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Filed herewith is an application for letters patent for COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS, in the name of inventors Sanchaita Datta and Ragula Bhaskar, comprising a title page, 27 pages of specification and claims, and 4 sheets of drawings. The following are also enclosed:

An Application Data Sheet;

A Certificate of Mailing by Express Mail and self-addressed stamped postcard.

Please publish the application in due course. Any and all requests for non-publication in prior applications in the priority chain are hereby withdrawn.

Please address all future communications to the undersigned.

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CERTIFICATE OF MAILING UNDER 37 CFR 1.10

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Application Data Sheet

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UNITED STATES
PATENT APPLICATION

OF

SANCHAITA DATTA AND RAGULA BHASKAR

FOR

COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

RELATED APPLICATIONS

This application claims priority to commonly owned copending U.S. provisional patent application serial no. 60/259,269 filed December 29, 2000, which is also incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to computer network data transmission, and more particularly relates to tools and techniques for point-to-point or switched connection communications such as those using two or more frame relay networks in parallel to provide benefits such as load balancing across network connections, greater reliability, and increased security.

TECHNICAL BACKGROUND OF THE INVENTION

Frame relay networking technology offers relatively high throughput and reliability. Data is sent in variable length frames, which are a type of packet. Each frame has an address that the frame relay network uses to determine the frame's destination. The frames travel to their destination through a series of switches in the frame relay network, which is sometimes called a network "cloud"; frame relay is an example of packet-switched networking technology. The transmission lines in the frame relay cloud must be essentially error-free for frame relay to perform well, although error handling by other mechanisms at the data source and destination can compensate to some extent for lower

line reliability. Frame relay and/or point-to-point network services are provided or have been provided by various carriers, such as AT&T, Qwest, XO, and MCI WorldCom.

Frame relay networks are an example of a "private network". Another example is a point-to-point network, such as a T1 or T3 connection. Although the underlying technologies differ somewhat, for purposes of the present invention frame relay networks and point-to-point networks are generally equivalent in important ways, such as the conventional reliance on manual switchovers when traffic must be redirected after a connection fails. A frame relay permanent virtual circuit is a virtual point-to-point connection. Frame relays are used as examples throughout this document, but the teachings will also be understood in the context of point-to-point networks.

A frame relay or point-to-point network may become suddenly unavailable for use. For instance, both MCI WorldCom and AT&T users have lost access to their respective frame relay networks during major outages. During each outage, the entire network failed. Loss of a particular line or node in a network is relatively easy to work around. But loss of an entire network creates much larger problems. Tools and techniques are needed to permit continued data transmission when the entire frame relay network that would normally carry the data is down.

Figure 1 illustrates prior art configurations involving two frame relay networks for increased reliability; similar configurations involve one or more point-to-point network connections. Two sites 102 transmit data to each other (alternately, one site might be only a data source, while the other is only a data destination). Each site has two border routers 104. Two frame relay networks 106, 108 are available to the sites 102 through the routers 104. The two frame relay networks 106, 108 have been given separate numbers in the

figure, even though each is a frame relay network, to emphasize the incompatibility of frame relay networks provided by different carriers. An AT&T frame relay network, for instance, is incompatible in many details with an MCI WorldCom frame relay network. For instance, two frame relay networks may have different maximum frame sizes or switching capacities. The two providers have to agree upon information rates, switching capacities, frame sizes, etc. before the two networks can communicate directly with each other.

A configuration like that shown in Figure 1 may be actively and routinely using both frame relay networks A and B. For instance, a local area network (LAN) at site 1 may be set up to send all traffic from the accounting and sales departments to router A1 and send all traffic from the engineering department to router B1. This may provide a very rough balance of the traffic load between the routers, but it does not attempt to balance router loads dynamically in response to actual traffic and thus is not "load-balancing" as that term is used herein.

Alternatively, one of the frame relay networks may be a backup which is used only when the other frame relay network becomes unavailable. In that case, it may take even skilled network administrators several hours to perform the steps needed to switch the traffic away from the failed network and onto the backup network. In general, the necessary Private Virtual Circuits (PVCs) must be established, routers at each site 102 must be reconfigured to use the correct serial links and PVCs, and LANs at each site 102 must be reconfigured to point at the correct router as the default gateway.

Although two private networks are shown in Figure 1, three or more such networks could be employed, with similar considerations coming into play as to increased

reliability, limits on load-balancing, the efforts needed to switch traffic when a network fails, and so on. Likewise, for clarity of illustration Figure 1 shows only two sites, but three or more sites could communicate through one or more private networks.

Figure 2 illustrates a prior art configuration in which data is normally sent between sites 102 over a private network 106. A failover box 202 at each site 102 can detect failure of the network 106 and, in response to such a failure, will send the data instead over an ISDN link 204 while the network 106 is down. Using an ISDN link 204 as a backup is relatively easier and less expensive than using another private network 106 as the backup, but generally provides lower throughput.

Figure 3 illustrates prior art configurations involving two private networks for increased reliability, in the sense that some of the sites in a given government agency or other entity 302 can continue communicating even after one network goes down. For instance, if a frame relay network A goes down, sites 1, 2, and 3 will be unable to communicate with each other but sites 4, 5, and 6 will still be able to communicate amongst themselves through frame relay network B. Likewise, if network B goes down, sites 1, 2, and 3 will still be able to communicate through network A. Only if both networks go down at the same time would all sites be completely cut off. Like the Figure 1 configurations, the Figure 3 configuration uses two private networks. Unlike Figure 1, however, there is no option for switching traffic to another private network when one network 106 goes down, although either or both of the networks in Figure 3 could have an ISDN backup like that shown in Figure 2. Note also that even when both private networks are up, sites 1, 2, and 3 communicate only among themselves; they are not connected to sites 4, 5, and 6.

Figure 4 illustrates a prior art response to the incompatibility of frame relay networks of different carriers. A special "network-to-network interface" (NNI) 402 is used to reliably transmit data between the two frame relay networks A and B. NNIs are generally implemented in software at carrier offices. Note that the configuration in Figure 4 does not provide additional reliability by using two frame relay networks 106, because those networks are in series rather than in parallel. If either of the frame relay networks A, B in the Figure 4 configuration fails, there is no path between site 1 and site 2; adding the second frame relay network has not increased reliability. By contrast, Figure 1 increases reliability by placing the frame relay networks in parallel, so that an alternate path is available if either (but not both) of the frame relay networks fails. Someone of skill in the art who was looking for ways to improve reliability by putting networks in parallel would probably not consider NNIs pertinent, because they are used for serial configurations rather than parallel ones, and adding networks in a serial manner does not improve reliability.

It would be an advancement in the art to provide another alternative for increasing reliability by configuring private networks in parallel, especially if other benefits are also provided. Such improvements are disclosed and claimed herein.

BRIEF SUMMARY OF THE INVENTION

The present invention provides tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration. In some embodiments a controller according to the invention comprises a site interface connecting the controller to a site, at

least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion. The controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability criterion that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message. Some controller embodiments include only two private network interfaces, while others have three or more private network interfaces, each of which is selectable by the packet path selector. The private network interfaces may connect to a User-to-Network Interface, or they may comprise network-specific interface means of the type found in frame relay network routers.

One method of the invention for combining connections for access to multiple parallel frame relay and/or point-to-point networks, comprises the steps of: obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion; connecting the controller site interface to a site to receive packets from a computer at the site; connecting a first private network interface of

the controller to a first private network; connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector. The criterion used by the packet path selector may be a load-balancing criterion, a reliability criterion, and/or a security criterion.

Another method for combining connections for access to multiple independent parallel frame relay or point-to-point networks comprises the steps of: sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion. In one variation, the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

Other features and advantages of the invention will become more fully apparent through the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

To illustrate the manner in which the advantages and features of the invention are obtained, a more particular description of the invention will be given with reference to the

attached drawings. These drawings only illustrate selected aspects of the invention and its context. In the drawings:

Figure 1 is a diagram illustrating a prior art approach having frame relay networks configured in parallel for increased reliability for all networked sites, in configurations that employ manual switchover between the two networks in case of failure.

Figure 2 is a diagram illustrating a prior art approach having a frame relay network configured in parallel with an ISDN network link for increased reliability for all networked sites.

Figure 3 is a diagram illustrating a prior art approach having independent frame relay networks, with each network connecting several sites but little or no communication between the networks.

Figure 4 is a diagram illustrating a prior art approach having frame relay networks configured in series through a network-to-network interface, with no consequent increase in reliability because the networks are in series rather than in parallel.

Figure 5 is a diagram illustrating generally configurations of the present invention, in which two or more private networks are placed in parallel for increased reliability for all networked sites, without requiring manual traffic switchover, and with the option in some embodiments of load balancing between the networks and/or increasing security by transmitting packets of a single logical connection over different private networks.

Figure 6 is a diagram further illustrating the present invention, in which three sites can communicate over two parallel private networks.

Figure 7 is a diagram further illustrating a multiple private network access controller of the present invention, which comprises a component tailored to each private

network to which the controller connects, and a path selector in the controller which uses one or more of the following as criteria: private network status (up/down), private network load, use of a particular private network for previous packets in a given logical connection or session.

Figure 8 is a flowchart illustrating methods of the present invention for sending packets over multiple parallel independent private networks for enhanced reliability, load balancing and/or security.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to methods, systems, and configured storage media for connecting sites over multiple independent parallel private networks such as frame relay networks and/or point-to-point network connections. "Multiple" networks means two or more such networks. "Independent" means routing information need not be shared between the networks. "Parallel" does not rule out the use of NNIs and serial networks, but it does require that at least two of the networks in the configuration be in parallel so that alternate data paths through different private networks are present. "Frame relay networks" or "private networks" does not rule out the use of an ISDN link or other backup for a particular frame relay or point-to-point private network, but it does require the presence of multiple such networks – Figure 2, for instance, does not meet this requirement.

Figure 5 illustrates generally configurations of the present invention involving frame relay networks; comments made here also apply to similar configurations involving point-to-point networks, or both types (frame relay and point-to-point) of private network.

Two or more frame relay networks 106 are placed in parallel between two or more sites 102. Access to the frame relay networks 106 at each site is through an inventive controller 502. The system containing the controllers 502 provides point-to-point connectivity between the sites 102. Additional controllers 502 may be used at each location, to provide a switched connection system with no single point of failure.

Unlike the configuration shown in Figure 1, the inventive configuration in Figure 5 does not require manual intervention by network administrators to coordinate traffic flow over the parallel networks 106. The networks 106 are independent of each other. When one attached network fails, the failure is sensed by the controller 502 and traffic is automatically routed through one or more other frame relay networks. Unlike the configuration in Figure 2, the inventive configuration combines two or more frame relay networks 106. Unlike the configuration in Figure 4, the inventive configuration requires two or more frame relay networks 106 be placed in parallel (although additional networks may also be placed in series). Unlike the configuration in Figure 3, the inventive configuration does not merely partition sites between unconnected networks – with the invention, most or all of the connected sites get the benefit of parallel networks, so they can continue transceiving even if one of the networks goes down.

Another difference between the inventive approach and prior approaches may also be noted here, namely, the narrow focus of some prior art on reliability differs from the present document's broader view, which considers load balancing and security as well as reliability. Configurations like those shown in Figure 2 are directed to reliability (which is also referred to by terms such as "fault tolerance", "redundancy", "backup", "disaster recovery", "continuity", and "failover"). That is, one of the network paths (in this case,

the one through the frame relay network) is the primary path, in that it is normally used for most or all of the traffic, while the other path (in this case, the one through the ISDN link) is used only when that primary path fails. Although the inventive configurations can be used in a similar manner, with one frame relay network being on a primary path and the other network(s) being used only as a backup when that first network fails, the inventive configurations also permit concurrent use of two or more frame relay networks. With concurrent use, elements such as load balancing between frame relay networks, and increased security by means of splitting pieces of a given message between frame relay networks, which are not considerations in the prior art of Figure 2, become possibilities in some embodiments of the present invention.

In general, the different frame relay or other private networks 106 will be provided by different carriers (WorldCom, AT&T, Qwest, etc.). In such cases, each frame relay network 106 typically operates on its own distinct clock. In some embodiments, the controller 502 sends traffic over all frame relay networks 106 to which it is connected, for load balancing and/or enhanced security. In other embodiments or situations, the controller 502 prefers a particular network 106, and uses the other network(s) as backup in case the preferred network 106 becomes unavailable.

In some embodiments, a frame relay network C at a location 3 is connected to a controller 502 for a location 1 but is not necessarily connected to the controller 502 at another location 2. In such cases, a packet from location 3 addressed to location 2 can be sent over network C to the controller at location 1, which can then redirect the packet to location 2 by sending it over network A or network B. That is, controllers 502 are

preferably, but not necessarily, provided at every location that can send packets over the parallel independent networks 106 of the system.

In some embodiments, the controller 502 at the receiving end of the network connection between two sites A and B has the ability to re-sequence the packets. This means that if the lines are of dissimilar speeds or if required by security criteria, the system can send packets out of order and re-sequence them at the other end. Packets may be sent out of sequence to enhance security, to facilitate load-balancing, or both. The TCP/IP packet format includes space for a sequence number, which can be used to determine proper packet sequence at the receiving end (the embodiments are dual-ended, with a controller 502 at the sending end and another controller 502 at the receiving end). The sequence number (and possibly more of the packet as well) can be encrypted at the sending end and then decrypted at the receiving end, for enhanced security.

Figure 6 further illustrates the present invention, in a particular configuration in which three sites 102 can communicate over two parallel independent frame relay networks 106; two or more point-to-point networks could be used similarly, as could a mixture of frame relay and point-to-point networks. In one such configuration, sites 1, 2, and 3 are connected via frame relay clouds 106. Routers 1, 2, and 3 are connected to frame relay cloud A, and routers 4, 5, and 6 are connected to frame relay cloud B. The WAN ports of the routers 104 on each frame cloud 106 are configured to form a single subnet. Virtual circuits (VCs) exist between site 1 and site 2, between site 2 and site 3, and between site 3 and site 1, on each of the clouds 106. A controller 502 is connected to each pair of routers 104 at each location to provide at least reliability through redundancy.

In operation, the controller 502 on each location is provided with a configuration file or other data structure containing a list of all the LAN IP addresses of the controllers 502 at the locations, and their subnet masks. Each controller 502 keeps track of available and active connections to the remote sites 102. If any of the routes are unavailable, the controller 502 preferably detects and identifies them. When a controller 502 receives IP traffic to any of the distant networks, the data is sent on the active connection to that destination. If all connections are active and available, the data load is preferably balanced across all the routers 104. If any of the VCs (or point-to-point connections) are unavailable, or any of the routers 104 are down, the traffic is not forwarded to that router; when the routes become available again, the load balancing across all active routes preferably resumes.

In some embodiments, load balancing is not the only factor considered when the controller 502 determines which router 104 should receive a given packet. Security may be enhanced by sending packets of a given message over two or more networks 106. Even if a packet sniffer or other eavesdropping tool is used to illicitly obtain data packets from a given network 106, the eavesdropper will thus obtain at most an incomplete copy of the message because the rest of the message traveled over a different network 106. Security can be further enhanced by sending packets out of sequence, particularly if the sequence numbers are encrypted.

Figure 7 is a diagram further illustrating a multiple frame relay and/or point-to-point network access controller 502 of the present invention. A site interface 702 connects the controller 502 to the LAN at the site 102. This interface 702 can be

implemented, for instance, as any local area network interface, like 10/100Base-T ethernet, gigabit ATM or any other legacy or new LAN technology.

The controller 502 also includes a packet path selector 704, which may implemented in custom hardware, or implemented as software configuring semi-custom or general-purpose hardware. The path selector 704 determines which path to send a given packet on. In the configuration of Figure 6, for instance, the path selector in the controller at location 1 selects between a path through router 1 and a path through router 4. In different embodiments and/or different situations, one or more of the following criteria may be used to select a path for a given packet, for a given set of packets, and/or for packets during a particular time period:

- Redundancy: do not send the packet(s) to a path through a network 106, a router 104, or a connection that is apparently down. Instead, use devices (routers, network switches, bridges, etc.) that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning. Techniques and tools for detecting network path failures are generally well understood, although their application in the context of the present invention is believed to be new.
- Load-balancing: send packets in distributions that balance the load of a given network, router, or connection relative to other networks, routers, or connections available to the controller 502. This promotes balanced loads on one or more of the devices (routers, frame relay switches) that carry packets after the packets leave the selected network interfaces. Load-balancing may be done through an algorithm as simple as a modified round-robin approach which places the next

packet on the next available line, or it may involve more complex algorithms that attempt to measure and track the throughput, latency, and/or other performance characteristics of a given link or path element. Load-balancing is preferably done on a per-line basis, as opposed to prior art approaches which use a per-department and/or per-router basis for dividing traffic. Load-balancing algorithms in general are well understood, although their application in the context of the present invention is believed to be new.

- Security: divide the packets of a given message (session, file, web page, etc.) so they travel over different networks 106. This promotes the use of multiple frame relay networks to carry different pieces of a given message, so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message. Dividing message packets between networks 106 for better security may be done in conjunction with load balancing, and may in some cases be a side-effect of load-balancing. But load-balancing can be done on a larger granularity scale than security, e.g., by sending one entire message over network A and the next entire message over network B. Security may thus involve finer granularity than load balancing, and may even be contrary to load balancing in the sense that dividing up a message to enhance security may increase the load on a heavily loaded path even though a more lightly loaded alternate path is available and would be used for the entire message if security was not sought by message-splitting between networks. Other security criteria may also be used, e.g., one network 106 may be viewed as more secure than another, encryption may be enabled, or other security measures may be taken.

The controller 502 also includes two or more private network interfaces 706, namely, so there is at least one interface 706 per private network 106 to which the controller 502 controls access. Each interface 706 can be implemented as a direct interface 706 or as an indirect interface 706; a given embodiment may comprise only direct interfaces 706, may comprise only indirect interfaces 706, or may comprise at least one of each type of interface. A direct interface 706 may be implemented, for instance, as a direct frame relay connection over land line or wireless or network interfaces to which the frame relay routers can connect, or as a point-to-point interface to a dedicated T1, T3, or wireless connection. One suitable implementation includes a standard Ethernet card, which connects to an external frame relay User-Network Interface (UNI) in a router of a network 106. UNIs generally are known in the art. One indirect interface 706 effectively makes part of the controller 502 into a UNI by including in the interface 706 the same kind of special purpose hardware and software that is found on the frame relay network side (as opposed to the UNI side) of a frame relay network router. Such an indirect frame relay network interface 706 is tailored to the specific timing and other requirements of the frame relay network to which the indirect interface 706 connects. For instance, one indirect interface 706 may be tailored to a Qwest frame relay network 106, while another indirect interface 706 in the same controller 502 is tailored to a UUNet network 106. The indirect interface 706 may connect to the frame relay network 106 over fiber optic, T1, wireless, or other links. In short, a direct interface 706 relies on special purpose hardware and connectivity/driver software in a router, to which the direct interface 706 of the controller 502 connects through a UNI. By contrast, an indirect interface 706 includes such special purpose hardware and connectivity/driver software inside the controller 502

itself. In either case, the controller provides packet switching capabilities for at least redundancy without manual switchover, and preferably for dynamic load-balancing between lines as well. The controller 502 in each case also optionally includes memory buffers in the site interface 702, in the path selector 704, and/or in the network interfaces 706.

An understanding of methods of the invention will follow from understanding the invention's devices, and vice versa. For instance, from Figures 5-7, one may ascertain methods of the invention for combining connections for access to multiple parallel private networks 106, such as frame relay networks. One method begins by obtaining a controller 502. The controller comprises (a) a site interface 702, (b) at least two network interfaces 706 tailored to particular frame relay networks 106 for operation as though part of a network-to-network interface in a serial network configuration, and (c) a packet path selector 704 which selects between network interfaces 706 according to a specified criterion. Path selection criteria may be specified by configuration files, hardware jacks or switches, ROM values, remote network management tools, or other means. One then connects the site interface 702 to a site 102 to receive packets from a computer (possibly via a LAN) at the site 102. Likewise, one connects a first network interface 706 to a first router 104 for routing packets to a first frame relay network 106, and a second network interface 706 to a second router 104 for routing packets to a second frame relay network 106. A third, fourth, etc. frame relay network 106 may be similarly connected to the controller 502 in some embodiments and/or situations. The connected frame relay networks 106 are parallel to one another (not serial, although additional networks not directly connected to the controller 502 may be serially connected to the networks 106).

The connected frame relay networks 106 are independent of one another, in that no routing information need be shared between them, to make them parallel (NNIs can still be used to connect networks in serial to form a larger independent and parallel network). A mistake in the routing information for one network 106 will thus not affect the other network 106. After the connections are made (which may be done in a different order than recited here), one sends a packet to the site interface 702, which then sends the packet through the one (or more – copies can be sent through multiple networks 106) network interface 706 that was selected by the packet path selector 704.

Figure 8 is a flowchart further illustrating methods of the present invention, which send packets over multiple parallel independent private networks 106 for enhanced reliability, load balancing and/or security; frame relay networks are used as an example, but point-to-point networks may be similarly employed. During a connection forming step 802, at least one virtual circuit is obtained between two sites 102. If the frame relay networks 106 will be used concurrently, the controllers 502 provide a connection which comprises multiple conventional virtual circuits, since two or more networks may (or will) carry packets during the step 802 connection. The controller 502 then checks the status of each connection and updates the information for available communication paths.

During a packet receiving step 804, the controller 502 at a given location receives a packet to be sent from that location to another site 102. In some cases, multiple packets may be received in a burst. The packet comes into the controller 502 through the site interface 702.

During a path selecting step 806, the path selector 704 selects the path over which the packet will be sent; selection is made between at least two paths, each of which goes

over a different network 106 than the other. The networks 106 are independent parallel frame relay networks. This path selecting step 806 may be performed once per packet, or a given selection may pertain to multiple packets. Path selection 806 is shown as following packet receipt 804, but in some embodiments and/or some situations, it may precede packet receipt 804. More generally, the steps illustrated and discussed in this document may be performed in various orders, including concurrently, except in those cases in which the results of one step are required as input to another step. Likewise, steps may be omitted unless required by the claims, regardless of whether they are expressly described as optional in this Detailed Description. Steps may also be repeated, or combined, or named differently.

As indicated, the path selection may use 808 load balancing as a criterion for selecting a path, use 810 network 106 status (up/down) and other connectivity criteria (e.g., router status, connectivity status) as a criterion for selecting a path, and/or use 812 division of packets between networks 106 for enhanced security as a criterion for selecting a path. These steps may be implemented in a manner consistent with the description above of the path selector 704 given in the discussion of Figure 7. More generally, unless it is otherwise indicated, the description herein of systems of the present invention extends to corresponding methods, and vice versa.

The description of systems and methods likewise extend to corresponding computer-readable media (e.g., RAM, ROM, other memory chips, disks, tape, Iomega ZIP or other removable media, and the like) which are configured by virtue of containing software to perform an inventive method, or software (including any data structure) which is uniquely suited to facilitate performance of an inventive method. Articles of

manufacture within the scope of the present invention thus include a computer-readable storage medium in combination with the specific physical configuration of a substrate of the computer-readable storage medium, when that substrate configuration represents data and/or instructions which cause one or more computers to operate in a specific and predefined manner as described and claimed herein.

During a packet transmission step 814, the packet is sent on the selected 806 path. This is done by sending the packet over the network interface 706 for the path selected. As indicated in Figure 8, the method may then loop back to receive 804 the next packet, select 806 its path, send 814 it, and so on. As noted, other specific method instances are also possible. One example is the inventive method in which load balancing or reliability criteria cause an initial path selection to be made 806, and then a loop occurs in which multiple packets are received 804 and then sent 814 over the selected path without repeating the selecting step 806 for each receive 804 – send 814 pair. Note that some embodiments of the invention permit packets of a given message to be sent over different networks 106, thereby enhancing 812 security. The PVCs are in general always connected, but an ending step 816 may be performed during an orderly shutdown for diagnostic or upgrade work, for instance.

Summary

The present invention provides methods and devices for placing frame relay and other private networks in parallel, thereby providing redundancy without requiring manual switchover in the event of a network failure. Load-balancing between lines and/or between networks may also be performed. For instance, the invention can be used to

provide reliable, efficient, and secure point-to-point connections for private networks 102. Some prior art approaches require network reconfiguration each time a frame relay circuit fails, and some have complex router configurations to handle load balancing and network failures. This requires substantial effort by individual frame relay network customers to maintain connectivity, and they will often receive little or no help from the frame relay carriers. Instead, well-trained staff are needed at each location, as are expensive routers. By contrast, these requirements are not imposed by the present invention.

As used herein, terms such as "a" and "the" and item designations such as "connection" or "network" are generally inclusive of one or more of the indicated item. In particular, in the claims a reference to an item normally means at least one such item is required.

The invention may be embodied in other specific forms without departing from its essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. Headings are for convenience only. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by patent is:

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a

packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

ABSTRACT

Methods, configured storage media, and systems are provided for communications using two or more frame relay or point-to-point networks in parallel to provide load balancing across network connections, greater reliability, and/or increased security. A controller provides access to two or more private networks in parallel, through direct or indirect network interfaces. When one attached network fails, the failure is sensed by the controller and traffic is routed through one or more other private networks. When all attached networks are operating, the controller preferably balances the load between them.

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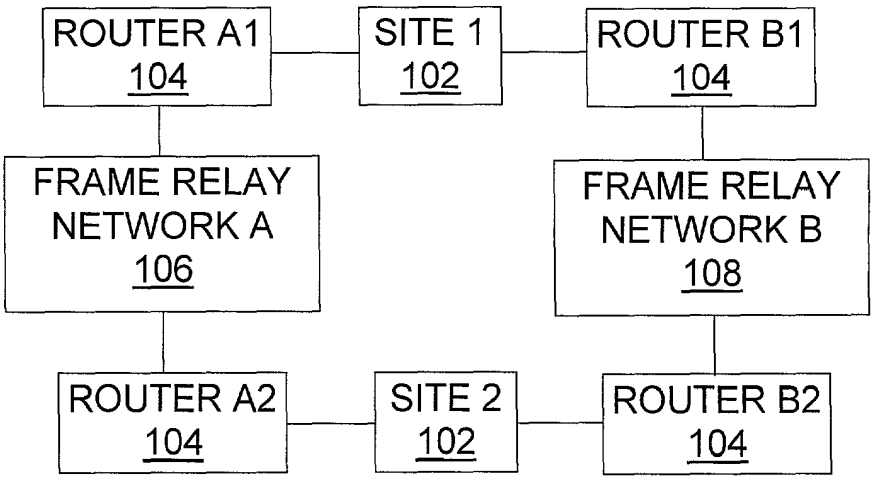

(PRIOR ART)

Fig. 1

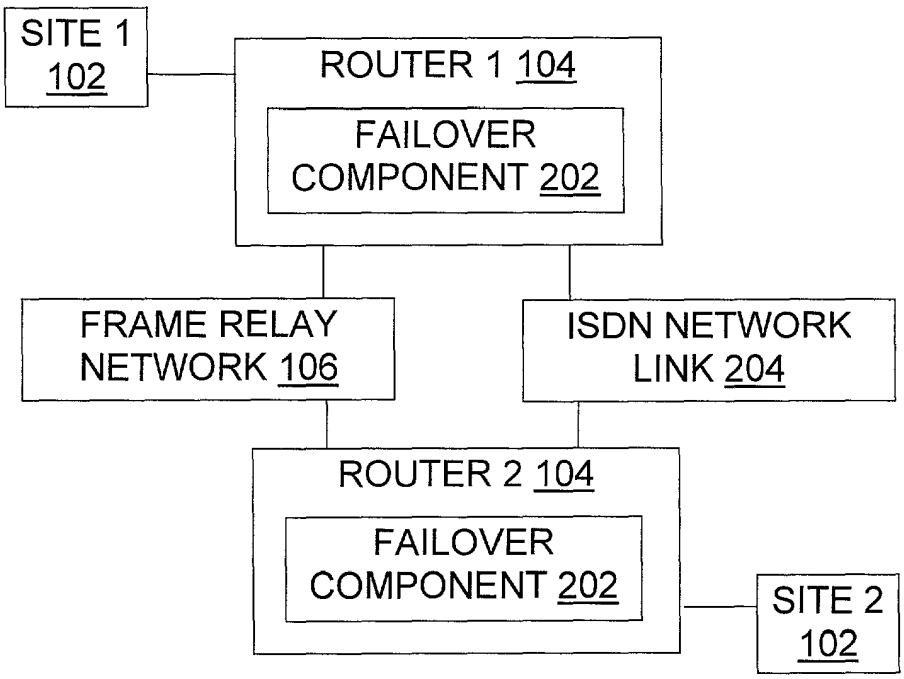

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Fig. 2

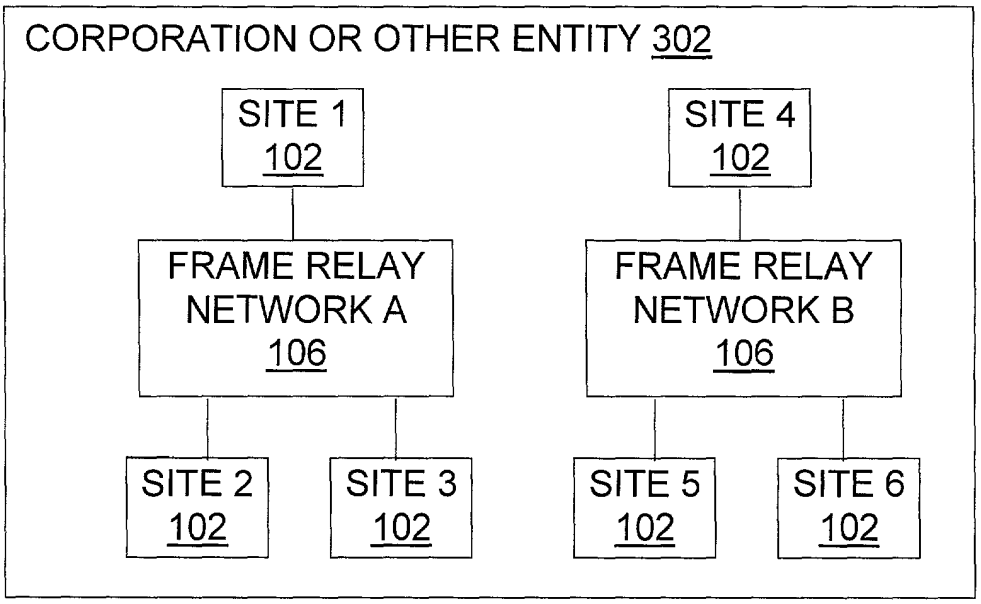

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Fig. 3

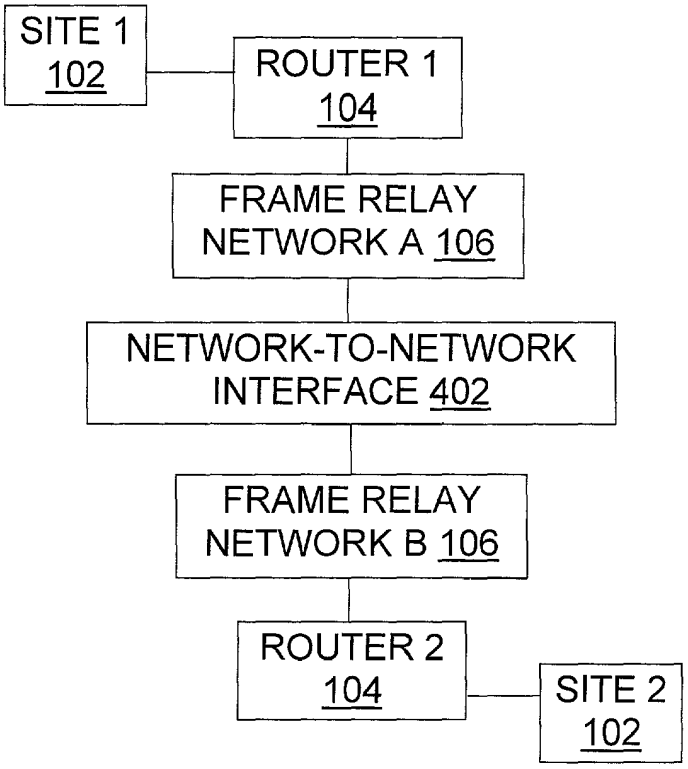

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Fig. 4

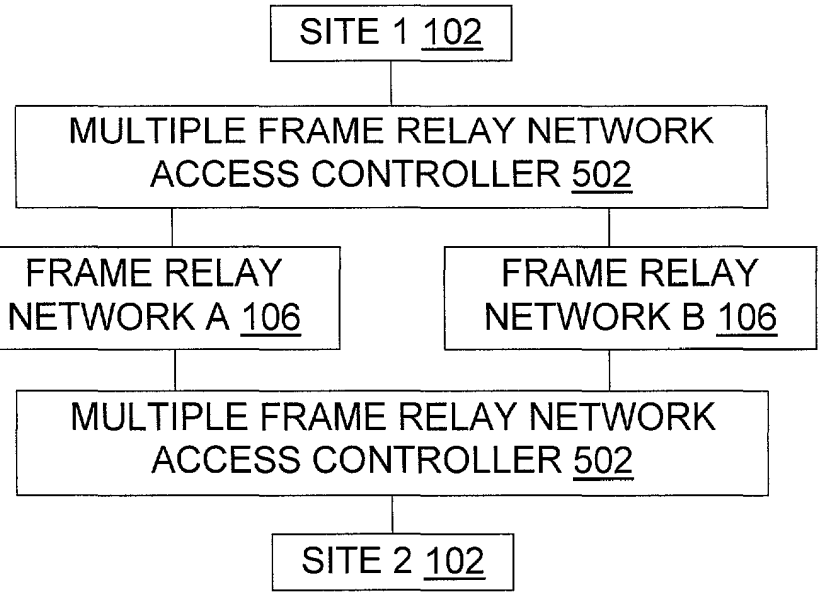

Fig. 5

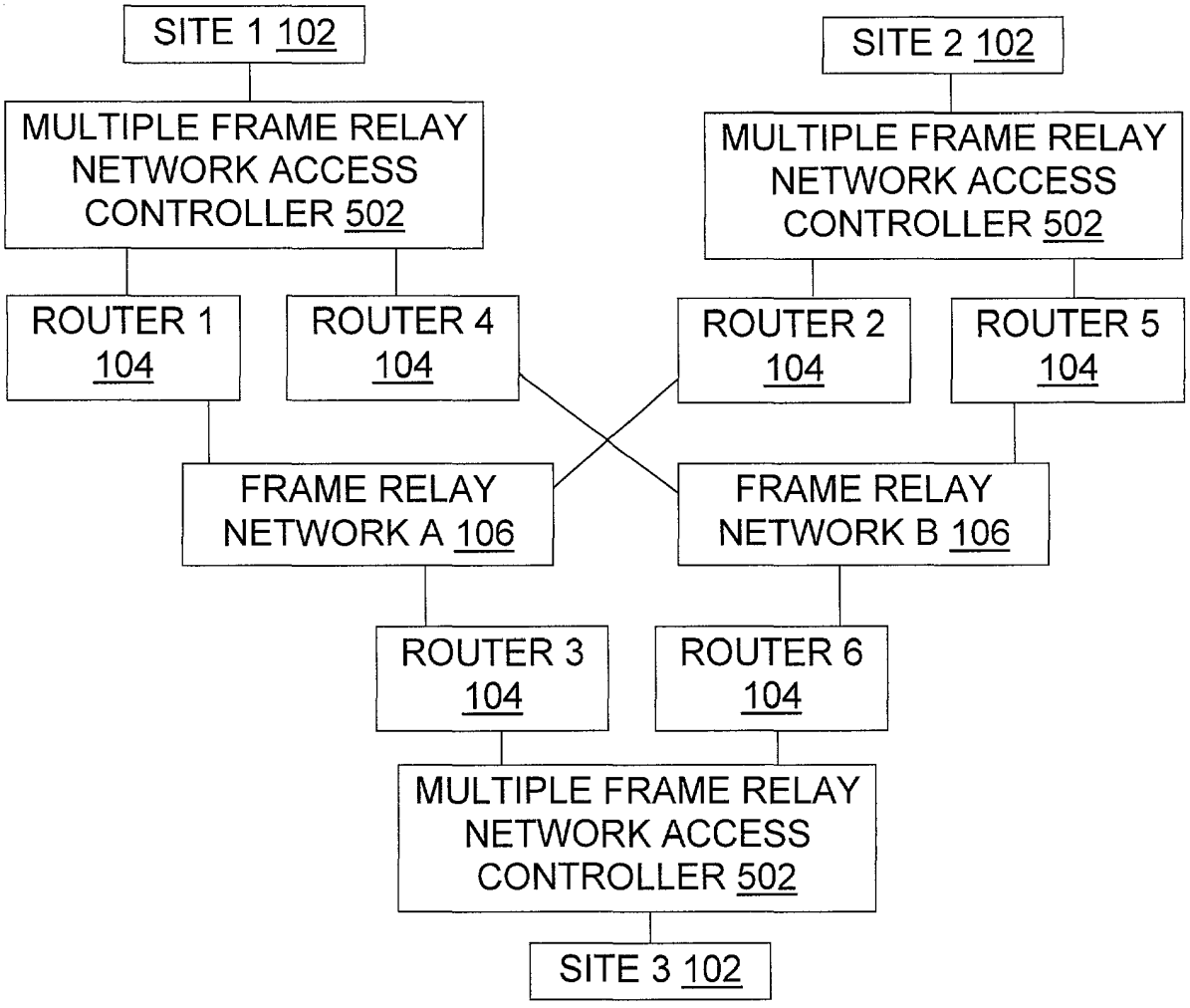

Fig. 6

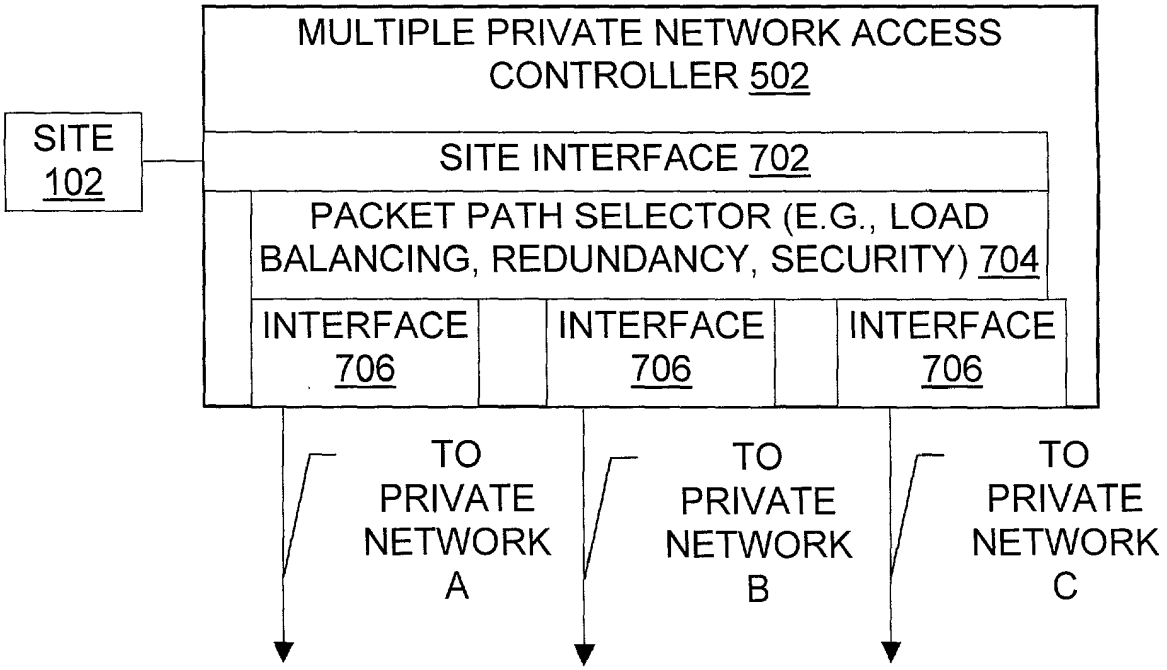

Fig. 7

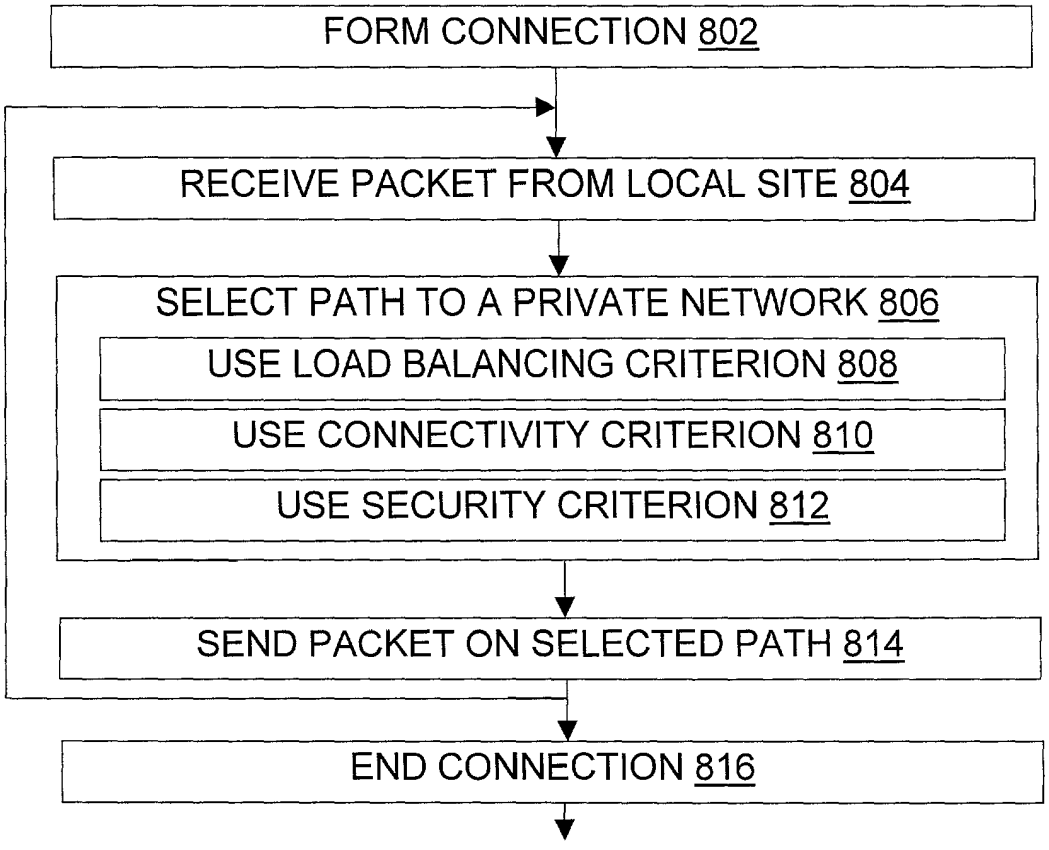

Fig. 8

J1000 U.S. PTO
10/034197
12/28/01

PATENT NUMBER and ISSUE DATE

U.S. **UTILITY** Patent Application

APPL NUM	FILING DATE	CLASS	SUBCLASS	GAU	EXAMINER
10034197	12/28/2001	709	24	2151	S

**APPLICANTS: Datta Sanchaita; Bhaskar Regula;

**CONTINUING DATA VERIFIED:
THIS APPLN CLAIMS BENEFIT OF 60/259,269 12/29/2000

** FOREIGN APPLICATIONS VERIFIED:

PG-PUB	DO NOT PUBLISH ☐	RESCIND ☐	
Foreign priority claimed	☐ yes ☐ no	ATTORNEY DOCKET NO	
35 USC 119 conditions met	☐ yes ☐ no	3003.2.9A	
Verified and Acknowledged Examiners's intials			

TITLE : Combining connections for parallel access to multiple frame relay and other private networks

U.S.DEPT. OF COMM /PAT.& TM-PTO-436L(Rev. 12-94)

NOTICE OF ALLOWANCE MAILED	Assistant Examiner	CLAIMS ALLOWED	
		Total Claims	Print Claim for O.G
ISSUE FEE		DRAWING	
Amount Due / Date Paid	Primary Examiner	Sheets Drwg. / Figs.Drwg. / Print Fig.	Application Examiner
☐ TERMINAL DISCLAMER	PREPARED FOR ISSUE		

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SEARCH

Class	Sub.	Date	Exmr.
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370	351		
	401		
	419		

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

SEARCH NOTES

(List databases searched. Attach search strategy inside.)

	Date	Exmr.
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ISSUE SLIP STAPLE AREA (for additional cross-references)

ISSUING CLASSIFICATION

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INDEX OF CLAIMS

✓ .... Rejected – (Through numeral) ... Canceled N .... Non-elected A .... Appeal
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Final	Original	10/20/03	4/15/04							
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Express Mail Label No. EL855688731US

PATENT APPLICATION
Docket No. 3003.2.9A

December 28, 2001

Commissioner for Patents
Box Patent Application
P.O. Box 2327
Arlington, VA 22202

Commissioner:

Filed herewith is an application for letters patent for COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS, in the name of inventors Sanchaita Datta and Ragula Bhaskar, comprising a title page, 27 pages of specification and claims, and 4 sheets of drawings. The following are also enclosed:

An Application Data Sheet;

A Certificate of Mailing by Express Mail and self-addressed stamped postcard.

Please publish the application in due course. Any and all requests for non-publication in prior applications in the priority chain are hereby withdrawn.

Please address all future communications to the undersigned.

Respectfully submitted,

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COMPUTER LAW++
1211 East Yale Avenue
Salt Lake City, Utah 84105
801-582-2724 (voice)
801-583-1984 (fax)

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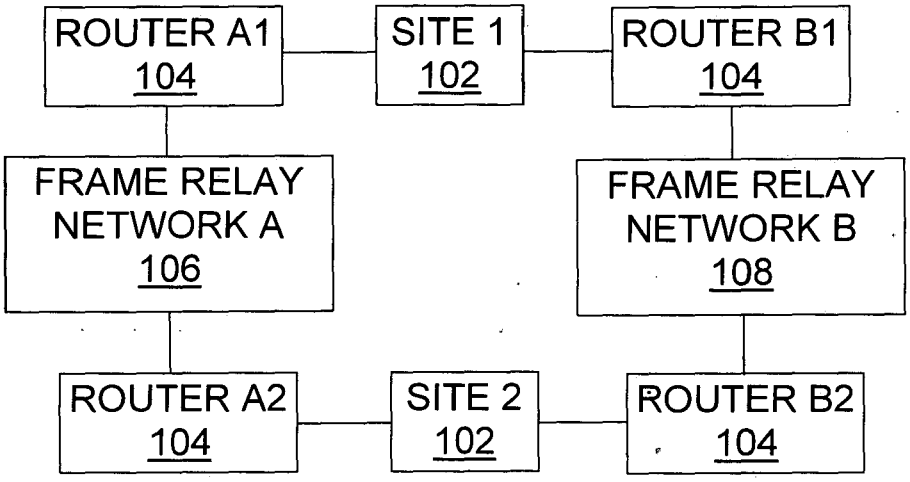
CERTIFICATE OF MAILING UNDER 37 CFR 1.10

I hereby certify that the correspondence listed below is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on December 28, 2001 addressed to the Assistant Commissioner for Patents, Box Patent Application, P.O. Box 2327, Arlington, VA 22202:

Certificate of Mailing, Postcard
Transmittal Letter
Patent Application including title page, 27 pages of specification and claims, and 4 drawing sheets
Application Data Sheet

EL855688731US
"Express Mail" label number



(PRIOR ART)

Fig. 1

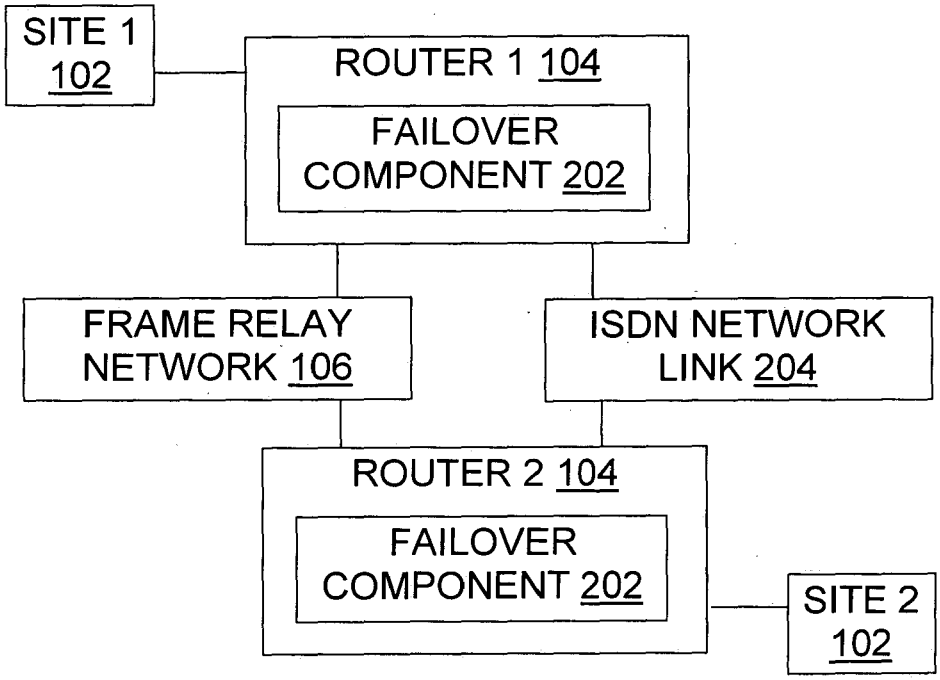


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Fig. 2

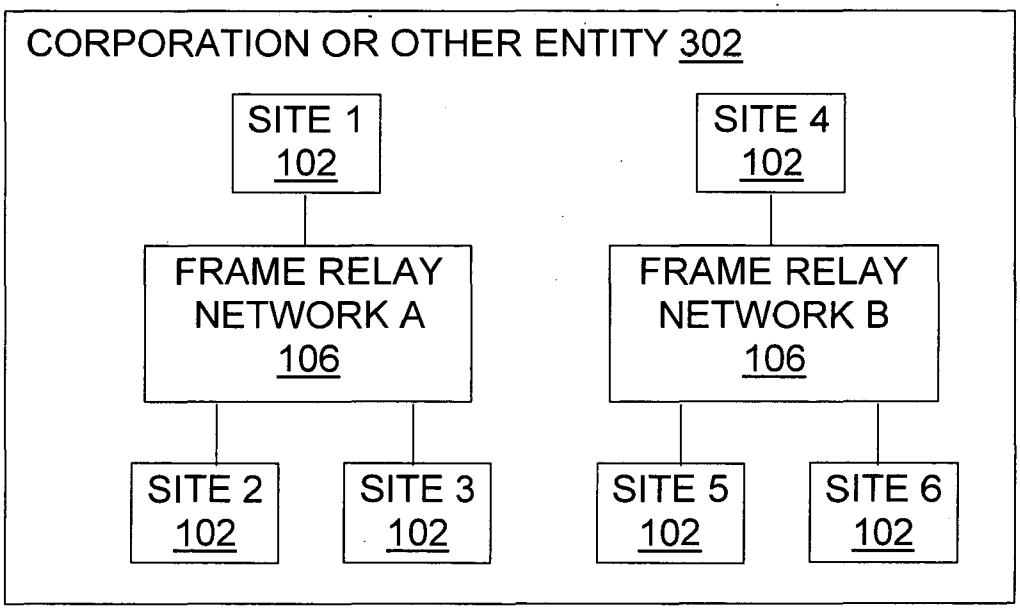

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Fig. 3

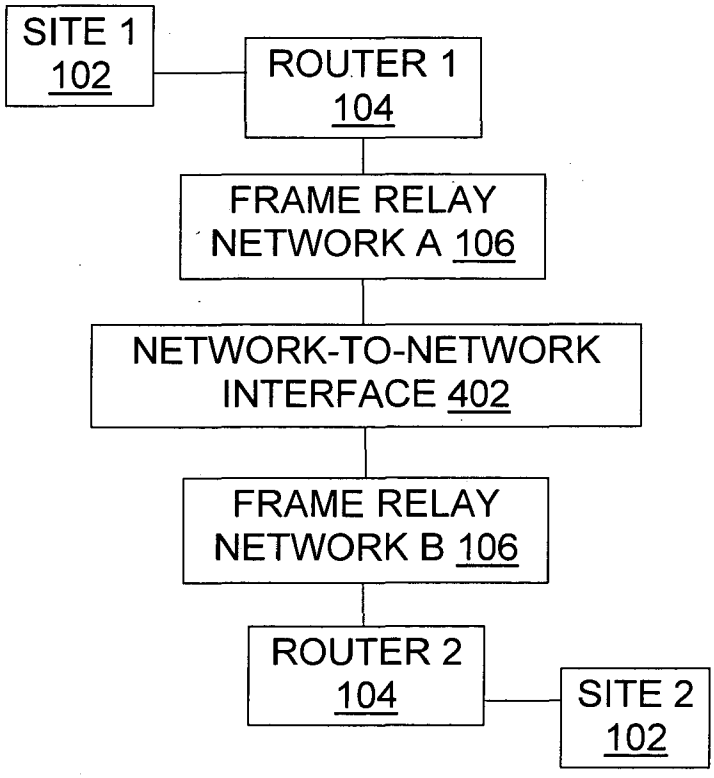

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Fig. 4

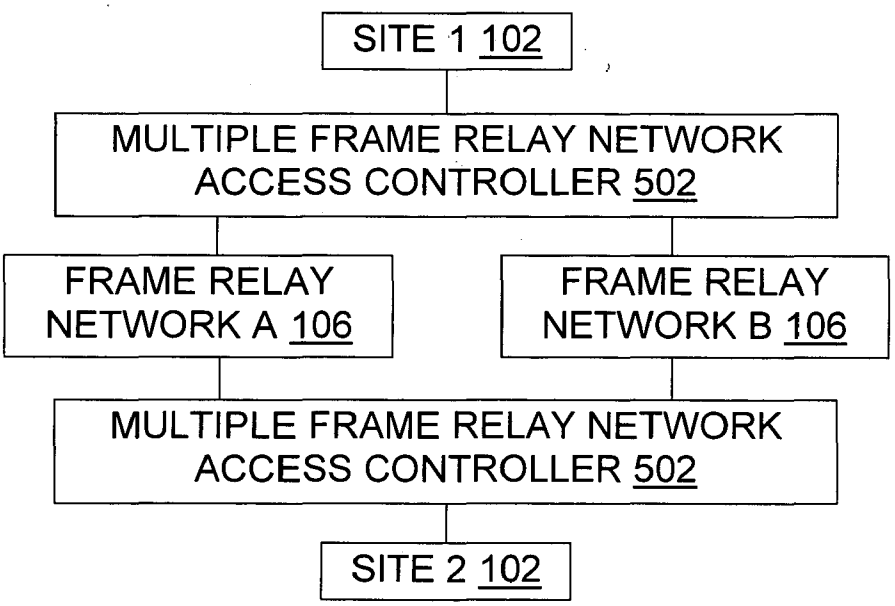

Fig. 5

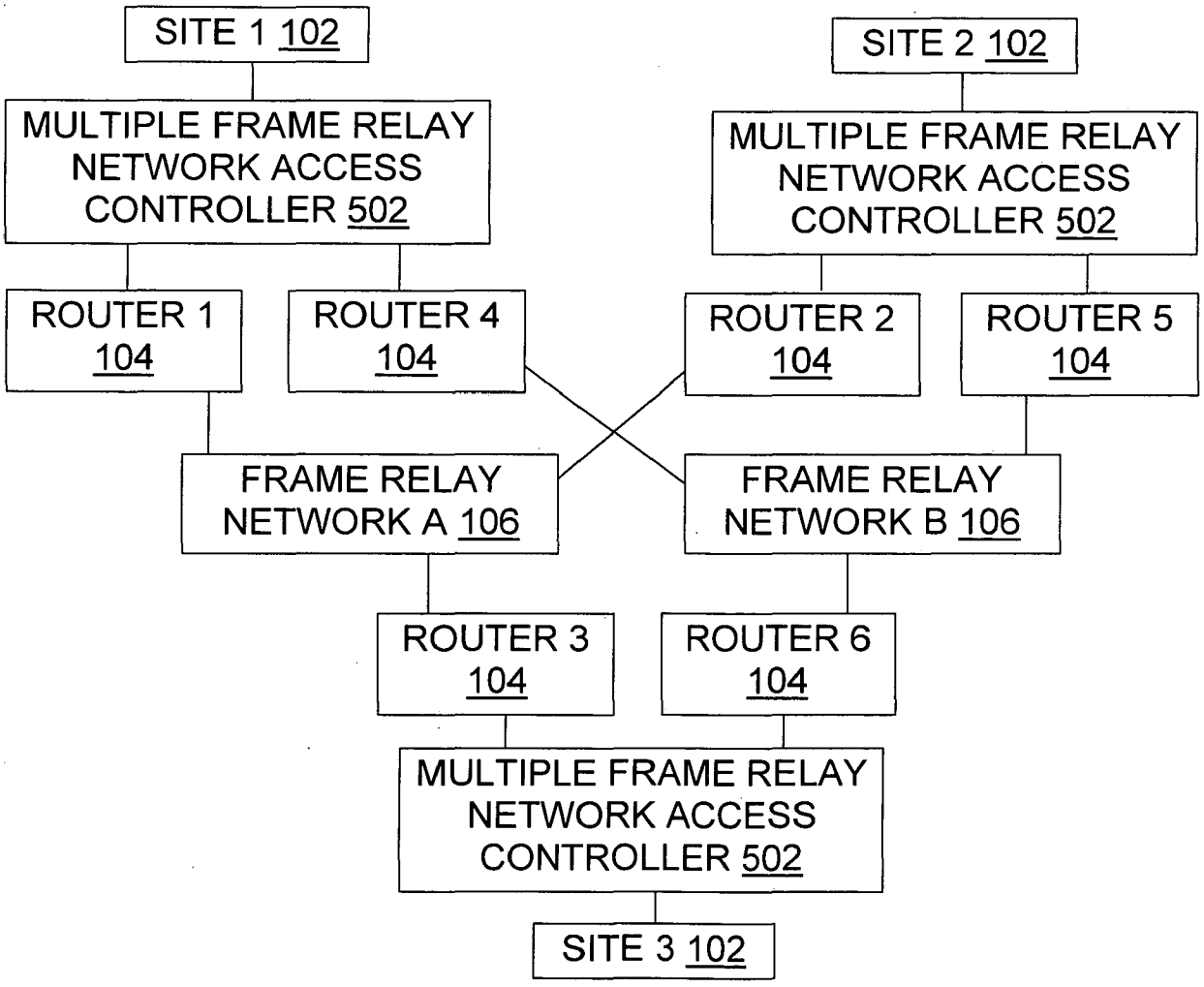

Fig. 6

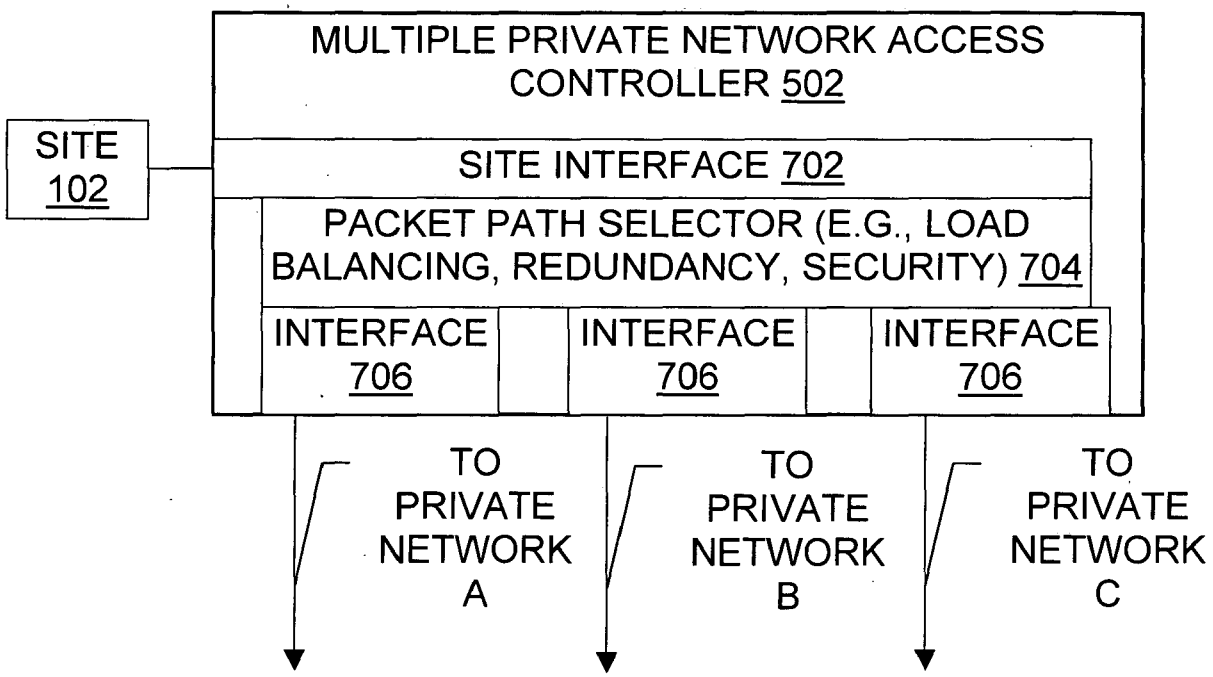

Fig. 7

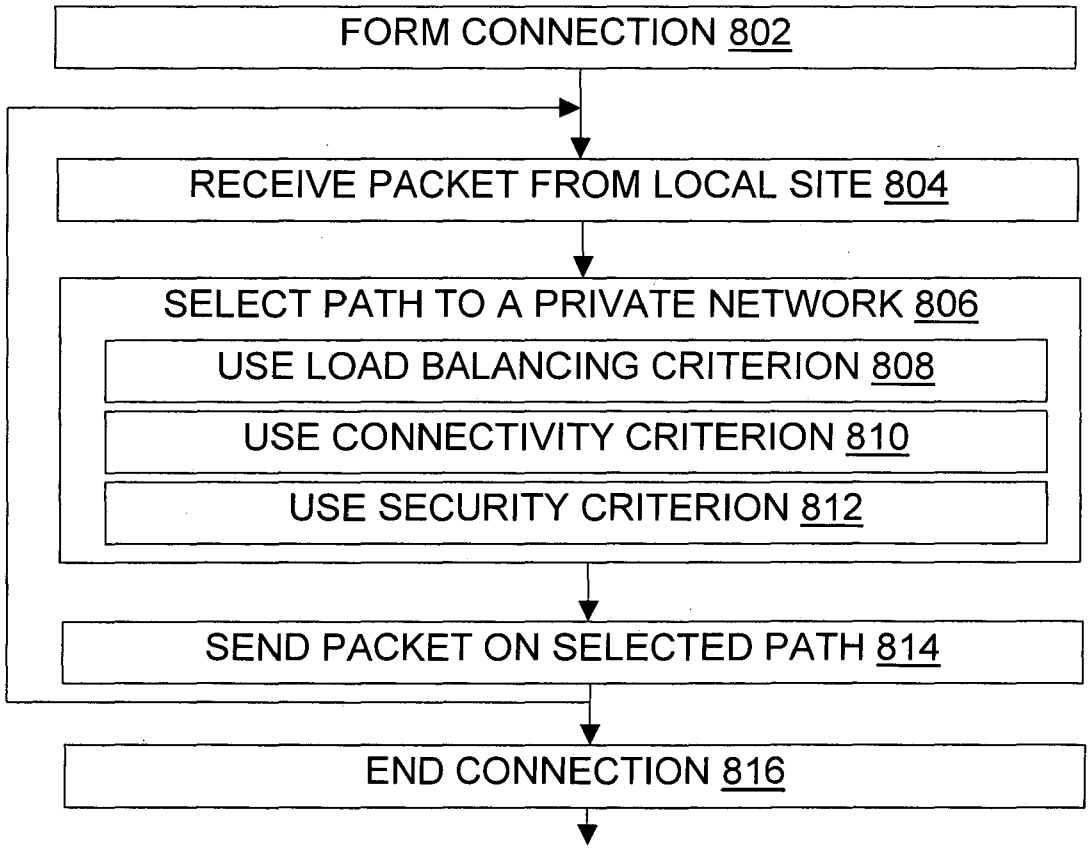

Fig. 8

Express Mail Label No. EL855688731US
PATENT APPLICATION
DOCKET NO. 3003.2.9A

UNITED STATES
PATENT APPLICATION

OF

SANCHAITA DATTA AND RAGULA BHASKAR

FOR

COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

RELATED APPLICATIONS

This application claims priority to commonly owned copending U.S. provisional patent application serial no. 60/259,269 filed December 29, 2000, which is also incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to computer network data transmission, and more particularly relates to tools and techniques for point-to-point or switched connection communications such as those using two or more frame relay networks in parallel to provide benefits such as load balancing across network connections, greater reliability, and increased security.

TECHNICAL BACKGROUND OF THE INVENTION

Frame relay networking technology offers relatively high throughput and reliability. Data is sent in variable length frames, which are a type of packet. Each frame has an address that the frame relay network uses to determine the frame's destination. The frames travel to their destination through a series of switches in the frame relay network, which is sometimes called a network "cloud"; frame relay is an example of packet-switched networking technology. The transmission lines in the frame relay cloud must be essentially error-free for frame relay to perform well, although error handling by other mechanisms at the data source and destination can compensate to some extent for lower

line reliability. Frame relay and/or point-to-point network services are provided or have been provided by various carriers, such as AT&T, Qwest, XO, and MCI WorldCom.

Frame relay networks are an example of a "private network". Another example is a point-to-point network, such as a T1 or T3 connection. Although the underlying technologies differ somewhat, for purposes of the present invention frame relay networks and point-to-point networks are generally equivalent in important ways, such as the conventional reliance on manual switchovers when traffic must be redirected after a connection fails. A frame relay permanent virtual circuit is a virtual point-to-point connection. Frame relays are used as examples throughout this document, but the teachings will also be understood in the context of point-to-point networks.

A frame relay or point-to-point network may become suddenly unavailable for use. For instance, both MCI WorldCom and AT&T users have lost access to their respective frame relay networks during major outages. During each outage, the entire network failed. Loss of a particular line or node in a network is relatively easy to work around. But loss of an entire network creates much larger problems. Tools and techniques are needed to permit continued data transmission when the entire frame relay network that would normally carry the data is down.

Figure 1 illustrates prior art configurations involving two frame relay networks for increased reliability; similar configurations involve one or more point-to-point network connections. Two sites 102 transmit data to each other (alternately, one site might be only a data source, while the other is only a data destination). Each site has two border routers 104. Two frame relay networks 106, 108 are available to the sites 102 through the routers 104. The two frame relay networks 106, 108 have been given separate numbers in the

figure, even though each is a frame relay network, to emphasize the incompatibility of frame relay networks provided by different carriers. An AT&T frame relay network, for instance, is incompatible in many details with an MCI WorldCom frame relay network. For instance, two frame relay networks may have different maximum frame sizes or switching capacities. The two providers have to agree upon information rates, switching capacities, frame sizes, etc. before the two networks can communicate directly with each other.

A configuration like that shown in Figure 1 may be actively and routinely using both frame relay networks A and B. For instance, a local area network (LAN) at site 1 may be set up to send all traffic from the accounting and sales departments to router A1 and send all traffic from the engineering department to router B1. This may provide a very rough balance of the traffic load between the routers, but it does not attempt to balance router loads dynamically in response to actual traffic and thus is not "load-balancing" as that term is used herein.

Alternatively, one of the frame relay networks may be a backup which is used only when the other frame relay network becomes unavailable. In that case, it may take even skilled network administrators several hours to perform the steps needed to switch the traffic away from the failed network and onto the backup network. In general, the necessary Private Virtual Circuits (PVCs) must be established, routers at each site 102 must be reconfigured to use the correct serial links and PVCs, and LANs at each site 102 must be reconfigured to point at the correct router as the default gateway.

Although two private networks are shown in Figure 1, three or more such networks could be employed, with similar considerations coming into play as to increased

reliability, limits on load-balancing, the efforts needed to switch traffic when a network fails, and so on. Likewise, for clarity of illustration Figure 1 shows only two sites, but three or more sites could communicate through one or more private networks.

Figure 2 illustrates a prior art configuration in which data is normally sent between sites 102 over a private network 106. A failover box 202 at each site 102 can detect failure of the network 106 and, in response to such a failure, will send the data instead over an ISDN link 204 while the network 106 is down. Using an ISDN link 204 as a backup is relatively easier and less expensive than using another private network 106 as the backup, but generally provides lower throughput.

Figure 3 illustrates prior art configurations involving two private networks for increased reliability, in the sense that some of the sites in a given government agency or other entity 302 can continue communicating even after one network goes down. For instance, if a frame relay network A goes down, sites 1, 2, and 3 will be unable to communicate with each other but sites 4, 5, and 6 will still be able to communicate amongst themselves through frame relay network B. Likewise, if network B goes down, sites 1, 2, and 3 will still be able to communicate through network A. Only if both networks go down at the same time would all sites be completely cut off. Like the Figure 1 configurations, the Figure 3 configuration uses two private networks. Unlike Figure 1, however, there is no option for switching traffic to another private network when one network 106 goes down, although either or both of the networks in Figure 3 could have an ISDN backup like that shown in Figure 2. Note also that even when both private networks are up, sites 1, 2, and 3 communicate only among themselves; they are not connected to sites 4, 5, and 6.

Figure 4 illustrates a prior art response to the incompatibility of frame relay networks of different carriers. A special "network-to-network interface" (NNI) 402 is used to reliably transmit data between the two frame relay networks A and B. NNIs are generally implemented in software at carrier offices. Note that the configuration in Figure 4 does not provide additional reliability by using two frame relay networks 106, because those networks are in series rather than in parallel. If either of the frame relay networks A, B in the Figure 4 configuration fails, there is no path between site 1 and site 2; adding the second frame relay network has not increased reliability. By contrast, Figure 1 increases reliability by placing the frame relay networks in parallel, so that an alternate path is available if either (but not both) of the frame relay networks fails. Someone of skill in the art who was looking for ways to improve reliability by putting networks in parallel would probably not consider NNIs pertinent, because they are used for serial configurations rather than parallel ones, and adding networks in a serial manner does not improve reliability.

It would be an advancement in the art to provide another alternative for increasing reliability by configuring private networks in parallel, especially if other benefits are also provided. Such improvements are disclosed and claimed herein.

BRIEF SUMMARY OF THE INVENTION

The present invention provides tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration. In some embodiments a controller according to the invention comprises a site interface connecting the controller to a site, at

least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion. The controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability criterion that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message. Some controller embodiments include only two private network interfaces, while others have three or more private network interfaces, each of which is selectable by the packet path selector. The private network interfaces may connect to a User-to-Network Interface, or they may comprise network-specific interface means of the type found in frame relay network routers.

One method of the invention for combining connections for access to multiple parallel frame relay and/or point-to-point networks, comprises the steps of: obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion; connecting the controller site interface to a site to receive packets from a computer at the site; connecting a first private network interface of

the controller to a first private network; connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector. The criterion used by the packet path selector may be a load-balancing criterion, a reliability criterion, and/or a security criterion.

Another method for combining connections for access to multiple independent parallel frame relay or point-to-point networks comprises the steps of: sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion. In one variation, the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

Other features and advantages of the invention will become more fully apparent through the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

To illustrate the manner in which the advantages and features of the invention are obtained, a more particular description of the invention will be given with reference to the

attached drawings. These drawings only illustrate selected aspects of the invention and its context. In the drawings:

Figure 1 is a diagram illustrating a prior art approach having frame relay networks configured in parallel for increased reliability for all networked sites, in configurations that employ manual switchover between the two networks in case of failure.

Figure 2 is a diagram illustrating a prior art approach having a frame relay network configured in parallel with an ISDN network link for increased reliability for all networked sites.

Figure 3 is a diagram illustrating a prior art approach having independent frame relay networks, with each network connecting several sites but little or no communication between the networks.

Figure 4 is a diagram illustrating a prior art approach having frame relay networks configured in series through a network-to-network interface, with no consequent increase in reliability because the networks are in series rather than in parallel.

Figure 5 is a diagram illustrating generally configurations of the present invention, in which two or more private networks are placed in parallel for increased reliability for all networked sites, without requiring manual traffic switchover, and with the option in some embodiments of load balancing between the networks and/or increasing security by transmitting packets of a single logical connection over different private networks.

Figure 6 is a diagram further illustrating the present invention, in which three sites can communicate over two parallel private networks.

Figure 7 is a diagram further illustrating a multiple private network access controller of the present invention, which comprises a component tailored to each private

network to which the controller connects, and a path selector in the controller which uses one or more of the following as criteria: private network status (up/down), private network load, use of a particular private network for previous packets in a given logical connection or session.

Figure 8 is a flowchart illustrating methods of the present invention for sending packets over multiple parallel independent private networks for enhanced reliability, load balancing and/or security.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to methods, systems, and configured storage media for connecting sites over multiple independent parallel private networks such as frame relay networks and/or point-to-point network connections. "Multiple" networks means two or more such networks. "Independent" means routing information need not be shared between the networks. "Parallel" does not rule out the use of NNIs and serial networks, but it does require that at least two of the networks in the configuration be in parallel so that alternate data paths through different private networks are present. "Frame relay networks" or "private networks" does not rule out the use of an ISDN link or other backup for a particular frame relay or point-to-point private network, but it does require the presence of multiple such networks – Figure 2, for instance, does not meet this requirement.

Figure 5 illustrates generally configurations of the present invention involving frame relay networks; comments made here also apply to similar configurations involving point-to-point networks, or both types (frame relay and point-to-point) of private network.

Two or more frame relay networks 106 are placed in parallel between two or more sites 102. Access to the frame relay networks 106 at each site is through an inventive controller 502. The system containing the controllers 502 provides point-to-point connectivity between the sites 102. Additional controllers 502 may be used at each location, to provide a switched connection system with no single point of failure.

Unlike the configuration shown in Figure 1, the inventive configuration in Figure 5 does not require manual intervention by network administrators to coordinate traffic flow over the parallel networks 106. The networks 106 are independent of each other. When one attached network fails, the failure is sensed by the controller 502 and traffic is automatically routed through one or more other frame relay networks. Unlike the configuration in Figure 2, the inventive configuration combines two or more frame relay networks 106. Unlike the configuration in Figure 4, the inventive configuration requires two or more frame relay networks 106 be placed in parallel (although additional networks may also be placed in series). Unlike the configuration in Figure 3, the inventive configuration does not merely partition sites between unconnected networks – with the invention, most or all of the connected sites get the benefit of parallel networks, so they can continue transceiving even if one of the networks goes down.

Another difference between the inventive approach and prior approaches may also be noted here, namely, the narrow focus of some prior art on reliability differs from the present document's broader view, which considers load balancing and security as well as reliability. Configurations like those shown in Figure 2 are directed to reliability (which is also referred to by terms such as "fault tolerance", "redundancy", "backup", "disaster recovery", "continuity", and "failover"). That is, one of the network paths (in this case,

the one through the frame relay network) is the primary path, in that it is normally used for most or all of the traffic, while the other path (in this case, the one through the ISDN link) is used only when that primary path fails. Although the inventive configurations can be used in a similar manner, with one frame relay network being on a primary path and the other network(s) being used only as a backup when that first network fails, the inventive configurations also permit concurrent use of two or more frame relay networks. With concurrent use, elements such as load balancing between frame relay networks, and increased security by means of splitting pieces of a given message between frame relay networks, which are not considerations in the prior art of Figure 2, become possibilities in some embodiments of the present invention.

In general, the different frame relay or other private networks 106 will be provided by different carriers (WorldCom, AT&T, Qwest, etc.). In such cases, each frame relay network 106 typically operates on its own distinct clock. In some embodiments, the controller 502 sends traffic over all frame relay networks 106 to which it is connected, for load balancing and/or enhanced security. In other embodiments or situations, the controller 502 prefers a particular network 106, and uses the other network(s) as backup in case the preferred network 106 becomes unavailable.

In some embodiments, a frame relay network C at a location 3 is connected to a controller 502 for a location 1 but is not necessarily connected to the controller 502 at another location 2. In such cases, a packet from location 3 addressed to location 2 can be sent over network C to the controller at location 1, which can then redirect the packet to location 2 by sending it over network A or network B. That is, controllers 502 are

preferably, but not necessarily, provided at every location that can send packets over the parallel independent networks 106 of the system.

In some embodiments, the controller 502 at the receiving end of the network connection between two sites A and B has the ability to re-sequence the packets. This means that if the lines are of dissimilar speeds or if required by security criteria, the system can send packets out of order and re-sequence them at the other end. Packets may be sent out of sequence to enhance security, to facilitate load-balancing, or both. The TCP/IP packet format includes space for a sequence number, which can be used to determine proper packet sequence at the receiving end (the embodiments are dual-ended, with a controller 502 at the sending end and another controller 502 at the receiving end). The sequence number (and possibly more of the packet as well) can be encrypted at the sending end and then decrypted at the receiving end, for enhanced security.

Figure 6 further illustrates the present invention, in a particular configuration in which three sites 102 can communicate over two parallel independent frame relay networks 106; two or more point-to-point networks could be used similarly, as could a mixture of frame relay and point-to-point networks. In one such configuration, sites 1, 2, and 3 are connected via frame relay clouds 106. Routers 1, 2, and 3 are connected to frame relay cloud A, and routers 4, 5, and 6 are connected to frame relay cloud B. The WAN ports of the routers 104 on each frame cloud 106 are configured to form a single subnet. Virtual circuits (VCs) exist between site 1 and site 2, between site 2 and site 3, and between site 3 and site 1, on each of the clouds 106. A controller 502 is connected to each pair of routers 104 at each location to provide at least reliability through redundancy.

In operation, the controller 502 on each location is provided with a configuration file or other data structure containing a list of all the LAN IP addresses of the controllers 502 at the locations, and their subnet masks. Each controller 502 keeps track of available and active connections to the remote sites 102. If any of the routes are unavailable, the controller 502 preferably detects and identifies them. When a controller 502 receives IP traffic to any of the distant networks, the data is sent on the active connection to that destination. If all connections are active and available, the data load is preferably balanced across all the routers 104. If any of the VCs (or point-to-point connections) are unavailable, or any of the routers 104 are down, the traffic is not forwarded to that router; when the routes become available again, the load balancing across all active routes preferably resumes.

In some embodiments, load balancing is not the only factor considered when the controller 502 determines which router 104 should receive a given packet. Security may be enhanced by sending packets of a given message over two or more networks 106. Even if a packet sniffer or other eavesdropping tool is used to illicitly obtain data packets from a given network 106, the eavesdropper will thus obtain at most an incomplete copy of the message because the rest of the message traveled over a different network 106. Security can be further enhanced by sending packets out of sequence, particularly if the sequence numbers are encrypted.

Figure 7 is a diagram further illustrating a multiple frame relay and/or point-to-point network access controller 502 of the present invention. A site interface 702 connects the controller 502 to the LAN at the site 102. This interface 702 can be

implemented, for instance, as any local area network interface, like 10/100Base-T ethernet, gigabit ATM or any other legacy or new LAN technology.

The controller 502 also includes a packet path selector 704, which may implemented in custom hardware, or implemented as software configuring semi-custom or general-purpose hardware. The path selector 704 determines which path to send a given packet on. In the configuration of Figure 6, for instance, the path selector in the controller at location 1 selects between a path through router 1 and a path through router 4. In different embodiments and/or different situations, one or more of the following criteria may be used to select a path for a given packet, for a given set of packets, and/or for packets during a particular time period:

- Redundancy: do not send the packet(s) to a path through a network 106, a router 104, or a connection that is apparently down. Instead, use devices (routers, network switches, bridges, etc.) that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning. Techniques and tools for detecting network path failures are generally well understood, although their application in the context of the present invention is believed to be new.
- Load-balancing: send packets in distributions that balance the load of a given network, router, or connection relative to other networks, routers, or connections available to the controller 502. This promotes balanced loads on one or more of the devices (routers, frame relay switches) that carry packets after the packets leave the selected network interfaces. Load-balancing may be done through an algorithm as simple as a modified round-robin approach which places the next

packet on the next available line, or it may involve more complex algorithms that attempt to measure and track the throughput, latency, and/or other performance characteristics of a given link or path element. Load-balancing is preferably done on a per-line basis, as opposed to prior art approaches which use a per-department and/or per-router basis for dividing traffic. Load-balancing algorithms in general are well understood, although their application in the context of the present invention is believed to be new.

- Security: divide the packets of a given message (session, file, web page, etc.) so they travel over different networks 106. This promotes the use of multiple frame relay networks to carry different pieces of a given message, so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message. Dividing message packets between networks 106 for better security may be done in conjunction with load balancing, and may in some cases be a side-effect of load-balancing. But load-balancing can be done on a larger granularity scale than security, e.g., by sending one entire message over network A and the next entire message over network B. Security may thus involve finer granularity than load balancing, and may even be contrary to load balancing in the sense that dividing up a message to enhance security may increase the load on a heavily loaded path even though a more lightly loaded alternate path is available and would be used for the entire message if security was not sought by message-splitting between networks. Other security criteria may also be used, e.g., one network 106 may be viewed as more secure than another, encryption may be enabled, or other security measures may be taken.

The controller 502 also includes two or more private network interfaces 706, namely, so there is at least one interface 706 per private network 106 to which the controller 502 controls access. Each interface 706 can be implemented as a direct interface 706 or as an indirect interface 706; a given embodiment may comprise only direct interfaces 706, may comprise only indirect interfaces 706, or may comprise at least one of each type of interface. A direct interface 706 may be implemented, for instance, as a direct frame relay connection over land line or wireless or network interfaces to which the frame relay routers can connect, or as a point-to-point interface to a dedicated T1, T3, or wireless connection. One suitable implementation includes a standard Ethernet card, which connects to an external frame relay User-Network Interface (UNI) in a router of a network 106. UNIs generally are known in the art. One indirect interface 706 effectively makes part of the controller 502 into a UNI by including in the interface 706 the same kind of special purpose hardware and software that is found on the frame relay network side (as opposed to the UNI side) of a frame relay network router. Such an indirect frame relay network interface 706 is tailored to the specific timing and other requirements of the frame relay network to which the indirect interface 706 connects. For instance, one indirect interface 706 may be tailored to a Qwest frame relay network 106, while another indirect interface 706 in the same controller 502 is tailored to a UUNet network 106. The indirect interface 706 may connect to the frame relay network 106 over fiber optic, T1, wireless, or other links. In short, a direct interface 706 relies on special purpose hardware and connectivity/driver software in a router, to which the direct interface 706 of the controller 502 connects through a UNI. By contrast, an indirect interface 706 includes such special purpose hardware and connectivity/driver software inside the controller 502

itself. In either case, the controller provides packet switching capabilities for at least redundancy without manual switchover, and preferably for dynamic load-balancing between lines as well. The controller 502 in each case also optionally includes memory buffers in the site interface 702, in the path selector 704, and/or in the network interfaces 706.

An understanding of methods of the invention will follow from understanding the invention's devices, and vice versa. For instance, from Figures 5-7, one may ascertain methods of the invention for combining connections for access to multiple parallel private networks 106, such as frame relay networks. One method begins by obtaining a controller 502. The controller comprises (a) a site interface 702, (b) at least two network interfaces 706 tailored to particular frame relay networks 106 for operation as though part of a network-to-network interface in a serial network configuration, and (c) a packet path selector 704 which selects between network interfaces 706 according to a specified criterion. Path selection criteria may be specified by configuration files, hardware jacks or switches, ROM values, remote network management tools, or other means. One then connects the site interface 702 to a site 102 to receive packets from a computer (possibly via a LAN) at the site 102. Likewise, one connects a first network interface 706 to a first router 104 for routing packets to a first frame relay network 106, and a second network interface 706 to a second router 104 for routing packets to a second frame relay network 106. A third, fourth, etc. frame relay network 106 may be similarly connected to the controller 502 in some embodiments and/or situations. The connected frame relay networks 106 are parallel to one another (not serial, although additional networks not directly connected to the controller 502 may be serially connected to the networks 106).

The connected frame relay networks 106 are independent of one another, in that no routing information need be shared between them, to make them parallel (NNIs can still be used to connect networks in serial to form a larger independent and parallel network). A mistake in the routing information for one network 106 will thus not affect the other network 106. After the connections are made (which may be done in a different order than recited here), one sends a packet to the site interface 702, which then sends the packet through the one (or more – copies can be sent through multiple networks 106) network interface 706 that was selected by the packet path selector 704.

Figure 8 is a flowchart further illustrating methods of the present invention, which send packets over multiple parallel independent private networks 106 for enhanced reliability, load balancing and/or security; frame relay networks are used as an example, but point-to-point networks may be similarly employed. During a connection forming step 802, at least one virtual circuit is obtained between two sites 102. If the frame relay networks 106 will be used concurrently, the controllers 502 provide a connection which comprises multiple conventional virtual circuits, since two or more networks may (or will) carry packets during the step 802 connection. The controller 502 then checks the status of each connection and updates the information for available communication paths.

During a packet receiving step 804, the controller 502 at a given location receives a packet to be sent from that location to another site 102. In some cases, multiple packets may be received in a burst. The packet comes into the controller 502 through the site interface 702.

During a path selecting step 806, the path selector 704 selects the path over which the packet will be sent; selection is made between at least two paths, each of which goes

over a different network 106 than the other. The networks 106 are independent parallel frame relay networks. This path selecting step 806 may be performed once per packet, or a given selection may pertain to multiple packets. Path selection 806 is shown as following packet receipt 804, but in some embodiments and/or some situations, it may precede packet receipt 804. More generally, the steps illustrated and discussed in this document may be performed in various orders, including concurrently, except in those cases in which the results of one step are required as input to another step. Likewise, steps may be omitted unless required by the claims, regardless of whether they are expressly described as optional in this Detailed Description. Steps may also be repeated, or combined, or named differently.

As indicated, the path selection may use 808 load balancing as a criterion for selecting a path, use 810 network 106 status (up/down) and other connectivity criteria (e.g., router status, connectivity status) as a criterion for selecting a path, and/or use 812 division of packets between networks 106 for enhanced security as a criterion for selecting a path. These steps may be implemented in a manner consistent with the description above of the path selector 704 given in the discussion of Figure 7. More generally, unless it is otherwise indicated, the description herein of systems of the present invention extends to corresponding methods, and vice versa.

The description of systems and methods likewise extend to corresponding computer-readable media (e.g., RAM, ROM, other memory chips, disks, tape, Iomega ZIP or other removable media, and the like) which are configured by virtue of containing software to perform an inventive method, or software (including any data structure) which is uniquely suited to facilitate performance of an inventive method. Articles of

manufacture within the scope of the present invention thus include a computer-readable storage medium in combination with the specific physical configuration of a substrate of the computer-readable storage medium, when that substrate configuration represents data and/or instructions which cause one or more computers to operate in a specific and predefined manner as described and claimed herein.

During a packet transmission step 814, the packet is sent on the selected 806 path. This is done by sending the packet over the network interface 706 for the path selected. As indicated in Figure 8, the method may then loop back to receive 804 the next packet, select 806 its path, send 814 it, and so on. As noted, other specific method instances are also possible. One example is the inventive method in which load balancing or reliability criteria cause an initial path selection to be made 806, and then a loop occurs in which multiple packets are received 804 and then sent 814 over the selected path without repeating the selecting step 806 for each receive 804 – send 814 pair. Note that some embodiments of the invention permit packets of a given message to be sent over different networks 106, thereby enhancing 812 security. The PVCs are in general always connected, but an ending step 816 may be performed during an orderly shutdown for diagnostic or upgrade work, for instance.

Summary

The present invention provides methods and devices for placing frame relay and other private networks in parallel, thereby providing redundancy without requiring manual switchover in the event of a network failure. Load-balancing between lines and/or between networks may also be performed. For instance, the invention can be used to

provide reliable, efficient, and secure point-to-point connections for private networks 102. Some prior art approaches require network reconfiguration each time a frame relay circuit fails, and some have complex router configurations to handle load balancing and network failures. This requires substantial effort by individual frame relay network customers to maintain connectivity, and they will often receive little or no help from the frame relay carriers. Instead, well-trained staff are needed at each location, as are expensive routers. By contrast, these requirements are not imposed by the present invention.

As used herein, terms such as "a" and "the" and item designations such as "connection" or "network" are generally inclusive of one or more of the indicated item. In particular, in the claims a reference to an item normally means at least one such item is required.

The invention may be embodied in other specific forms without departing from its essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. Headings are for convenience only. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by patent is:

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a

packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

ABSTRACT

Methods, configured storage media, and systems are provided for communications using two or more frame relay or point-to-point networks in parallel to provide load balancing across network connections, greater reliability, and/or increased security. A controller provides access to two or more private networks in parallel, through direct or indirect network interfaces. When one attached network fails, the failure is sensed by the controller and traffic is routed through one or more other private networks. When all attached networks are operating, the controller preferably balances the load between them.

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PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2001

Application or Docket Number: 10034197

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	21	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	21 minus 20=	* 1
INDEPENDENT CLAIMS	3 minus 3 =	* 0
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	740.00
X$ 9=	9	OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL	379	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Ind pend nt	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the ntry in column 1 is less than the entry in column 2, writ "0" in column 3.
** If the "Highest Number Pr viously Paid For" IN THIS SPACE is less than 20, nter "20."
***If th "Highest Number Previously Paid For" IN THIS SPACE is less than 3, nter "3."
Th "Highest Number Previously Paid For" (Total or Ind pendent) is th highest number found in the appropriat box in column 1.

CLAIMS ONLY

SERIAL NO.	FILING DATE
APPLICANT(S)	

CLAIMS

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT			*		*		*	
	IND.	DEP.	IND.	DEP.	IND.	DEP.		IND.	DEP.	IND.	DEP.	IND.	DEP.
1	1						51						
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47							97						
48							98						
49							99						
50							100						
TOTAL IND.	3						TOTAL IND.						
TOTAL DEP.	18						TOTAL DEP.						
TOTAL CLAIMS	21						TOTAL CLAIMS						

* *MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS*

FORM PTO-2022 (1-98)

U.S.DEPARTMENT OF COMMERCE
Patent and Trademark Office

*U.S. GPO: 1998-443-593/89152

Application Data Sheet

Application Information

Application Type::	Regular
Subject Matter::	Utility
Suggested Classification::	
Suggested Group Art Unit::	
CD-ROM or CD-R?	None
Title::	COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS
Attorney Docket Number::	3003.2.9A
Request for Early Publication?::	No
Request for Non-Publication?::	No
Suggested Drawing Figure::	8
Total Drawing Sheets::	4
Small Entity::	Yes
Petition included?::	No
Petition Type::	
Secrecy Order in Parent Appl.?::	No

Applicant Information

Applicant Authority type::	Inventor
Primary Citizenship Country::	US
Status::	Full Capacity
Given Name::	Sanchaita
Middle Name::	
Family Name::	Datta
Name Suffix::	

City of Residence:: Salt Lake City
State of Province of Residence:: UT
Country of Residence:: US
Street of mailing address:: 4540 South Jupiter Drive
City of mailing address:: Salt Lake City
State or Province of mailing address:: UT
Postal or Zip Code of mailing address:: 84124

Applicant Authority type:: Inventor
Primary Citizenship Country:: US
Status:: Full Capacity
Given Name:: Bhaskar
Middle Name::
Family Name:: Ragula
Name Suffix::
City of Residence:: Salt Lake City
State of Province of Residence:: UT
Country of Residence:: US
Street of mailing address:: 4540 South Jupiter Drive
City of mailing address:: Salt Lake City
State or Province of mailing address:: UT
Postal or Zip Code of mailing address:: 84124

Correspondence Information

Correspondence Customer Number:: 23484

Representative Information

Representative Customer Number::	23484

Domestic Priority Information

Application::	Continuity Type::	Parent Application::	Parent Filing Date::
This Application	Non-Provisional of	60/259,269	12/29/00

Assignee Information

Assignee Name:: Ragula Systems d/b/a/ FatPipe Networks

ARTIFACT SHEET

Enter artifact number below. Artifact number is application number + artifact type code (see list below) + sequential letter (A, B, C ...). The first artifact folder for an artifact type receives the letter A, the second B, etc..
Examples: 59123456PA, 59123456PB, 59123456ZA, 59123456ZB

10/684,197 ZA

Indicate quantity of a single type of artifact received but not scanned. Create individual artifact folder/box and artifact number for each Artifact Type.

☐ CD(s) containing:
- computer program listing — ☐
  Doc Code: Computer — Artifact Type Code: P
- pages of specification and/or sequence listing and/or table — ☐
  Doc Code: Artifact — Artifact Type Code: S
- content unspecified or combined — ☐
  Doc Code: Artifact — Artifact Type Code: U

☐ Stapled Set(s) Color Documents or B/W Photographs
Doc Code: Artifact Artifact Type Code: C

☐ Microfilm(s)
Doc Code: Artifact Artifact Type Code: F

☐ Video tape(s)
Doc Code: Artifact Artifact Type Code: V

☐ Model(s)
Doc Code: Artifact Artifact Type Code: M

☐ Bound Document(s)
Doc Code: Artifact Artifact Type Code: B

☐ Confidential Information Disclosure Statement or Other Documents marked Proprietary, Trade Secrets, Subject to Protective Order, Material Submitted under MPEP 724.02, etc.
Doc Code: Artifact Artifact Type Code X

☑ Other, description: Floppy Discs
Doc Code: Artifact Artifact Type Code: Z

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A

CONFIRMATION NO. 7746

23484
JOHN W L OGILVIE
COMPUTER LAW
1211 EAST YALE AVE
SALT LAKE CITY, UT 84105

FORMALITIES LETTER

OC000000007395127

Date Mailed: 01/31/2002

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **370** *to complete the basic filing fee for a small entity.*
- Total additional claim fee(s) for this application is $9.
  - **$9** for **1** total claims over 20.
- The oath or declaration is missing.
  A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is $ 444.**

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202
PART 3 - OFFICE COPY

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A

CONFIRMATION NO. 7746

FORMALITIES LETTER

OC000000007395127

23484
JOHN W L OGILVIE
COMPUTER LAW
1211 EAST YALE AVE
SALT LAKE CITY, UT 84105

Date Mailed: 01/31/2002

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

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  A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is $ 444.**

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202

CERTIFICATE OF MAILING
I certify this document, Inventors' Declaration, check #1709 for $444, postcard, are being mailed, postage paid, on February 21, 2002, to

PART 2 - COPY TO BE RETURNED WITH RESPONSE

Commissioner of Patents, Box Missing Parts, PO Box 2327, Arlington VA 22202:

03/04/2002 BSAYASI1 00000174 10034197

01 FC:201	370.00 OP
02 FC:203	9.00 OP
03 FC:205	65.00 OP

#3

Docket No. 3003.2.9A

INVENTORS' DECLARATION FOR UTILITY PATENT APPLICATION

Application of **Sanchaita Datta and Ragula Bhaskar** filed on December 28, 2001.

As a below named inventors, we hereby declare that:

Our residences, post office addresses, and citizenship are as stated below next to our names; we believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS, the specification of which is filed as stated above; we have reviewed and understand the contents of said specification, including the claims; and we acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations, § 1.56..

We claim the benefit, to the extent possible under 35 United States Code § 119(e) and otherwise, of the following United States provisional application:

Serial No. 60/259,269 filed December 29, 2000

As named inventors, we hereby appoint the following registered practitioners to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

John W. L. Ogilvie, Reg. No. 37,987
Genie L. Ogilvie, Reg. No. 43,841

Please direct all correspondence to:

John W. L. Ogilvie
Computer Law++
1211 East Yale Avenue
Salt Lake City, Utah 84105

801-582-2724 (voice)
801-583-1984 (fax)
(Customer No. 23484)

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventors

Sanchaita Datta, residing at and having a post office address of:
4540 South Jupiter Drive, Salt Lake City, Utah 84124
Citizenship: USA

Signed: Sanchaita Datta Date: Jan 24, 02

Ragula Bhaskar, residing at and having a post office address of:
4540 South Jupiter Drive, Salt Lake City, Utah 84124
Citizenship: USA

Signed: R Mercer Date: Jan 24 02

* * * * * * * * * * * *

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 24th DAY OF Jan, 2002.
BY Sanchaita Datta & Ragula Bhaskar
Sharon F. Aaron
NOTARY PUBLIC

NOTARY PUBLIC
SHARON F. AARON
4455 So. 700 E., Ste. 100
Murray, Utah 84107
My Commission Expires
April 3, 2003
STATE OF UTAH

2155 #4 BT

PATENT APPLICATION 5-10-02
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

FIRST INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner of
Patents & Trademarks
Washington, D. C. 20231

Commissioner:

This Information Disclosure Statement is filed in response to the duty of candor described in 37 C.F.R. §§ 1.56, 1.98, MPEP § 2001.06(c), and elsewhere. The references listed on the enclosed Form PTO-1449 (incorporated herein by reference) are respectfully submitted for consideration by the Office.

Dated April 29, 2002.

CERTIFICATE OF MAILING

I hereby certify that the correspondence listed below is being deposited with the United States Postal Service as Priority Mail, postage paid, on April 29, 2002 addressed to the Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202:

Postcard
First IDS w/ PTO-1449 and 38 references

Respectfully submitted,

JOHN W.L. OGILVIE
Registration No. 37,987

COMPUTER LAW++
1211 East Yale Avenue
Salt Lake City, Utah 84105
(801) 582-2724 voice
(801) 583-1984 fax

\p-ids

2155
#5
BT
3-25-03

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

SECOND INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner of
Patents & Trademarks
Washington, D. C. 20231

Commissioner:

This Information Disclosure Statement is filed in response to the duty of candor described in 37 C.F.R. §§ 1.56, 1.98, MPEP § 2001.06(c), and elsewhere. The reference listed on the enclosed Form PTO-1449 (incorporated herein by reference) is respectfully submitted for consideration by the Office.

Dated March 14, 2003.

CERTIFICATE OF MAILING

I hereby certify that the correspondence listed below is being deposited with the United States Postal Service as First Class Mail, postage paid, on March 14, 2003 addressed to the Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202:

Postcard
Second IDS w/PTO-1449 and 1 references

Respectfully submitted,

JOHN W.L. OGILVIE
Registration No. 37,987

COMPUTER LAW++
1211 East Yale Avenue
Salt Lake City, Utah 84105
801-582-2724 voice
801-583-1984 fax

\p-ids-1

2155 # 6 BT
4-23-03

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

THIRD INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner of
Patents & Trademarks
Washington, D. C. 20231

Commissioner:

This Information Disclosure Statement is filed in response to the duty of candor described in 37 C.F.R. §§ 1.56, 1.98, MPEP § 2001.06(c), and elsewhere. The reference listed on the enclosed Form PTO-1449 (incorporated herein by reference) is respectfully submitted for consideration by the Office.

Dated April 9, 2003.

CERTIFICATE OF MAILING

I hereby certify that the correspondence listed below is being deposited with the United States Postal Service as First Class Mail, postage paid, on April 9, 2003 addressed to the Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202:

Postcard
Third IDS w/ PTO-1449 and 1 reference

Respectfully submitted,

JOHN W.L. OGILVIE
Registration No. 37,987

COMPUTER LAW++
1211 East Yale Avenue
Salt Lake City, Utah 84105
801-582-2724 voice
801-583-1984 fax

\p-ids-2

2155

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

FOURTH INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner of
Patents & Trademarks
Washington, D. C.

Commissioner:

This Information Disclosure Statement is filed in response to the duty of candor described in 37 C.F.R. §§ 1.56, 1.98, MPEP § 2001.06(c), and elsewhere. The references listed on the enclosed Form PTO-1449 (incorporated herein by reference) are respectfully submitted for consideration by the Office.

Dated April 11, 2003.

CERTIFICATE OF MAILING

I hereby certify that the correspondence listed below is being deposited with the United States Postal Service as Priority Mail, postage paid, on April 11, 2003 addressed to the Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202:

Postcard
Fourth IDS w/ PTO-1449 and 15 references

\p-ids-3

Respectfully submitted,

JOHN W.L. OGILVIE
Registration No. 37,987

COMPUTER LAW++
1211 East Yale Avenue
Salt Lake City, Utah 84105
801-582-2724 (voice)
801-583-1984 (fax)

Form PTO-1449 Sheet 1 of 2

Applicant: Sanchaita Datta and Ragula Bhaskar
Serial No.: 10/034,197 Att'y Docket No. 3003.2.9A
Filing Date: December 28, 2001
For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

LIST OF REFERENCES CITED BY APPLICANT{PRIVATE }

U.S. Patent Documents

Examiner Initial*		Document Number	Issue Date	Name	Class	Sub Class	Filing Date
Thn	A1	6,493,349	12/10/02	Casey	370	409	11/13/98
	A2	6,438,100	08/20/02	Halpern et al.	370	218	08/05/99
	A3	6,339,595	01/15/02	Rekhter et al.	370	392	12/23/97
	A4	5,948,069	09/07/99	Kitai et al.	709	240	07/19/96
	A5	5,737,526	04/07/98	Periasamy et al.	395	200.06	12/30/94
	A6	5,420,862	05/30/95	Perlman	370	85.13	06/14/91
Thn	A7	5,398,012	03/14/95	Derby et al.	340	825.03	11/24/92

Other Documents
(including Author, Title, Pertinent Pages, etc.)

Thn A8 T. Liao et al., "Using multiple links to interconnect LANs and public circuit switched data networks," *Proc. Int. Conference on Communications Systems: Towards Global Integration, Vol. 1*, Singapore, 59 November 1990, pp. 289-293

A9 Press release from www.coyotepoint,com, September 8, 1997

A10 Network Address Translation Technical Discussion, from safety.net; no later than 05/07/1999

A11 Higginson et al., "Development of Router Clusters to Provide Fast Failover in IP Networks," from www.asia-pacific.digital.com; no later than 9/29/98

Thn A12 Pages from www.navpoint.com; no later than 12/24/2001

Examiner: Thenarguezan Date Considered: 10/20/03

*EXAMINER: Please initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Please include a copy of this form with the next communication to applicant.

Applicant: Sanchaita Datta and Ragula Bhaskar
Serial No.: 10/034,197 Att'y Docket No. 3003.2.9A
Filing Date: December 28, 2001
For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

	A13	Feibel, "Internetwork Link," Novell's® Complete Encyclopedia of Networking, copyright date 1995
Thn	A14	Tanenbaum, Computer Networks (3rd Ed.), pp. 396-406; copyright date 1996
Thn	A15	Wexler, "Frame Relay and IP VPNs: Compete Or Coexist?", from www.bcr.com; July 1999

Examiner: Thn Date Considered: 10/20/03

*EXAMINER: Please initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Please include a copy of this form with the next communication to applicant.

#7 $215.00

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

PETITION FOR SPECIAL EXAMINING PROCEDURE
(Accelerated Examination Of New Application)

The Honorable Commissioner of
Patents & Trademarks
Washington, D.C. 20231

Commissioner:

Pursuant to M.P.E.P. § 708.02 VIII, Applicants and Assignee respectfully petition the Office for accelerated examination of the above-identified patent application.

As required, a statement regarding pre-examination search and a detailed discussion of references are submitted below. Copies of the references identified in the search and deemed most closely related to the subject matter encompassed by the claims were filed in a First Information Disclosure Statement on 29 April 2002. Additional IDSs have been filed (on March 14, 2003, April 9, 2003, and April 11, 2003), and the references submitted therein are also discussed below.

If the Office determines that the claims should be made subject to a restriction requirement, an oral election of claims to be initially examined will be made without traverse.

Pre-examination Search

A pre-examination search was made both for relevant patents and for relevant non-patent references, including an online search that used keyword-driven search engines with

key words and phrases such as "frame relay", "point-to-point", "status", "path", "NNI", "network-to-network", "UNI", "clouds", "networks", "multiple", "carriers", "reliab", "load balanc", "multi-hom", "parallel", "concurrent", "BGP", "ISDN", "disaster", "backup", "outage", "Exodus", "Sprint", "MCI", and "AT&T".

With respect to U.S. patents, the classes and subclasses of patents identified in the search are as follows:

Class	Sub-class(es)
370	60, 218, 465
709	200, 224, 237

Detailed Discussion of the References

Several points should be noted in connection with the references. First, some of the claimed subject matter was used to guide the search. It does not follow from the mere fact that certain references are listed here that one of ordinary skill in the art would have combined these or similar references without the benefit of seeing the claims. In the event it makes a rejection under § 103 using these or any other references, the Office must identify a suggestion or motivation in the art for combining the references.

Second, the discussion below tries to be both complete and concise. By necessity, however, the discussion rests on a good-faith prediction as to which topics the Office will find of interest in examining this application. All participants in the examination process are free to decide later that other aspects of these references and/or other references also merit attention. Of course, the Office will also notify Applicants if examination indicates that the claims and/or references should be interpreted or characterized in some way different from that now presented.

Third, the pre-examination search is not a substitute for the Examiner's search. Likewise, the information provided here is meant to be an aid to the Examiner; it is not meant to be a substitute for the Examiner's own independent review and analysis of the references. In particular, the fact that some of the references discussed below are

emphasized more than the other references does not imply that the Examiner's review of the other references will be cursory or non-existent. Although the information given here is believed to be accurate, errors may nonetheless be present. Also, points whose significance is not currently understood may be discussed here inadequately or not at all.

Fourth, to promote conciseness this initial discussion of the patentability of the claims focuses on certain features of the independent claims. However, other features and combinations of features in both the independent claims and the dependent claims also provide proper grounds for allowing the claims. A lack of patentability will not automatically follow from some later determination (either before or after issuance) that the claim features discussed expressly below are insufficient. Each claim must be viewed as a whole.

Fifth, the technical background of the invention is also discussed in the Technical Background of the Invention portion of the application, and that discussion is incorporated herein by this reference.

Sixth, citation of a reference does not imply adoption of all definitions given in the reference, or agreement with all assertions made in (or implied from) the reference. In particular and without limitation, terms may be used differently in a reference than in the present application; in the event of a conflict, the meaning given to a term (expressly or implicitly) in the application and/or in other statements by Assignee should govern.

Seventh, the dates in reference citations are merely presumptions based on copyright notices, retrieval dates, and/or similar indicia. A document's actual publication date, for instance, may be different than the date printed on the document. Indicia in a single document may specify multiple dates, or a range of dates, with only some of the dates qualifying the document as prior art. A document may also be submitted, even though submission is not required because the document's stated date makes it presumptively not prior art, if the document contains information that might be helpful, such as technical background or a discussion of work that may have been done earlier than the document's stated date.

Finally, a failure to expressly state here that a given reference does not teach a certain claim element does not mean that the reference teaches the claim element. If the Office takes the position that a claim element is taught by reference, then the Office must identify to Assignee the location(s) in the reference which support that position.

Datta 837: U.S. Patent Application No. 10/361,837 filed February 7, 2003

The inventors on this patent application are the same as in the present application. This reference was made of record in the IDS filed on March 14, 2003. It is a continuation-in-part of the present application. The Datta '837 application may be of interest to the Examiner as background information and/or for other reasons. For instance, although the undersigned does not believe this reference would support an obviousness-type double patenting rejection of the current application, or vice versa, the Office will make its own independent initial decision regarding that possibility. References discussed here are also discussed in a petition to accelerate examination of the '837 application. **If this reference is not cited** after this specific invitation to consider the Datta '837 reference, it will be understood that the Examiner has determined the reference is not a basis for rejection.

Casey: U.S. Patent No. 6,493,349 to Casey

This reference discusses a virtual private network infrastructure and a method of configuring such an infrastructure. To the undersigned, the most pertinent teachings of this reference appear to be its teachings about partitioning a provider's shared network infrastructure to form VPN areas, because partitioning a network into areas may raise the question of how those areas are combined, if at all. If they are combined in a parallel manner, rather than a serial manner or not combined at all, then at least some concept of network parallelism would be present. VPN areas are discussed, for instance, at column 3 line 27 through column 4 line 26. However, this discussion does not appear to the undersigned to teach the claimed combinations of parallel networks, much less the claimed limitations directed to parallel private networks and a packet path selector.

Note that "private network" as used in the present application refers to frame relay and point-to-point networks (see the application at page 2 lines 3-4), whereas "private network" as used in Casey apparently refers to customer sites (column 1 lines 22-24). Applicants are entitled to be their own lexicographers, and any confusion over this (or other) terminology used in the application should be resolved in favor of the meaning intended by Applicants even if that meaning conflicts with other possible meanings.

Datta 341: U.S. Patent No. 6,493,341 to Datta et al.

The inventors of this patent are the same as in the present application. This reference was made of record in the IDS filed on April 9, 2003. It claims priority to provisional application no. 60/174,114 filed on December 31, 1999. This patent may be of interest to the Examiner as background information and/or for other reasons. For instance, although the undersigned does not believe this reference would support an obviousness-type double patenting rejection of the current application, or vice versa, the Office will make its own independent initial decision regarding that possibility. **If this reference is not cited** after this specific invitation to consider the Datta '341 reference, it will be understood that the Examiner has determined the reference is not a basis for rejection.

Halpern: U.S. Patent No. 6,438,100 to Halpern et al.

This reference apparently deals mainly with routing inside a Carrier Scale Internetworking system. Frame relay is mentioned in column 2 lines 10-29, 47, and at column 6 line 30. This reference has some discussion of VPNs, e.g., in column 6 lines 14-40, so the remarks made above about the meaning of "private network" in discussing the Casey reference may also be noted here. A keyword search of this reference failed to disclose any use of "parallel" and the reference accordingly does not appear to the undersigned to teach the claimed access to parallel networks.

Rekhter: U.S. Patent No. 6,339,595 to Rekhter et al.

This reference deals with virtual private networks (VPNs), so the remarks made above about the meaning of "private network" in discussing the Casey reference may also be noted here. A keyword search of this reference failed to disclose any use of "frame relay" but there are several instances of "point-to-point". Only a single instance of "parallel" was found, at column 4 line 3. This reference does not appear to the undersigned to teach the claimed access to parallel networks using a packet path selector to select between parallel frame relay or point-to-point networks.

Datta 276: U.S. Patent No. 6,295,276 to Datta et al.

The inventors of this patent are the same as in the present application. As indicated in the Abstract, this patent describes methods, configured storage media, and systems for increasing bandwidth between a local area network ("LAN") and other networks by using multiple routers on the given LAN; Figures 2 and 3 each show a configuration with multiple routers in parallel. Data packets are multiplexed between the routers using a novel variation on the standard address resolution protocol, and other components. On receiving data destined for an external network, a controller or gateway computer will direct the data to the appropriate router. In addition to providing higher speed connections, the invention described in the '276 patent provides better fault tolerance in the form of redundant connections from the originating LAN to a wide area network such as the Internet.

The invention described in the present application is directed to configurations involving parallel private networks, e.g., "multiple independent private networks in a parallel network configuration" (independent claim 1), "multiple parallel private networks" (independent claim 13), "multiple independent parallel frame relay networks" (independent claim 19). Although the '276 invention might be usable in a parallel network configuration, that particular type of use is not required by, nor discussed in, the '276 patent.

Von Hammerstein: U.S. Patent No. 6,292,495 to Von Hammerstein et al.

As indicated in the Abstract, this patent discusses an apparatus and method for communicating link status information for permanent virtual circuits that share a data link connection identifier. A first frame relay packet that includes link status information for a plurality of virtual circuits that each share a first data link connection identifier is received via a frame relay network. Using the link status information in the first frame relay packet, a second frame relay packet that conforms to a standard local management interface status message format is generated. The second frame relay packet is transmitted to customer premise equipment.

As noted above, each independent claim of the present application requires parallel private networks. At column 1 lines 47-51, the '495 patent refers in passing to use of a router to interconnect a LAN to "several different networks." However, a keyword search of the '495 patent failed to find any instances of "parallel" and the reference accordingly does not appear to the undersigned to teach the claimed access to parallel networks.

Bhaskar: U.S. Patent No. 6,253,247 to Bhaskar et al.

The inventors of this patent are the same as in the present application. As indicated in the Abstract, this patent describes methods and systems for transmitting a user's data between two computer networks over physically separate telephone line connections which are allocated exclusively to the user. The user's data is placed in data packets, which are multiplexed onto the separate connections and sent concurrently to a demultiplexer. The data packets contain a computer network address such as an Internet protocol address. A dynamic address and sequence table allows the demultiplexer operation to restore the original order of the data after receiving the packets. The set of connections constitutes a virtual "fat pipe" connection through which the user's data is transmitted more rapidly. Additional users may be given their own dedicated "fat pipe" connections.

As noted above, each independent claim of the present application assumes parallel private networks are involved; the invention is not those networks themselves, but it does

provide tools and techniques for controlling access to parallel private networks. Although the '247 invention might be usable in a parallel network configuration, that particular type of use is not required by, nor discussed, in the '247 patent.

Estberg: U.S. Patent No. 6,148,337 to Estberg et al.

As indicated in the Abstract, this patent discusses a Mid-Level Manager (MLM) network information management system that monitors and manipulates the flow of private information on public networks. As discussed, the MLM system begins by retrieving and storing information about subscribers to the public networks. The MLM also queries the computers of the public networks to obtain information about network configuration and status. Upon receiving network information, the MLM system uses the stored subscriber information to analyze the network information and to determine the subscribers to which the network information pertains. If network information pertains to a subscriber and the subscriber is authorized to receive that information, the MLM system adds that network information to a subscriber-specific data storage location. In addition, network status information of interest to administrators of the public network is stored in a separate data storage location. The MLM system supplies the subscriber-specific network information to subscribers to allow them to monitor their networks in a real-time manner, ensuring that a subscriber receives only that information for which they are authorized and that only authorized parties will receive a subscriber's private data. The MLM system also provides the current network status information to public network administrators. Subscribers are also allowed to manipulate their flow of information, such as by changing the bandwidth on a PVC, in a real-time manner. The MLM system handles requests from subscribers to modify their levels of MLM service or their levels of service provider's public network service, and takes appropriate action to effect the change.

As noted above, each independent claim of the present application presupposes the presence of parallel private networks. At column 1 lines 52-56, the '337 patent states that "two or more private networks connected over a public network is referred to as a Virtual

Private Network (VPN)...." Text starting at column 7 line 61 discusses "an environment with two Virtual Private Networks (VPNs) and two public networks operated by service providers." However, a keyword search of the '337 patent failed to find any instances of "parallel". It also appears to the undersigned from the discussion in column 8 lines 3-6 and 37-45 that the networks 130 and 170 shown in Figure 1 are in series, not in parallel.

Feldman: U.S. Patent No. 6,055,561 to Feldman et al.

As indicated in the Abstract, IP based networks use a number of different IP routing protocols to determine how packets ought to be routed. However, due to the rapid growth of the Internet, there is a great need for higher packet forwarding performance. This patent discusses a way to map IP routing information onto a technology that uses label switching and swapping, such as ATM, without the need to change the network paradigm. This allows a network to continue to function and appear as a standard IP network, but with much higher performance. An Integrated Switch Router (ISR) is a switch that has been augmented with standard IP routing support. The ISR at an entry point to the switching environment performs standard IP forwarding of datagrams, but the "next hop" of the IP forwarding table has been extended to include a reference to a switched path (for example, the VCC in ATM technology). Each switched path may have an endpoint at a neighboring router (comparable to existing IP next hops on conventional routers), or may traverse a series of ISRs along the best IP forwarding path, to an ISR endpoint. This allows datagrams to be switched at hardware speeds through an entire ISR network.

As noted above, each independent claim of the present application requires parallel private networks. However, a keyword search of the '561 patent failed to find any instances of "parallel".

Kitai: U.S. Patent No. 5,948,069 to Kitai et al.

As indicated in the Abstract, this reference discusses a networking method and system for performing data communication to a client computer from a server computer

having a plurality of network interfaces through a network. A LAN switch is provided between the network and the server computer. The LAN switch includes a plurality of communication paths correspondingly connected to the network interfaces of the server computer. Any one of the communication paths are usable to connect the client computer with the server computer. A selector is provided for selecting one of the communication paths in accordance with a quality of service (QOS) requested by the client computer. The selector selects the communication path using information contained in a routing table in the server computer based on a network address of the network connected to the client computer. The routing table includes the address of the network connected to the client computer and addresses of network interfaces of the server computer correspondingly connected to the communication path.

However, a keyword search of this reference disclosed no instances of "frame relay", "point-to-point", "T1", or "T3". Although Kitai appears to the undersigned to be one of the references that is closest to the present invention, analysis by the Examiner is called for at this point to determine whether these or other differences or similarities merit further attention. Figure 3 may be of particular interest, since it shows two public networks 3070 and 3080 on what are apparently parallel communication paths between a client 3101 and a server 3000. It may also be important that the choice between network interfaces in Kitai is apparently made at the server (see, e.g., column 10 lines 13-65) rather than elsewhere; the present claims refer to a "site interface". In view of all this, the Examiner is specifically requested to **perform a detailed comparison of Kitai with the pending claims**, and to then take such action as the Examiner deems appropriate.

Periasamy: U.S. Patent No. 5,737,526 to Periasamy et al.

This reference discloses a hierarchical wide area network architecture in which multiple routers having a logical connection to one another are designated as a peer group. Column 3 states that more than one border peer can be included in each group, to share the transmission workload and act as a backup. In another statement (column 3 lines 16-23),

two or more routers are connected to a network in parallel to provide back-up facilities. When both of the routers are operating, conditional filters cause one of the routers to drop selected network frames, which are handled by the other router to avoid duplicate frames.

A keyword search revealed no instance of "frame relay", no instance of "point-to-point", one instance of "T1" (column 5 line 55), and no instances of "T3". The parallelism taught is apparently parallelism of routers, not of networks.

Iliev: U.S. Patent No. 5,459,720 to Iliev et al.

As indicated in the Abstract, this patent discusses a system including device access, network access system management, and related method for providing users who have aperiodic high bandwidth data transmission requirements between remote sites with access over a public switched digital network. The system uses a scheme of inverse multiplexing by which it first logically splits a high bandwidth information stream into multiple narrow band signals for transmission through a public switched digital network over a plurality of narrow band channels to be received at the remote location by another Switched Network Access System then recombined to form the original high bandwidth information stream causing the multiple narrow band channels to appear as a single high bandwidth channel to remote high bandwidth end users. The Switched Network Access System provides automatic bandwidth allocation and agility which optimizes throughput and reduces data communications costs by adding or dropping narrow band channels "as needed" based on user bandwidth utilization.

As noted above, each independent claim of the present application requires parallel private networks. However, a keyword search of the '720 patent failed to find any instances of "parallel". The following statement is made at column 3 lines 11-15: "A further object of the present invention is to simplify internetworking between LANs, terminals and workstations by providing concurrent WAN connections and inverse multiplexing across a plurality of network services and network carriers." The term "concurrent" may imply "parallel", and the present application discusses concurrency at, e.g., page 11 lines 3-10

and page 18 lines 13-17. However, Figure 1 of Iliev shows a single network 103, not multiple networks in parallel. Moreover, the text of this reference refers repeatedly to transmission through "a" network, which implies one network; see, e.g., column 2 lines 21-22, 43, 51-52, 63; column 3 line 30; and the preambles in each of claims 1, 6, 18, 24, 30.

Perlman: U.S. Patent No. 5,420,862 to Perlman

This reference discloses a "bridge router (brox)" which functions as a bridge under some conditions and as a router under other conditions. As illustrated in Figure 8, for instance, the broxes connect LANs. However, keyword searches of this reference failed to find any instances of "parallel", "frame relay", "T1", or "T3".

Derby: U.S. Patent No. 5,398,012 to Derby et al.

This reference discloses a process for determining the best communication route from a source end station to a destination end station, using network nodes at the interface between a wide area network and each sub-network. The network nodes contain access agents which control communication flow between the wide area network and an end station in the sub-network.

This reference discusses "parallel links" and "parallel transmission groups", e.g., at column 1 line 43, column 2 lines 48-55. Keyword searching revealed no instance of "frame relay", but "point-to-point" occurs at column 5 line 31, column 7 line 49, column 8 lines 18-20, and column 9 line 43. It also discusses a route selection apparatus, see, e.g., claim 1, for use with subnetworks, which the Examiner may consider different from the claimed invention's selection between parallel networks. Although Derby appears to the undersigned to be one of the references that is closest to the present invention, analysis by the Examiner is called for at this point to determine whether these or other differences or similarities merit further attention. The Examiner is specifically requested to **perform a detailed comparison of Derby with the pending claims**, and to then take such action as the Examiner deems appropriate.

LinkProof: "radware LinkProof Internet Link Traffic Management", pp. 1-4, copyright date 2000

This reference discusses traffic management for multi-homed networks. Page 2 states that patent pending Optimal Content Routing considers the real-time load, among other factors, that "LinkProof automatically detects failures", and that it redirects traffic through the optimal links. A drawing on page 3 shows three routers which are apparently in parallel. However, this reference does not appear to the undersigned to teach access to parallel networks as called for by the present invention.

Navpoint: "Navpoint Internet Dedicated Internet Service", pp. 1-3, copyright date 2000

This reference discusses frame relay, point-to-point, and ISDN networks, but it does not appear to the undersigned to teach access to parallel networks as called for by the present invention.

NxT1: "Selling Brief: NxT1 Connectivity", pp. 1-2, copyright date 2001

This reference mentions frame relay and point-to-point networking, load distribution, and dynamic link removal/restoration for increased reliability, but it does not appear to the undersigned to teach access to parallel networks as called for by the present invention.

Guide: "The Basic Guide to Frame Relay Networking", pp. 1-85, copyright date 1998

This reference discusses frame relay networks in depth. Point-to-point and other network technologies are also discussed. However, this reference does not appear to the undersigned to teach selection between parallel networks as called for by the present invention. A keyword search reveals that the word "parallel" is used only in connection with the example shown in Figure 13 on page 51 of the reference. That figure shows "Parallel SNA, BSC, Alarm and LAN Branch networks", as opposed to parallel frame relay

networks. Figure 13 also fails to show a packet path selector. Moreover, the parallel nature of the SNA, BSC, and LAN networks is characterized as undesirable; one obtains "better performance, greater reliability and lower costs" by consolidating the data from these networks onto one frame relay-based WAN. By teaching away from parallelism, this reference teaches away from the present invention.

Cross-fire: "Frame relay NNIs in the cross-fire", pp. 1-2, 11/22/99

This reference discusses frame relay network-to-network interfaces (NNIs). As indicated in the reference, NNIs are used for connecting networks in series, not in parallel. An NNI may be used, for instance, to connect a local carrier's frame relay net to a long distance carrier's net. There is a statement at the bottom of page 1 that "AT&T will assist users to put two separate routers on each site – one for each carrier's frame relay network – each attached to the LAN." This apparently refers to a configuration like that shown as prior art in Figure 1 of the present application. This reference does not appear to the undersigned to teach selection between parallel networks as called for by the present invention.

NNI & UNI: "NNI & UNI", pp. 1-2, Nov 16, 2001

This reference gives a definition for a network-to-network interface (NNI) and a definition for a user-to-network interface (UNI). It does not appear to the undersigned to teach parallel networks.

Cisco Adapter: "Cisco Four-Port Channelized E1 Frame Relay Port Adapter…", pp. 1-3, Jul 3, 2000

This reference discusses frame relay UNI and NNI interfaces. It does not appear to the undersigned to teach parallel networks.

Cisco pages: Frame Relay pages from www.cisco.com, pp. 1-8, Sep 21, 1999

This reference discusses frame relay networks. Page 5 discusses a multiplexer with both frame relay and non-frame relay interfaces. A keyword search of the reference failed to find any use of "parallel".

Pages 5-6 discuss frame relay networks provided by public carriers, and so-called "private Frame Relay networks". Confusion may be avoided by noting that the present application uses the term "private network" to include both frame relay networks and point-to-point networks, and that frame relay (private) networks may be provided by public carriers such as AT&T, Qwest, XO, and MCI WorldCom; see page 2 of the application. A network which is "private" in the application's sense may be either a private frame relay network or a public frame relay network according to this reference. Note also that a private network in the application's sense need not be a frame relay network at all; it may be a point-to-point network.

Protocol Directory: "Protocol Directory - Frame Relay", pp. 1-14, no later than 12/7/2001

This reference discusses frame relay network protocols. A keyword search of the reference failed to find any use of "parallel".

ATM: "Asynchronous Transfer Mode", pp. 1-3, no later than 12/7/2001

This reference discusses NNIs in ATM networks. Figure 1 shows several networks connected by NNIs. This reference does not appear to the undersigned to teach access to parallel private networks as claimed.

Domestic: "Frame Relay - Domestic", pp. 1-2, copyright date 2001

This reference discusses Qwest frame relay and NNIs. It does not appear to the undersigned to teach access to parallel networks as claimed.

InfoNow: InfoNow page, no later than 7/28/2001

This reference states: "Multiple connections to primary Internet backbones provide unparalleled service availability. In addition, our multiple-carrier voice circuits provide continuous availability for our voice enabled IVR services, and multiple frame-relay carriers provide secure access to client Intranets as required." However, it does not appear to the undersigned to teach selection between parallel networks as called for by the present application.

Smarts: "Smarts Takes On Frame Relay Correlation", one page, date may be 2001 or 1999

This reference discusses diagnosis of problems with frame relay networks. This may be relevant, for instance, to claim 21 of the present application, which requires "sensing failure of one of the parallel frame relay networks". The reference does not discuss "parallel" networks.

MICOM: "MICOM MARATHON® 5KT Pro", 4 pages, copyright date 1997

This reference states on page 2 that "The Marathon 5KT Pro supports up to three leased line WAN links or up to four frame relay WAN links, ... Multiple frame relay links can be configured to segment traffic for access to multiple frame relay carriers." The drawing on page 3 shows the device attached to a "Frame Relay Service". This reference does not discuss selection of one frame relay network rather than another during operation of the device, or criteria for making such a selection, and for at least those reasons it does not appear to the undersigned to teach the present invention's "packet path selector which selects between private network interfaces according to a specified criterion" (claims 1, 13; claim 19 has similar language).

Disaster Recovery I: "Disaster Recovery for Frame Relay Networks", pp. 1-10, no later than 12/7/2001

This reference discusses various options for increasing reliability in networking configurations that include a frame relay network. In particular, pages 5-7 discuss "duplicate networks" and reference is made to "multiple carrier" approaches on pages 5, 8, and 9. Page 5 notes that "Duplicate networks may require router reconfiguration to switch over when the primary network fails", which is consistent with the discussion of prior approaches in the present application on page 3 lines 15-21. Page 5 also discusses NNIs in connection with multiple carriers, whereas the present application distinguishes between serial and parallel network arrangements. Keyword searches found no instances of "parallel" in this reference. The reference also does not appear to the undersigned to teach the present invention's packet path selector.

Nolle: T. Nolle, "Watching Your Back", pp. 1-3, 11/01/99

This reference discusses frame relay network outages. The first full paragraph on page 2 presents "multiple frame relay carriers" as an option. However, this reference does not appear to the undersigned to teach the present invention's packet path selector.

Disaster Recovery II: "Disaster Recovery: Monitored Frame Relay Networks", pp. 1-3, no later than 7/28/2001

This reference discusses ISDN as a frame relay backup; it is consistent with the prior approaches illustrated in Figure 2 of the present application. Keyword searches found no instances of "parallel" in this reference. Although the ISDN connection may be parallel to the frame relay network, access to parallel private networks as claimed is apparently not taught by this reference.

Galaxy: "Galaxy IV failure and AT&T Frame Relay outage", pp. 1-4, 03 Jun 1998

This reference discusses a frame relay network outage. A statement under "Onus On The Customer" on page 2 refers generally to "parallel systems" (not to parallel private networks; there is no other use of "parallel". This reference does not appear to the

undersigned to teach the present invention's packet path selector for selecting between parallel private networks as claimed.

Exodus: "World Class Global Internet Data Centers", one page, copyright date 1999-2001

This reference discusses Exodus Communications, a company discussed in the preceding **Galaxy** reference. It does not appear to the undersigned to teach the present invention's packet path selector for selecting between parallel private networks as claimed.

ISDN: "ISDN finds role as frame relay sidekick", pp. 1-2, 11/17/99

This reference discusses ISDN as a frame relay backup; it is consistent with the prior approaches illustrated in Figure 2 of the present application. A reading of the reference found no instances of "parallel" in it. Access to parallel private networks as claimed is apparently not taught by this reference.

BGP: "Border Gateway Protocol", pp. 1-5, copyright date 2001

This reference discusses Border Gateway Protocol (BGP), frame relay, multi-homing, and other subjects. The first full paragraph on page 2 notes that an Internet Service Provider can have multiple connections to the Internet backbone. However, access to parallel private networks as claimed is apparently not taught by this reference.

FAQ: "Frequently Asked Questions on Multi-homing and BGP", pp. 1-7, no later than 07-Jun-2000

This reference discusses Border Gateway Protocol (BGP), multi-homing, routing, multiple connections, and other subjects. A statement on page 2 notes that multi-homing may be done for various reasons, including redundancy; as noted on page 10 of the present application, redundancy refers to reliability, and claims 4, 16, and 19 of the present application refer expressly to reliability. However, keyword searches found no instances of

"frame relay" or "parallel" in this reference, and access to parallel private networks as claimed is apparently not taught by this reference.

NACIO: "NACIO Systems", pp. 1-3, copyright date 1998-2001

This reference discusses fault-tolerance, redundant systems, Point-to-Point, Frame Relay, multi-homing, and other subjects. A reading of the reference found no instances of "parallel" in it. Access to parallel private networks as claimed is apparently not taught by this reference.

Multi: "Multi-Attached and Multi-Homed Dedicated Access", pp. 1-5, no later than 12/8/2001

This reference discusses multi-attached and multi-homed access for increased reliability. Frame relay is discussed. A keyword search found one use of the word "parallel", on page 3: "Using two parallel circuits between a customer's network and different CLIX routers will satisfy most customers high-availability requirements. For optimum resilience, you should ensure that the two CLIX access circuits do not share any common elements (e.g. a single unprotected tail circuit, a single CLEAR Frame AXIS shelf, or a single mux card), and use separate routers for each access circuit, powered from separate protected power sources if possible." The accompanying diagram on page 3 of the reference is reminiscent of Figure 1 of the present application; a similar but more general diagram shown on page 4 of the reference also resembles Figure 1. Load-balancing is mentioned on page 5; load-balancing is expressly called for in claims 3, 15, and 19 of the present application. But this reference does not appear to the undersigned to teach selection between parallel private networks as called for by the present invention.

Freedman: A. Freedman, "ISP Tech Talk", pp. 1-10, May 1997

This reference discusses reliability, Frame Relay, multi-homing, and other subjects. A keyword search of the reference found no instances of "parallel" in it. Access to parallel private networks as claimed does not appear to be taught by this reference.

Liao: T. Liao et al., "Using multiple links to interconnect LANs and public circuit switched data networks," *Proc. Int. Conference on Communications Systems: Towards Global Integration, Vol. 1*, Singapore, 59 November 1990, pp. 289-293

This reference discusses design of a gateway that interconnects a TCP/IP-based LAN and a public circuit switched data network using multilinks. Although it discusses use of multiple data links, the parallelism taught is apparently parallelism of multiple physical links to a single network, not parallelism of networks as claimed in the present application.

Coyotepoint: Press release from www.coyotepoint,com, September 8, 1997

This reference discusses a form of load-balancing, and the present application also refers to "load-balancing", see, e.g., claims 3, 15, 19. However, this reference does not appear to the undersigned to teach the claimed access to parallel networks.

NAT: Network Address Translation Technical Discussion, from safety.net; no later than 05/07/1999

This reference discusses parallelism in servers and a form of load-balancing, see, e.g., the paragraph on "Mux Server Mapping Mode" on page 4. But it does not appear to the undersigned to teach the claimed access to parallel networks.

Higginson: Higginson et al., "Development of Router Clusters to Provide Fast Failover in IP Networks," from www.asia-pacific.digital.com; no later than 9/29/98

This reference discusses failover, which is related to a form of reliability, and the present application also refers to "reliability", see, e.g., claims 4, 16, 19. However, this

reference does not appear to the undersigned to teach the claimed access to parallel networks.

Navpoint: Pages from www.navpoint.com; no later than 12/24/2001

This reference discusses frame relay and point-to-point connections. However, it does not appear to the undersigned to teach the claimed access to parallel networks.

Feibel: Feibel, "Internetwork Link," Novell's® Complete Encyclopedia of Networking, copyright date 1995

This reference discusses connections between networks. However, it does not appear to the undersigned to teach the claimed access to parallel networks.

Tanenbaum: Tanenbaum, Computer Networks (3rd Ed.), pp. 396-406; copyright date 1996

This reference discusses connections between networks, and ways in which networks differ from one another. Figures 5-36 and 5-37 may also be of interest. However, this reference does not appear to the undersigned to teach the claimed access to parallel networks using a packet path selector.

Wexler: Wexler, "Frame Relay and IP VPNs: Compete Or Coexist?", from www.bcr.com; July 1999

This reference discusses frame relay and VPNs. In particular, an apparent blurring of the line between the two technologies is discussed, see, e.g., page 3. It does not appear to the undersigned to teach the claimed access to parallel networks.

Conclusion

In view of the above, Assignee respectfully petitions the Office for accelerated examination of the claims. In the event of any questions, the undersigned invites a telephone call from the Office.

Dated April 21, 2003.

Enclosures
\p-petn-MakeSpecial9A

CERTIFICATE OF MAILING

I hereby certify that the correspondence listed below is being deposited with the United States Postal Service as Priority Mail, postage paid, on April 21, 2003 addressed to the Commissioner for Patents, Box DAC, P.O. Box 2327, Arlington, VA 22202:

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PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

FIFTH INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents:

This Information Disclosure Statement is filed in response to the duty of candor described in 37 C.F.R. §§ 1.56, 1.98, MPEP § 2001.06(c), and elsewhere. The references listed on the enclosed Form PTO-1449 (incorporated herein by reference) are respectfully submitted for consideration by the Office. They were first identified to the undersigned in an International Search Report in PCT/US03/03988 (Docket 3003.2.11B) received on June 2, 2003.

Dated June 3, 2003.

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I hereby certify that the correspondence listed below is being deposited with the United States Postal Service as Priority Mail, postage paid, on June 3, 2003 addressed to the Commissioner for Patents, Mail Stop Non-Fee Amendment, P.O. Box 1450, Alexandria, VA 22313-1450:

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Form PTO-1449 Sheet 1 of 1

Applicant: Sanchaita Datta and Ragula Bhaskar

Serial No.: 10/034,197 Att'y Docket No. 3003.2.9A

Filing Date: December 28, 2001

For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

LIST OF REFERENCES CITED BY APPLICANT

U.S. Patent Documents

Examiner Initial*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date
Thn A1	6,456,594	09/24/02	Kaplan et al.	370	238	07/24/00
Thn A2	6,449,259	09/10/02	Allain et al.	370	253	06/30/97
Thn A3	5,898,673	04/27/99	Riggan et al.	370	237	02/12/97

Other Document

(including Author, Title, Pertinent Pages, etc.)

Thn A4 B. Gleeson et al., "A Framework for IP Based Virtual Private Networks," RFC 2764 (February 2000)

Examiner: THUHA NGUYEN Date Considered: 4/15/04

*EXAMINER: Please initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Please include a copy of this form with the next communication to applicant.

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Paper No. 8

John W.L. Ogilvie
COMPUTER LAW ++
1211 East Yale Avenue
Salt Lake City, Utah 84105

In re Application of
Sanchaita DATTA et al
Application No. 10/034,197
Filed: December 28, 2001
For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

DECISION ON PETITION FOR ACCELERATED EXAMINATION UNDER MPEP §708.02(VIII)

This is a decision on the request for reconsideration of petition, filed April 25, 2003 under 37 C.F.R. §1.102(d) and M.P.E.P. §708.02(VIII): Accelerated Examination, to make the above-identified application special.

The petition is **GRANTED**.

M.P.E.P. §708.02, Section VIII which sets out the prerequisites for a grantable petition for Accelerated Examination under 37 C.F.R. §1.102(d) states in relevant part:

A new application (one which has not received any examination by the examiner) may be granted special status provided that applicant (and this term includes applicant's attorney or agent) complies with each of the following items:

(a) Submits a petition to make special accompanied by the fee set forth in 37 CFR 1.17(h);

(b) Presents all claims directed to a single invention, or if the Office determines that all the claims presented are not obviously directed to a single invention, **will make an election without traverse as a prerequisite to the grant of special status**.

(c) Submits a statement(s) that a pre - examination search was made, listing the field of search by class and subclass, publication, Chemical Abstracts, foreign patents, etc. A search made by a foreign patent office satisfies this requirement;

(d) Submits one copy each of the references deemed most closely related to the subject matter encompassed by the claims if said references are not already of record; and

(e) Submits a detailed discussion of the references, which discussion points out, with the particularity required by 37 CFR 1.111(b) and (c), how the claimed subject matter is patentable over the references.

In those instances where the request for this special status does not meet all the prerequisites set forth above, ***applicant will be notified and the defects in the request will be stated***. The application will remain in the status of a new application awaiting action in its regular turn. In those instances where a request is defective in one or more respects, applicant will be given one opportunity to perfect the request in a renewed petition to make special. If perfected, the request will then be granted. If not perfected in the first renewed petition, any additional renewed petitions to make special may or may not be considered at the discretion of the Group Special Program Examiner.

Applicant's submission meets all the criteria set out above. Accordingly, the Petition is **GRANTED**.

The application file is being forwarded to the Examiner of Record for accelerated examination according to the procedures set forth in M.P.E.P. §708.02, Section VIII.

Any inquiry concerning this decision should be directed to Vincent N. Trans whose telephone number is (703) 305-9750.

Vincent N. Trans
Special Programs Examiner
Technology Center 2100
Computer Architecture, Software and
Information Security
(703) 305-9750

DECISION ON PETITION
ROUTING SLIP
TC 2100

Application No.: 10/034,197 Art Unit: 2155

For Director's Secretary:

☑ **Granted** ☐ **Denied** ☐ **Dismissed**

☐ **Decision to be reviewed and signed by Director**

☑ **Mail Decision & enter decision in Petition Database**

☐ **Enter Change of Address in PALM**

☑ **Enter Paper Nos.** 7 **and the decision in PALM**

☑ **Other** forward file to Examiner for action

For Tech Support Staff and/or LIE:

☐ **Process and enter Paper Nos.**

☐ **Charge** fee to D.A. No.

☐ **Other**

☐ **Forward file to**

Questions should be directed to:

SPRE No. 1	SPRE No. 2	SPRE No. 3
Vin Trans SPRE 2100 PK2-2D16A 305-9750	Pinchus Laufer SPRE 2100 PK2-2D16B 306-4160	Josie Ballato SPRE 2100 PK2-2D16C 308-0269

Routing Slip Printed On: Tuesday, October 07, 2003 2:23:17 PM

L Number	Hits	Search Text	DB	Time stamp
1	384	LAN same (gateway or proxy or switch or router) same private adj (network or firewall)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:09
2	409516	site$3 (gateway or proxy or switch or router) same private adj (network or firewall)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:10
3	261	site$3 same (gateway or proxy or switch or router) same private adj (network or firewall)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:10
4	6	site$3 same (gateway or proxy or switch or router) same private adj (network or firewall).ab.	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:11
5	13	site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall).ab.	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:24
6	70	site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) and load adj balanc$6 and redirect$6	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:25
7	15	site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:36
8	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 same (packetiz$6 or datagram) and sequenc$4 near3 order	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:37
9	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 and (packetiz$6 or datagram) and sequenc$4 near3 order	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:38
11	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 same (packetiz$6 or datagram)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:38
12	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 with (packetiz$6 or datagram)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:38
13	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 near (packetiz$6 or datagram)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:38
10	19	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 and (packetiz$6 or datagram)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:44
14	2	(gateway or proxy) same load adj balanc$4 same redirect$4 same (frame adj relay or private adj network or firewall)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:45
16	7	(gateway or proxy) same load adj balanc$4 same redirect$4 same (packet$6 or datagram)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:46
15	2	(gateway or proxy) same load adj balanc$4 same redirect$4 same (private adj network or firewall)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:49
17	1	(gateway or proxy) same load adj balanc$4 same redirect$4 same (private adj network or firewall) and fail$4 same over	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:49
18	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over same fram3 adj relay	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:50
19	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over same frame adj relay	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:50
20	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over and frame adj relay	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:50
21	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj overy	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:50

22	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:50
23	0	client same server same (gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:51
24	0	client same server same (gateway or proxy) same load adj balanc$4 same redirect$4 and fail$4 adj over	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:51
25	9	client same server same (gateway or proxy) same load adj balanc$4 and fail$4 adj over	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:54
27	8	(gateway or proxy) same control same select$4 same load adj balanc$4 and (frame adj relay or private adj network)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 15:58
26	16	(gateway or proxy) same control same select$4 same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:06
28	1	370/401.ccls. and (gateway or proxy) same control same select$4 same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:08
29	30	370/401.ccls. and (gateway or proxy) same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:08
30	1	370/401.ccls. and (gateway or proxy) same load adj balanc$4 same private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:08
31	12	370/401.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:12
34	13	(site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall).ab.)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:13
32	4	709/105.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:13
33	5	709/220.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:17
35	9	709/225.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:27
36	0	client same server same (gateway or proxy) same control same load adj balac$4	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:27
37	16	client same server same (gateway or proxy) same control same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:28
38	4	client same server same (gateway or proxy) same control same load adj balanc$4 same (private adj network or intranet)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:38
39	12	client same server same (gateway or proxy) and control same load adj balanc$4 same (private adj network or intranet)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:28
40	0	(gateway or proxy) same control same load adj balanc$4 same ((multiple or plurality) near3 frame adj relay$2)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:39
41	0	(gateway or proxy) same control same load adj balanc$4 same ((multiple or plurality) same frame adj relay$2)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:40
42	1	(gateway or proxy) same control same load adj balanc$4 same ((multiple or plurality) same private adj network)	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:43
43	372733	client same server same control$4 same select$4 same private adjn network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:44

45	0	client same server same load adj balanc$4 same control$4 same select$4 same private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:45
46	0	client same server same control$4 same select$4 same load adj balanc$4 same private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:45
47	7	client same server same control$4 same select$4 and load adj balanc$4 same private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:45
44	18	client same server same control$4 same select$4 same private adj network	USPAT; US-PGPUB; IBM_TDB	2003/10/15 16:53

L Number	Hits	Search Text	DB	Time stamp
1	1	5948069.pn.	USPAT; US-PGPUB; IBM_TDB	2003/10/16 10:11
2	1	6112248.pn.	USPAT; US-PGPUB; IBM_TDB	2003/10/16 10:16
3	1	("1041776").PN.	USPAT; US-PGPUB; IBM_TDB	2003/10/16 10:17
4	34	multiple same ARP same IP same system	USPAT; US-PGPUB; IBM_TDB	2003/10/16 10:17
5	0	multiple same ARP same IP same system.ti.	USPAT; US-PGPUB; IBM_TDB	2003/10/16 10:18
6	9	multiple same ARP same IP same system same router$1	USPAT; US-PGPUB; IBM_TDB	2003/10/16 10:21
7	10	multiple same ARP same IP same system same router$1	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:22
8	189	(gateway or router or proxy) same private adj network same select$4	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:28
10	111	(gateway or router or proxy) same private adj network same select$4 same (path or link or line or route$4)	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:29
11	4	(gateway or router or proxy) same private adj network same select$4 same (path or link or line or route$4).ab.	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:31
12	0	(gateway or router or proxy) same select$4 same controll$4 same private adj network same (path or link or line or route$4).ab.	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:32
13	11	(gateway or router or proxy) same select$4 same controll$4 same private adj network same (path or link or line or route$4)	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:32
9	13	(gateway or router or proxy) same private adj network same select$4 same path	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:38
14	113	(gateway or router or proxy) same select$4 same (path or rout$4) same private adj network	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:38
15	113	(gateway or router or proxy) same (select$4 same (path or rout$4)) same private adj network	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:39
16	52	(gateway or router or proxy) same (select$4 near4 (path or rout$4)) same private adj network	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:39
17	44	(gateway or router or proxy) same (select$4 adj4 (path or rout$4)) same private adj network	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:49
18	1154	(gateway or router or proxy) same (select$4 ad4 (path or rout$4)) same private adj network	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:39

19	14	(gateway or router or proxy) same (select$4 adj (path or rout$4)) same private adj network	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:39
20	0	(gateway or router or proxy) same (select$4 adj4 (path or rout$4)) same private adj network.ab.	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:50
21	17	(gateway or router or proxy) same (select$4 adj4 (path or rout$4)) same private adj network same control$4	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:50
22	17	(gateway or router or proxy) same control$4 same (select$4 adj4 (path or rout$4)) same private adj network	USPAT; US-PGPUB; EPO; IBM_TDB	2003/10/16 10:50

L Number	Hits	Search Text	DB	Time stamp
1	0	point adj3 point same private adj network same frame adj realy	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:02
2	0	point adj3 point same private adj network and frame adj realy	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:02
3	1	point adj3 point and private adj network and frame adj realy	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:04
4	0	point adj3 point and private adj network and frame adj realy and load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:04
5	0	private adj network and frame adj realy and load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:04
6	323	private adj network and ATM and load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:05
7	103	private adj network same ATM and load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:05
8	3	private adj network same ATM same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:07
9	3	(proxy or gateway or control$4 or load adj balancer) same private adj network same ATM same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:07
10	151	(proxy or gateway or control$4 or load adj balancer) same (private adj network or ATM) same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:08
11	4	(proxy or gateway or control$4 or load adj balancer) same (private adj network or ATM) same load adj balanc$4 same select$4 same path	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:08
12	4	(proxy or gateway or control$4 or load adj balancer) same (private adj network or ATM) same load adj balanc$4 same select$4 same path$3	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:11
13	4	(proxy or gateway or control$4 or load adj balancer) same (private adj networks or ATM) same load adj balanc$4 same select$4 same path$3	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:11
14	1	(proxy or gateway or control$4 or load adj balancer) same (private adj networks) same load adj balanc$4 same select$4 same path$3	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:11
15	1	(proxy or gateway or control$4 or load adj balancer) same ((multiple or plurality) adj (private adj network$2 or frame adj realy$2)) same load adj balanc$4 same select$4 same path$3	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:12
16	2	(proxy or gateway or control$4 or load adj balancer) same ((multiple or plurality) adj (private adj network$2 or frame adj realy$2)) same load adj balanc$4	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:14
17	14	(proxy or gateway or control$4 or load adj balancer) same ((multiple or plurality) adj (private adj network$2 or frame adj realy$2))	USPAT; US-PGPUB; IBM_TDB	2003/10/17 09:14

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 11/05/2003

JOHN W L OGILVIE
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EXAMINER	
NGUYEN, THU HA T	

ART UNIT	PAPER NUMBER
2155	9

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/034,197	Applicant(s)	
	Examiner Thu Ha T. Nguyen	Art Unit 2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4,5,6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Claims **1-21** are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 3, 8-9 are rejected under 35 U.S.C. § 102(e) as being anticipated by **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**.

4. As to claim **1, Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site (abstract, figures 3, 7, 15, 22, 24);

at least two private network interfaces (abstract, figures 3, 7, 22, col. 5 lines 29-63); and

a packet path selector which selects between private network interfaces according to a specified criterion (abstract, figures 3, 7, 15);

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

5. As to claim **3, Kitai** teaches the invention as claimed, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

6. As to claim **8, Kitai** teaches the invention as claimed, wherein the controller comprises at least three frame relay network interfaces, each of which is

selectable by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

7. As to claim **9, Kitai** teaches the invention as claimed, wherein the controller operates in a system providing at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2, 4, 11, 13-16 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**.

10. As to claim **2, Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (abstract, figures 1, 5, col. Col. 1 lines 4-col. 2 lines 30).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

11. As to claim **4, Kitai** does not teach the invention as claimed; however, **Pearce** teaches wherein the packet path selector selects between private network interfaces according to a reliability criterion thereby promoting use of devices that will still carry packets alter the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

12. As to claim **11, Kitai** does not explicitly teach the invention as claimed; however, **Pearc** teaches wherein each private network interface is an indirect interface tailored to a particular type of frame relay network (abstract, figures 1, 5, col. Col. 1 lines

4-col. 2 lines 30). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

13. As to claim **13, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion (abstract, figures 3, 7, 15, 22, 24, col. 5 lines 29-63);

connecting the controller site interface to a site to receive packets from a computer at the site (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first private network interface of the controller to a first private network (abstract, figures 3, 7);

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network. **Pearce** teaches connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the process of connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network because it would have an efficient and reliable communications system.

14. As to claim **14, Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches wherein the private networks are frame relay networks (abstract, figures 1, 5, col. Col. 1 lines 4-col. 2 lines 30). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the private networks are frame relay networks because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

15. As to claim **15, Kitai** teaches the invention as claimed, further comprising the step of specifying the criterion for use by the packet path selector, wherein the

specified criterion-is a load balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

16. As to claim **16, Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

17. Claims 5, 17 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

18. As to claim **5, Kitai** does not explicitly teach the invention as claimed; however, **Dutta** teaches wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the

message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Dutta** to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient.

19. As to claim **17, Kitai** does not explicitly teach the invention as claimed; however, **Dutta** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Dutta** to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient.

20. Claims 6-7 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680**.

21. As to claim **6, Kitai** does not explicitly teach the invention as claimed; however, **Goldszmidt** teaches wherein the controller sends packets out of sequence

over the parallel private networks (abstract, figures 3, 5). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Goldszmidt** to have the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load.

22. As to claim **7, Kitai** does not explicitly teach the invention as claimed; however, **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure.

23. Claims 10, 12, 18 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Albright et al.,** (hereinafter Albright) U.S Patent No. **6,209,039**.

24. As to claim **10, Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller operates in a system providing

connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

25. As to claim **12, Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure.

26. As to claim **18, Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein at least one of the steps connecting a private

network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have a the controller connects the controller to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

27. Claims 19-21 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, and **Pearce** U.S. Patent No. **5,910,951**, in view of **Goldszmidt** U.S Patent No. **6,195,680**.

28. As to claim **19, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

29. sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified criterion is load balancing (abstract, figures 3, 7, 9, 15, 19, 22, 24, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-63, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

However, **Kitai** does not explicitly teach wherein the specified criterion is one of: reliability criterion, a security criterion. **Pearce** teaches the specified criterion is reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). **Goldszmidt** teaches the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and G ldszmidt** to specified criterion is one of reliability and security because it would have an efficient communication system to control, select and transfer data over the reliability, qualification and security network amongst multiple networks

30. As to claim **20, Kitai** teaches the invention as claimed, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, and the controller sends different packets of a given message to different frame relay networks (abstract, col. 3 lines 6-42).

31. As to claim **21, Pearce** teaches the invention as claimed, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network (abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and P arce** to have step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other

parallel frame relay because it would detect and improve network security, traffic and failure.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (703) 305-7447. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SPE Hosain T. Alam, can be reached at (703) 308-6662.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications.

Thu Ha Nguyen

October 20, 2003

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

Notice of References Cited	Application/Control No. 10/034,197	Applicant(s)/Patent Under Reexamination	
	Examiner Thu Ha T. Nguyen	Art Unit 2155	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,910,951 A	06-1999	Pearce et al.	370/351
	B	US-6,546,423 B1	04-2003	Dutta et al.	709/225
	C	US-5,948,069 A	09-1999	Kitai et al.	709/240
	D	US-6,209,039 B1	03-2001	Albright et al.	709/249
	E	US-6,195,680 B1	02-2001	Goldszmidt et al.	709/203
	F	US-6,112,248 A	08-2000	Maciel et al.	709/238
	G	US-2002/0049840 A1	04-2002	SQUIRE et al.	709/225
	H	US-6,253,230 B1	06-2001	Couland et al.	709/203
	I	US-2002/0138618 A1	09-2002	Szabo, Paul I.	709/225
	J	US-2002/0059451 A1	05-2002	Haviv, Yaron	709/238
	K	US-6,578,066 B1	06-2003	Logan et al.	709/105
	L	US-2002/0181485 A1	12-2002	CAO et al.	370/419
	M	US-6,098,093 A	08-2000	Bayeh et al.	709/203

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Form PTO-1449 Sheet 1 of 1

Applicant: Sanchaita Datta and Ragula Bhaskar
Serial No.: 10/034,197 Att'y Docket No. 3003.2.9A
Filing Date: December 28, 2001
For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

REFERENCE CITED BY APPLICANT{PRIVATE }

U.S. Patent Document

Examiner Initial*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date
Tha A1	6,493,341	12/10/02	Datta et al.	370	392	12/29/00

Examiner: Tha Date Considered: 10/20/03

*EXAMINER: Please initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Please include a copy of this form with the next communication to applicant.

Form PTO-1449 Sheet 1 of 1

Applicant: Sanchaita Datta and Ragula Bhaskar

Serial No.: 10/034,197 Att'y Docket No. 3003.2.9A

Filing Date: December 28, 2001

For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

REFERENCE CITED BY APPLICANT{PRIVATE }

U.S. Patent Application

Examiner Initial*	
Tha A1	Serial no. 10/361837 filed February 7, 2003 (docket no. 3003.2.11A)

Examiner: Tha Date Considered: 10/20/03

*EXAMINER: Please initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Please include a copy of this form with the next communication to applicant.

Form PTO-1449 Sheet 1 of 3

Applicant: Sanchaita Datta and Ragula Bhaskar
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For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

LIST OF REFERENCES CITED BY APPLICANT

U.S. Patent Documents

Examiner Initial*		Document Number	Issue Date	Name	Class	Sub Class	Filing Date
Thn	A1	6,298,063	10/02/01	Coile et al.	370	401	03/15/00
	A2	6,295,276	09/25/01	Datta et al.	370	218	12/31/99
	A3	6,292,495	09/18/01	Von Hammerstein et al.	370	465	04/10/98
	A4	6,266,335	07/24/01	Bhaskaran	370	399	12/19/97
	A5	6,253,247	06/26/01	Bhaskar et al.	709	237	05/20/97
	A6	6,249,820	06/19/01	Dobbins et al.	709	238	05/06/98
	A7	6,148,337	11/14/00	Estberg et al.	709	224	04/01/98
	A8	6,112,248	08/29/00	Maciel et al.	709	238	02/04/98
	A9	6,055,561	04/25/00	Feldman et al.	709	200	09/30/97
	A10	5,473,599	12/05/95	Li et al.	370	16	04/22/94
Thn	A11	5,459,720	10/17/95	Iliev et al.	370	60	03/31/94

Other Documents
(including Author, Title, Pertinent Pages, etc.)

Thn A12 European Patent Application EP 1 041 776 A1, published 04.10.2000

A13 European Patent Application EP 1 041 775 A1, published 04.10.2000

A14 "radware LinkProof Internet Link Traffic Management", pp. 1-4, copyright date 2000

Examiner: Thn Date Considered: 10/20/03

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Filing Date: December 28, 2001
For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

Thn	A15	"Navpoint Internet Dedicated Internet Service", pp. 1-3, copyright date 2000
	A16	"Selling Brief: NxT1 Connectivity", pp. 1-2, copyright date 2001
	A17	"The Basic Guide to Frame Relay Networking", pp. 1-85, copyright date 1998
	A18	"Frame relay NNIs in the cross-fire", pp. 1-2, 11/22/99
	A19	"NNI & UNI", pp. 1-2, Nov 16, 2001
	A20	"Cisco Four-Port Channelized E1 Frame Relay Port Adapter...", pp. 1-3, Jul 3, 2000
	A21	Frame Relay pages from www.cisco.com, pp. 1-8, Sep 21, 1999
	A22	"Protocol Directory - Frame Relay", pp. 1-14, no later than 12/7/2001
	A23	"Asynchronous Transfer Mode", pp. 1-3, no later than 12/7/2001
	A24	"Frame Relay - Domestic", pp. 1-2, copyright date 2001
	A25	InfoNow page, no later than 7/28/2001
	A26	"Smarts Takes On Frame Relay Correlation", one page, date may be 2001 or 1999
	A27	"MICOM MARATHON® 5KT Pro", 4 pages, copyright date 1997
	A28	"Disaster Recovery for Frame Relay Networks", pp. 1-10, no later than 12/7/2001
	A29	T. Nolle, "Watching Your Back", pp. 1-3, 11/01/99
	A30	"Disaster Recovery: Monitored Frame Relay Networks", pp. 1-3, no later than 7/28/2001
	A31	"Galaxy IV failure and AT&T Frame Relay outage", pp. 1-4, 03 Jun 1998
	A32	"World Class Global Internet Data Centers", one page, copyright date 1999-2001
	A33	"ISDN finds role as frame relay sidekick", pp. 1-2, 11/17/99
Thn	A34	"Border Gateway Protocol", pp. 1-5, copyright date 2001

Examiner: Thn Date Considered: 10/20/03

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Filing Date: December 28, 2001
For: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS

Thn A35 "Frequently Asked Questions on Multi-homing and BGP", pp. 1-7, no later than 07-Jun-2000

A36 "NACIO Systems", pp. 1-3, copyright date 1998-2001

A37 "Multi-Attached and Multi-Homed Dedicated Access", pp. 1-5, no later than 12/8/2001

Thn A38 A. Freedman, "ISP Tech Talk", pp. 1-10, May 1997

Examiner: Thn Date Considered: 10/20/03

*EXAMINER: Please initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Please include a copy of this form with the next communication to applicant.

#11
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2-9-04

PATENT APPLICATION
ATTORNEY DOCKET NO. 3003.2.9A/JWO

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**RESPONSE** CERTIFICATE OF FAX TRANSMISSION DATE OF FAXING: 4 Feb 2004 I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being faxed to the USPTO central fax number 703-872-9306 on the date indicated above. [signature]

Mail Stop Non-fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Patent Official:

In response to the Office Action mailed November 5, 2003, Applicants and Assignee respectfully submit the following remarks and request favorable reconsideration of the above-captioned application. .

Change of Customer Number and Address

Please note that this application should now be associated with Customer Number 20,551, at the address for that Customer Number. The undersigned is already an attorney of record in this case; he has simply changed firms.

REMARKS

Applicants express their appreciation to the Examiner for considering the application.

In the Office Action, claims 1, 3, and 8-9 were rejected under Section 102 in view of U.S. Patent Application No. 5,948,069 by Kitai et al. ("Kitai"). Claims 2, 4, 11, and 13-16 were rejected under Section 103 in view of Kitai combined with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce"). Claims 5 and 17 were rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta"). Claims 6 and 7 were rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt"). Claims 10, 12, and 18 were rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright"). Claims 19-21 were rejected under Section 103 in view of Kitai combined with Pearce and also with Goldszmidt.

For at least the reasons explained below, all rejections should be withdrawn.

Section 102 Rejections based on Kitai

Claims 1, 3, and 8-9 were rejected under Section 102 in view of Kitai. It is well-established law that a rejection under Section 102 is not proper when the cited reference fails to teach any of the claimed limitations – all claimed limitations must be taught by the reference, or else the rejection will be overturned. See, e.g., M.P.E.P. § 2131 and cases cited therein. As explained below, the rejections of claims 1, 3, and 8-9 are not proper because Kitai fails to teach the "private networks" limitations of those claims.

Claim 1 is limited to "private networks". Claim 1 is expressly limited to a "controller which controls access to multiple independent private networks...." Claim one expressly recites "at least two private network interfaces". A "private network interface" is an interface to a "private network"; see, e.g., the application at page 16 lines 1-3, which states: "The controller 502 also includes two or more private network interfaces 706, namely, so there is at least one interface 706 per private network 106 to which the controller 502 controls access." (emphasis added). Thus, "private networks" are clearly limitations of claim 1, and hence "private networks" are also limitations of dependent claims 3 and 8-9.

What, then, is a "private network"? This term is defined by applicants, in an exercise of the well-established right of patent applicants to be their own lexicographers:

> "Frame relay networks are an example of a 'private network'. Another example is a point-to-point network, such as a T1 or T3 connection." Application at page 2 lines 3-4.
>
> " 'Frame relay networks' or 'private networks' does not rule out the use of an ISDN link or other backup for a particular frame relay or point-to-point private network, but it does require the presence of multiple such networks – Figure 2, for instance, does not meet this requirement." Application at page 9 lines 16-20.
>
> "The present invention provides tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration." Application at page 5 lines 20-22 (summary of invention).

In short, "private networks" as claim limitations are frame relay networks and/or point-to-point networks.

Kitai does not teach such private networks. A keyword search of Kitai reveals no use of "frame relay", and no use of "point-to-point". There is likewise no discussion of "T1" or "T3" connections in Kitai. The term "private network" was coined for use in the present application, so it would not necessarily mean the same thing even if it were present in Kitai, but it is not present in Kitai. Accordingly, Applicants respectfully submit that Kitai does not teach private networks.

Because Kitai fails to teach the "private networks" limitations of claim 1 and its dependent claims, it is not proper to reject those claims under Section 102 based on Kitai. The rejections should be withdrawn.

Section 103 Rejections based on Kitai with Pearce

Claims 2, 4, 11, and 13-16 were rejected under Section 103 in view of Kitai combined with Pearce. As a justification for combining Kitai and Pearce, the Office Action asserts at the top of page 5 that the combination would have been obvious "because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple

networks." But this is not a teaching of the prior art – it is an unsupported assertion by the Office. No supporting citation to Kitai, to Pearce, or to any other source of prior art is given. It is well-established patent law that a rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. See, e.g., M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient and reliable is not specific **evidence** that one of skill would have combined these two particular references. For at least this reason, the rejections under Section 103 based on Kitai with Pearce should be withdrawn.

Furthermore, Pearce does not teach private networks. Independent claim 13, like independent claim 1, expressly requires "private networks" and "private network interfaces" (namely, interfaces to private networks). But a keyword search of Pearce reveals no use of "frame relay", and no use of "point-to-point". There is likewise no discussion of "T1" or "T3" connections in Pearce. There is no use of "private network" in Pearce. As noted above, Kitai does not teach private networks. Neither does Pearce. Even if Pearce and Kitai are combined, they fail to teach the "private network" limitations of independent claims 1 and 13, and hence of their dependent claims. Accordingly, this lack of private network teaching is another reason the rejections under Section 103 based on Kitai with Pearce should be withdrawn.

Section 103 Rejections based on Kitai with Dutta

Claims 5 and 17 were rejected under Section 103 in view of Kitai combined with Dutta. As a justification for combining Kitai and Dutta, the Office Action asserts on page 9 that the combination would have been obvious "because it would improve the data transferring more secure and efficient." But this is not a teaching of the prior art – it is an unsupported assertion by the Office. No supporting citation to Kitai, to Dutta, or to any other source of prior art is given. A general unsupported assertion that the combination would be secure and efficient is not specific **evidence** that one of skill would have combined these two particular references. For at least this reason, the rejections under Section 103 based on Kitai with Dutta should be withdrawn.

Furthermore, Dutta does not teach private networks as claimed. A keyword search of Dutta reveals no use of "frame relay", and no use of "point-to-point". There is likewise no discussion of "T1" or "T3" connections in Dutta. Even if Kitai and Dutta are combined, they fail to teach the "private network" limitations of the claims. Accordingly, this lack of private network teaching is another reason the rejections under Section 103 based on Kitai with Dutta should be withdrawn.

In addition, Dutta load balances between *servers*, not between *networks*; see, e.g., Dutta at column 4 line 63 through column 5 line 8 ("load balancing by the firewall in response to changing load conditions at the servers"). Indeed, Dutta does not even use the plural term "networks". For this reason as well, the rejections under Section 103 based on Kitai with Dutta should be withdrawn.

Section 103 Rejections based on Kitai with Goldszmidt

Claims 6 and 7 were rejected under Section 103 in view of Kitai combined with Goldszmidt. As a justification for combining Kitai and Goldszmidt, the Office Action asserts on page 10 that the combination would have been obvious because it "would have an efficient communication system to process control and monitor the delivery of packet to control the traffic load." But this is not a teaching of the prior art – it is an unsupported assertion by the Office. No supporting citation to Kitai, to Goldszmidt, or to any other source of prior art is given. A general unsupported assertion that the combination would be efficient is not specific **evidence** that one of skill would have combined these two particular references. For at least this reason, the rejections under Section 103 based on Kitai with Goldszmidt should be withdrawn.

Moreover, Goldszmidt is about *receiving* packets out of sequence, not *sending* them out of sequence. As noted at column 11 lines 7-9: "Each packet may travel along a different route and arrive at their destination at different times or out of sequence and the receiving computer reassembles the original information." Goldszmidt views out-of-sequence packets as a problem to be addressed, not as an advantage. In short, Goldszmidt does not teach intentionally sending packets out of sequence, as required by claims 6 and 7. Kitai does not even discuss packet "sequence". Accordingly, the combination of Kitai with Goldszmidt fails to teach the claimed

limitation of sending packets out of sequence, and for that reason as well the rejections based on that combination should be withdrawn.

Further, with respect to the encrypted sequence number limitation of claim 7, neither Kitai nor Goldszmidt even mentions encryption, much less teaches the claimed limitation. This is yet another reason to withdraw the rejection of claim 7.

Section 103 Rejections based on Kitai with Albright

Claims 10, 12, and 18 were rejected under Section 103 in view of Kitai combined with Albright. As a justification for combining Kitai and Albright, the Office Action asserts on page 11 that the combination would have been obvious "because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure." But this is not a teaching of the prior art – it is an unsupported assertion by the Office. No supporting citation to Kitai, to Albright, or to any other source of prior art is given. A general unsupported assertion that the combination would be efficient is not specific **evidence** that one of skill would have combined these two particular references. For at least this reason, the rejections under Section 103 based on Kitai with Albright should be withdrawn.

Moreover, the alleged justification for combining the references, and the reliance on Albright, each apparently confuse *serial* networks with *parallel* networks. Serial networks are in series, with a packet traveling first through one network and then through the other; if one of the networks in a serial configuration fails, then a packet cannot complete its trip. Parallel networks are side-by-side, so a packet travels through one network or the other network but not both; if one of the networks fails then the packet can complete its trip without using the failed network by using the other network instead. Albright teaches use of serial network configurations, as shown for instance in Albright Figures 1, 2, and 3. Figure 2 of Albright shows parallel *links* between two serial networks but the networks themselves are in series, not parallel. By contrast, the present invention is directed to *parallel networks*, as stated expressly in the claims and illustrated for example in application Figures 5 and 6.

Albright's reliance on series networks is further evident in Albright's focus on NNIs – network-to-network interfaces used to connect two networks in series. NNI's are discussed in the present application's discussion of prior art at page 5:

> Figure 4 illustrates a prior art response to the incompatibility of frame relay networks of different carriers. A special "network-to-network interface" (NNI) 402 is used to reliably transmit data between the two frame relay networks A and B. NNIs are generally implemented in software at carrier offices. Note that the configuration in Figure 4 does not provide additional reliability by using two frame relay networks 106, because those networks are in series rather than in parallel. If either of the frame relay networks A, B in the Figure 4 configuration fails, there is no path between site 1 and site 2; adding the second frame relay network has not increased reliability. By contrast, Figure 1 increases reliability by placing the frame relay networks in parallel, so that an alternate path is available if either (but not both) of the frame relay networks fails. Someone of skill in the art who was looking for ways to improve reliability by putting networks in parallel would probably not consider NNIs pertinent, because they are used for serial configurations rather than parallel ones, and adding networks in a serial manner does not improve reliability.

Accordingly, the rejections based on Albright and Kitai should be withdrawn, if only because Albright and Kitai fails to teach the claimed parallel private network innovations.

Section 103 Rejections based on Kitai with Pearce and Goldszmidt

Claims 19-21 were rejected under Section 103 in view of Kitai combined with Pearce and also with Goldszmidt. As elsewhere in the Office Action, the only asserted ground for combining the references is a broad one ("reliability and security" and efficiency) that could be asserted for almost any combination of references -- these reasons are not specific to these particular references. Nor is any evidence given of a suggestion or motivation in the art that would have led one of skill to focus on and combine these three references rather than focusing on other references. For at least this reason, the rejections of claims 19-21 should be withdrawn.

C nclusion

In light of the above, Applicants and Assignee respectfully submit that all pending claims are allowable. They request that the rejections be withdrawn, and that the claims be allowed and passed to issue. Their silence here does not signify agreement or acquiescence in the Office Action's assertions, and they reserve all arguments.

If any impediment to the allowance of these claims remains after entry of this Response, the Examiner is strongly encouraged to call John Ogilvie at 801-566-6633 so that such matters may be resolved as expeditiously as possible.

DATED this 4th day of February, 2004.

Respectfully submitted,

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2155
#13

Attorney Docket No.: RADW 21.090 (101092-00074)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	SANCHAITA DATTA
Confirmation No.:	7746
Serial No.:	10/034,197
Filed:	December 28, 2001
Title:	COMBINING CONNECTIONS FOR PARALLEL ACCESS...
Examiner:	THU HA T. NGUYEN
Group Art Unit:	2155

April 5, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

05/11/2004 BTURNER 00000001 501290 10034190

01 FC:1808 130.00 DA
02 FC:1806 180.00 DA

THIRD PARTY SUBMISSION

SIR:

Please withdraw the fees for this third party submission from deposit account 50-1290, as set forth in 37 CFR 1.17(p) and 37 CFR 1.17(i).

Third party submission has been discarded because it was not submitted in a timely fashion.

5/10/04

PMK

with n

11180753.01

submission has been served upon the applicant in accordance with 37 CFR 1.248. Proof of service is attached.

This submission is after the two months from the time the application was published because:

1. The publication of the application only became known to the third party submitter on or about January 30, 2004; and
2. The U.S. patent issued on December 16, 2003, which was after the two month period had expired and therefore could not have been submitted within the time period.

Respectfully submitted,

Brian S. Myers
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Docket No.: RADW 21.090101092-00074
BSM:fd

CERTIFICATE OF SERVICE

I hereby certify that on April 2, 2004, I caused the foregoing **THIRD PARTY SUBMISSION** to be served as follows:

by U.S. Mail, first class, by depositing the same in a depository of the United States Postal Service, on:

John W. L. Ogilvie
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Brian S. Myers

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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20551 7590 04/19/2004

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EXAMINER	
NGUYEN, THU HA T	

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/034,197	Applicant(s)	
	Examiner Thu Ha T. Nguyen	Art Unit 2155	

-- The MAILING DATE of this c mmunication appears on the cover sheet with the correspondence address --

Period for R ply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/04/04* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *10* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Claims **1-21** are presented for examination.

Response to Arguments

2. Applicant's arguments filed February 04, 2004 have been fully considered but they are not persuasive because of the following reasons:

3. Applicants argue that Kitai does not teach or suggest private networks. In response to Applicants' argument, Examiner asserts that Kitai does teach LAN 3050, 3100, 3200, 3300, 3400 (figures 3, 7) as private networks as broadly disclosed in Applicants' claimed language.

4. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to combine the teaching of Kitai and Pearce to have the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks (see col. 2 lines 61-col. 3 lines 5).

5. Applicants argue that Pearce does not teach or suggest private networks. In response to Applicants' argument, Examiner asserts that Pearce Packet-switched (e.g., Ethernet) network as private network (col. 2 lines 1-30).

6. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to combine the teachings of Kitai and Dutta to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient (see col. 1 lines 29-63). Dutta teaches a firewall regulates the flow of packetized information and prevent unauthorized access to or from a private network. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

7. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in

the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to combine the teachings of Kitai and Goldszmidt to have the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load (see col. 2 lines 65-col. 3 lines 11).

8. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to combine the teachings of Kitai, Pearce and Goldszmidt to specified criterion is one of reliability and security because it would have an efficient communication system to control, select and transfer data over the reliability, qualification and security network amongst multiple networks (Pearce reference, see col. 2 lines 61-col. 3 lines 5) (Goldszmidt reference, see figures 7, 8, col. 15 lines 44-57. Goldszmidt teaches the using of firewall to prevent unauthorized access to or from a private network. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria).

9. As a result, cited prior arts do disclose a system and method for controlling access to multiple independent private networks, as broadly claimed by the Applicants. Applicants clearly have still failed to identify specific claim limitations that would define a clearly patentable distinction over prior arts.

10. Therefore, the examiner asserts that cited prior art teaches or suggests the subject matter broadly recited in independent claims 1, 13 and 19. Claims 2-12, 14-18, and 20-21 are also rejected at least by virtue of their dependency on independent claims and by other reasons set forth in the previous office action [see paper no. 9]. Accordingly, claims 1-21 are rejected.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 1, 3, 8-9 are rejected under 35 U.S.C. § 102(e) as being anticipated by **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**.

13. As to claim **1, Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site (abstract, figures 3, 7, 15, 22, 24);

at least two private network interfaces (abstract, figures 3, 7, 22, col. 5 lines 29-63); and

a packet path selector which selects between private network interfaces according to a specified criterion (abstract, figures 3, 7, 15);

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

14. As to claim **3, Kitai** teaches the invention as claimed, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

15. As to claim **8, Kitai** teaches the invention as claimed, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

16. As to claim **9, Kitai** teaches the invention as claimed, wherein the controller operates in a system providing at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10)

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 2, 4, 11, 13-16 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**.

19. As to claim **2, Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (abstract, figures 1, 5, col. Col. 1 lines 4-col. 2 lines 30). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

20. As to claim **4, Kitai** does not teach the invention as claimed; however, **Pearce** teaches wherein the packet path selector selects between private network interfaces according to a reliability criterion thereby promoting use of devices that will still carry packets alter the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

21. As to claim **11, Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches wherein each private network interface is an indirect interface tailored to a particular type of frame relay network (abstract, figures 1, 5, col. Col. 1 lines 4-col. 2 lines 30). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

22. As to claim **13, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion (abstract, figures 3, 7, 15, 22, 24, col. 5 lines 29-63);

connecting the controller site interface to a site to receive packets from a computer at the site (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first private network interface of the controller to a first private network (abstract, figures 3, 7);

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network. **Pearce** teaches connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the process of connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network because it would have an efficient and reliable communications system.

23. As to claim **14, Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches wherein the private networks are frame relay networks (abstract, figures 1, 5, col. Col. 1 lines 4-col. 2 lines 30). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the private networks are frame relay networks because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

24. As to claim **15, Kitai** teaches the invention as claimed, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion-is a load balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

25. As to claim **16, Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to have the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks.

26. Claims 5, 17 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

27. As to claim **5, Kitai** does not explicitly teach the invention as claimed; however, **Dutta** teaches wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple

private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Dutta** to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient.

28. As to claim **17, Kitai** does not explicitly teach the invention as claimed; however, **Dutta** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Dutta** to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient.

29. Claims 6-7 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Goldszmidt et al.**, (hereinafter Goldszmidt) U.S Patent No. **6,195,680**.

30. As to claim **6, Kitai** does not explicitly teach the invention as claimed; however, **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel private networks (abstract, figures 3, 5). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Goldszmidt** to have the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load.

31. As to claim **7, Kitai** does not explicitly teach the invention as claimed; however, **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure.

32. Claims 10, 12, 18 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Albright et al.,** (hereinafter Albright) U.S Patent No. **6,209,039**.

33. As to claim **10, Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

34. As to claim **12, Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure.

35. As to claim **18, Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have a the controller connects the controller to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

36. Claims 19-21 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, and **Pearce** U.S. Patent No. **5,910,951**, in view of **Goldszmidt** U.S Patent No. **6,195,680**.

37. As to claim **19, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

38. sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified criterion is load balancing (abstract, figures 3, 7, 9, 15, 19, 22, 24,

col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-63, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

However, **Kitai** does not explicitly teach wherein the specified criterion is one of: reliability criterion, a security criterion. **Pearce** teaches the specified criterion is reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). **Goldszmidt** teaches the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Goldszmidt** to specified criterion is one of reliability and security because it would have an efficient communication system to control, select and transfer data over the reliability, qualification and security network amongst multiple networks.

39. As to claim **20, Kitai** teaches the invention as claimed, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, and the controller sends different packets of a given message to different frame relay networks (abstract, col. 3 lines 6-42).

40. As to claim **21, Pearce** teaches the invention as claimed, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network (abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine

the teachings of **Kitai and Pearce** to have step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay because it would detect and improve network security, traffic and failure.

Conclusion

41. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

42. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

43. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (703)

305-7447. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SPE Hosain T. Alam, can be reached at (703) 308-6662.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications.

Thu Ha Nguyen

April 15, 2004

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

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MAY 25 2004

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FACSIMILE MEMORANDUM

THORPE NORTH & WESTERN L.L.P.
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DATE: MAY 25, 2004
PAGE 1 OF: 7
TO: EXAMINER THU HA NGUYEN
ASSISTANT COMMISSIONER FOR PATENTS
FACSIMILE NUMBER: (703)872-9306
FROM: JOHN W. L. OGILVIE
TRANSMITTED BY: SHEILA
OUR DOCKET NUMBER: 22971.NP
PREVIOUS DOCKET NUMBER: 3003.2.9A
INVENTOR: SANCHAITA DATTA AND RAGULA BHASKAR
SERIAL NO.: 10/034,197
TITLE: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS
SUBJECT:
AMENDMENT FILED VIA FAX

REMARKS:

PLEASE ACKNOWLEDGE RECEIPT

INCLUDED ARE: INTERVIEW SUMMARY (6 PAGES)
CERTIFICATE OF FAX

PATENT APPLICATION
ATTORNEY DOCKET NO. 3003.2.9A/JWO

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**INTERVIEW SUMMARY** CERTIFICATE OF FAX TRANSMISSION DATE OF FAXING: May 25, 2004 I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being faxed to the USPTO central fax number 703 872-9306 on the date indicated above. Sheila Halterman Sheila Halterman

Mail Stop Non-fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the undersigned's telephonic interview with the Examiner on May 12, 2004, and pursuant to M.P.E.P. § 713.04 and 37 C.F.R. § 1.133, and the Final Office Action mailed April 19, 2004, the undersigned respectfully submits the following remarks.

Introduction

The meaning of claim language "private network" was discussed during the interview. Agreement was not reached.

The Examiner maintains that (i) a LAN may be a private network, (ii) Kitai (U.S. Patent No. 5,948,069) teaches LANs, and (iii) the rejections relying in part or whole on Kitai are therefore proper.

Applicants, Assignee, and the undersigned agree that Kitai teaches LANs, but we disagree with the Examiner's position on the implications of LANs in Kitai. In particular, we submit that it does not matter whether Kitai teaches LANs, because LANs are not private networks.

It is uncontested that Kitai fails to teach frame relay or point-to-point networks; LANs are the only candidates for private networks in Kitai asserted by the Examiner. Thus, the pending rejections rely on the Examiner's assertion that Kitai teaches private networks by teaching LANs. Because LANs are *not* private networks, the rejections based on Kitai are improper and should be withdrawn or reversed.

As promised by the undersigned during the interview, arguments are provided below to more fully explain and show why "private networks" do not include LANs.

The meaning of "private networks" depends on the specification, and on skill in the art

The term "private network" was coined for use in the present application – its first appearance in the body of the specification is in quotes. It is an exercise of the well-established right of patent applicants to be their own lexicographers. Accordingly, the specification **must** be considered when determining what is and what is not meant by "private network". *See* M.P.E.P. § 2111 (PTO gives claims their broadest reasonable meaning while "taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification"). "Private network" cannot be given any meaning whatsoever – it can only be given a meaning that is consistent with the examples and discussion in the application.

The application gives examples of private networks, e.g., frame relay networks and/or point-to-point networks. The application does **not** state that a LAN is a private network; if it did, the Examiner's interpretation would be correct.

On the other hand, the application does not contain an express contrary statement such as "a LAN is not a private network". The usefulness of such a statement was not apparent during preparation of the application. It simply did not occur to the undersigned while preparing the application that someone might read "private network" to include LANs.

In short, the broadest reasonable interpretation of the claims must be consistent both with the specification and with the interpretation that those skilled in the art would reach. M.P.E.P. § 2111. We therefore face the question of how the term "private network" would be understood by one of skill in the art who read the application to gather the intended meaning of that term.

A person of skill understands: LANs are not WANs, and frame relay implies a WAN

A person of skill in the art would understand certain things even before reading the application. For instance, one skilled in the art would understand the following definitions, or similar definitions:

> LAN (n.) Local area network, a network of multiple interconnected data terminals or devices within a local area to facilitate data transfer. Most notable of LAN topologies is ethernet, token ring, FDDI, etc.
>
> WAN (n.) Wide area network, a network of circuits spanning a large region or global in proportions, that is used to transmit data between widespread subscribers. See also LAN.
>
> FRAD (n.) Frame relay assembler/disassembler, used to interface a LAN with a frame relay WAN.
> "High Performance Computing and Communications Glossary 2.1" (1993, 1995) (at http://wotug.ukc.ac.uk/parallel/acronyms/hpccgloss)

Likewise, one of skill would understand that the differences between LANs and WANs go beyond the differences in their geographic scope. For instance, one skilled in the art would have an understanding of the following passage:

> Remote bridging presents several unique internetworking challenges, one of which is the difference between LAN and WAN speeds. Although several fast WAN technologies now are establishing a presence in geographically dispersed internetworks, LAN speeds are often an order of magnitude faster than WAN speeds. **Vast differences in LAN and WAN speeds** can prevent users from running delay-sensitive LAN applications over the WAN.
> "What is Bridging?" (Cisco Systems; copyright 2000) (at http://www.pulsewan.com/data101/bridging_basics.htm) (emphasis added)

One of skill would also associate frame relay with WANs, not with LANs. This is clear from the definition of FRAD above. It is also apparent in the puzzled question "*How would there be Frame Relay in a LAN environment?*" in the following posting:

Re: Encapsulation for LAN emulation

- *From: comp.dcom.cell-relay@usenet.ucs.indiana.edu*
- *Date: Thu, 5 May 1994 17:53:59 -0500*
- *X-Originally-From: rajeev@trillium.com*

V. Srinivas writes,

> Is there any move towards providing LAN emulation on the Frame Relay
> ATM intterworking scenario also ?

LAN Emulation is currently being defined for IEEE 802.3 and 802.5 only. I don't understand the "LAN emulation on the Frame Relay ATM intterworking scenario". How would there be Frame Relay in a LAN environment? Of course if LAN Emulation is carried over an ATM network that interworks with a Frame Relay network to provide end-to-end connectivity, then sure your scenario exists, but that is transparent to LAN Emulation.

Rajeev Gupta — Email : rajeev@trillium.com
Trillium Digital Systems, Inc. — Voice (w) : (310) 479-0500
2001 S. Barrington Ave., Suite 215 — Fax (w) : (310) 575-0172
Los Angeles, CA 90025.

(at http://cell-relay.indiana.edu/mhonarc/cell-relay/1994-May/msg00091.html)

The definitions, article excerpt, and posting provided above are not comprehensive, but the undersigned believes they are representative of how one of skill would understand the relationship between LANs, WANs, and frame relay before reading the application. This includes the understandings that (a) LANs and WANs are not readily interchangeable, and (b) frame relay is associated with WANs as opposed to WANs.

The application's "private networks" would be understood as WANs, not LANs

As explained in the Response filed February 4, 2004, "private networks" are defined and exemplified in the application to include frame relay networks and/or point-to-point networks. As noted above, one of skill would not expect to find frame relay in a LAN, and would instead associate frame relay with WANs. Since the application does not suggest otherwise, one of skill would therefore understand private networks to be WANs rather than LANs.

Moreover, the text and figures of the application treat a private network as something that connects local and remote sites; page 13 refers to "remote sites" and "distant networks". LANs are *local* area networks, whereas WANs are *wide* area networks spanning large regions. One of

skill would therefore understand that the private network connecting one site with another *distant or remote* site is a WAN, not a LAN. It follows that the private network interfaces 706 are interfaces to WANs, not to LANs.

Likewise, the application treats LANs – when they are present – as something located within a site. See, e.g., page 3 line 20 ("LANs at each site 102"). Accordingly, "A site interface 702 connects the controller 502 to the LAN at the site 102." Page 13 lines 21-22. When a LAN is present, the LAN interface in the claimed controller 502 (Figure 7) is thus the *site* interface 702, *not* a private network interface 706.

The discussion of Figure 6 on page 12 also refers to "WAN ports of the routers 104 on each frame cloud 106". This reinforces the understanding of one of skill that private networks 106 (page 4 line 5), such as frame relay networks 106 (page 5 line 5), are WANs rather than LANs.

One of skill would also understand that LANs are optional (see page 17 lines 16-17, and note also that the term "site interface" was used for part 702 rather than "LAN interface" to allow the possibility that no LAN is present at a particular site). By contrast, private networks are not optional – they are always present in the context of the claimed invention because a purpose of the invention is to access them. It follows that LANs are not private networks, because if they were they would be simultaneously optional and mandatory, which does not make sense.

Conclusion

In light of the above, Applicants and Assignee respectfully submit that all pending claims are allowable. They request that the rejections be withdrawn, and that the claims be allowed and passed to issue. Their silence here does not signify agreement or acquiescence in the Office Action's assertions, and they reserve all arguments. No additional fee is believed due. However, the Commissioner is authorized to charge any additional fee or to credit any overpayment in connection with this paper to Deposit Account No. 20-0100.

If allowance is not forthcoming by the end of June, an appeal will be filed. If there are questions, the Examiner is invited to call the undersigned.

DATED this 25th day of May, 2004.

Respectfully submitted,

JOHN W.S. OGILVIE
Registration No. 37,987

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FACSIMILE MEMORANDUM

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DATE: JUNE 7, 2004 PAGE 1 OF: 4
TO: COMMISSIONER FOR PATENTS FACSIMILE NUMBER: (703)872-9306
FROM: JOHN W. L. OGILVIE TRANSMITTED BY: SHEILA
DOCKET NUMBER: MULTIPLE DOCKET NOS. FOR FATPIPE SYSTEMS AKA RAGULA SYSTEMS DEVELOPMENT COMPANY

SUBJECT:
SUBSTITUTE POWER OF ATTORNEY AND CHANGE OF ADDRESS FOR CORRESPONDENCE

REMARKS:

PLEASE ACKNOWLEDGE RECEIPT

IF YOU DO NOT RECEIVE THE COMPLETE DOCUMENT, PLEASE NOTIFY THE SENDER AS SOON AS POSSIBLE.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

CERTIFICATE OF DEPOSIT

DATE OF DEPOSIT: 6/7/04

I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being sent via facsimile No. (703)872-9306 to the Commissioner for Patents, on the date indicated above.

Sheila Halterman
Sheila Halterman

SUBSTITUTE POWER OF ATTORNEY AND CHANGE OF ADDRESS FOR CORRESPONDENCE

FatPipe Systems aka Ragula Systems Development Company, a corporation of the State of Utah, whose address is 4455 South 700 East, Suite 100, Salt Lake City, Utah, 84107, hereby appoints as its attorneys and/or patent agents the law firm of THORPE NORTH & WESTERN, LLP, having a business address of 8180 South 700 East, Suite 200, Sandy, Utah 84070, and VAUGHN W. NORTH, Registration No. 27,930; M. WAYNE WESTERN, Registration No. 22,788; CLIFTON W. THOMPSON, Registration No. 36,947; GARRON M. HOBSON, Registration No. 41,073; PETER M. DE JONGE, Registration No. 47,521; WEILI CHENG, Registration No. 44,609; DAVID R. MCKINNEY, Registration No. 42,868; STEVE M. PERRY, Registration No. 45,357; GARY P. OAKESON, Registration No. 44,266; DAVID W. OSBORNE, Registration No. 44,989; JASON R. JONES, Registration No. 51,008; ERIK S. ERICKSEN, Registration No. 48,954; JOHN W.L. OGILVIE, Registration No. 37,987; and CHRISTOPHER L. JOHNSON, Registration No. 46,809; all with full power of substitution and revocation, to prosecute applications and to transact all business in the Patent and Trademark Office connected with regard to the following:

Revocation Of Power Of Attorney
With New Power Of Attorney And
Change Of Correspondence Address
Page 2

DOCKET NO.	TITLE	SERIAL/PATENT NO.
22807.NP (formerly 3003.2.1A)	System and Method for Transmitting a User's Data Packets Concurrently Over Different Telephone Lines Between Two Computer Networks	Pat. No. 6,253,247
22809 (formerly 3003.2.3)	Combining Routers to Increase Concurrency and Redundancy in External Network Access	Pat. No. 6,295,276
22814.NP (formerly 3003.2.8A)	Combining Routers to Increase Concurrency and Redundancy in External Network Access	Pat. No. 6,493,341
22814.CIP (formerly 3003.2.8B)	Combining Routers to Increase Concurrency and Redundancy in External Network Access	Serial No. 10/263,497
22973.NP (formerly 3003.2.11A)	Tools and Techniques for Directing Packets Over Disparate Networks	Serial No. 10/361,837
22972.NP (formerly 3003.2.10B)	Domain Name Resolution Making IP Address Selections in Response to Connection Status When Multiple Connections are Present	Serial No. 10/034,190
22971.NP (formerly 3003.2.9A)	Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks	Serial No. 10/034,197

All correspondence concerning this application should be directed to:

John W. L. Ogilvie
THORPE NORTH & WESTERN, LLP
Customer No. 20,551
P.O. Box 1219
Sandy, Utah 84091-1219
Telephone: (801) 566-6633
Facsimile: (801) 566-0750

All previous powers of attorney with regard to these matters are hereby revoked.

Dated this 11 day of May 2004 at Salt Lake City, UT (City, State).

FatPipe Systems
Aka: Ragula Systems Development Company

By: Sanchaita Datta
Name: SANCHAITA DATTA
Title: V.P.

AF
2155
IFW

PATENT APPLICATION
ATTORNEY DOCKET NO. 3003.2.9A / 22971.NP

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**NOTICE OF APPEAL** **CERTIFICATE OF MAILING** DATE OF MAILING: 7/14/04 I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being mailed, postage paid, in a package addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated above. Sheila Hatterman Printed Name: Sheila Hatterman

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Pursuant to 37 C.F.R. § 1.191 *et seq.* Applicants and Assignee hereby appeal from the decision of the Examiner rejecting pending claims 1-21 as set forth in a Final Office Action mailed April 19, 2004. Check no. 19823 for $165.00 is enclosed for the filing fee for this Notice of Appeal (Small Entity).

This application has been granted ***accelerated*** examination status.

07/20/2004 SZEWDIE1 00000124 10034197
01 FC:2401 165.00 OP

Dated this July 14, 2004.

Respectfully submitted,

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UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

20551 7590 07/23/2004

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SANDY, UT 84070

EXAMINER	
NGUYEN, THU HA T	

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)	
	10/034,197	Sanchita Datta	
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED on May 25, 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☐ The proposed amendment(s) will not be entered because:

   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *See attachment*.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: *none*.

   Claim(s) objected to: *none*.

   Claim(s) rejected: *1-21*.

   Claim(s) withdrawn from consideration: *none*.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

Attachment to Advisory Action

1. Applicant's arguments filed May 25, 2004 have been fully considered but they are not persuasive because of the following reasons:

2. Applicant argues that Kitai does not teach or suggest private networks. In response to Applicants' argument, Examiner asserts that Kitai does teach LAN 3050, 3100, 3200, 3300, 3400 (figures 3, 7) as private networks as broadly disclosed in Applicants' claimed language.

3.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., private network, e.g., frame relay network and/or point-to-point networks, and frame relay implies a WAN) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. Applicant argues that a private network is a frame relay network that would be understood and implied as WAN. Examiner asserts that the dictionary definition of LAN is a computer network that spans a relatively small area. Most LANs are confined to a single building or group of building (i.e., Intranet, Ethernet). One LAN can be connected to other LANs over any distance via telephone lines and radio waves. A system of LANs connected in this way is called a WAN. Thus, Examiner concludes

that Kitai does teach private network since Kitai teaches more than one LAN connected via way of telephone line and radio way (figure 3). Moreover, in a LAN or Intranet system, a user from outside cannot not access to Intranet without pass through firewall or security authentication, likewise user from Intranet cannot access to Internet either, if that user's request does not pass through firewall or any kind of security authentication. Therefore, Examiner concludes that Kitai does disclose and read on the private network limitations.

5. As a result, cited prior arts do disclose a system and method for controlling access to multiple independent private networks, as broadly claimed by the Applicants. Applicants clearly have still failed to identify specific claim limitations that would define a clearly patentable distinction over prior arts.

6. Therefore, the examiner asserts that cited prior art teaches or suggests the subject matter broadly recited in independent claims 1, 13 and 19. Claims 2-12, 14-18, and 20-21 are also rejected at least by virtue of their dependency on independent claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (703) 305-7447. The examiner can normally be reached Monday through Friday from 8:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SPE Hosain T. Alam, can be reached at (703) 308-6662.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications.

Thu Ha Nguyen

July 19, 2004

IFW
AF

PATENT APPLICATION
ATTORNEY DOCKET NO. 22971.NP / 3003.2.9A

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**APPEAL BRIEF** CERTIFICATE OF MAILING DATE OF MAILING: 8/17/04 I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being mailed, postage paid, in a package addressed to Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated above.: Sheila Halterman Printed Name: Sheila Halterman

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicants and Assignee hereby appeal from the Final Office Action mailed April 19, 2004. The Notice of Appeal was filed July 14, 2004. This application has been granted ***accelerated*** examination status.

Third Party Submission

The Final Office Action does not refer to the third-party submission that was filed, on behalf of an unidentified third party, on or about April 5, 2004. References were submitted to the Office by a third party in each of the following applications of the Assignee: 10/034190, 10/034197, 10/361837, 10/263497. That submission was made two weeks before the mailing of the Final Office Action, but it is not clear to the undersigned whether the Examiner has yet received and considered the submission's references. If copies of the submission's references

have not reached the Examiner, they will be submitted by the undersigned on request. Otherwise, the undersigned will assume that the Examiner does have copies of the third-party submission references and has considered them before answering this Appeal Brief. The undersigned respectfully submits that this approach is consistent with the Office's laudable effort to reduce unnecessary paperwork.

Real Party in Interest

The real party in interest in this appeal is Assignee, Ragula Systems (FatPipe Networks).

Related Appeals and Interferences

None.

Status of Claims

Claims 1-21 were rejected in the Final Office Action, are still pending, and are now appealed.

Status of Amendments

No amendments were filed after the Final Office Action. However, a detailed Interview Summary was filed on May 25, 2004.

Summary of Invention

The present invention relates to tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration, as shown for instance in Figure 5 or Figure 6. Frame relay networks 106 and point-to-point networks are each "private networks"; *see* application at page 9 lines 10-12. In some embodiments a controller 502 according to the invention comprises a site interface 702 connecting the controller to a site 102, at least two private network interfaces 706, and a packet path selector 704 which selects between private network interfaces according to a specified

criterion. A site may include a local area network; *see* discussion of Figure 7 on pages 13-14, and page 17 lines 15-17.

The controller receives 804 a packet through the site interface and sends 814 the packet through the private network interface that was selected 806 by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion 808 that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability criterion 810 that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion 812 that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

The invention also provides other controller embodiments, and it provides method embodiments. The claims define the invention; this summary is provided merely as an introduction and to assist in understanding the claims.

Issues

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 1, 3, and 8-9 properly rejected under Section 102 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 2, 4, 11, and 13-16 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?
4. Were claims 5 and 17 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
5. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
6. Were claims 10, 12, and 18 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?

7. Were claims 19-21 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?

Grouping of Claims

Solely for purposes of this appeal, the claims are grouped as follows:

Group I: claims 1, 3, and 8-9

Group II: claims 2, 4, 11, and 13-16

Group III: claims 5 and 17

Group IV: claims 6 and 7

Group V: claims 10, 12, and 18

Group VI: claims 19-21

In this appeal, each claim in a given group stand or fall together.

Argument

By way of context, the following papers are among those filed or mailed in this case:

Provisional	provisional application, filed December 29, 2000
Application	non-provisional application, filed December 28, 2001
First IDS	information disclosure statement, filed April 29, 2002
Second IDS	information disclosure statement, filed March 14, 2003
Third IDS	information disclosure statement, filed April 9, 2003
Fourth IDS	information disclosure statement, filed April 11, 2003
Petition	petition to accelerate examination, filed April 21, 2003
Fifth IDS	information disclosure statement, filed June 3, 2003
Petition Grant	decision granting Petition, mailed October 8, 2003
First Action	first office action on the merits, mailed November 5, 2003
Response	response, filed February 4, 2004
Third-Party	third party submission, filed on or about April 5, 2004
Final Action	final office action, mailed April 19, 2004

Interview Summary interview summary, filed May 25, 2004

Appeal Notice notice of appeal, filed July 14, 2004

The shortcomings of the rejections will now be reviewed. Arguments and statements by Applicants made earlier but not repeated here are also part of the record for this appeal and are not waived, although they may be modified or supplemented here. To keep this brief short while still trying to provide an adequate basis for review, some observations and arguments that might have been presented are not included. Accordingly, Applicants' silence here with respect to particular statements by the Office does not indicate their agreement or acquiescence.

A local area network is not a "private network" (Groups I – IV, VI)

Each rejection, under Section 102 or under Section 103, depends on Kitai. With the possible exception of Group V claims, whose rejection is based in part on Albright (a reference that discusses frame relay networks at length and in detail), the claim rejections all apparently rely on the Examiner's assertion that the claim term "private network" includes the local area network disclosed in Kitai. Applicants and Assignee agree with the Examiner that Kitai discloses local area networks (LANs). But they do not agree that a LAN is a "private network" as used in the claims. A LAN is not a private network.

The meaning of "private networks" depends on the specification, and on skill in the art. The term "private network" was coined for use in the present application – its first appearance in the body of the specification is in quotes. It is an exercise of the well-established right of patent applicants to be their own lexicographers. Accordingly, the specification **must** be considered when determining what is and what is not meant by "private network". *See* M.P.E.P. § 2111 (PTO gives claims their broadest reasonable meaning while "taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification"). "Private network" can only be given a meaning that is consistent with the examples and discussion in the application.

As explained in the Response, "private networks" are defined and exemplified in the application to include frame relay networks and/or point-to-point networks:

"Frame relay networks are an example of a 'private network'. Another example is a point-to-point network, such as a T1 or T3 connection." Application at page 2 lines 3-4.

" 'Frame relay networks' or 'private networks' does not rule out the use of an ISDN link or other backup for a particular frame relay or point-to-point private network, but it does require the presence of multiple such networks – Figure 2, for instance, does not meet this requirement." Application at page 9 lines 16-20.

"The present invention provides tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration." Application at page 5 lines 20-22 (summary of invention).

The application does **not** state that a LAN is a private network; if it did, the Examiner's interpretation would be correct. On the other hand, the application does not contain an express contrary statement such as "a LAN is not a private network". The usefulness of such a statement was not apparent during preparation of the application. It simply did not occur to the undersigned while preparing the application that someone might read "private network" to include LANs.

Accordingly, the broadest reasonable interpretation of the claims must be consistent both with the specification and with the interpretation that those skilled in the art would reach. M.P.E.P. § 2111. We therefore face the question of how the term "private network" would be understood by one of skill in the art who read the application to gather the intended meaning of that term.

A person of skill understands that LANs are not WANs, and that frame relay implies a WAN. It is undisputed that a person of skill in the art would understand certain things even before reading the application. For instance, one skilled in the art would understand the following definitions, or similar definitions:

> LAN (n.) Local area network, a network of multiple interconnected data terminals or devices within a local area to facilitate data transfer. Most notable of LAN topologies is ethernet, token ring, FDDI, etc.

WAN (n.) Wide area network, a network of circuits spanning a large region or global in proportions, that is used to transmit data between widespread subscribers. See also LAN.

FRAD (n.) Frame relay assembler/disassembler, used to interface a LAN with a frame relay WAN.
"High Performance Computing and Communications Glossary 2.1" (1993, 1995) (at http://wotug.ukc.ac.uk/parallel/acronyms/hpccgloss)

Likewise, one of skill would understand that the differences between LANs and WANs go beyond the differences in their geographic scope. For instance, one skilled in the art would have an understanding of the following passage:

> Remote bridging presents several unique internetworking challenges, one of which is the difference between LAN and WAN speeds. Although several fast WAN technologies now are establishing a presence in geographically dispersed internetworks, LAN speeds are often an order of magnitude faster than WAN speeds. **Vast differences in LAN and WAN speeds** can prevent users from running delay-sensitive LAN applications over the WAN.
> "What is Bridging?" (Cisco Systems; copyright 2000) (at http://www.pulsewan.com/data101/bridging_basics.htm) (emphasis added)

One of skill would also associate frame relay with WANs, not with LANs. This is clear from the definition of FRAD above. It is also apparent in the puzzled question "*How would there be Frame Relay in a LAN environment?*" in the following posting:

Re: Encapsulation for LAN emulation

- *From: comp.dcom.cell-relay@usenet.ucs.indiana.edu*
- *Date: Thu, 5 May 1994 17:53:59 -0500*
- *X-Originally-From: rajeev@trillium.com*

```
V. Srinivas writes,

> Is there any move towards providing LAN emulation on the Frame Relay
> ATM intterworking scenario also ?

LAN Emulation is currently being defined for IEEE 802.3 and 802.5
only. I don't understand the "LAN emulation on the Frame Relay ATM
intterworking scenario". How would there be Frame Relay in a LAN
environment? Of course if LAN Emulation is carried over an ATM
network that interworks with a Frame Relay network to provide
end-to-end connectivity, then sure your scenario exists, but that
is transparent to LAN Emulation.

-----------------------------------------------------------------
Rajeev Gupta                        Email     : rajeev@trillium.com
Trillium Digital Systems, Inc.      Voice (w) : (310) 479-0500
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2001 S. Barrington Ave., Suite 215 Fax   (w) : (310) 575-0172
Los Angeles, CA 90025.
------------------------------------------------------------------
(at http://cell-relay.indiana.edu/mhonarc/cell-relay/1994-May/msg00091.html)
```

The definitions, article excerpt, and posting provided above were previously submitted in the Interview Summary, with which the Examiner has not disagreed. As noted there, although they are not comprehensive the undersigned believes that they are representative of how one of skill would understand the relationship between LANs, WANs, and frame relay before reading the application. This includes the understandings that (a) LANs and WANs are not readily interchangeable, and (b) frame relay is associated with WANs as opposed to WANs.

One of skill would not expect to find frame relay in a LAN, and would instead associate frame relay with WANs. Since the application does not suggest otherwise, one of skill would therefore understand private networks to be WANs rather than LANs.

Moreover, the text and figures of the application treat a private network as something that connects local and remote sites; page 13 refers to "remote sites" and "distant networks". LANs are *local* area networks, whereas WANs are *wide* area networks spanning large regions. One of skill would therefore understand that the private network connecting one site with another *distant or remote* site is a WAN, not a LAN. It follows that the private network interfaces 706 are interfaces to WANs, not to LANs.

Likewise, the application treats LANs – when they are present – as something located within a site. See, e.g., page 3 line 20 ("LANs at each site 102"). Accordingly, a "site interface 702 connects the controller 502 to the LAN at the site 102." Page 13 lines 21-22. When a LAN is present, the LAN interface in the claimed controller 502 (Figure 7) is thus the *site* interface 702, *not* a private network interface 706.

The discussion of Figure 6 on page 12 also refers to "WAN ports of the routers 104 on each frame cloud 106". This reinforces the understanding of one of skill that private networks 106 (page 4 line 5), such as frame relay networks 106 (page 5 line 5), are WANs rather than LANs.

One of skill would also understand that LANs are optional. See page 17 lines 16-17, and note also that the term "site interface" was used for part 702 rather than "LAN interface" to allow

the possibility that no LAN is present at a particular site. By contrast, private networks are not optional – they are always present in the context of the claimed invention because a purpose of the invention is to access them. It follows that LANs are not private networks, because if they were they would be simultaneously optional and mandatory, which does not make sense.

In short, "private networks" as claim limitations are frame relay networks and/or point-to-point networks. The application's "private networks" would be understood as WANs, not as LANs. Kitai's LANs do not serve as "private networks" and the rejections that rely on Kitai to supply the teaching of a private network (Groups I-IV, VI) should be withdrawn or reversed for at least that reason.

Claims 1, 3, and 8-9 (Group I) were not properly rejected under Section 102 in view of Kitai

It is well-established law that a rejection under Section 102 is not proper when the cited reference fails to teach one or more of the claimed limitations – all claimed limitations must be taught by the reference, or else the rejection will be overturned. *See, e.g.,* M.P.E.P. § 2131 and cases cited therein. As explained below, the rejections of claims 1, 3, and 8-9 are not proper because Kitai fails to teach the "private networks" limitations of those claims.

Claim 1 is limited to "private networks" in a parallel network configuration. Claim 1 is expressly limited to a "controller which controls access to multiple independent private networks...." Claim one expressly recites "at least two private network interfaces" to access the parallel networks. A "private network interface" is an interface to a "private network"; see, e.g., the application at page 16 lines 1-3, which states: "The controller 502 also includes two or more private network interfaces 706, namely, so there is at least one interface 706 per private network 106 to which the controller 502 controls access." (emphasis added). Thus, parallel "private networks" are clearly limitations of claim 1, and hence parallel "private networks" are also limitations of dependent claims 3 and 8-9.

Kitai does not teach such private networks. As explained above, the LANs disclosed in Kitai are not private networks. A keyword search of Kitai reveals no use of "frame relay", and no use of "point-to-point". There is likewise no discussion of "T1" or "T3" connections in Kitai. The term "private network" was coined for use in the present application, so it would not

necessarily mean the same thing even if it were present in Kitai, but it is not present in Kitai. Accordingly, Kitai does not teach private networks.

Because Kitai fails to teach the parallel "private networks" limitations of claim 1 and its dependent claims, it is not proper to reject those claims under Section 102 based on Kitai. The rejections should be withdrawn or reversed.

Claims 2, 4, 11, and 13-16 (Group II) were not properly rejected under Section 103 in view of Kitai combined with Pearce

These rejections are improper because the references were not properly combined, and are also improper because the combination fails to teach private networks.

As a justification for combining Kitai and Pearce, the Office Action asserts at the top of page 5 of the First Action that the combination would have been obvious "because it would have an efficient communication system to control and select the reliable, qualifiable network among multiple networks." No supporting citation to Kitai, to Pearce, or to any other source of prior art was given. After the Response pointed out that the assertion was unsupported, the Final Action repeated the assertion with a citation to "col. 2 lines 61-col. 3 lines 5". The Final Action failed to state whether this was a citation to Kitai or a citation to Pearce, but it is apparently a citation to Pearce, since it would otherwise begin in mid-sentence.

The Office has not identified anything specific in the cited portion of Pearce that would have suggested or motivated one of skill to consider Kitai in the context of Pearce. Pearce discusses a prioritized list of qualifying networks, but Kitai does not mention "prioritized" networks or "qualifying" networks. Pearce also discusses more general concepts here, such as networks, transmission, and receiving devices, which do appear in Kitai but also appear in other references. The Office fails to provide specific evidence of anything in Pearce that would have led one of skill to Kitai, as opposed to any other reference.

It is well-established patent law that a rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. *See, e.g.,* M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient and reliable is not specific **evidence** that one of skill would have combined these two

particular references. The cited portion of Pearce also fails to provide the necessary suggestion or motivation. Because the combination is improper, the rejections under Section 103 based on Kitai with Pearce should be withdrawn or reversed.

Furthermore, the combination does not teach private networks. Independent claim 13, like independent claim 1, expressly requires "private networks" and "private network interfaces" (namely, interfaces to private networks). But a keyword search of Pearce reveals no use of "frame relay", and no use of "point-to-point". There is likewise no discussion of "T1" or "T3" connections in Pearce. There is no use of "private network" in Pearce. The Final Action asserts that packet-switched Ethernet networks, mentioned in Pearce at column 2 line 22, are private networks, but Ethernet is treated in the application (page 14 line 2) as a LAN technology. As discussed above, LANs are not private networks.

Accordingly, even if Pearce and Kitai are combined they fail to teach the "private network" limitations of these claims. This is another reason to withdraw or reverse the rejections under Section 103 based on Kitai with Pearce.

Claims 5 and 17 (Group III) were not properly rejected under Section 103 in view of Kitai combined with Dutta

These rejections are improper because the references were not properly combined, and are also improper because the combination fails to teach private networks.

As a justification for combining Kitai and Dutta, the First Office Action asserts on page 9 that the combination would have been obvious "because it would improve the data transferring more secure and efficient." No supporting citation to Kitai, to Dutta, or to any other source of prior art was given. After the Response pointed out that the assertion was unsupported, the Final Action repeated the assertion with a citation to "col. 1 lines 29-63". The Final Action failed to state whether this was a citation to Kitai or a citation to Dutta, but it is apparently a citation to Dutta, since it would otherwise begin in mid-sentence. The Final Action also asserts, on page 3:

> Dutta teaches a firewall regulates the flow of packetized information and prevent unauthorized access to or from a private network. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

The Office has not identified anything specific in the cited portion of Dutta that would have suggested or motivated one of skill consider Kitai in the context of Dutta. Dutta does discuss a firewall and security, but Kitai does not mention "firewall" or "security". Dutta also discusses more general concepts here, such as packets and flags, which do appear in Kitai but also appear in other references. The Office fails to provide specific evidence of anything in Dutta that would have led one of skill to Kitai, as opposed to any other reference.

Furthermore, the combination does not teach private networks. As pointed out in the Response, and not rebutted in the Final Action, a keyword search of Dutta reveals no use of "frame relay", and no use of "point-to-point". There is likewise no discussion of "T1" or "T3" connections in Dutta. Accordingly, even if Kitai and Dutta are combined, they fail to teach the "private network" limitations of the claims. This is another reason to withdraw or reverse the rejections under Section 103 based on Kitai with Dutta.

Claims 6 and 7 (Group IV) were not properly rejected under Section 103 in view of Kitai combined with Goldszmidt

As a justification for combining Kitai and Goldszmidt, the Office Action asserts on page 10 of the First Action that the combination would have been obvious because it "would have an efficient communication system to process control and monitor the delivery of packet to control the traffic load." After the Response pointed out that the assertion was unsupported, the Final Action repeated the assertion with a citation, apparently to Goldszmidt:

> In this case, the reason to combine the teachings of Kitai and Gldszmidt to have the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load (col. 2 lines 65-col. 3 lines 11).

But Goldszmidt is about *receiving* packets out of sequence, not *sending* them out of sequence. As noted at column 11 lines 7-9: "Each packet may travel along a different route and arrive at their destination at different times or out of sequence and the receiving computer reassembles the original information." Goldszmidt views out-of-sequence packets as a problem to be addressed, not as an advantage. Goldszmidt does not teach intentionally sending packets out of sequence, as required by claims 6 and 7. Kitai does not even discuss packet "sequence".

Accordingly, the combination of Kitai with Goldszmidt is not motivated by Goldszmidt, and even if it were it fails to teach the claimed limitation of sending packets out of sequence. The rejections should be withdrawn or reversed.

Further, with respect to the encrypted sequence number limitation of claim 7, neither Kitai nor Goldszmidt even mentions encryption, much less teaches the claimed limitation. This is yet another reason to withdraw the rejection of claim 7.

Claims 10, 12, and 18 (Group V) were not properly rejected under Section 103 in view of Kitai combined with Albright

As a justification for combining Kitai and Albright, the Office Action asserts on page 11 of the First Action and page 14 of the Final Action that the combination would have been obvious "because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure." But no supporting citation to Kitai, to Albright, or to any other source of prior art was given to support this asserted motivation. A general unsupported assertion that the combination would be efficient is not specific **evidence** that one of skill would have combined these two particular references. The portion of Albright cited by the Office does not point the reader toward Kitai any more than it points to some other network reference. Kitai does not mention "frame relay" or "clock", the features highlighted in the office actions next to the citation.

The Final Action also asserts Albright's passing mention of Ethernet as a reason one of skill would have combined Albright with Kitai. But Kitai does not mention "Ethernet".

Likewise, although the Final Action asserts Albright's network interface teachings as a ground for combining Albright and Kitai, those network interfaces in Albright are interfaces to a frame relay network; Kitai does not mention "frame relay".

Moreover, the alleged justification for combining the references, and the reliance on Albright, each apparently confuse *serial* networks with *parallel* networks. Serial networks are in series, with a packet traveling first through one network and then through the other; if one of the networks in a serial configuration fails, then a packet cannot complete its trip. Parallel networks

are side-by-side, so a packet travels through one network or the other network but not both; if one of the networks fails then the packet can complete its trip without using the failed network by using the other network instead. Albright teaches use of serial network configurations, as shown for instance in Albright Figures 1, 2, and 3. Figure 2 of Albright shows parallel *links* between two serial networks but the networks themselves are in series, not parallel. By contrast, the present invention is directed to *parallel networks*, as stated expressly in the claims and illustrated for example in application Figures 5 and 6.

Albright's reliance on series networks is further evident in Albright's focus on NNIs – network-to-network interfaces used to connect two networks in series. NNI's are discussed in the present application's discussion of prior art at page 5:

> Figure 4 illustrates a prior art response to the incompatibility of frame relay networks of different carriers. A special "network-to-network interface" (NNI) 402 is used to reliably transmit data between the two frame relay networks A and B. NNIs are generally implemented in software at carrier offices. Note that the configuration in Figure 4 does not provide additional reliability by using two frame relay networks 106, because those networks are in series rather than in parallel. If either of the frame relay networks A, B in the Figure 4 configuration fails, there is no path between site 1 and site 2; adding the second frame relay network has not increased reliability. By contrast, Figure 1 increases reliability by placing the frame relay networks in parallel, so that an alternate path is available if either (but not both) of the frame relay networks fails. Someone of skill in the art who was looking for ways to improve reliability by putting networks in parallel would probably not consider NNIs pertinent, because they are used for serial configurations rather than parallel ones, and adding networks in a serial manner does not improve reliability.

Accordingly, the rejections based on Albright and Kitai should be withdrawn or reversed, because the combination is improper and because the combination fails to teach the claimed parallel private network innovations.

Claims 19-21 (Group VI) were not properly rejected under Section 103 in view of Kitai combined with Pearce and with Goldszmidt

Claim 19 provides a new method for combining connections for access to multiple independent parallel frame relay networks. As elsewhere in the office actions, however, the only asserted ground for combining the references to reject this invention is a broad one ("reliability

and security" and efficiency) that could be asserted for almost any combination of references – these reasons are not specific to these particular references. Nor is any evidence given of a suggestion or motivation in the art that would have led one of skill to focus on and combine these three references rather than focusing on other references. For at least this reason, the rejections of claims 19-21 should be withdrawn.

Conclusion

For at least the reasons explained above, all rejections should be withdrawn or reversed. If any questions might be answered by telephone, the undersigned invites a call at the Office's convenience.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Appeal Brief to Deposit Account No. 20-0100.

Dated this August 17, 2004.

Respectfully submitted,

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CLAIMS ON APPEAL

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	303	(frame adj relay adj network$2 or ATM) same controller same router	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 16:26
L2	0	(frame adj relay adj network$2 or ATM) same controller same router (path$4 or channel$4 or link$4) same select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 16:27
L3	7	(frame adj relay adj network$2 or ATM) same controller same router same (path$4 or channel$4 or link$4) same select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 16:59
L4	2	"6775235".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 16:29
L5	1	"5398012".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:30
L6	1	"5420862".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:31
L7	1	"6665702".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:31
L8	1	"6493349".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:32
L9	1	"6493341".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:32
L10	1	"6456594".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:33
L11	1	"6449259".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:33
L12	1	"6438100".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:34
L13	1	"6339595".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:35
L14	1	"6339595".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:35
L15	1	"6295276".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:35
L16	1	"6253247".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:36
L17	1	"6128298".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:36

L18	1	"5948069".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:37
L19	1	"5898673".PN.	USPAT; USOCR	ADJ	ON	2004/12/06 16:37
L20	40	disparat$4 same network and frame adj relay adj network	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 17:00
L21	11	disparat$4 same network and frame adj relay adj network and (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 17:22
L22	3	disparat$4 adj network and frame adj relay adj network and (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 17:23
L23	119	frame adj relay adj network and (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 17:23
L24	7	frame adj relay adj network same (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 17:25
L25	4	virtual adj private adj network and frame adj relay adj network same (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/06 17:25

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L7	1	(private adj network adj interface$3 or frame adj relay adj interface$4) same (path$3 or link$4 or rout$4) same select$4 same load adj balanc$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 10:25
L8	1	(private adj network adj interface$3 or frame adj relay adj3 interface$4) same (path$3 or link$4 or rout$4) same select$4 same load adj balanc$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 10:26
L9	10	(private adj network adj interface$3 or frame adj relay adj3 interface$4) same (path$3 or link$4 or rout$4) same select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 10:26
L10	618	LAN same (gateway or proxy or switch or router) same private adj (network or firewall)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L11	498060	site$3 (gateway or proxy or switch or router) same private adj (network or firewall)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L12	369	site$3 same (gateway or proxy or switch or router) same private adj (network or firewall)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L13	12	site$3 same (gateway or proxy or switch or router) same private adj (network or firewall).ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L14	20	site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall).ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L15	100	site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) and load adj balanc$6 and redirect$6	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L16	23	site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L17	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 same (packetiz$6 or datagram) and sequenc$4 near3 order	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L18	1	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 and (packetiz$6 or datagram) and sequenc$4 near3 order	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L19	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 same (packetiz$6 or datagram)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L20	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 with (packetiz$6 or datagram)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L21	0	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 near (packetiz$6 or datagram)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L22	35	(gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall) same load adj balanc$6 and redirect$6 and (packetiz$6 or datagram)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L23	6	(gateway or proxy) same load adj balanc$4 same redirect$4 same (frame adj relay or private adj network or firewall)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L24	11	(gateway or proxy) same load adj balanc$4 same redirect$4 same (packet$6 or datagram)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L25	6	(gateway or proxy) same load adj balanc$4 same redirect$4 same (private adj network or firewall)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L26	2	(gateway or proxy) same load adj balanc$4 same redirect$4 same (private adj network or firewall) and fail$4 same over	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L27	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over same fram3 adj relay	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L28	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over same frame adj relay	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L29	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over and frame adj relay	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L30	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj overy	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L31	0	(gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L32	0	client same server same (gateway or proxy) same load adj balanc$4 same redirect$4 same fail$4 adj over	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L33	0	client same server same (gateway or proxy) same load adj balanc$4 same redirect$4 and fail$4 adj over	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L34	23	client same server same (gateway or proxy) same load adj balanc$4 and fail$4 adj over	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L35	12	(gateway or proxy) same control same select$4 same load adj balanc$4 and (frame adj relay or private adj network)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L36	24	(gateway or proxy) same control same select$4 same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L37	1	370/401.ccls. and (gateway or proxy) same control same select$4 same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L38	48	370/401.ccls. and (gateway or proxy) same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L39	2	370/401.ccls. and (gateway or proxy) same load adj balanc$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L40	18	370/401.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L41	20	(site$3 same (gateway or proxy or switch or router) same (frame adj relay or private adj network or firewall).ab.)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L42	0	709/105.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L43	5	709/220.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L44	11	709/225.ccls. and (gateway or proxy) same load adj balanc$4 and private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L45	0	client same server same (gateway or proxy) same control same load adj balac$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L46	23	client same server same (gateway or proxy) same control same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L47	6	client same server same (gateway or proxy) same control same load adj balanc$4 same (private adj network or intranet)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L48	18	client same server same (gateway or proxy) and control same load adj balanc$4 same (private adj network or intranet)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L49	0	(gateway or proxy) same control same load adj balanc$4 same ((multiple or plurality) near3 frame adj relay$2)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L50	0	(gateway or proxy) same control same load adj balanc$4 same ((multiple or plurality) same frame adj relay$2)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L51	4	(gateway or proxy) same control same load adj balanc$4 same ((multiple or plurality) same private adj network)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L52	475922	client same server same control$4 same select$4 same private adjn network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L53	2	client same server same load adj balanc$4 same control$4 same select$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L54	2	client same server same control$4 same select$4 same load adj balanc$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L55	12	client same server same control$4 same select$4 and load adj balanc$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L56	29	client same server same control$4 same select$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L57	0	client same server same control$4 same select$4 same private adj network same best adj rout$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L58	3686	client same server same control$4 same select$4 rout$4 same private adj network same best adj rout$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L59	6520	client same server same control$4 same select$4 rout$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L60	10	client same server same control$4 same select$4 same rout$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L61	8	client same server same control$4 same select$4 same path$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L62	1	"5948069".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L63	1	"6112248".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L64	2	("1041776").PN.	US-PGPUB; USPAT; USOCR; IBM_TDB	OR	OFF	2004/12/07 11:55
L65	69	multiple same ARP same IP same system	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L66	0	multiple same ARP same IP same system.ti.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L67	12	multiple same ARP same IP same system same router$1	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L68	13	multiple same ARP same IP same system same router$1	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L69	267	(gateway or router or proxy) same private adj network same select$4	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L70	170	(gateway or router or proxy) same private adj network same select$4 same (path or link or line or route$4)	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L71	11	(gateway or router or proxy) same private adj network same select$4 same (path or link or line or route$4).ab.	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L72	2	(gateway or router or proxy) same select$4 same control$4 same private adj network same (path or link or line or route$4).ab.	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55

L73	18	(gateway or router or proxy) same select$4 same controll$4 same private adj network same (path or link or line or route$4)	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L74	28	(gateway or router or proxy) same private adj network same select$4 same path	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L75	166	(gateway or router or proxy) same select$4 same (path or rout$4) same private adj network	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L76	166	(gateway or router or proxy) same (select$4 same (path or rout$4)) same private adj network	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L77	76	(gateway or router or proxy) same (select$4 near4 (path or rout$4)) same private adj network	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L78	56	(gateway or router or proxy) same (select$4 adj4 (path or rout$4)) same private adj network	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L79	1873	(gateway or router or proxy) same (select$4 ad4 (path or rout$4)) same private adj network	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L80	22	(gateway or router or proxy) same (select$4 adj (path or rout$4)) same private adj network	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L81	0	(gateway or router or proxy) same (select$4 adj4 (path or rout$4)) same private adj network.ab.	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L82	19	(gateway or router or proxy) same (select$4 adj4 (path or rout$4)) same private adj network same control$4	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 12:56
L83	19	(gateway or router or proxy) same control$4 same (select$4 adj4 (path or rout$4)) same private adj network	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 11:55
L85	87	709/250.ccls. and load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L86	27	709/250.ccls. and load adj balanc$4 same select$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L87	0	709/250.ccls. and load adj balanc$4 same select$4 same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L88	31	709/250.ccls. and load adj balanc$4 and multiple adj network$2	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L89	0	709/250.ccls. and load adj balanc$4 and multiple adj network$2 same select$4 same path	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L90	9	709/250.ccls. and load adj balanc$4 and multiple adj network$2 and select$4 same path	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L91	14	709/250.ccls. and load adj balanc$4 and multiple adj network$2 and private	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L92	10	709/250.ccls. and load adj balanc$4 and multiple adj network$2 and firewall	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L93	5	709/250.ccls. and load adj balanc$4 and multiple adj network$2 and frame adj relay	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L94	11	709/250.ccls. and load adj balanc$4 and frame adj relay	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L95	20	((multiple or plurality) same network$3) same (private adj network or frame adj relay or ATM) same load adj balanc$4 same control$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L96	0	709/250.ccls. and ((multiple or plurality) same network$3) same (private adj network or frame adj relay or ATM) same load adj balanc$4 same control$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L97	1	709/203.ccls. and ((multiple or plurality) same network$3) same (private adj network or frame adj relay or ATM) same load adj balanc$4 same control$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L98	0	"5910951.pn.control$4"	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L99	1	"5809415".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L100	1	"5910951".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L101	1	"6061679".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L102	1	("20020138618").PN.	US-PGPUB; USPAT; USOCR; IBM_TDB	OR	OFF	2004/12/07 11:55
L103	0	point adj3 point same private adj network same frame adj realy	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L104	0	point adj3 point same private adj network and frame adj realy	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L105	1	point adj3 point and private adj network and frame adj realy	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L106	0	point adj3 point and private adj network and frame adj realy and load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L107	1	private adj network and frame adj realy and load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L108	437	private adj network and ATM and load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L109	149	private adj network same ATM and load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L110	5	private adj network same ATM same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L111	5	(proxy or gateway or control$4 or load adj balancer) same private adj network same ATM same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L112	202	(proxy or gateway or control$4 or load adj balancer) same (private adj network or ATM) same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L113	4	(proxy or gateway or control$4 or load adj balancer) same (private adj network or ATM) same load adj balanc$4 same select$4 same path	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L114	4	(proxy or gateway or control$4 or load adj balancer) same (private adj network or ATM) same load adj balanc$4 same select$4 same path$3	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L115	4	(proxy or gateway or control$4 or load adj balancer) same (private adj networks or ATM) same load adj balanc$4 same select$4 same path$3	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L116	1	(proxy or gateway or control$4 or load adj balancer) same (private adj networks) same load adj balanc$4 same select$4 same path$3	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L117	1	(proxy or gateway or control$4 or load adj balancer) same ((multiple or plurality) adj (private adj network$2 or frame adj realy$2)) same load adj balanc$4 same select$4 same path$3	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 12:55
L118	2	(proxy or gateway or control$4 or load adj balancer) same ((multiple or plurality) adj (private adj network$2 or frame adj realy$2)) same load adj balanc$4	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L119	19	(proxy or gateway or control$4 or load adj balancer) same ((multiple or plurality) adj (private adj network$2 or frame adj realy$2))	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L120	1	(proxy or gateway or control$4 or load adj balancer) same parallel same((multiple or plurality) adj (private adj network$2 or frame adj realy$2))	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L121	4	parallel same((multiple or plurality) adj (private adj network$2 or frame adj realy$2))	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L122	1	"5910951".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L123	1132	frame adj relay adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L124	0	frame adj relay adj network same private adj netork	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L125	85	frame adj relay adj network same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L126	0	frame adj relay adj network same private adj network.ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L127	0	frame adj relay adj network same private adj "networkti."	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L128	0	frame adj relay adj network same private adj network.ti.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L129	79	frame adj relay adj network.ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L130	287	access$2 same frame adj relay adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L131	60	control$4 same access$2 same frame adj relay adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L132	3	control$4 same access$2 same frame adj relay adj network.ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L133	3	control$4 same access$2 same frame adj relay adj network$1.ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L134	3	control$4 same access$2 same frame adj relay adj network$2.ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L135	287	access$2 same frame adj relay adj networks	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L136	1	access$2 same frame adj relay adj networks.ti.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L137	31	frame adj relay adj networks.ti.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L138	1	"5948069".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L139	1	"5910951".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L140	1	"6253230".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L141	319	packeti$4 same out same (order or sequenc$4)	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L142	0	packeti$4 same out same (order or sequenc$4) same client same server same private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L143	6	packeti$4 same out same (order or sequenc$4) same client same server and private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L144	1	packeti$4 same (out near3 (order or sequenc$4)) same client same server and private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L145	1	packeti$4 same (out adj3 (order or sequenc$4)) same client same server and private adj network	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L146	2	packeti$4 same (out adj3 (order or sequenc$4)) same client same server	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L147	24	(packeti$4 or datagram)same (out adj3 (order or sequenc$4)) same client same server	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L148	1	"6098093".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L149	1	"6578066".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L150	1	"6061679".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L151	1	"6253230".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L152	1	"6195680".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L153	1	"6546423".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L154	1	"5948069".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L155	1	"5910951".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L156	1	"6499054".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L157	1	"5910951".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L158	3107	ethernet adj card	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L159	1	ethernet adj card.ti.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55

L160	12	ethernet adj card.ab.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L161	1	"6195680".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L162	0	"6546423.pn"	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L163	1	"6546423".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L164	1	"5948069".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L165	1	"5910951".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L166	1	"5961590".pn.	US-PGPUB; USPAT; IBM_TDB	OR	ON	2004/12/07 11:55
L167	2	"5948069".pn.	US-PGPUB; USPAT; DERWENT; IBM_TDB	OR	OFF	2004/12/07 11:55
L168	303	(frame adj relay adj network$2 or ATM) same controller same router	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:55
L169	0	(frame adj relay adj network$2 or ATM) same controller same router (path$4 or channel$4 or link$4) same select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:55
L170	7	(frame adj relay adj network$2 or ATM) same controller same router same (path$4 or channel$4 or link$4) same select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 12:56
L171	2	"6775235".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:55
L172	1	"5398012".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55
L173	1	"5420862".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55

L174	1	"6665702".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55
L175	1	"6493349".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55
L176	1	"6493341".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55
L177	1	"6456594".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55
L178	1	"6449259".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55
L179	1	"6438100".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:55
L180	1	"6339595".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:56
L181	1	"6339595".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:56
L182	1	"6295276".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:56
L183	1	"6253247".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:56
L184	1	"6128298".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:56
L185	1	"5948069".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:56
L186	1	"5898673".PN.	USPAT; USOCR	ADJ	ON	2004/12/07 11:56
L187	40	disparat$4 same network and frame adj relay adj network	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:56
L188	11	disparat$4 same network and frame adj relay adj network and (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:56
L189	3	disparat$4 adj network and frame adj relay adj network and (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:56
L190	119	frame adj relay adj network and (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:56

L191	7	frame adj relay adj network same (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:56
L192	4	virtual adj private adj network and frame adj relay adj network same (path$4 or link$4 or rout$4) adj select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 11:56
L193	7	(frame adj relay adj network$2 or ATM) same controller same router same (path$4 or channel$4 or link$4) same select$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/12/07 13:16
L194	19	(gateway or router or proxy) same (select$4 adj4 (path or rout$4)) same private adj network same control$4	US-PGPUB; USPAT; EPO; IBM_TDB	OR	ON	2004/12/07 13:17

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

7590 12/23/2004

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EXAMINER	
NGUYEN, THU HA T	
ART UNIT	**PAPER NUMBER**
2155	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,197		
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2004* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Claims **1-21** are presented for examination.

Response to Arguments

2. In view of Applicants' arguments in the appeal brief filed on August 17, 2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kitai et al.**, (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

5. As to claim 1, **Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

a packet path selector which selects between network interfaces according to a specified criterion (abstract, figures 3, 7, 15, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3);

wherein the controller receives a packet through the site interface (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach at least two private network interfaces, a packet path selector which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector. **Albright** teaches at least two private network interfaces (figure 3, elements 310, 314), a packet path selector (figure 3, processors 204, 306) a packet path selector which selects between private network interfaces (figure 3, interface 310, 314, col. 5, lines 65-col. 6, lines 21, lines 39-51 [processor selects links/frame relay interface between links/frame relay interfaces]) and sends the packet through the private network

interface that was selected by the packet path selector (col. 5, lines 24-35, col. 6, lines 22-38, col. 7, lines 17-25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include a packet path selector which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25).

6. As to claim 2, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

7. As to claim 3, **Kitai** teaches the invention as claimed, wherein the packet path selector selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59). However, **Kitai** does not explicitly teach private network interfaces. **Albright** teaches private network interfaces (figure 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include private network interfaces because it would provide an efficient communications system that the selection of private network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

8. As to claim 8, **Kitai** teaches the invention as claimed, wherein the controller comprises at least three network interfaces, each of which is selectable by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57). **Kitai** does not explicitly teach frame relay network interfaces; however, **Albright** teaches frame relay network interfaces (col. 6, lines 64-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay network interfaces because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on

traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

9. As to claim 9, **Kitai** teaches the invention as claimed, wherein the controller operates in a system providing at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

10. As to claim 10, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

11. As to claim 11, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is an indirect

interface tailored to a particular type of frame relay network (figure 3, col. 7, lines 6-16). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliability and dynamically interface/paths among multiple interfaces/paths.

12. As to claim 12, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 4, 13-16 and 18 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, **Albright et al.** (hereinafter Albright) U.S. Patent No. 6,209,039, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**.

15. As to claim 4, **Kitai** does not teach the invention as claimed; however, **Albright** teaches private network interfaces (figure 3, col. 6, lines 65-col. 7, lines 3). **Pearce** teaches wherein the packet path selector selects between network interfaces according to a reliability criterion thereby promoting use of devices that will still carry packets alter the packets leave the selected network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

16. As to claim 13, **Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, and a packet path selector which selects between network interfaces according to a specified criterion (abstract, figures 3, 7, 15, 22, 24, col. 5 lines 29-63);

connecting the controller site interface to a site to receive packets from a computer at the site (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7);

sending a packet to the site interface which then sends the packet through a network interface selected by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach at least two private network interfaces, a packet path selector which selects between private network interfaces, then sends the packet through a private network interface selected by the packet path selector and connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network.

Pearce teaches connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

Albright teaches at least two private network interfaces (figure 3, elements 310, 314), a packet path selector (figure 3, processors 204, 306), a packet path selector which selects between private network interfaces (figure 3, interface 310, 314, col. 5, lines 65-col. 6, lines 21, lines 39-51 [processor selects links/frame relay interface between links/frame relay interfaces]), then sends the packet through a private network interface selected by the packet path selector (col. 5, lines 24-35, col. 6, lines 22-38, col. 7, lines 17-25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce and Albright** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25).

17. As to claim 14, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the private networks are frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

18. As to claim 15, **Kitai** teaches the invention as claimed, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion-is a load balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

19. As to claim 16, **Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

20. As to claim 18, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have a the controller connects the controller to a

User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

21. Claim 5 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai, Albright,** in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

22. As to claim 5, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches private networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Dutta** teaches wherein specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion, thereby promoting use of multiple networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Dutta** to have private networks and the packet path selector selects between network interfaces according to a security criterion because it would improve the data transferring more secure and efficient between networks.

23. Claim 17 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai, Albright, Pearce,** in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

24. As to claim 17, **Kitai, Albright and Pearce** do not explicitly teach the invention as claimed; however, **Dutta** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright, Pearce and Dutta** to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient.

25. Claims 6-7 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai**, and **Albright**, in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680**.

26. As to claim 6, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches private networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load.

27. As to claim 7, **Kitai** and **Albright** do not explicitly teach the invention as claimed;, however, **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure.

28. Claim 19 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai**, and **Pearce** U.S. Patent No. **5,910,951**, in view of **Goldszmidt** U.S Patent No. **6,195,680**.

29. As to claim 19, **Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified

criterion is load balancing (abstract, figures 3, 7, 9, 15, 19, 22, 24, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-63, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

However, **Kitai** does not explicitly teach wherein the specified criterion is one of: reliability criterion, a security criterion.

Pearce teaches the specified criterion is reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12).

Goldszmidt teaches the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Goldszmidt** to specified criterion is one of reliability and security because it would have an efficient communication system to control, select and transfer data over the reliability, qualification and security network amongst multiple networks.

30. Claims 20-21 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai**, **Pearce and** Goldszmidt, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

31. As to claim 20, **Kitai** teaches the invention as claimed, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, and the controller sends different packets of a given message to different networks

(abstract, col. 3 lines 6-42). **Kitai** does not explicitly teach frame relay networks. However, **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers

32. As to claim 21, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Pearce** teaches the step of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network (abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Albright** to include frame relay networks and the step of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

34. Hemmandy (USPN 6,633,569), Choudhury et al. (USPN 5,933,412), Mawhinney et al. (USPN 6,038,219), Shenoda et al. (USPN 6,389,130), Allain et al. (USPN 6,449,259), and Border et al. (USPPN 2002/0010792) are recited for disclosing various information related to the claimed invention. Applicants are requested to consider these prior art references when responding to this office action.

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (571) 272-3989. The examiner can normally be reached Monday through Friday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SPE Hosain T. Alam, can be reached at (571) 272-3978.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications.

Thu Ha Nguyen

December 8, 2004

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

Notice of References Cited	Application/Control No. 10/034,197	Applicant(s)/Patent Under Reexamination	
	Examiner Thu Ha T. Nguyen	Art Unit 2155	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,633,569 B2	10-2003	Hemmady, Ajit G.	370/398
	B	US-5,933,412 A	08-1999	Choudhury et al.	370/218
	C	US-6,038,219 A	03-2000	Mawhinney et al.	370/242
	D	US-6,389,130 B1	05-2002	Shenoda et al.	379/221.08
	E	US-6,449,259 B1	09-2002	Allain et al.	370/253
	F	US-2002/0010792	01-2002	Border et al.	709/238
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
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	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes

Application No.	Applicant(s)	
10/034,197		
Examiner	**Art Unit**	
Thu Ha T. Nguyen	2155	

SEARCHED			
Class	Subclass	Date	Examiner
709	238	12/8/2004	THN
370	218,242		
	253,398	12/8/2004	THN

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
East, Derwen, USPG-Pub search results attached	12/8/2004	THN
Consult with SPEs Hosain T. Alam, Zarni Maung	12/8/2004	THN

Index of Claims

Application No.	Applicant(s)	
10/034,197		
Examiner	**Art Unit**	
Thu Ha T. Nguyen	2155	

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
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Claim		Date
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AF

PATENT APPLICATION
ATTORNEY DOCKET NO. 22971.NP / 3003.2.9A

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**SUPPLEMENTAL APPEAL BRIEF** **CERTIFICATE OF MAILING** DATE OF MAILING: 3-4-05 I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being mailed, postage paid, in a package addressed to Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated above. Karen Jacobson Printed Name: KAREN JACOBSON

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

On August 17, 2004, Applicants and Assignee filed an Original Appeal Brief appealing from a Final Office Action mailed April 19, 2004. On December 23, 2004, the Examiner reopened prosecution by mailing a Reopening Office Action.

Please reinstate the appeal.

This application has been granted ***accelerated*** examination status.

The Original Appeal Brief is incorporated herein. To the extent this Supplemental Appeal Brief is inconsistent with the original Appeal Brief, this Supplemental Appeal Brief should prevail.

Real Party in Interest

The real party in interest in this appeal is Assignee, Ragula Systems (FatPipe Networks).

Related Appeals and Interferences

None.

Status of Claims

Claims 1-21 were rejected in the Final Office Action, were rejected in the Reopening Office Action (December 23, 2004), are still pending, and are now appealed.

Status of Amendments

No amendments were filed after the Final Office Action or the Reopening Office Action.

Summary of Invention

The present invention relates to tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration, as shown for instance in Figure 5 or Figure 6. Frame relay networks 106 and point-to-point networks are each "**private networks**"; *see* application at page 9 lines 10-12. In some embodiments a controller 502 according to the invention comprises a site interface 702 connecting the controller to a site 102, at least two private network interfaces 706, and a packet path selector 704 which selects between private network interfaces according to a specified criterion. A site may include a local area network; *see* discussion of Figure 7 on pages 13-14, and page 17 lines 15-17.

The controller receives 804 a packet through the site interface and sends 814 the packet through the private network interface that was selected 806 by the packet path selector. The controller's packet path selector selects between **private network** interfaces according to various criteria, such as (a) a load-balancing criterion 808 that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability

criterion 810 that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion 812 that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

The invention also provides other controller embodiments, and it provides method embodiments. The claims define the invention; this summary is provided merely as an introduction and to assist in understanding the claims.

Issues

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 9, 15 properly rejected under Section 103 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 1-3, 8, 10-12, 14, 18, and 20 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?
4. Were claims 4, 13, 16, and 21 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?
5. Was claim 5 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
6. Was claim 17 properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta?
7. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
8. Was claim 19 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?

Note: The foregoing statement of issues resolves inconsistencies in the Reopening Office Action by following the actual reference citations that were made claim-by-claim in the Reopening Office Action, rather than following the summary paragraphs therein. For instance, summary paragraph 4 of the Reopening Office Action asserts that several claims, including claim 9, are rejected in view of Kitai and Albright, but the actual rejection in paragraph 9 of the Reopening Office Action only cites Kitai. Therefore, claim 9 is treated here as being rejected in view of Kitai alone. Several similar inconsistencies in the Reopening Office Action are likewise resolved by addressing the references that were actually discussed in a rejection, rather than the references that a summary paragraph merely asserted (wrongly) would be discussed.

Grouping of Claims

Solely for purposes of this appeal, the claims are grouped as follows:

Group I: claims 9, 15

Group II: claims 1-3, 8, 10-12, 14, 18, and 20

Group III: claims 4, 13, 16, and 21

Group IV: claim 5

Group V: claim 17

Group VI: claims 6 and 7

Group VII: claim 19

This grouping is different than the grouping in the original Appeal Brief, because the references are combined differently in the Reopening Office Action than in the Final Office Action.

In this appeal, each of the claims in a given group stand or fall together.

Argument

By way of context, the following papers are among those filed or mailed in this case:

Provisional provisional application, filed December 29, 2000

Application	non-provisional application, filed December 28, 2001
First IDS	information disclosure statement, filed April 29, 2002
Second IDS	information disclosure statement, filed March 14, 2003
Third IDS	information disclosure statement, filed April 9, 2003
Fourth IDS	information disclosure statement, filed April 11, 2003
Petition	petition to accelerate examination, filed April 21, 2003
Fifth IDS	information disclosure statement, filed June 3, 2003
Petition Grant	decision granting Petition, mailed October 8, 2003
First Action	first office action on the merits, mailed November 5, 2003
Response	response, filed February 4, 2004
Third-Party	third party submission, filed on or about April 5, 2004
Final Action	final office action, mailed April 19, 2004
Interview Summary	interview summary, filed May 25, 2004
Appeal Notice	notice of appeal, filed July 14, 2004
Original Appeal Brief	original brief, filed August 17, 2004
Reopening Office Action	office action reopening prosecution, December 23, 2004
Supplemental Appeal Brief	this present brief

The shortcomings of the rejections will now be reviewed. Arguments and statements by Applicants made earlier but not repeated here are also part of the record for this appeal and are not waived, although they may be modified or supplemented here. To keep this brief short while still trying to provide an adequate basis for review, some observations and arguments that might have been presented are not included. Accordingly, Applicants' silence here with respect to particular statements by the Office does not indicate their agreement or acquiescence.

A local area network is not a "private network"

Despite the well-documented and detailed explanation of Kitai's shortcomings at pages 5-9 of the Original Appeal Brief (incorporated herein), the Examiner continues to assert Kitai in every rejection. The examiner now concedes (e.g., on pages 3, 5, 9 of the Reopening Office Action) that Kitai does not teach private networks; the LANs of Kitai are not private networks.

The failure of Kitai to discuss private networks is one reason those of skill in the art would not have combined Kitai with other references, such as Albright, that do discuss frame relay or other private networks. Kitai's failure to discuss private networks is also a reason why the asserted combinations, even if they were proper, would fail to teach the claimed invention. However, these points are made at length in the Original Appeal Brief and below, so it suffices at this time to note that the Reopening Office Action (unlike the Final Office Action) does not argue that Kitai's local area networks are actually private networks as claimed by Applicants. Indeed, by withdrawing the rejections under Section 102 which were based solely on Kitai, the Examiner has implicitly acknowledged that Kitai fails to teach private networks.

Claims 9 and 15 (Group I) were not properly rejected under Section 103 in view of Kitai

The Reopening Office Action is inconsistent as to the basis for rejecting these claims. Although the preceding summary paragraphs in the Reopening Office Action (paragraphs 4 and 14) assert that these claims are rejected based on more references than just Kitai, the rejections themselves (paragraphs 9 and 18) only discuss Kitai. Accordingly, for purposes of appeal, the rejections are based solely on Kitai. However, if the Board wishes to consider other grounds *sua sponte*, with regard to these or other claims, then Applicants respectfully request that the Board please also consider the arguments here and in the Original Appeal Brief against combining Kitai with other cited references.

As noted, the Examiner concedes that Kitai fails to teach private networks. Moreover, the leap from Kitai's LANs to the claimed invention's private networks is a large and nonobvious leap, for at least the reasons discussed in the Original Appeal Brief at pages 6-9. Thus, the claims are not obvious in view of Kitai.

Claims 1-3, 8, 10-12, 14, 18, and 20 (Group II) were not properly rejected under Section 103 in view of Kitai combined with Albright

The Original Appeal Brief noted on pages 13-14 the failure of the office actions up to that point to provide a proper justification for combining Kitai and Albright. The Reopening Office Action asserts different reasons, but they likewise fail to establish the necessary suggestion or

motivation in the art for combining these references. On page 4 of the Reopening Office Action, the reason given is that the combination "would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25)." But as in the Final Action, this rejection confuses serial networks with parallel networks. The cited section of Albright actually teaches routing *within* a network, not routing that selects between two parallel networks. Moreover, the rejection again fails to explain any reason why the cited section of Albright would have led one of skill in the art to Kitai, as opposed to any other reference.

Accordingly, the rejections based on Albright and Kitai should be withdrawn or reversed. The combination is improper because the cited section of Albright (a frame relay reference) does not suggest combination with Kitai (a LAN reference). Moreover, the combination fails to teach the claimed parallel private network innovations, because Albright teaches serial networks (they are in fact the very reason for Albright's network-to-network interface) rather than teaching networks placed in parallel as claimed.

Claims 4, 13, 16, and 21 (Group III) were not properly rejected under Section 103 in view of Kitai combined with Albright and Pearce

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The Reopening Office Action fails to give any further basis for adding Pearce to this combination. For example, in paragraph 15, the Reopening Office Action merely asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths." Paragraph 32 of the Reopening Office Action asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would detect and improve network security, traffic and failure." These are general statements, which do not suggest any combination of references. They merely suggest goals without suggesting ways to meet them.

The rejections fail to identify anything specific in one reference or in the art that would have led one of skill to the particular other references. It is well-established patent law that a

rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. *See, e.g.,* M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient or more secure is not specific **evidence** that one of skill would have combined these particular references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 5 (Group IV) was not properly rejected under Section 103 in view of Kitai combined with Albright and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The Reopening Office Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 17 (Group V) was not properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The Reopening Office Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claims 6 and 7 (Group VI) were not properly rejected under Section 103 in view of Kitai combined with Albright and Goldszmidt

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Office Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 19 (Group VII) was not properly rejected under Section 103 in view of Kitai combined with Pearce and Goldszmidt

The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Office Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

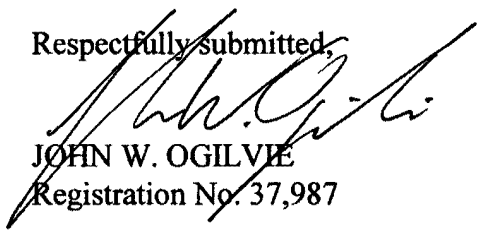
Conclusion

The appeal should be reinstated, or the claims should be allowed. If the appeal is reinstated, then all rejections should be reversed for the reasons above. If any questions might be answered by telephone, the undersigned invites a call at the Office's convenience.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Appeal Brief to Deposit Account No. 20-0100.

Dated this March 4, 2005.

Respectfully submitted,



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CLAIMS ON APPEAL

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/034,197
Filing Date: December 28, 2001
Appellant(s): DATTA ET AL.

Ragula Systems (FatPipe Networks)

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 07, 2005.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that dependent claims 2-12, 14-18, and 20-21 stand or fall together with independent claims 1, 13, and 19, respectively.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

U.S. Pat. No. **5,948,069**	**Kitai et al**	September 07, 1999
U.S. Pat. No. **6,209,039**	**Albright et al**	March 27, 2001
U.S. Pat. No. **5,910,951**	**Pearce et al**	June 08, 1999
U.S. Pat. No. **6,546,423**	**Dutta et al**	April 08, 2003
U.S. Pat. No. **6,195,680**	**Goldszmidt et al**	February 27, 2001

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-21 are rejected under 35 U.S.C. 103.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 8-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.**, (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

3. As to claim 1, **Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

a packet path selector which selects between network interfaces according to a specified criterion (abstract, figures 3, 7, 15, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3);

wherein the controller receives a packet through the site interface (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach at least two private network interfaces, a packet path selector which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector. **Albright** teaches at least two private network interfaces (figure 3, elements 310, 314), a packet path selector (figure 3, processors 204, 306) a packet path selector which selects between private network interfaces (figure 3, interface 310, 314, col. 5, lines 65-col. 6, lines 21, lines 39-51 [processor selects links/frame relay interface between links/frame relay interfaces]) and sends the packet through the private network interface that was selected by the packet path selector (col. 5, lines 24-35, col. 6, lines 22-38, col. 7, lines 17-25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include a packet path selector which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector because it would provide an efficient communications

system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25).

4. As to claim 2, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

5. As to claim 3, **Kitai** teaches the invention as claimed, wherein the packet path selector selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59). However, **Kitai** does not explicitly teach private network interfaces. **Albright** teaches private network interfaces (figure 3). It would have been obvious to one of ordinary skill in the Data Processing art

at the time of the invention to combine the teachings of **Kitai and Albright** to include private network interfaces because it would provide an efficient communications system that the selection of private network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

6. As to claim 8, **Kitai** teaches the invention as claimed, wherein the controller comprises at least three network interfaces, each of which is selectable by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57). **Kitai** does not explicitly teach frame relay network interfaces; however, **Albright** teaches frame relay network interfaces (col. 6, lines 64-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay network interfaces because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

7. As to claim 9, **Kitai** teaches the invention as claimed, wherein the controller operates in a system providing at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

8. As to claim 10, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

9. As to claim 11, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is an indirect interface tailored to a particular type of frame relay network (figure 3, col. 7, lines 6-16). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliability and dynamically interface/paths among multiple interfaces/paths.

10. As to claim 12, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure.

11. Claims 4, 13-16 and 18 are rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, **Albright et al.** (hereinafter Albright) U.S. Patent No. 6,209,039, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**.

12. As to claim 4, **Kitai** does not teach the invention as claimed; however, **Albright** teaches private network interfaces (figure 3, col. 6, lines 65-col. 7, lines 3). **Pearce** teaches wherein the packet path selector selects between network interfaces according to a reliability criterion thereby promoting use of devices that will still carry packets alter the packets leave the selected network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time

of the invention to combine the teachings of **Kitai, Albright and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

13. As to claim 13, **Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, and a packet path selector which selects between network interfaces according to a specified criterion (abstract, figures 3, 7, 15, 22, 24, col. 5 lines 29-63);

connecting the controller site interface to a site to receive packets from a computer at the site (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7);

sending a packet to the site interface which then sends the packet through a network interface selected by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach at least two private network interfaces, a packet path selector which selects between private network interfaces, then sends the

packet through a private network interface selected by the packet path selector and connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network.

Pearce teaches connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

Albright teaches at least two private network interfaces (figure 3, elements 310, 314), a packet path selector (figure 3, processors 204, 306), a packet path selector which selects between private network interfaces (figure 3, interface 310, 314, col. 5, lines 65-col. 6, lines 21, lines 39-51 [processor selects links/frame relay interface between links/frame relay interfaces]), then sends the packet through a private network interface selected by the packet path selector (col. 5, lines 24-35, col. 6, lines 22-38, col. 7, lines 17-25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce and Albright** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25).

14. As to claim 14, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the private networks are frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of

Kitai and Albright to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

15. As to claim 15, **Kitai** teaches the invention as claimed, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion-is a load balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

16. As to claim 16, **Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

17. As to claim 18, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have a the controller connects the controller to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

18. Claim 5 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai, Albright,** in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

19. As to claim 5, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches private networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Dutta** teaches wherein specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion, thereby promoting use of multiple networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Dutta** to have private networks and the packet path selector selects between network interfaces

according to a security criterion because it would improve the data transferring more secure and efficient between networks.

20. Claim 17 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai, Albright, Pearce,** in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

21. As to claim 17, **Kitai, Albright and Pearce** do not explicitly teach the invention as claimed; however, **Dutta** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright, Pearce and Dutta** to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient.

22. Claims 6-7 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai**, and **Albright**, in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680**.

23. As to claim 6, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches private networks (figure 3, col. 6, lines 65-col. 7, lines 3).

Goldszmidt teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load.

24. As to claim 7, **Kitai** and **Albright** do not explicitly teach the invention as claimed; however, **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure.

25. Claim 19 is rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai**, and **Pearce** U.S. Patent No. **5,910,951**, in view of **Goldszmidt** U.S Patent No. **6,195,680**.

26. As to claim 19, **Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified criterion is load balancing (abstract, figures 3, 7, 9, 15, 19, 22, 24, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-63, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

However, **Kitai** does not explicitly teach wherein the specified criterion is one of: reliability criterion, a security criterion.

Pearce teaches the specified criterion is reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12).

Goldszmidt teaches the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Goldszmidt** to specified criterion is one of reliability and security because it would have an efficient communication system to control, select and transfer data over the reliability, qualification and security network amongst multiple networks.

27. Claims 20-21 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai, Pearce and Goldszmidt**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

28. As to claim 20, **Kitai** teaches the invention as claimed, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, and the controller sends different packets of a given message to different networks (abstract, col. 3 lines 6-42). **Kitai** does not explicitly teach frame relay networks. However, **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

29. As to claim 21, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Pearce** teaches the step of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network (abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the

teachings of **Kitai, Pearce and Albright** to include frame relay networks and the step of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

(11) Response to Argument

(**A**) A local area network, as disclosed in Kitai, is not a "private network" and also appellant refers back to original Appeal Brief for "private network" issue.

As to point (**A**), examiner disagrees with appellant's argument since the examiner reopened the Office action with new ground of rejection.

(**B**) Claims 9 and 15 were not properly rejected under section 103 in view of Kitai. Kitai fails to teach private networks.

As to point (**B**), before addressing the argument, the examiner submits that in the Reopening Office Action in paragraphs 5 and 16 (as independent claims 1 and 13) the examiner stated that the primary reference Kitai teaches a site interface connecting...; a packet path selector which selects...; a controller receives a packet... However, Kitai does not explicitly teach private network interface (see the Reopening Office Action paragraphs 5, and 16 dated 12/23/04). Claim 9 depends on claim 1, recited point-to-point connection and claim 15 depends on independent claim 13, recited the specified criterion is a load balancing criterion as disclosed in Kitai reference (see the Reopening Office Action paragraphs 9 and 18). There is nothing mentioned about private network

interface in claims 9 and 15. Therefore, only Kitai as a primary reference can properly rejected claims 9 and 15.

(**C**) Claims 1-3, 8, 10-12, 14, 18 and 20 were not properly rejected under section 103 in view of Kitai combined with Albright. The Reopening Office Action fails to establish the necessary suggestion or motivation in the art for combining theses references.

As to point (**C**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate at least two private network interfaces, a packet path selector which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector, as disclosed by Albright into system of Kitai because it were conventionally employed in the art to provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (see Albright col. 2, lines 15-25).

Appellant agues the combination fails to teach the claimed parallel network, because Albright teaches serial network rather than teaching parallel network.

Examiner asserts that Kitai teaches parallel network (see Kitai col. 2, lines 48-54) and moreover, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

(**D**) Claims 4, 13, 16, and 21 were not properly rejected under section 103 in view of Kitai combined with Albright and Pearce. The rejection fails to suggestion or motivation of combination of references.

As to point (**D**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate a selector to select paths/interfaces according to a reliability criterion, as disclosed by Pearce into Kitai and Albright system because it would have conventionally employed in the art to have an efficient communication system to control

and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths (see Pearce col. 2, lines 24-30, col. 2, line 61-col. 3, line 5).

(**E**) Claim 5 was not properly rejected under section 103 in view of Kitai combined with Albright and Dutta. The rejection fails to suggestion or motivation to combine the references.

As to point (**E**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the specified criterion is a security criterion, as disclosed by Dutta into Kitai and Albright system because it were conventionally employed in the art to provide an efficient system to improve the data transferring more secure and efficient between networks (see Dutta col. 1, lines 4-52, col. 2, lines 14-16).

(**F**) Claim 17 was not properly rejected under section 103 in view of Kitai combined with Albright, Pearce and Dutta. The rejection fails to suggestion or motivation to combine the references.

As to point (**F**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the specified criterion is a security criterion, as disclosed by Dutta into Kitai and Albright and Pearce system because it were conventionally employed in the art to provide an efficient system to improve the data transferring more secure and efficient between networks (see Dutta col. 1, lines 4-52, col. 2, lines 14-16).

(**G**) Claims 6 and 7 were not properly rejected under section 103 in view of Kitai combined with Albright and Goldszmidt. The rejection fails to suggestion or motivation to combine the references.

As to point (**G**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,

the reason to incorporate the feature of sending packets out of sequence, as disclosed by Goldszmidt into Kitai and Albright system because it were conventionally employed in the art to provide an efficient system to process, control and monitor the delivery of packet to control the traffic load (see Goldszmidt col. 2, lines 55-62, col. 3, lines 12-15).

(**H**) Claim 5 was not properly rejected under section 103 in view of Kitai combined with Albright and Dutta. The rejection fails to suggestion or motivation to combine the references.

As to point (**H**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the specified criterion is a security criterion, as disclosed by Dutta into Kitai and Albright system because it were conventionally employed in the art to provide an efficient system to improve the data transferring more secure and efficient between networks (see Dutta col. 1, lines 4-52, col. 2, lines 14-16).

(I) Claim 19 was not properly rejected under section 103 in view of Kitai combined with Pearce and Goldszmidt. The rejection fails to suggestion or motivation to combine the references.

As to point (I), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the specified criterion is a reliability and security criterion, as disclosed by Pearce and Goldszmidt into Kitai system because it would have conventionally employed in the art to have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths (see Pearce col. 2, lines 24-30, col. 2, line 61-col. 3, line 5).

Examiner has considered all of applicant's arguments.

The ultimate determination of patentability must be based on consideration of the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence. In re Oetiker, 977 F.2d 1443, 24 USPQZd 1443 (Fed. Cir. 1992). The submission of objective evidence of patentability does not mandate a conclusion of patentability in and of itself. In re Chupp,

816 F.2d 643, 2 USPQZd 1437 (Fed. Cir. 1987). Facts established by rebuttal evidence must be evaluated along with the facts on which the conclusion of a prima facie case was reached, not against the conclusion itself. In re Eli Lilly, 902 F.2d 943, 14 USPQZd 1741 (Fed. Cir. 1990). In other words, each piece of rebuttal evidence should not be evaluated for its ability to knockdown the prima facie case. All of the competent rebuttal evidence taken as a whole should be weighed against the evidence supporting the prima facie case. In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). Although the record may establish evidence of secondary considerations which are indicia of nonobviousness, the record may also establish such a strong case of obviousness that the objective evidence of nonobviousness is not sufficient to outweigh the evidence of obviousness. Newell Cos. v. Kenney Mfg. Co., 864 F.2d 757, 769, 9 USPQZd 1417, 1427 (Fed. Cir. 1988), cert. denied, 493 U.S. 814 (1989)*, Richardson-vicks, Inc., v. The Upjohn Co., 122 F.3d 1476, 1484, 44 USPQZd 1 181, 1 187 (Fed. Cir. 1997) (showing of unexpected results and commercial success of claimed ibuprofen and psuedoephedrine combination in single tablet form, while supported by substantial evidence, held not to overcome strong prima facie case of obviousness).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

ZARNI MAUNG
SUPERVISORY PATENT EXAMINER

ThuHa Nguyen
June 11, 2005

Conferees

PATRICE WINDER
PRIMARY EXAMINER

John W. L. Ogilvie
THORPE NORTH & WESTERN, LLP
P.O. Box 1219
Sandy, UT 84091-1219

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

SEARCHED			
Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Appeal conference: Primary Patrice Winder; SPE Zarni Maung	6/9/2005	THN plw

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
10/034,197	DATTA ET AL.
Examiner	**Art Unit**
Thu Ha T. Nguyen	2155

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	+	Restricted	I	Interference	O	Objected

Claim		Date								
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PATENT APPLICATION
ATTORNEY DOCKET NO. 3003.2.9A

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**APPELLANTS' REPLY** CERTIFICATE OF FAX TRANSMISSION DATE OF TRANSMISSION: 27 June 2005 I hereby certify that this paper and a Change of Correspondence Address are being faxed to 703-872-9306, on the date indicated above. Printed Name: John W. Quine

Commissioner:

On August 17, 2004, Appellants filed an Original Appeal Brief appealing from a Final Office Action mailed April 19, 2004. On December 23, 2004, the Examiner reopened prosecution by mailing a Reopening Office Action. On March 4, 2004 Appellants filed a Supplemental Appeal Brief, and on June 17, 2005 the Examiner's Answer was mailed. The present paper is in Reply to the Examiner's Answer.

This application has been granted ***accelerated*** examination status.

Grouping of Claims

The grouping of claims for the appeal is unsettled.

The Examiner's Answer states one grouping of claims on page 2, asserts on that page that this claim grouping was recited in Appellants' brief, and then repeats the grounds for rejection that were stated in the Reopening Office Action. However, the grouping of claims stated on page 2 of the Examiner's Answer was *not* recited in Appellants' brief, and it does *not* follow the structure of the rejections stated in the Reopening Office Action.

Page 2 of the Examiner's Answer identifies three claim groups:

Claims 1, 2-12;
Claims 13, 14-18; and
Claims 19, 20-21.

But these three groups are not consistent with Appellants' Brief or with the stated grounds for rejection. This claim grouping (three groups: 1-12, 13-18, 19-21) given in the Answer is not accepted by Appellants.

Page 4 of the Supplemental Appeal Brief identified seven claim groups:

Group I:	claims 9, 15
Group II:	claims 1-3, 8, 10-12, 14, 18, and 20
Group III:	claims 4, 13, 16, and 21
Group IV:	claim 5
Group V:	claim 17
Group VI:	claims 6 and 7
Group VII:	claim 19

This grouping generally tracks the Reopening Office Action grounds, by grouping claims that are rejected on the same grounds and for which there is also clearly a discussion of all cited references. This approach is explained in the Supplemental Appeal Brief on pages 3 and 4, in the presentation of issues and claim groupings. However, this approach could be seen as departing from the rejections' structure by separating claims 9 and 15 into their own group.

Arrival at an appropriate claim grouping is further complicated by the fact that the Examiner's Answer is not internally consistent. On page 2, the Answer identifies three claim groupings, but on pages 3-17 it repeats rejections (made in the Reopening Office Action) that use more than three groupings.

In short, without further action, the Board will face multiple inconsistent claim groupings. This could hamper a full, efficient, and fair review of the claims. In the interest of promoting such review, and in a spirit of compromise with the Examiner, Appellants hereby agree to modify the claim grouping of their Supplemental Appeal Brief by treating claim 9 as standing or falling with its parent claim 1, and by treating claim 15 as standing or falling with its parent claim 13. The resulting claim grouping follows the structure of the rejections and reduces the number of claim groups by one.

Pursuant to M.P.E.P. § 1206, Appellants therefore submit the six (not seven) claim groups shown below. Please refer to the Reopening Office Action and the two Appeal Briefs for identification and discussion of the specific claim limitations involved. Within each of these six groups, the claims stand or fall together.

(Group) claims	References cited	Sample reasons for patentability
(II) claims 1-3, 8, 9, 10-12, 14, 18, and 20	Kitai + Albright	Kitai + Albright combination is not supported; see Supp. Appeal Brief at 6-7, Orig. Appeal Brief at 13-14: no motive to combine frame relay reference Albright w/ LAN reference Kitai; no motive to combine serial reference Albright w/ parallel reference Kitai
(III) claims 4, 13, 15, 16, and 21	Kitai + Albright + Pearce	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11
(IV) claim 5	Kitai + Albright + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(V) claim 17	Kitai + Albright + Pearce + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(VI) claims 6 and 7	Kitai + Albright + Goldszmidt	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Goldszmidt, see Orig. Appeal Brief at 12-13
(VII) claim 19	Kitai + Pearce + Goldszmidt	Kitai + Pearce combination is not supported, see Orig. Appeal Brief at 10-11; Kitai + Goldszmidt combination is not supported, see Orig. Appeal Brief at 12-13

Reply to Examiner's Responses

On pages 17-24, the Examiner's Answer responds to arguments made by Appellants. In reply, Appellants respectfully submit that the claims are patentable and the rejections are flawed.

Examiner's response (A) seeks to reverse the Examiner's position by arguing that local area networks as disclosed in Kitai are actually "private networks" as claimed. The only basis given for this reversal in the Answer is that "the examiner reopened the Office action with new ground of rejection." This is not a sufficient basis to support the change in position. Indeed, the Reopening Office Action admits in its discussion of claim 1 that "Kitai does not explicitly teach at least two private network interfaces" and it then relies on Albright to teach private network interfaces. As explained at length in both the Original Appeal Brief at pages 5-9 and the Supplemental Appeal Brief at pages 5-6, Kitai does not teach private networks. This lack of teaching in Kitai is pertinent, not only because it makes Kitai unusable as a Section 102 reference, but also under Section 103 because it draws one of skill away from the asserted Kitai-Albright combination, as explained in the Appeal Briefs.

Examiner's response (B) argues that Kitai taken alone under Section 103 is grounds for rejecting claims 9 and 15, because private networks are not mentioned in those claims. But this argument fails to recognize that claims 9 and 15 include the limitations of their respective parent claims, which do expressly require private networks.

Examiner's response (C) misunderstands Appellants' argument. The Examiner treats the argument as one that states the combination fails to teach the claimed invention because Albright teaches serial networks rather than parallel networks. The response therefore understandably notes that the failure of one reference in a combination to teach a contested feature does not show that the combination as a whole fails to teach the feature, and thus to teach the invention. That is, the Examiner's answer is basically that it doesn't matter that Albright fails to teach parallel networks, because Kitai does teach parallel networks.

But this answer is directed at the wrong argument. Appellants are not arguing that Kitai combined with Albright fails to teach parallel networks. Rather, Appellants argue that Kitai and Albright were not properly combined.

Appellants' claims were improperly used as a blueprint. In the Office Action mailed 11/05/2003, the Examiner made rejections using Kitai as a Section 102 reference. In the next Response, Appellants pointed out that Kitai does not teach private networks, and hence cannot support rejections under Section 102. In the final action mailed 04/19/2004, the Examiner

asserted again that Kitai was a Section 102 reference. The Original Appeal Brief followed, in which pages 5 through 9 explained in detail and with supporting evidence why Kitai does not teach parallel networks and thus could not – by itself – support rejections. Instead of letting the appeal go to the Board, the Examiner then reopened prosecution. In the Reopening Office Action, the Examiner did *not* assert Kitai as a Section 102 reference. Instead, the Examiner made Section 103 rejections, supplementing Kitai by pointing to Albright for the necessary teaching of private networks. Of course, Albright cannot be used as a ground for rejection in combination with Kitai unless there is some suggestion or motivation **in the art** for combining those references. There is not.

Appellants argue that Albright and Kitai were not properly combined, not merely because the Examiner failed to give any specific evidence of a motivation or suggestion in the art supporting that combination, but also because of the undisputed fact that Albright deals with *serial* networks – a fact which would have led those of skill in the art away from combining Albright with Kitai when they were trying to build a *parallel* network configuration.

In short, Appellants argue against making the Kitai + Albright combination in the first place, not against the teachings of that (improper) combination once it is made. This argument has not been rebutted. The Kitai + Albright combination is improper, regardless of what it teaches or fails to teach.

Examiner's response (D) cites a portion of Pearce as a suggestion or motivation for adding Pearce to the Kitai + Albright combination. But this fails to support the rejection.

As noted in the Appeal Briefs, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Pearce does not point toward the teachings of Kitai or Albright as possible solutions to some problem. Indeed, even if one interprets Pearce as treating the need for a prioritized list of qualifying networks as a problem, one sees that Pearce promptly provides *its own solution* in the form of a filter 38. The undersigned did not find in Pearce any suggestion that a reader should look elsewhere for serial network-to-network interfaces as described in Albright, or for a LAN switch as described in Kitai. Pearce is self-contained in this respect, and thus would not have instilled a motive to look elsewhere to enhance or replace the filter 38. Accordingly, the combination of Pearce with Kitai and Albright is not proper.

Examiner's response (E) cites a portion of Dutta as a suggestion or motivation for adding Dutta to the Kitai + Albright combination. This fails to support the rejection.

As noted, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Dutta does not point toward the teachings of Kitai or Albright. As noted, e.g., on page 12 of the Original Appeal Brief, Dutta discusses firewalls and security while Kitai does not mention either. Albright discusses frame relay networks but Dutta does not. There is no evidence of any suggestion or motivation in Dutta that would have led one of skill to Kitai and Albright rather than somewhere else, and those of skill in the art did not have the claims to use as a blueprint. The combination of Dutta with Kitai and Albright is not proper.

Examiner's response (F) attempts to justify the even larger combination of Kitai, Albright, Pearce, and Dutta. As noted above and in the Appeal Briefs (which are incorporated as part of the record before the Board), the sub-combination of Kitai with Albright is not proper, and neither are the combinations of three references obtained by adding Pearce or Dutta alone to Kitai and Albright. The only basis for combining these four references is impermissible hindsight, which is driven by Appellants' claims, not by the prior art.

Examiner's response (G) fails to rebut the argument made at pages 12-13 of the Original Appeal Brief. Goldszmidt does not teach *sending* packets out of sequence as claimed. Rather, Goldszmidt views such non-sequential packets as an unfortunate problem and concerns itself with ways to handle *receiving* packets out of sequence. Nor is there a motivation for combining the references – as noted, Kitai fails to mention packet sequence, and the Kitai + Albright combination is not properly motivated.

Examiner's response (H) again tries to defend combining Kitai, Albright, and Dutta. As noted above, e.g., in regard to response (E), this combination is not proper.

Examiner's response (I) tries to defend combining Kitai, Pearce, and Goldszmidt. As noted above, e.g., in regard to responses (D) and (G), this combination is not proper.

Conclusion

Although this application was made special, examination has now stretched out to include *five* office actions, which contain substantial repetition:

11/05/2003 citing Kitai, Pearce, Dutta, Goldszmidt, Albright
04/19/2004 citing Kitai, Pearce, Dutta, Goldszmidt, Albright
07/23/2004 citing Kitai
12/23/2004 citing Kitai, Pearce, Dutta, Goldszmidt, Albright
06/17/2005 citing Kitai, Pearce, Dutta, Goldszmidt, Albright

As a result, this application – which was granted accelerated examination status – is now entitled to a patent term adjustment of at least six months under 37 C.F.R. § 1.702(b). Further delay will further prejudice Appellants. All claims should be allowed, with the promptness required by the application's accelerated examination status. Barring that, the appeal should be promptly submitted to the Board for decision.

If any questions might be answered by telephone, the undersigned invites a call from the Office. Please note the **new contact information** shown below.

Dated this June 27, 2005.

Respectfully submitted,

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PTO/SB/122 (04-05)
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Application Number	10/034,197
Filing Date	12/28/2001
First Named Inventor	Sanchaita Datta
Art Unit	2155
Examiner Name	Nguyen, Thu Ha
Attorney Docket Number	3003.2.9A

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☐ Applicant/Inventor

☐ Assignee of record of the entire interest.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

☑ Attorney or agent of record. Registration Number 37987.

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number _____.

Signature

Typed or Printed Name John W. Ogilvie

Date 27 June 2005 | Telephone 801-706-2546

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 07/19/2005

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SALT LAKE CITY, UT 84105

EXAMINER	
NGUYEN, THU HA T	

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 07/19/2005

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.

EXAMINER

ART UNIT	PAPER
	20050712

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The reply brief filed on June 27, 2005 has been entered and considered. The application has been forwarded to the Board of Patent Appeals and Interferences for decision on the appeal.

SALEH NAJJAR
PRIMARY EXAMINER

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SANCHAITA DATTA and RAGULA BHASKAR

Application No. 10/034,197

ORDER RETURNING UNDOCKETED APPEAL TO EXAMINER

This application was electronically received at the Board of Patent Appeals and Interferences on August 12, 2005. A review of the application has revealed that the application is not ready for docketing as an appeal. Accordingly, the application is herewith being returned to the examiner. The matters requiring attention prior to docketing are identified below.

APPEAL BRIEF

Appellant filed an Appeal Brief dated March 7, 2005, in response to the non-final rejection mailed December 23, 2004. The Appeal Brief is not in compliance with the new rules under 37 CFR 41.37(c).

37 CFR § 41.37(c) states:

(a)(1) Appellant must file a brief under this section within two months from the date of filing the notice of appeal under § 41.31.

(2) The brief must be accompanied by the fee set forth in § 41.20(b)(2).

(b) On failure to file the brief, accompanied by the requisite fee, within the period specified in paragraph (a) of this section, the appeal with stand dismissed.

(c)(1) The brief shall contain the following items under appropriate headings and in the order indicated in paragraphs (c)(1)(i) through (c)(1)(x) of this section, except that a brief filed by an appellant who is not represented by a registered practitioner need only substantially comply with paragraphs (c)(1)(i) through (c)(1)(iv) and (c)(1)(vii) through (c)(1)(x) of this section:

(i) ***Real party in interest.*** A statement identifying by name the real party in interest.

(ii) ***Related appeals and interferences.*** A statement identifying by application, patent, appeal or interference number all other prior and pending appeals, interferences or judicial proceedings known to appellant, the appellant's legal representative, or assignee which may be related to, directly affect or be

directly affected by or have a bearing on the Board's decision in the pending appeal. Copies of any decisions rendered by a court or the Board in any proceeding identified under this paragraph must be included in an appendix as required by paragraph (c)(1)(x) of this section.

(iii) ***Status of claims.*** A statement of the status of all the claims in the proceeding (*e.g.*, rejected, allowed or confirmed, withdrawn, objected to, canceled) and an identification of those claims that are being appealed.

(iv) ***Status of amendments.*** A statement of the status of any amendment filed subsequent to final rejection.

(v) ***Summary of claimed subject matter***. A concise explanation of the subject matter defined in each of the independent claims involved in the appeal, which shall refer to the specification by page and line number, and to the drawing, if any, by reference characters. For each claim involved in the appeal, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters.

(vi) ***Grounds of rejection to be reviewed on appeal***. A concise statement of each ground of rejection presented for review.

(vii) ***Argument***. The contentions of appellant with respect to each ground of rejection presented for review in paragraph (c)(1)(vi) of this section, and the basis therefor, with citations of the statutes, regulations, authorities, and parts of the record relied on. Any arguments or authorities not included in the brief or a reply brief filed pursuant to § 41.41 will be refused consideration by the Board, unless good cause is shown. Each ground of rejection must be treated under a separate heading. For each ground of rejection applying to two or more claims, the claims may be argued separately or as a group. When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone. Notwith-standing any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately. Any claim argued separately should be placed under a subheading identifying the claim by number. Claims argued as a group should be placed under a subheading identifying the claims by number. A statement which merely points out what a claim recites will not be considered an argument for patentability of the claim.

(viii) ***Claims appendix***. An appendix containing a copy of the claims involved in the appeal.

(c)(1) The brief shall contain the following items under appropriate headings and in the order indicated in paragraphs (c)(1)(I) through (c)(1)(x) of this section, except that a brief filed by an appellant who is not represented by a registered practitioner need only substantially comply with paragraphs (c)(1)(i) through (c)(1)(iv) and (c)(1)(vii) through (c)(1)(x) of this section:

(ix) ***Evidence appendix***. An appendix containing copies of any evidence submitted pursuant to §§ 1.130, 1.131, 1.132 of this title or of any other evidence entered by the examiner and relied upon by appellant in the appeal, along with a statement setting forth where in the record that evidence was entered in the record by the examiner. Reference to unentered evidence is not permitted in the brief. See § 41.33 for treatment of evidence submitted after appeal. This appendix may also include copies of the evidence relied upon by the examiner as to grounds of rejection to be reviewed on appeal.

(x) ***Related proceedings appendix***. An appendix containing copies of decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of this section.

(2) A brief shall not include any new or non-admitted amendment, or any new or non-admitted affidavit or other evidence. See § 1.116 of this title for amendments, affidavits or other evidence filed after final action but before or with any appeal and § 41.33 for amendments, affidavits or other evidence filed after the date of the appeal.

(d) If a brief is filed which does not comply with all the requirements of paragraph (c) of this section, appellant will be notified of the reasons for non-compliance and given a time period within which to file an amended brief. If appellant does not file an amended brief within the set time period, or files an amended brief which does not overcome all the reasons for non-compliance stated in the notification, the appeal will stand dismissed.

An in-depth review of the Appeal Brief indicates that the following sections are missing from the Appeal Brief filed September 14, 2004:

1) "Summary of Claimed Subject Matter," as set forth in 37 CFR § 41.37(c)(1)(v);

2) "Grounds of rejection to be reviewed on appeal", as set forth in 37 CFR § 41.37(c)(1)(vi)

3) "Evidence Appendix," as set forth in 37 CFR § 41.37(c)(1)(ix); and

4) "Related Proceedings Appendix," as set forth in 37 CFR § 41.37(c)(1)(x).

Accordingly, the Appeal Brief filed March 7, 2005, does not comply with the new rules under 37 CFR § 41.37(c). It is required that a substitute brief be submitted that is in compliance with 37 CFR § 41.37(c). For more information on the Board's new rules, please see the web page entitled "More Information on the Rules of Practice Before the BPAI," Final Rule at:

http://www.uspto.gov/web/offices/dcom/bpai/fr2004/ moreinfo.html.

EXAMINER'S ANSWER

On June 27, 2005, 2005, an Examiner's Answer was mailed. A review of the Examiner's Answer reveals that is not in compliance with the headings as set forth in the new rules under 37 CFR 41.37(c).

At such time that this application is returned to the Board of Patent Appeals and Interferences, it is requested that the Artifact, identified as 10/034,197ZA, be forwarded to the Board at the same time.

Accordingly, it is

ORDERED that the application is returned to the examiner for:

1) notify appellant that the Appeal Brief is defective and to file a substitute Appeal Brief in accordance with the new rules effective September 13, 2004;

2) vacate the Examiner's Answer dated June 27, 2005,

3) prepare a revised Examiner's Answer to include all appropriate headings in accordance with the new rules effective September 13, 2004;

4) provide the requested artifact of 10/034,197ZA; and

5) for such further action as may be appropriate.

It is important that the Board of Patent Appeals and Interferences be informed promptly of any action affecting the appeal (i.e. abandonment, issue, reopening prosecution).

BOARD OF PATENT APPEALS
AND INTERFERENCES

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PATENT APPLICATION
ATTORNEY DOCKET NO. 22971.NP / 3003.2.9A

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**SUBSTITUTE APPEAL BRIEF** **CERTIFICATE OF MAILING** DATE OF MAILING: 21 Nov 2005 I hereby certify that this paper is being mailed, postage paid, in a Priority Mail package addressed to Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated above. Printed Name: John W. Ogilvie

Commissioner for Patents:

On August 17, 2004, Applicants and Assignee filed an Original Brief appealing from a Final Action mailed April 19, 2004. On December 23, 2004, the Examiner reopened prosecution by mailing a Reopening Action. On March 4, 2005, Applicants and Assignee filed a Supplemental Brief, which the Board then objected to.

This Substitute Appeal Brief is filed in response to the Board's Order mailed October 10, 2005, which was received by the undersigned on November 14, 2005.

Real Party in Interest

The real party in interest in this appeal is Assignee, Ragula Systems (FatPipe Networks).

Related Appeals and Interferences

None.

Status of Claims

Claims 1-21 were rejected in the Final Action, were rejected in the Reopening Action (December 23, 2004), are still pending, and are now appealed.

Status of Amendments

No amendments were filed after the Final Action or the Reopening Action.

Summary of Claimed Subject Matter

The present invention relates to tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration, as shown for instance in Figure 5 or Figure 6. Frame relay networks 106 and point-to-point networks are each "private networks"; *see* application at page 9 lines 10-12. In some embodiments a controller 502 according to the invention comprises a site interface 702 connecting the controller to a site 102, at least two private network interfaces 706, and a packet path selector 704 which selects between private network interfaces according to a specified criterion. A site may include a local area network; *see* discussion of Figure 7 on pages 13-14, and page 17 lines 15-17.

The controller receives 804 a packet through the site interface and sends 814 the packet through the private network interface that was selected 806 by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion 808 that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability criterion 810 that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion 812 that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

The invention also provides other controller embodiments, and it provides method embodiments. The claims define the invention; this summary is provided merely as an introduction and to assist in understanding the claims.

Grounds of Rejection to be Reviewed on Appeal

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 9, 15 properly rejected under Section 103 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 1-3, 8, 10-12, 14, 18, and 20 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?
4. Were claims 4, 13, 16, and 21 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?
5. Was claim 5 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
6. Was claim 17 properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta?
7. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
8. Was claim 19 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?

Note: The foregoing statement of issues resolves inconsistencies in the Reopening Action by following the actual reference citations that were made claim-by-claim in the Reopening Action, rather than following the summary paragraphs therein. For instance, summary paragraph 4 of the Reopening Action asserts that several claims, including claim 9, are rejected in view of Kitai and Albright, but the actual rejection in paragraph 9 of the Reopening Action only cites Kitai. Therefore, claim 9 is treated here as being rejected in view of Kitai alone. Several similar inconsistencies in the Reopening Action

are likewise resolved by addressing the references that were actually discussed in a rejection, rather than the references that a summary paragraph merely asserted (wrongly) would be discussed.

Argument

By way of context, the following papers are among those filed or mailed in this case:

Provisional	provisional application, filed December 29, 2000
Application	non-provisional application, filed December 28, 2001
First IDS	information disclosure statement, filed April 29, 2002
Second IDS	information disclosure statement, filed March 14, 2003
Third IDS	information disclosure statement, filed April 9, 2003
Fourth IDS	information disclosure statement, filed April 11, 2003
Petition	petition to accelerate examination, filed April 21, 2003
Fifth IDS	information disclosure statement, filed June 3, 2003
Petition Grant	decision granting Petition, mailed October 8, 2003
First Action	first office action on the merits, mailed November 5, 2003
Response	response, filed February 4, 2004
Third-Party	third party submission, filed on or about April 5, 2004
Final Action	final office action, mailed April 19, 2004
Interview Summary	interview summary, filed May 25, 2004
Appeal Notice	notice of appeal, filed July 14, 2004
Advisory Action	advisory office action, mailed July 23, 2004
Original Brief	appeal brief, filed August 17, 2004
Reopening Action	office action, mailed December 23, 2004
Supplemental Brief	appeal brief, filed March 4, 2005
Examiner's Answer	answer, mailed June 16, 2005
Supplemental Reply	reply, filed June 27, 2005
Remand Order	Board order, mailed October 10, 2005

The shortcomings of the rejections are reviewed below. Arguments and statements by Applicants made earlier but not repeated here are also part of the record for this appeal and are not waived, although they may be modified or supplemented here. To keep this brief short while still trying to provide an adequate basis for review, some observations and arguments that might have been presented are not included. Accordingly, Applicants' silence here with respect to particular statements by the Office does not indicate their agreement or acquiescence.

Third Party Submission

The Final Action does not refer to the third-party submission that was filed, on behalf of an unidentified third party, on or about April 5, 2004. References were submitted to the Office by a third party in each of the following applications of the Assignee: 10/034190, 10/034197, 10/361837, 10/263497. That submission was made two weeks before the mailing of the Final Action, but it is not clear to the undersigned whether the Examiner has yet received and considered the submission's references. If copies of the submission's references have not reached the Examiner, they will be submitted by the undersigned on request. Otherwise, the undersigned will assume that the Examiner does have copies of the third-party submission references and has considered them before answering this Brief. The undersigned respectfully submits that this approach is consistent with the Office's laudable effort to reduce unnecessary paperwork.

Grouping of Claims

The grouping of claims for the appeal has been unsettled.

The Examiner's Answer states one grouping of claims on page 2, asserts on that page that this claim grouping was recited in Appellants' brief, and then repeats the grounds for rejection that were stated in the Reopening Action. However, the grouping of claims stated on page 2 of the Examiner's Answer was *not* recited in Appellants' brief, and it does *not* follow the structure of the rejections stated in the Reopening Action.

Page 2 of the Examiner's Answer identifies three claim groups:

Claims 1, 2-12;

Claims 13, 14-18; and
Claims 19, 20-21.

But these three groups are not consistent with Appellants' Brief or with the stated grounds for rejection. This claim grouping (three groups: 1-12, 13-18, 19-21) given in the Answer is not accepted by Appellants.

Page 4 of the Supplemental Brief identified seven claim groups:

Group I:	claims 9, 15
Group II:	claims 1-3, 8, 10-12, 14, 18, and 20
Group III:	claims 4, 13, 16, and 21
Group IV:	claim 5
Group V:	claim 17
Group VI:	claims 6 and 7
Group VII:	claim 19

This grouping generally tracks the Reopening Action grounds, by grouping claims that are rejected on the same grounds and for which there is also clearly a discussion of all cited references. This approach is explained in the Supplemental Brief on pages 3 and 4, in the presentation of issues and claim groupings. However, this approach could be seen as departing from the rejections' structure by separating claims 9 and 15 into their own group.

Arrival at an appropriate claim grouping is further complicated by the fact that the Examiner's Answer is not internally consistent. On page 2, the Answer identifies three claim groupings, but on pages 3-17 it repeats rejections (made in the Reopening Action) that use more than three groupings.

In short, without further action, the Board will face multiple inconsistent claim groupings. This could hamper a full, efficient, and fair review of the claims. In the interest of promoting such review, and in a spirit of compromise with the Examiner, Appellants hereby agree to modify the claim grouping of their Supplemental Brief by treating claim 9 as standing or falling with its parent claim 1, and by treating claim 15 as standing or falling with its parent claim 13. The resulting claim grouping follows the structure of the rejections and reduces the number of claim groups by one.

Pursuant to M.P.E.P. § 1206, Appellants therefore submit the six (not seven) claim groups shown below. Please refer to the Reopening Action and the appeal Briefs for identification and discussion of the specific claim limitations involved. Within each of these six groups, the claims stand or fall together.

(Group) claims	References cited	Sample reasons for patentability
(II) claims 1-3, 8, 9, 10-12, 14, 18, and 20	Kitai + Albright	Kitai + Albright combination is not supported; see Supp. Appeal Brief at 6-7, Orig. Appeal Brief at 13-14: no motive to combine frame relay reference Albright w/ LAN reference Kitai; no motive to combine serial reference Albright w/ parallel reference Kitai
(III) claims 4, 13, 15, 16, and 21	Kitai + Albright + Pearce	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11
(IV) claim 5	Kitai + Albright + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(V) claim 17	Kitai + Albright + Pearce + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(VI) claims 6 and 7	Kitai + Albright + Goldszmidt	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Goldszmidt, see Orig. Appeal Brief at 12-13
(VII) claim 19	Kitai + Pearce + Goldszmidt	Kitai + Pearce combination is not supported, see Orig. Appeal Brief at 10-11; Kitai + Goldszmidt combination is not supported, see Orig. Appeal Brief at 12-13

Reply to Examiner's Responses

On pages 17-24, the Examiner's Answer responds to arguments made by Appellants. It may be helpful to begin with these arguments, and work backward from there as needed. In reply

to the Answer, Appellants respectfully submit that the claims are patentable and the rejections are flawed.

Examiner's response (A) seeks to reverse the Examiner's position by arguing that local area networks as disclosed in Kitai are actually "private networks" as claimed. The only basis given for this reversal in the Answer is that "the examiner reopened the Office action with new ground of rejection." This is not a sufficient basis to support the change in position. Indeed, the Reopening Action admits in its discussion of claim 1 that "Kitai does not explicitly teach at least two private network interfaces" and it then relies on Albright to teach private network interfaces. As explained at length in both the Original Brief at pages 5-9 and the Supplemental Brief at pages 5-6, Kitai does not teach private networks. This lack of teaching in Kitai is pertinent, not only because it makes Kitai unusable as a Section 102 reference, but also under Section 103 because it draws one of skill away from the asserted Kitai-Albright combination, as explained in the appeal Briefs.

Examiner's response (B) argues that Kitai taken alone under Section 103 is grounds for rejecting claims 9 and 15, because private networks are not mentioned in those claims. But this argument fails to recognize that claims 9 and 15 include the limitations of their respective parent claims, which do expressly require private networks.

Examiner's response (C) misunderstands Appellants' argument. The Examiner treats the argument as one that states the combination fails to teach the claimed invention because Albright teaches serial networks rather than parallel networks. The response therefore understandably notes that the failure of one reference in a combination to teach a contested feature does not show that the combination as a whole fails to teach the feature, and thus to teach the invention. That is, the Examiner's answer is basically that it doesn't matter that Albright fails to teach parallel networks, because Kitai does teach parallel networks.

But this answer is directed at the wrong argument. Appellants are not arguing that Kitai combined with Albright fails to teach parallel networks. Rather, Appellants argue that Kitai and Albright were not properly combined.

Appellants' claims were improperly used as a blueprint. In the Office Action mailed 11/05/2003, the Examiner made rejections using Kitai as a Section 102 reference. In the next

Response, Appellants pointed out that Kitai does not teach private networks, and hence cannot support rejections under Section 102. In the final action mailed 04/19/2004, the Examiner asserted again that Kitai was a Section 102 reference. The Original Appeal Brief followed, in which pages 5 through 9 explained in detail and with supporting evidence why Kitai does not teach parallel networks and thus could not – by itself – support rejections. Instead of letting the appeal go to the Board, the Examiner then reopened prosecution. In the Reopening Action, the Examiner did *not* assert Kitai as a Section 102 reference. Instead, the Examiner made Section 103 rejections, supplementing Kitai by pointing to Albright for the necessary teaching of private networks. Of course, Albright cannot be used as a ground for rejection in combination with Kitai unless there is some suggestion or motivation **in the art** for combining those references. There is not.

Appellants argue that Albright and Kitai were not properly combined, not merely because the Examiner failed to give any specific evidence of a motivation or suggestion in the art supporting that combination, but also because of the undisputed fact that Albright deals with *serial* networks – a fact which would have led those of skill in the art away from combining Albright with Kitai when they were trying to build a *parallel* network configuration.

In short, Appellants argue against making the Kitai + Albright combination in the first place, not against the teachings of that (improper) combination once it is made. This argument has not been rebutted. The Kitai + Albright combination is improper, regardless of what it teaches or fails to teach.

Examiner's response (D) cites a portion of Pearce as a suggestion or motivation for adding Pearce to the Kitai + Albright combination. But this fails to support the rejection.

As noted in the Appeal Briefs, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Pearce does not point toward the teachings of Kitai or Albright as possible solutions to some problem. Indeed, even if one interprets Pearce as treating the need for a prioritized list of qualifying networks as a problem, one sees that Pearce promptly provides its own solution in the form of a filter 38. The undersigned did not find in Pearce any suggestion that a reader should look elsewhere for serial network-to-network interfaces as described in Albright, or for a LAN switch as described in Kitai. Pearce is self-contained in this

respect, and thus would not have instilled a motive to look elsewhere to enhance or replace the filter 38. Accordingly, the combination of Pearce with Kitai and Albright is not proper.

Examiner's response (E) cites a portion of Dutta as a suggestion or motivation for adding Dutta to the Kitai + Albright combination. This fails to support the rejection.

As noted, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Dutta does not point toward the teachings of Kitai or Albright. As noted, e.g., on page 12 of the Original Brief, Dutta discusses firewalls and security while Kitai does not mention either. Albright discusses frame relay networks but Dutta does not. There is no evidence of any suggestion or motivation in Dutta that would have led one of skill to Kitai and Albright rather than somewhere else, and those of skill in the art did not have the claims to use as a blueprint. The combination of Dutta with Kitai and Albright is not proper.

Examiner's response (F) attempts to justify the even larger combination of Kitai, Albright, Pearce, and Dutta. As noted above and in the appeal Briefs (which are incorporated as part of the record before the Board), the sub-combination of Kitai with Albright is not proper, and neither are the combinations of three references obtained by adding Pearce or Dutta alone to Kitai and Albright. The only basis for combining these four references is impermissible hindsight, which is driven by Appellants' claims, not by the prior art.

Examiner's response (G) fails to rebut the argument made at pages 12-13 of the Original Brief. Goldszmidt does not teach *sending* packets out of sequence as claimed. Rather, Goldszmidt views such non-sequential packets as an unfortunate problem and concerns itself with ways to handle *receiving* packets out of sequence. Nor is there a motivation for combining the references – as noted, Kitai fails to mention packet sequence, and the Kitai + Albright combination is not properly motivated.

Examiner's response (H) again tries to defend combining Kitai, Albright, and Dutta. As noted above, e.g., in regard to response (E), this combination is not proper.

Examiner's response (I) tries to defend combining Kitai, Pearce, and Goldszmidt. As noted above, e.g., in regard to responses (D) and (G), this combination is not proper.

We turn now to other arguments exchanged before this Substitute Appeal, and repeated here for convenience.

A local area network is not a "private network"

Despite the well-documented and detailed explanation of Kitai's shortcomings at pages 5-9 of the Original Appeal Brief (incorporated herein), the Examiner continues to assert Kitai in every rejection. The examiner now concedes (e.g., on pages 3, 5, 9 of the Reopening Action) that Kitai does not teach private networks; the LANs of Kitai are not private networks. The failure of Kitai to discuss private networks is one reason those of skill in the art would not have combined Kitai with other references, such as Albright, that do discuss frame relay or other private networks. Kitai's failure to discuss private networks is also a reason why the asserted combinations, even if they were proper, would fail to teach the claimed invention. However, these points are made at length in the Original Appeal Brief and below, so it suffices at this time to note that the Reopening Action (unlike the Final Action) does not argue that Kitai's local area networks are actually private networks as claimed by Applicants. Indeed, by withdrawing the rejections under Section 102 which were based solely on Kitai, the Examiner has implicitly acknowledged that Kitai fails to teach private networks.

Claims 9 and 15 were not properly rejected under Section 103 in view of Kitai

The Reopening Action is inconsistent as to the basis for rejecting these claims. Although the preceding summary paragraphs in the Reopening Action (paragraphs 4 and 14) assert that these claims are rejected based on more references than just Kitai, the rejections themselves (paragraphs 9 and 18) only discuss Kitai. Accordingly, for purposes of appeal, the rejections are based solely on Kitai. However, if the Board wishes to consider other grounds *sua sponte*, with regard to these or other claims, then Applicants respectfully request that the Board please also consider the arguments here and in the Original Appeal Brief against combining Kitai with other cited references.

As noted, the Examiner concedes that Kitai fails to teach private networks. Moreover, the leap from Kitai's LANs to the claimed invention's private networks is a large and nonobvious leap, for at least the reasons discussed in the Original Appeal Brief at pages 6-9. Thus, the claims are not obvious in view of Kitai.

Claims 1-3, 8, 9, 10-12, 14, 18, and 20 (Group II) were not properly rejected under Section 103 in view of Kitai combined with Albright

The Original Appeal Brief noted on pages 13-14 the failure of the office actions up to that point to provide a proper justification for combining Kitai and Albright. The Reopening Action asserts different reasons, but they likewise fail to establish the necessary suggestion or motivation in the art for combining these references. On page 4 of the Reopening Action, the reason given is that the combination "would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25)." But as in the Final Action, this rejection confuses serial networks with parallel networks. The cited section of Albright actually teaches routing *within* a network, not routing that selects between two parallel networks. Moreover, the rejection again fails to explain any reason why the cited section of Albright would have led one of skill in the art to Kitai, as opposed to any other reference.

Accordingly, the rejections based on Albright and Kitai should be withdrawn or reversed. The combination is improper because the cited section of Albright (a frame relay reference) does not suggest combination with Kitai (a LAN reference). Moreover, the combination fails to teach the claimed parallel private network innovations, because Albright teaches serial networks (they are in fact the very reason for Albright's network-to-network interface) rather than teaching networks placed in parallel as claimed.

Claims 4, 13, 15, 16, and 21 (Group III) were not properly rejected under Section 103 in view of Kitai combined with Albright and Pearce

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The Reopening Action fails to give any further basis for adding Pearce to this combination. For example, in paragraph 15, the Reopening Action merely asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths." Paragraph 32 of the Reopening Action asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would detect and improve network security, traffic and failure."

These are general statements, which do not suggest any combination of references. They merely suggest goals without suggesting ways to meet them.

The rejections fail to identify anything specific in one reference or in the art that would have led one of skill to the particular other references. It is well-established patent law that a rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. *See, e.g.*, M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient or more secure is not specific **evidence** that one of skill would have combined these particular references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 5 (Group IV) was not properly rejected under Section 103 in view of Kitai combined with Albright and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 17 (Group V) was not properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claims 6 and 7 (Group VI) were not properly rejected under Section 103 in view of Kitai combined with Albright and Goldszmidt

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify

combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 19 (Group VII) was not properly rejected under Section 103 in view of Kitai combined with Pearce and Goldszmidt

The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Conclusion

For at least the reasons explained above, all rejections should be withdrawn or reversed. If any questions might be answered by telephone, the undersigned invites a call at the Office's convenience.

Please note that the **correspondence address below is different** than in earlier Briefs.

Dated this November 21, 2005.

Respectfully submitted,

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CLAIMS APPENDIX

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

EVIDENCE APPENDIX

(empty)

RELATED PROCEEDINGS APPENDIX

(empty)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

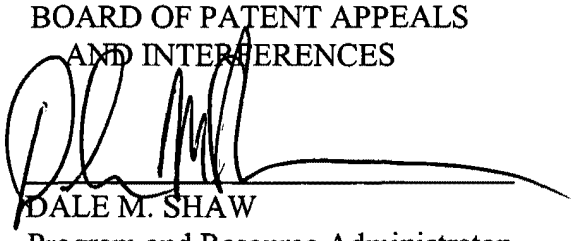
Ex parte SANCHAITA DATTA and RAGULA BHASKAR

Application No. 10/034,197

ORDER RETURNING UNDOCKETED APPEAL TO EXAMINER

On November 10, 2005, the Board of Patent Appeals and Interference mailed an Order Returning Undocketed Appeal. This Order Returning Undocketed Appeal was inadvertently dated October 10, 2005. This communication is to clarify that the official mail date is November 10, 2005.

BOARD OF PATENT APPEALS
AND INTERFERENCES



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 06/14/2006

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EXAMINER	
NGUYEN, THU HA T	

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Notification of Non-Compliant Appeal Brief (37 CFR 41.37)	Application N .	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

--The MAILING DATE of this c mmunication appears on the c ver sheet with the correspondence address--

The Appeal Brief filed on *25 November 2005* is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file anamended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.

2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).

3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).

4. ☒ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).

5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi))

6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).

7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).

8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).

9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).

10. ☒ Other (including any explanation in support of the above items):

Appeallant is required to provide the artifact of 10/034,197ZA in response to this communication.

Thuhanguyen
Patent Examiner
AU 2155

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**REVISED SUBSTITUTE APPEAL BRIEF** **CERTIFICATE OF TRANSMISSION** I certify that this paper is being submitted through EFS-WEB to the Commissioner for Patents on June 19, 2006. Printed Name: [signature]

Commissioner for Patents:

This case was **made special** by a Decision mailed October 8, 2003.

On August 17, 2004, Appellants filed an Original Brief appealing from a Final Action mailed April 19, 2004. On December 23, 2004, the Examiner reopened prosecution by mailing a Reopening Action. On March 4, 2005, Appellants filed a Supplemental Brief. An Examiner's Answer was mailed three months later, on June 17, 2005, and Appellants' Reply was filed ten days after that, on June 27, 2005. Several months later, on November 10, 2005, the Board remanded the case to the Examiner. Appellants filed a Substitute Appeal Brief eleven days later, on November 21, 2005.

Almost six months after that, on June 14, 2006, the Office mailed a Notification of Non-Compliant Brief. The present Revised Substitute Brief is filed five days later, in response to the Notification. Appellants submit that the Substitute Brief was adequate for appeal, but to avoid further delay add the material shown in *underlined italics* below.

Real Party in Interest

The real party in interest in this appeal is Assignee, Ragula Systems (FatPipe Networks).

Related Appeals and Interferences

None.

Status of Claims

Claims 1-21 were rejected in the Final Action, were rejected in the Reopening Action (December 23, 2004), are still pending, and are now appealed.

Status of Amendments

No amendments were filed after the Final Action or the Reopening Action.

Summary of Claimed Subject Matter

The present invention relates to tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration, as shown for instance in Figure 5 or Figure 6. Frame relay networks 106 and point-to-point networks are each "private networks"; *see* application at page 9 lines 10-12. In some embodiments a controller 502 according to the invention comprises a site interface 702 connecting the controller to a site 102, at least two private network interfaces 706, and a packet path selector 704 which selects between private network interfaces according to a specified criterion. A site may include a local area network; *see* discussion of Figure 7 on pages 13-14, and page 17 lines 15-17.

The controller receives 804 a packet through the site interface and sends 814 the packet through the private network interface that was selected 806 by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion 808 that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability

criterion 810 that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion 812 that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

In response to point 4 of the Notification, figure reference numbers are used in corresponding text in this application, as is the case in many patent applications, and correlating the above information with the independent claims readily yields the following:

1. A controller (502) which controls access to multiple independent private networks (application at page 9 lines 10-12) in a parallel network configuration, the controller comprising:

a site interface (702) connecting the controller to a site (102);

at least two private network interfaces (706); and

a packet path selector (704) which selects between private network interfaces according to a specified criterion;

wherein the controller receives (804) a packet through the site interface and sends (814) the packet through the private network interface that was selected (806) by the packet path selector.

13. A method for combining connections for access to multiple parallel private networks (application at page 9 lines 10-12), the method comprising the steps of:

obtaining a controller (502), the controller comprising a site interface (702), at least two private network interfaces (706), and a packet path selector (704) which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site (102) to receive (804) packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending (814) a packet to the site interface which then sends the packet through a private network interface selected (806) by the packet path selector.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending (814) a packet to a site interface of a controller (502), the controller comprising the site interface (702) which receives (804) packets, at least two network interfaces (706), and a packet path selector (704) which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

The invention also provides other controller embodiments, and it provides method embodiments. The claims define the invention; this summary is provided merely as an introduction and to assist in understanding the claims.

Grounds of Rejection to be Reviewed on Appeal

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 9, 15 properly rejected under Section 103 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 1-3, 8, 10-12, 14, 18, and 20 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?
4. Were claims 4, 13, 16, and 21 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?
5. Was claim 5 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
6. Was claim 17 properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta?

7. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
8. Was claim 19 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?

Note: The foregoing statement of issues resolves inconsistencies in the Reopening Action by following the actual reference citations that were made claim-by-claim in the Reopening Action, rather than following the summary paragraphs therein. For instance, summary paragraph 4 of the Reopening Action asserts that several claims, including claim 9, are rejected in view of Kitai and Albright, but the actual rejection in paragraph 9 of the Reopening Action only cites Kitai. Therefore, claim 9 is treated here as being rejected in view of Kitai alone. Several similar inconsistencies in the Reopening Action are likewise resolved by addressing the references that were actually discussed in a rejection, rather than the references that a summary paragraph merely asserted (wrongly) would be discussed.

Argument

By way of context, the following papers are among those filed or mailed in this case:

Provisional	provisional application, filed December 29, 2000
Application	non-provisional application, filed December 28, 2001
First IDS	information disclosure statement, filed April 29, 2002
Second IDS	information disclosure statement, filed March 14, 2003
Third IDS	information disclosure statement, filed April 9, 2003
Fourth IDS	information disclosure statement, filed April 11, 2003
Petition	petition to accelerate examination, filed April 21, 2003
Fifth IDS	information disclosure statement, filed June 3, 2003
Petition Grant	decision granting Petition, mailed October 8, 2003
First Action	first office action on the merits, mailed November 5, 2003

Response	response, filed February 4, 2004
Third-Party	third party submission, filed on or about April 5, 2004
Final Action	final office action, mailed April 19, 2004
Interview Summary	interview summary, filed May 25, 2004
Appeal Notice	notice of appeal, filed July 14, 2004
Advisory Action	advisory office action, mailed July 23, 2004
Original Brief	appeal brief, filed August 17, 2004
Reopening Action	office action, mailed December 23, 2004
Supplemental Brief	appeal brief, filed March 4, 2005
Examiner's Answer	answer, mailed June 16, 2005
Supplemental Reply	reply, filed June 27, 2005
Remand Order	Board order, mailed October 10, 2005
Substitute Brief	*appeal brief, filed November 21, 2005*

The shortcomings of the rejections are reviewed below. Arguments and statements by Applicants made earlier but not repeated here are also part of the record for this appeal and are not waived, although they may be modified or supplemented here. To keep this brief short while still trying to provide an adequate basis for review, some observations and arguments that might have been presented are not included. Accordingly, Applicants' silence here with respect to particular statements by the Office does not indicate their agreement or acquiescence.

Third Party Submission

The Final Action does not refer to the third-party submission that was filed, on behalf of an unidentified third party, on or about April 5, 2004. References were submitted to the Office by a third party in each of the following applications of the Assignee: 10/034190, 10/034197, 10/361837, 10/263497. That submission was made two weeks before the mailing of the Final Action, but it is not clear to the undersigned whether the Examiner has yet received and considered the submission's references. If copies of the submission's references have not reached the Examiner, they will be submitted by the undersigned on request. Otherwise, the undersigned will assume that the Examiner does have copies of the third-party submission

references and has considered them before answering this Brief. The undersigned respectfully submits that this approach is consistent with the Office's laudable effort to reduce unnecessary paperwork.

Update: In response to the Examiner's Request in the Notification mailed June 14, 2006, a copy of the third party submission's non-patent references is submitted with this Revised Substitute Brief.

Grouping of Claims

The grouping of claims for the appeal has been unsettled.

The Examiner's Answer states one grouping of claims on page 2, asserts on that page that this claim grouping was recited in Appellants' brief, and then repeats the grounds for rejection that were stated in the Reopening Action. However, the grouping of claims stated on page 2 of the Examiner's Answer was *not* recited in Appellants' brief, and it does *not* follow the structure of the rejections stated in the Reopening Action.

Page 2 of the Examiner's Answer identifies three claim groups:

Claims 1, 2-12;
Claims 13, 14-18; and
Claims 19, 20-21.

But these three groups are not consistent with Appellants' Brief or with the stated grounds for rejection. This claim grouping (three groups: 1-12, 13-18, 19-21) given in the Answer is not accepted by Appellants.

Page 4 of the Supplemental Brief identified seven claim groups:

Group I:	claims 9, 15
Group II:	claims 1-3, 8, 10-12, 14, 18, and 20
Group III:	claims 4, 13, 16, and 21
Group IV:	claim 5
Group V:	claim 17
Group VI:	claims 6 and 7
Group VII:	claim 19

This grouping generally tracks the Reopening Action grounds, by grouping claims that are rejected on the same grounds and for which there is also clearly a discussion of all cited

references. This approach is explained in the Supplemental Brief on pages 3 and 4, in the presentation of issues and claim groupings. However, this approach could be seen as departing from the rejections' structure by separating claims 9 and 15 into their own group.

Arrival at an appropriate claim grouping is further complicated by the fact that the Examiner's Answer is not internally consistent. On page 2, the Answer identifies three claim groupings, but on pages 3-17 it repeats rejections (made in the Reopening Action) that use more than three groupings.

In short, without further action, the Board will face multiple inconsistent claim groupings. This could hamper a full, efficient, and fair review of the claims. In the interest of promoting such review, and in a spirit of compromise with the Examiner, Appellants hereby agree to modify the claim grouping of their Supplemental Brief by treating claim 9 as standing or falling with its parent claim 1, and by treating claim 15 as standing or falling with its parent claim 13. The resulting claim grouping follows the structure of the rejections and reduces the number of claim groups by one.

Pursuant to M.P.E.P. § 1206, Appellants therefore submit the six (not seven) claim groups shown below. Please refer to the Reopening Action and the appeal Briefs for identification and discussion of the specific claim limitations involved. Within each of these six groups, the claims stand or fall together.

(Group) claims	References cited	Sample reasons for patentability
(II) claims 1-3, 8, 9, 10-12, 14, 18, and 20	Kitai + Albright	Kitai + Albright combination is not supported; see Supp. Appeal Brief at 6-7, Orig. Appeal Brief at 13-14; no motive to combine frame relay reference Albright w/ LAN reference Kitai; no motive to combine serial reference Albright w/ parallel reference Kitai
(III) claims 4, 13, 15, 16, and 21	Kitai + Albright + Pearce	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11

(IV) claim 5	Kitai + Albright + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(V) claim 17	Kitai + Albright + Pearce + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(VI) claims 6 and 7	Kitai + Albright + Goldszmidt	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Goldszmidt, see Orig. Appeal Brief at 12-13
(VII) claim 19	Kitai + Pearce + Goldszmidt	Kitai + Pearce combination is not supported, see Orig. Appeal Brief at 10-11; Kitai + Goldszmidt combination is not supported, see Orig. Appeal Brief at 12-13

Reply to Examiner's Responses

On pages 17-24, the Examiner's Answer responds to arguments made by Appellants. It may be helpful to begin with these arguments, and work backward from there as needed. In reply to the Answer, Appellants respectfully submit that the claims are patentable and the rejections are flawed.

Examiner's response (A) seeks to reverse the Examiner's position by arguing that local area networks as disclosed in Kitai are actually "private networks" as claimed. The only basis given for this reversal in the Answer is that "the examiner reopened the Office action with new ground of rejection." This is not a sufficient basis to support the change in position. Indeed, the Reopening Action admits in its discussion of claim 1 that "Kitai does not explicitly teach at least two private network interfaces" and it then relies on Albright to teach private network interfaces. As explained at length in both the Original Brief at pages 5-9 and the Supplemental Brief at pages 5-6, Kitai does not teach private networks. This lack of teaching in Kitai is pertinent, not only because it makes Kitai unusable as a Section 102 reference, but also under Section 103

because it draws one of skill away from the asserted Kitai-Albright combination, as explained in the appeal Briefs.

Examiner's response (B) argues that Kitai taken alone under Section 103 is grounds for rejecting claims 9 and 15, because private networks are not mentioned in those claims. But this argument fails to recognize that claims 9 and 15 include the limitations of their respective parent claims, which do expressly require private networks.

Examiner's response (C) misunderstands Appellants' argument. The Examiner treats the argument as one that states the combination fails to teach the claimed invention because Albright teaches serial networks rather than parallel networks. The response therefore understandably notes that the failure of one reference in a combination to teach a contested feature does not show that the combination as a whole fails to teach the feature, and thus to teach the invention. That is, the Examiner's answer is basically that it doesn't matter that Albright fails to teach parallel networks, because Kitai does teach parallel networks.

But this answer is directed at the wrong argument. Appellants are not arguing that Kitai combined with Albright fails to teach parallel networks. Rather, Appellants argue that Kitai and Albright were not properly combined.

Appellants' claims were improperly used as a blueprint. In the Office Action mailed 11/05/2003, the Examiner made rejections using Kitai as a Section 102 reference. In the next Response, Appellants pointed out that Kitai does not teach private networks, and hence cannot support rejections under Section 102. In the final action mailed 04/19/2004, the Examiner asserted again that Kitai was a Section 102 reference. The Original Appeal Brief followed, in which pages 5 through 9 explained in detail and with supporting evidence why Kitai does not teach parallel networks and thus could not – by itself – support rejections. Instead of letting the appeal go to the Board, the Examiner then reopened prosecution. In the Reopening Action, the Examiner did *not* assert Kitai as a Section 102 reference. Instead, the Examiner made Section 103 rejections, supplementing Kitai by pointing to Albright for the necessary teaching of private networks. Of course, Albright cannot be used as a ground for rejection in combination with Kitai unless there is some suggestion or motivation **in the art** for combining those references. There is not.

Appellants argue that Albright and Kitai were not properly combined, not merely because the Examiner failed to give any specific evidence of a motivation or suggestion in the art supporting that combination, but also because of the undisputed fact that Albright deals with *serial* networks – a fact which would have led those of skill in the art away from combining Albright with Kitai when they were trying to build a *parallel* network configuration.

In short, Appellants argue against making the Kitai + Albright combination in the first place, not against the teachings of that (improper) combination once it is made. This argument has not been rebutted. The Kitai + Albright combination is improper, regardless of what it teaches or fails to teach.

Examiner's response (D) cites a portion of Pearce as a suggestion or motivation for adding Pearce to the Kitai + Albright combination. But this fails to support the rejection.

As noted in the Appeal Briefs, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Pearce does not point toward the teachings of Kitai or Albright as possible solutions to some problem. Indeed, even if one interprets Pearce as treating the need for a prioritized list of qualifying networks as a problem, one sees that Pearce promptly provides its own solution in the form of a filter 38. The undersigned did not find in Pearce any suggestion that a reader should look elsewhere for serial network-to-network interfaces as described in Albright, or for a LAN switch as described in Kitai. Pearce is self-contained in this respect, and thus would not have instilled a motive to look elsewhere to enhance or replace the filter 38. Accordingly, the combination of Pearce with Kitai and Albright is not proper.

Examiner's response (E) cites a portion of Dutta as a suggestion or motivation for adding Dutta to the Kitai + Albright combination. This fails to support the rejection.

As noted, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Dutta does not point toward the teachings of Kitai or Albright. As noted, e.g., on page 12 of the Original Brief, Dutta discusses firewalls and security while Kitai does not mention either. Albright discusses frame relay networks but Dutta does not. There is no evidence of any suggestion or motivation in Dutta that would have led one of skill to Kitai and Albright rather than somewhere else, and those of skill in the art did not have the claims to use as a blueprint. The combination of Dutta with Kitai and Albright is not proper.

Examiner's response (F) attempts to justify the even larger combination of Kitai, Albright, Pearce, and Dutta. As noted above and in the appeal Briefs (which are incorporated as part of the record before the Board), the sub-combination of Kitai with Albright is not proper, and neither are the combinations of three references obtained by adding Pearce or Dutta alone to Kitai and Albright. The only basis for combining these four references is impermissible hindsight, which is driven by Appellants' claims, not by the prior art.

Examiner's response (G) fails to rebut the argument made at pages 12-13 of the Original Brief. Goldszmidt does not teach *sending* packets out of sequence as claimed. Rather, Goldszmidt views such non-sequential packets as an unfortunate problem and concerns itself with ways to handle *receiving* packets out of sequence. Nor is there a motivation for combining the references – as noted, Kitai fails to mention packet sequence, and the Kitai + Albright combination is not properly motivated.

Examiner's response (H) again tries to defend combining Kitai, Albright, and Dutta. As noted above, e.g., in regard to response (E), this combination is not proper.

Examiner's response (I) tries to defend combining Kitai, Pearce, and Goldszmidt. As noted above, e.g., in regard to responses (D) and (G), this combination is not proper.

We turn now to other arguments exchanged before this Substitute Appeal, and repeated here for convenience.

A local area network is not a "private network"

Despite the well-documented and detailed explanation of Kitai's shortcomings at pages 5-9 of the Original Appeal Brief (incorporated herein), the Examiner continues to assert Kitai in every rejection. The examiner now concedes (e.g., on pages 3, 5, 9 of the Reopening Action) that Kitai does not teach private networks; the LANs of Kitai are not private networks. The failure of Kitai to discuss private networks is one reason those of skill in the art would not have combined Kitai with other references, such as Albright, that do discuss frame relay or other private networks. Kitai's failure to discuss private networks is also a reason why the asserted combinations, even if they were proper, would fail to teach the claimed invention. However, these points are made at length in the Original Appeal Brief and below, so it suffices at this time

to note that the Reopening Action (unlike the Final Action) does not argue that Kitai's local area networks are actually private networks as claimed by Applicants. Indeed, by withdrawing the rejections under Section 102 which were based solely on Kitai, the Examiner has implicitly acknowledged that Kitai fails to teach private networks.

Claims 9 and 15 were not properly rejected under Section 103 in view of Kitai

The Reopening Action is inconsistent as to the basis for rejecting these claims. Although the preceding summary paragraphs in the Reopening Action (paragraphs 4 and 14) assert that these claims are rejected based on more references than just Kitai, the rejections themselves (paragraphs 9 and 18) only discuss Kitai. Accordingly, for purposes of appeal, the rejections are based solely on Kitai. However, if the Board wishes to consider other grounds *sua sponte*, with regard to these or other claims, then Applicants respectfully request that the Board please also consider the arguments here and in the Original Appeal Brief against combining Kitai with other cited references.

As noted, the Examiner concedes that Kitai fails to teach private networks. Moreover, the leap from Kitai's LANs to the claimed invention's private networks is a large and nonobvious leap, for at least the reasons discussed in the Original Appeal Brief at pages 6-9. Thus, the claims are not obvious in view of Kitai.

Claims 1-3, 8, 9, 10-12, 14, 18, and 20 (Group II) were not properly rejected under Section 103 in view of Kitai combined with Albright

The Original Appeal Brief noted on pages 13-14 the failure of the office actions up to that point to provide a proper justification for combining Kitai and Albright. The Reopening Action asserts different reasons, but they likewise fail to establish the necessary suggestion or motivation in the art for combining these references. On page 4 of the Reopening Action, the reason given is that the combination "would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25)." But as in the Final Action, this rejection confuses serial networks with parallel networks. The cited section of Albright actually teaches routing

within a network, not routing that selects between two parallel networks. Moreover, the rejection again fails to explain any reason why the cited section of Albright would have led one of skill in the art to Kitai, as opposed to any other reference.

Accordingly, the rejections based on Albright and Kitai should be withdrawn or reversed. The combination is improper because the cited section of Albright (a frame relay reference) does not suggest combination with Kitai (a LAN reference). Moreover, the combination fails to teach the claimed parallel private network innovations, because Albright teaches serial networks (they are in fact the very reason for Albright's network-to-network interface) rather than teaching networks placed in parallel as claimed.

Claims 4, 13, 15, 16, and 21 (Group III) were not properly rejected under Section 103 in view of Kitai combined with Albright and Pearce

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The Reopening Action fails to give any further basis for adding Pearce to this combination. For example, in paragraph 15, the Reopening Action merely asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths." Paragraph 32 of the Reopening Action asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would detect and improve network security, traffic and failure." These are general statements, which do not suggest any combination of references. They merely suggest goals without suggesting ways to meet them.

The rejections fail to identify anything specific in one reference or in the art that would have led one of skill to the particular other references. It is well-established patent law that a rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. *See, e.g.*, M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient or more secure is not specific **evidence** that one of skill would have combined these particular references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 5 (Group IV) was not properly rejected under Section 103 in view of Kitai combined with Albright and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 17 (Group V) was not properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claims 6 and 7 (Group VI) were not properly rejected under Section 103 in view of Kitai combined with Albright and Goldszmidt

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 19 (Group VII) was not properly rejected under Section 103 in view of Kitai combined with Pearce and Goldszmidt

The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for

combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

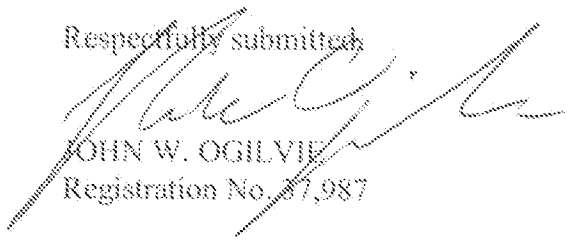
Conclusion

For at least the reasons explained above, all rejections should be withdrawn or reversed. If any questions might be answered by telephone, the undersigned invites a call at the Office's convenience.

Please note that the **correspondence address below is different** than in earlier Briefs.

Dated this June 19, 2006.

Respectfully submitted,



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CLAIMS APPENDIX

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

EVIDENCE APPENDIX

(was empty *but now contains non-patent literature from third party submission, requested by Examiner in Notification mailed 06/14/2006*)

This is an attachment to the Revised Supplemental Brief filed June 19, 2006 in 10/034,197.

A Notification mailed 06/14/2006 in 10/034,197 required appellant to provide the "Artifact of 10/034/197ZA". Accordingly, a copy of said artifact is provided, in the following 9 pages, in the form of a copy of a third party submission and accompanying non-patent literature; a copy of the cited patent is not enclosed, consistent with Office practice in IDSs.

John Ogilvie
Reg. No. 37987

Attorney Docket No.: 101092-00074

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	SANCHAITA DATTA
Confirmation No.:	7746
Serial No.:	10/034,197
Filed:	December 28, 2001
Title:	COMBINING CONNECTIONS FOR PARALLEL ACCESS…
Examiner:	THU HA T. NGUYEN
Group Art Unit:	2155

April 2, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

THIRD PARTY SUBMISSION

SIR:

Please withdraw the fees for this third party submission from deposit account 50-1290, as set forth in 37 CFR 1.17(p) and 37 CFR 1.17(i).

Submitted for consideration is the following documents and publication date:

1) U.S. Patent No. 6,665,702B1 Issued December 16, 2003;

2) "Radware announces LinkProof: The first IP Load Balancing Solution for networks with multiple ISP connection" Published October 7, 1999;

3) "Radware Balances the Network" Published January 7, 2000;

4) "Global Product Spotlight: Radware Linkproof" Published December 1, 1999;

5) "Radware Seeks Solutions to Easy-Access Problems" Published December 1, 1999;

This submission has been served upon the applicant in accordance with 37 CFR 1.248. Proof of service is attached.

This submission is after the two months from the time the application was published because:

1. The publication of the application only became known to the third party submitter on or about January 30, 2004; and
2. The U.S. patent issued on December 16, 2003, which was after the two month period had expired and therefore could not have been submitted within the time period.

Respectfully submitted,

_____
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Reg. No. 46,947

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Docket No.: 101092-00074
BSM:fd

Radware announces LinkProof: The first IP Load Balancing Solution for networks with multiple ISP connection

Mahwah, NJ; October 7, 1999. To ensure 7x24 availability many enterprises, e-commerce sites and regional ISPs are utilizing multiple Internet router connections. The LinkProof by Radware (Nasdaq: RDWR) is the first technology designed to intelligently load balance IP traffic between these "multi-homed" sites, creating redundancy and eliminating single points of failure.

Deploying independent router connections to two or more ISPs creates these multi-homed sites. This diversity ensures 7x24 availability and an uninterrupted packet delivery to and from the enterprise in the event one or more ISP connection fails. While this adds redundancy, it also creates configuration complexity that may necessitate intricate routing protocols such as BGP (Border Gateway Protocol) and/or coordination between the contracted ISPs.

LinkProof removes this complexity by taking responsibility for the packet delivery through a healthy ISP connection. Sitting logically between the enterprise network and a farm of Internet routers, the LinkProof verifies ISP health and intelligently load balances all inbound and outbound traffic. In addition, it performs Smart NAT to ensure the uninterrupted packet delivery to and from the enterprise network. Smart NAT allows the LinkProof to perform network address translation according to the ISP connection selected to carry the session to the Internet. For example, if the LinkProof chooses ISP_1 for outbound session delivery, then the translated source address will belong to the ISP_1 IP address pool for the inbound response.

Internet traffic is optimized by the LinkProof through intelligent load balancing based on the current session and/or load per verified ISP connection. Additionally, network proximity is measured to determine the closest and fastest route. Network proximity is calculated in both router hops and round trip latency. This allows multi-homed sites to transmit information through a fast, healthy route.

LinkProof also uses proximity detection to perform inbound traffic management. For Internet users attempting to access a resource on the enterprise network (such as a Web server), the LinkProof uses DNS to assure the most optimal ISP connection. This feature allows the LinkProof to consistently use the best and quickest path to satisfy user requests for information.

The LinkProof continuously monitors the health of all routers in the farm, and periodically checks each router path and the health of user defined nodes beyond the router. This monitoring allows the LinkProof to continually send sessions through healthy routers on a healthy Internet path.

About Radware

Radware develops, manufacturers and markets products that manage and direct Internet traffic among network resources to enable continuous access to Web sites and other services, applications and content based on the Internet protocol. Radware offers a broad range of Internet traffic management solutions to service providers, e-commerce businesses and corporate enterprises that require uninterrupted availability and optimal

performance of IP-based applications that are critical to their business. Radware's Internet traffic management solutions enable its customers to manage their network infrastructure to bypass system failures and to scale their network infrastructure to accommodate increasing IP traffic. Radware's products improve the productivity of network infrastructure by distributing traffic within a network to optimize the use of available network resources. Radware's products can be deployed either as independent solutions to address specific application needs at a particular location within a network or as an end-to-end integrated solution to manage traffic throughout a network.

This press release contains forward-looking statements that are subject to risks and uncertainties. Factors that could cause actual results to differ materially from these forward-looking statements include, but are not limited to, general business conditions in the Internet traffic management industry, changes in demand for Internet traffic management products, the timing and amount or cancellation of orders and other risks detailed from time to time in Radware's filings with the Securities and Exchange Commission, including Radware's Form F-1.

Radware Balances the Network

Internet Traffic Management Center, January 1, 2000

By Peter Christy

One of the absolutely thrilling parts of our job is being exposed to the continuing innovation of in the industry. We love watching the process of application invention - new ideas, seemingly out of the blue, that redefine "common knowledge" on what the product category is good for.

In the past, Alteon had some of our favorite inventions: cache redirection and balancing was certainly a good idea, and they invented a particularly cute DNS request capture application. This time we focus on Radware with LinkProof -- their invention for balancing and managing multi-homed connections out to the Internet.

Multi-homing is a simple concept. You want to have multiple connections to the Internet, provided by multiple ISPs. But multi-homing quickly gets very complicated, is difficult to configure, and is certainly not something you would want to reconfigure casually. Radware looked at this problem and developed an innovative application of traffic management.

For this discussion, let's assume a fairly simple multi-homing configuration: a branch office LAN connected to the Internet through two different ISPs. The obvious application of traffic management is simple life testing of the two links, and assuring that no traffic is sent to an ISP if a link is down. And you can imagine how a traffic manager could look at the load on the two links and balance it suitably.

But Radware goes well beyond this, using their DNS technology to determine which of the ISPs is the better path for specific traffic, and then routing traffic accordingly. This is clearly an innovative and clever use of traffic management, and certainly one we had never come close to imagining before. (See Radware's white paper for more interesting details.)

This kind of innovation is particularly important given a question we are regularly asked: "Won't the traffic management product category disappear over time as the functionality migrates into conventional routers and switches?" The answer we give is "Yes, if a traffic management company invents nothing new, then over time the value of that product will diminish." But we strongly feel that this is the wrong way to look at traffic management. In the server room, we see traffic management systems in effect becoming the operating system of the clustered computers that are serving out a return to centralized information systems. That's a big deal and a big future. And at the global level, we see the DNS solutions evolving into fairly full-blown content-directed routing schemes (as in the Akamai network), and that's also a very big deal. So the future of traffic management lies in innovation, and it's a significant and exciting future, if an unknown one.

Global Product Spotlight: Radware Linkproof

NetworkMagazine.com, December 1, 1999.

Radware's new load balancer maximizes backup Internet links

By David Greenfield

What's an easy way to strengthen an Internet hookup? Add a link to another upstream Internet provider. That might be smart planning, but it doesn't make for great accounting. Backup links sit idle most of the time, which means ISPs pay full tariffs for rarely used lines.

Radware (www.radware.com) thinks there's a better business solution. Its new LinkProof is the first load balancer to make running parallel links to the Internet easy and cost-effective. For starters, LinkProof optimally distributes traffic across multiple access lines. What's more, if a line or router fails, LinkProof rolls the traffic over to the backup connections.

That might not sound like such a big deal. After all, tweaking the Border Gateway Protocol 4 (BGP4) routing protocol can yield similar benefits. But not everyone runs BGP4, and those who do spend considerable time and expertise configuring the protocol. Finally, while BGP4 will switch to a backup link, the protocol won't let you weight your traffic distribution to maximize your connections. LinkProof will do all of that, and it doesn't require a Ph.D. to deploy.

Or so says Radware. Although there are plenty of users briefed on the product, nobody has tested it. What's more, none of these users are the second-tier ISPs that are supposed to adopt the product. Finally, because LinkProof only works with links on its subnet, the box can't distribute traffic loads across lines on other networks or offices.

Still, that's not stopping some major networkers from getting excited about the product. "On paper at least, LinkProof sounds like just what we want," says George Kurian, consultant of architecture and technology planning at Pacific Corp., a utility company in Portland, OR. Pacific currently runs its Internet access out of Portland, while paying for a backup link out of Salt Lake City, UT.

LinkProof, a modular box with two Ethernet or Fast Ethernet ports, sits between the firewall protecting the corporate backbone and in front of the routers connected to the Internet. At install-time, the network manager assigns a weight to each link that indicates the speed or cost of each line.

The rest of the configuration depends on the particular application. When load balancing incoming traffic, as is common with an e-commerce site, the LinkProof appears as the default DNS server. DNS queries from users looking to access the site are sent to LinkProof. It has IP addresses that are associated with each of the ISPs' links. LinkProof determines the optimum link based on latency and packet loss and then responds with the appropriate destination IP address.

When balancing outgoing Internet traffic, LinkProof is defined as the default router. It receives all outgoing packets and determines

the optimal link. LinkProof then changes the packet's source address to an address associated with an ISP's line and forwards the packet to the appropriate router.

So what happens in the event of a failure? LinkProof constantly monitors the health of each connection by testing the availability of up to 10 IP addresses along the path. If the address doesn't respond after some user-defined period of time, the traffic is directed to the alternative link. By default, the switch time is two seconds.

The key in both cases is Smart Network Address Translation (SmartNAT), which is the ability to reply with an IP address specific to a link. With SmartNAT, LinkProof insures that the client's responses return along the same link as the outgoing request. This enables LinkProof to account for traffic flowing in both directions when making a load-balancing decision. "Without SmartNAT, you don't get real load balancing," says Kurian.

Radware certainly isn't the only vendor in the load-balancing market. A number of other companies---including Alteon WebSystems, Foundry Networks, and F5 Networks ---deliver products that distribute traffic across Web sites and firewalls.

However, they stumble when it comes to delivering SmartNAT capabilities. Alteon is close, but the implementation is too cumbersome, says Kurian. Foundry and F5 don't offer products with SmartNAT today. F5 says it will add the SmartNAT feature in the next release of BIG/ip, which is expected to ship in December 1999. Foundry has not announced plans for releasing SmartNAT.

Radware Seeks Solutions to Easy-Access Problems

South China Morning Post, December 7, 1999.

South China Morning Post
INTERNET EDITION

By Veronique Saunier

Continuous access to Web sites is at the core of every product developed by Radware, a small Israeli company that claims to be the second-largest vendor of Internet traffic-management solutions. "The Internet is cruel. For a company cashing on e-commerce, a down time of even one minute means lost business and lost customers who may never come back," said Yaron Danieli, Radware's vice-president of sales for Asia Pacific.

"Yet the Internet is vulnerable. Everything from traffic overload to a pulled Ethernet cable can make a Web server unavailable."

Maintaining Web sites to keep them up and running continuously has become a business in itself for many companies, including France Telecom Hebergement - the host of the prestigious Presidency of Republic of France site - or Sprint IP Web hosting.

These carriers guarantee 100 per cent availability and offer their customers financial compensation if their sites are down for even a few seconds.

The way they keep their promises without bankruptcy is by making every machine and circuit of the network redundant by ensuring if one machine breaks the other still operates.

They also place so-called "load balancers" at strategic points of the network to make the Internet as fluid and fast as possible.

Although the concept of load balancing is quite simple - it directs Internet traffic to the server that is less busy - Radware claims it pioneered the concept and has been perfecting it since the launch of Web Server Director (WSD) four years ago.

WSD won Radware top honours from several United States technical magazines for its management, configuration, and ability to act as both primary and secondary load balancer at once.

Follow-up products include WSD Pro, which supports multiple networks, WSD DS which dispatches traffic to the nearest server in

the case of distributed sites, and Cache Server Director which intercepts Web users' requests and directs them to the most available cache server.

High availability also has become a critical component of firewalls deployed across enterprise networks to provide secure connectivity for Internet, and intranet and extranet communications.

Last year Radware launched FireProof, which load balances data to the best available firewall of the network.

According to Mr Danieli, many Cisco Systems' firewalls are load balanced by Radware's FireProof.

"While we were installing FireProof, we realised many companies wished to have multiple connections to the Internet instead of relying on one single ISP but were not ready to go through the hassles," Sharon Trachtman, vice-president marketing, said.

Using multiple ISPs adds redundancy abilities but necessitates complex configuration and routing protocols as well as close co-ordination between the contracted ISPs.

To make things easier, Radware designed a dedicated product that determined the closest, fastest and healthiest route for incoming and out-bound IP traffic between different ISPs.

That product, LinkProof, was launched globally last month.

Such responsiveness is the key to Radware's success.

RELATED PROCEEDINGS APPENDIX

(empty)

Electronic Acknowledgement Receipt

EFS ID:	1083061
Application Number:	10034197
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	19-JUN-2006
Filing Date:	28-DEC-2001
Time Stamp:	13:35:05
Application Type:	Utility
International Application Number:	

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Supplemental Appeal Brief	RevSubAppBriefPart1of2.pdf	7453262	no	21

Warnings:					
Information:					
2	Supplemental Appeal Brief	RevSubAppBriefPart2of2.pdf	3118766	no	11
Warnings:					
Information:					
			Total Files Size (in bytes):	10572028	

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

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EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Notification of Non-Compliant Appeal Brief (37 CFR 41.37)	Application No.	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on *19 June 2006* is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file anamended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.

2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).

3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).

4. ☒ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).

5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi))

6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).

7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).

8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).

9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).

10. ☒ Other (including any explanation in support of the above items):

The appeal brief does not contain a explanation of the subject matter as defined in the independent claims involved in the appeal brief. The appeal brief fails to set forth the structrure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings.
Also applicant is requested to provide another supplemental appeal brief which is clearly printed since the previous supplement appeal brief filed on June 19, 2006 was not clear to read.

Thuhanguyen

ThuHa Nguyen
Patent Examiner
AU 2155

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**TWICE REVISED SUBSTITUTE APPEAL BRIEF** **CERTIFICATE OF TRANSMISSION** I certify that this paper is being submitted through EFS-WEB to the Commissioner for Patents on September 12, 2006. Printed Name: John W. Ogilvie

Commissioner for Patents:

This case was **made special** by a Decision mailed October 8, 2003.

On August 17, 2004, Appellants filed an Original Brief appealing from a Final Action mailed April 19, 2004. On December 23, 2004, the Examiner reopened prosecution by mailing a Reopening Action. On March 4, 2005, Appellants filed a Supplemental Brief. An Examiner's Answer was mailed three months later, on June 17, 2005, and Appellants' Reply was filed ten days after that, on June 27, 2005. Several months later, on November 10, 2005, the Board remanded the case to the Examiner. Appellants filed a Substitute Appeal Brief eleven days later, on November 21, 2005. Almost six months after that, on June 14, 2006, the Office mailed a Notification of Non-Compliant Brief. A Revised

Substitute Brief was filed five days later, in response to the Notification. Appellants submit that the Substitute Brief was adequate for appeal, but to avoid further delay added the material shown in the Revised Substitute Brief in underlined italics. A second Notification of Non-Compliant Brief was mailed September 8, 2006, and the present Twice Revised Substitute Brief is filed in response.

Real Party in Interest

The real party in interest in this appeal is Assignee, Ragula Systems (FatPipe Networks).

Related Appeals and Interferences

None.

Status of Claims

Claims 1-21 were rejected in the Final Action, were rejected in the Reopening Action (December 23, 2004), are still pending, and are appealed.

Status of Amendments

No amendments were filed after the Final Action or the Reopening Action.

Summary of Claimed Subject Matter

The present invention relates to tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration, as shown for instance in Figure 5 or Figure 6. Frame relay networks 106 and point-to-point networks are each

"private networks"; *see* application at page 9 lines 10-12. In some embodiments a controller 502 according to the invention comprises a site interface 702 connecting the controller to a site 102, at least two private network interfaces 706, and a packet path selector 704 which selects between private network interfaces according to a specified criterion. A site may include a local area network; *see* discussion of Figure 7 on pages 13-14, and page 17 lines 15-17.

The controller receives 804 a packet through the site interface and sends 814 the packet through the private network interface that was selected 806 by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion 808 that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability criterion 810 that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion 812 that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

In response to point 4 of the first Notification, figure reference numbers are used in corresponding text in this application, as is the case in many patent applications, and correlating the above information with the independent claims readily yields the following:

1. A controller (502) which controls access to multiple independent private networks (application at page 9 lines 10-12) in a parallel network configuration, the controller comprising:

a site interface (702) connecting the controller to a site (102);

at least two private network interfaces (706); and

a packet path selector (704) which selects between private network interfaces according to a specified criterion;

wherein the controller receives (804) a packet through the site interface and sends (814) the packet through the private network interface that was selected (806) by the packet path selector.

13. A method for combining connections for access to multiple parallel private networks (application at page 9 lines 10-12), the method comprising the steps of:

obtaining a controller (502), the controller comprising a site interface (702), at least two private network interfaces (706), and a packet path selector (704) which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site (102) to receive (804) packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending (814) a packet to the site interface which then sends the packet through a private network interface selected (806) by the packet path selector.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending (814) a packet to a site interface of a controller (502), the controller comprising the site interface (702) which receives (804) packets, at least two network interfaces (706), and a packet path selector (704) which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

The invention also provides other controller embodiments, and it provides method embodiments. The claims define the invention; this summary is provided merely as an introduction and to assist in understanding the claims.

Grounds of Rejection to be Reviewed on Appeal

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 9, 15 properly rejected under Section 103 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 1-3, 8, 10-12, 14, 18, and 20 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?
4. Were claims 4, 13, 16, and 21 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?

5. Was claim 5 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
6. Was claim 17 properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta?
7. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
8. Was claim 19 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?

Note: The foregoing statement of issues resolves inconsistencies in the Reopening Action by following the actual reference citations that were made claim-by-claim in the Reopening Action, rather than following the summary paragraphs therein. For instance, summary paragraph 4 of the Reopening Action asserts that several claims, including claim 9, are rejected in view of Kitai and Albright, but the actual rejection in paragraph 9 of the Reopening Action only cites Kitai. Therefore, claim 9 is treated here as being rejected in view of Kitai alone. Several similar inconsistencies in the Reopening Action are likewise resolved by addressing the references that were actually discussed in a rejection, rather than the references that a summary paragraph merely asserted (wrongly) would be discussed.

Argument

By way of context, the following papers are among those filed or mailed in this case:

Provisional	provisional application, filed December 29, 2000
Application	non-provisional application, filed December 28, 2001
First IDS	information disclosure statement, filed April 29, 2002
Second IDS	information disclosure statement, filed March 14, 2003
Third IDS	information disclosure statement, filed April 9, 2003
Fourth IDS	information disclosure statement, filed April 11, 2003
Petition	petition to accelerate examination, filed April 21, 2003
Fifth IDS	information disclosure statement, filed June 3, 2003
Petition Grant	decision granting Petition, mailed October 8, 2003
First Action	first office action on the merits, mailed November 5, 2003
Response	response, filed February 4, 2004
Third-Party	third party submission, filed on or about April 5, 2004
Final Action	final office action, mailed April 19, 2004
Interview Summary	interview summary, filed May 25, 2004
Appeal Notice	notice of appeal, filed July 14, 2004
Advisory Action	advisory office action, mailed July 23, 2004
Original Brief	appeal brief, filed August 17, 2004
Reopening Action	office action, mailed December 23, 2004
Supplemental Brief	appeal brief, filed March 4, 2005
Examiner's Answer	answer, mailed June 16, 2005
Supplemental Reply	reply, filed June 27, 2005
Remand Order	Board order, mailed October 10, 2005
Substitute Brief	appeal brief, filed November 21, 2005
Second Substitute Brief	filed September 12, 2006

The shortcomings of the rejections are reviewed below. Arguments and statements by Applicants made earlier but not repeated here are also part of the record for this appeal and are not waived, although they may be modified or supplemented here. To keep this brief short while still trying to provide an adequate basis for review, some observations and arguments that might have been presented are not included. Accordingly, Applicants' silence here with respect to particular statements by the Office does not indicate their agreement or acquiescence.

Third Party Submission

The Final Action does not refer to the third-party submission that was filed, on behalf of an unidentified third party, on or about April 5, 2004. References were submitted to the Office by a third party in each of the following applications of the Assignee: 10/034190, 10/034197, 10/361837, 10/263497. That submission was made two weeks before the mailing of the Final Action, but it was not clear to the undersigned whether the Examiner had received and considered the submission's references. In response to the Examiner's Request in the Notification mailed June 14, 2006, a copy of the third party submission's non-patent references was submitted with the Revised Substitute Brief.

Grouping of Claims

The grouping of claims for the appeal has been unsettled.

The Examiner's Answer states one grouping of claims on page 2, asserts on that page that this claim grouping was recited in Appellants' brief, and then repeats the grounds for rejection that were stated in the Reopening Action. However, the

grouping of claims stated on page 2 of the Examiner's Answer was *not* recited in Appellants' brief, and it does *not* follow the structure of the rejections stated in the Reopening Action.

Page 2 of the Examiner's Answer identifies three claim groups:

Claims 1, 2-12;
Claims 13, 14-18; and
Claims 19, 20-21.

But these three groups are not consistent with Appellants' Brief or with the stated grounds for rejection. This claim grouping (three groups: 1-12, 13-18, 19-21) given in the Answer is not accepted by Appellants.

Page 4 of the Supplemental Brief identified seven claim groups:

Group I:	claims 9, 15
Group II:	claims 1-3, 8, 10-12, 14, 18, and 20
Group III:	claims 4, 13, 16, and 21
Group IV:	claim 5
Group V:	claim 17
Group VI:	claims 6 and 7
Group VII:	claim 19

This grouping generally tracks the Reopening Action grounds, by grouping claims that are rejected on the same grounds and for which there is also clearly a discussion of all cited references. This approach is explained in the Supplemental Brief on pages 3 and 4, in the presentation of issues and claim groupings. However, this approach could be seen as departing from the rejections' structure by separating claims 9 and 15 into their own group.

Arrival at an appropriate claim grouping is further complicated by the fact that the Examiner's Answer is not internally consistent. On page 2, the Answer

identifies three claim groupings, but on pages 3-17 it repeats rejections (made in the Reopening Action) that use more than three groupings.

In short, without further action, the Board will face multiple inconsistent claim groupings. This could hamper a full, efficient, and fair review of the claims. In the interest of promoting such review, and in a spirit of compromise with the Examiner, Appellants hereby agree to modify the claim grouping of their Supplemental Brief by treating claim 9 as standing or falling with its parent claim 1, and by treating claim 15 as standing or falling with its parent claim 13. The resulting claim grouping follows the structure of the rejections and reduces the number of claim groups by one.

Pursuant to M.P.E.P. § 1206, Appellants therefore submit the six (not seven) claim groups shown below. Please refer to the Reopening Action and the appeal Briefs for identification and discussion of the specific claim limitations involved. Within each of these six groups, the claims stand or fall together.

(Group) claims	References cited	Sample reasons for patentability
(II) claims 1-3, 8, 9, 10-12, 14, 18, and 20	Kitai + Albright	Kitai + Albright combination is not supported; see Supp. Appeal Brief at 6-7, Orig. Appeal Brief at 13-14: no motive to combine frame relay reference Albright w/ LAN reference Kitai; no motive to combine serial reference Albright w/ parallel reference Kitai
(III) claims 4, 13, 15, 16, and 21	Kitai + Albright + Pearce	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11

(IV) claim 5	Kitai + Albright + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(V) claim 17	Kitai + Albright + Pearce + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(VI) claims 6 and 7	Kitai + Albright + Goldszmidt	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Goldszmidt, see Orig. Appeal Brief at 12-13
(VII) claim 19	Kitai + Pearce + Goldszmidt	Kitai + Pearce combination is not supported, see Orig. Appeal Brief at 10-11; Kitai + Goldszmidt combination is not supported, see Orig. Appeal Brief at 12-13

Reply to Examiner's Responses

On pages 17-24, the Examiner's Answer responds to arguments made by Appellants. It may be helpful to begin with these arguments, and work backward from there as needed. In reply to the Answer, Appellants respectfully submit that the claims are patentable and the rejections are flawed.

Examiner's response (A) seeks to reverse the Examiner's position by arguing that local area networks as disclosed in Kitai are actually "private networks" as claimed. The only basis given for this reversal in the Answer is that "the examiner reopened the Office action with new ground of rejection." This is not a sufficient basis to support the change in position. Indeed, the Reopening Action admits in its discussion of claim 1 that "Kitai does not explicitly teach at least two private network interfaces" and it then relies on Albright to teach private network

interfaces. As explained at length in both the Original Brief at pages 5-9 and the Supplemental Brief at pages 5-6, Kitai does not teach private networks. This lack of teaching in Kitai is pertinent, not only because it makes Kitai unusable as a Section 102 reference, but also under Section 103 because it draws one of skill away from the asserted Kitai-Albright combination, as explained in the appeal Briefs.

Examiner's response (B) argues that Kitai taken alone under Section 103 is grounds for rejecting claims 9 and 15, because private networks are not mentioned in those claims. But this argument fails to recognize that claims 9 and 15 include the limitations of their respective parent claims, which do expressly require private networks.

Examiner's response (C) misunderstands Appellants' argument. The Examiner treats the argument as one that states the combination fails to teach the claimed invention because Albright teaches serial networks rather than parallel networks. The response therefore understandably notes that the failure of one reference in a combination to teach a contested feature does not show that the combination as a whole fails to teach the feature, and thus to teach the invention. That is, the Examiner's answer is basically that it doesn't matter that Albright fails to teach parallel networks, because Kitai does teach parallel networks.

But this answer is directed at the wrong argument. Appellants are not arguing that Kitai combined with Albright fails to teach parallel networks. Rather, Appellants argue that Kitai and Albright were not properly combined.

Appellants' claims were improperly used as a blueprint. In the Office Action mailed 11/05/2003, the Examiner made rejections using Kitai as a Section 102 reference. In the next Response, Appellants pointed out that Kitai does not teach

private networks, and hence cannot support rejections under Section 102. In the final action mailed 04/19/2004, the Examiner asserted again that Kitai was a Section 102 reference. The Original Appeal Brief followed, in which pages 5 through 9 explained in detail and with supporting evidence why Kitai does not teach parallel networks and thus could not – by itself – support rejections. Instead of letting the appeal go to the Board, the Examiner then reopened prosecution. In the Reopening Action, the Examiner did *not* assert Kitai as a Section 102 reference. Instead, the Examiner made Section 103 rejections, supplementing Kitai by pointing to Albright for the necessary teaching of private networks. Of course, Albright cannot be used as a ground for rejection in combination with Kitai unless there is some suggestion or motivation **in the art** for combining those references. There is not.

Appellants argue that Albright and Kitai were not properly combined, not merely because the Examiner failed to give any specific evidence of a motivation or suggestion in the art supporting that combination, but also because of the undisputed fact that Albright deals with *serial* networks – a fact which would have led those of skill in the art away from combining Albright with Kitai when they were trying to build a *parallel* network configuration.

In short, Appellants argue against making the Kitai + Albright combination in the first place, not against the teachings of that (improper) combination once it is made. This argument has not been rebutted. The Kitai + Albright combination is improper, regardless of what it teaches or fails to teach.

Examiner's response (D) cites a portion of Pearce as a suggestion or motivation for adding Pearce to the Kitai + Albright combination. But this fails to support the rejection.

As noted in the Appeal Briefs, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Pearce does not point toward the teachings of Kitai or Albright as possible solutions to some problem. Indeed, even if one interprets Pearce as treating the need for a prioritized list of qualifying networks as a problem, one sees that Pearce promptly provides its own solution in the form of a filter 38. The undersigned did not find in Pearce any suggestion that a reader should look elsewhere for serial network-to-network interfaces as described in Albright, or for a LAN switch as described in Kitai. Pearce is self-contained in this respect, and thus would not have instilled a motive to look elsewhere to enhance or replace the filter 38. Accordingly, the combination of Pearce with Kitai and Albright is not proper.

Examiner's response (E) cites a portion of Dutta as a suggestion or motivation for adding Dutta to the Kitai + Albright combination. This fails to support the rejection.

As noted, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Dutta does not point toward the teachings of Kitai or Albright. As noted, e.g., on page 12 of the Original Brief, Dutta discusses firewalls and security while Kitai does not mention either. Albright discusses frame relay networks but Dutta does not. There is no evidence of any suggestion or motivation in Dutta that would have led one of skill to Kitai and Albright rather than somewhere else, and those of skill in the art did not have the claims to use as a blueprint. The combination of Dutta with Kitai and Albright is not proper.

Examiner's response (F) attempts to justify the even larger combination of Kitai, Albright, Pearce, and Dutta. As noted above and in the appeal Briefs (which

are incorporated as part of the record before the Board), the sub-combination of Kitai with Albright is not proper, and neither are the combinations of three references obtained by adding Pearce or Dutta alone to Kitai and Albright. The only basis for combining these four references is impermissible hindsight, which is driven by Appellants' claims, not by the prior art.

Examiner's response (G) fails to rebut the argument made at pages 12-13 of the Original Brief. Goldszmidt does not teach *sending* packets out of sequence as claimed. Rather, Goldszmidt views such non-sequential packets as an unfortunate problem and concerns itself with ways to handle *receiving* packets out of sequence. Nor is there a motivation for combining the references – as noted, Kitai fails to mention packet sequence, and the Kitai + Albright combination is not properly motivated.

Examiner's response (H) again tries to defend combining Kitai, Albright, and Dutta. As noted above, e.g., in regard to response (E), this combination is not proper.

Examiner's response (I) tries to defend combining Kitai, Pearce, and Goldszmidt. As noted above, e.g., in regard to responses (D) and (G), this combination is not proper.

We turn now to other arguments exchanged before this Substitute Appeal, and repeated here for convenience.

A local area network is not a "private network"

Despite the well-documented and detailed explanation of Kitai's shortcomings at pages 5-9 of the Original Appeal Brief (incorporated herein), the Examiner continues to assert Kitai in every rejection. The examiner now concedes

(e.g., on pages 3, 5, 9 of the Reopening Action) that Kitai does not teach private networks; the LANs of Kitai are not private networks. The failure of Kitai to discuss private networks is one reason those of skill in the art would not have combined Kitai with other references, such as Albright, that do discuss frame relay or other private networks. Kitai's failure to discuss private networks is also a reason why the asserted combinations, even if they were proper, would fail to teach the claimed invention. However, these points are made at length in the Original Appeal Brief and below, so it suffices at this time to note that the Reopening Action (unlike the Final Action) does not argue that Kitai's local area networks are actually private networks as claimed by Applicants. Indeed, by withdrawing the rejections under Section 102 which were based solely on Kitai, the Examiner has implicitly acknowledged that Kitai fails to teach private networks.

Claims 9 and 15 were not properly rejected under Section 103 in view of Kitai

The Reopening Action is inconsistent as to the basis for rejecting these claims. Although the preceding summary paragraphs in the Reopening Action (paragraphs 4 and 14) assert that these claims are rejected based on more references than just Kitai, the rejections themselves (paragraphs 9 and 18) only discuss Kitai. Accordingly, for purposes of appeal, the rejections are based solely on Kitai. However, if the Board wishes to consider other grounds *sua sponte*, with regard to these or other claims, then Applicants respectfully request that the Board please also consider the arguments here and in the Original Appeal Brief against combining Kitai with other cited references.

As noted, the Examiner concedes that Kitai fails to teach private networks. Moreover, the leap from Kitai's LANs to the claimed invention's private networks

is a large and nonobvious leap, for at least the reasons discussed in the Original Appeal Brief at pages 6-9. Thus, the claims are not obvious in view of Kitai.

Claims 1-3, 8, 9, 10-12, 14, 18, and 20 (Group II) were not properly rejected under Section 103 in view of Kitai combined with Albright

The Original Appeal Brief noted on pages 13-14 the failure of the office actions up to that point to provide a proper justification for combining Kitai and Albright. The Reopening Action asserts different reasons, but they likewise fail to establish the necessary suggestion or motivation in the art for combining these references. On page 4 of the Reopening Action, the reason given is that the combination "would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25)." But as in the Final Action, this rejection confuses serial networks with parallel networks. The cited section of Albright actually teaches routing *within* a network, not routing that selects between two parallel networks. Moreover, the rejection again fails to explain any reason why the cited section of Albright would have led one of skill in the art to Kitai, as opposed to any other reference.

Accordingly, the rejections based on Albright and Kitai should be withdrawn or reversed. The combination is improper because the cited section of Albright (a frame relay reference) does not suggest combination with Kitai (a LAN reference). Moreover, the combination fails to teach the claimed parallel private network innovations, because Albright teaches serial networks (they are in fact the very reason for Albright's network-to-network interface) rather than teaching networks placed in parallel as claimed.

Claims 4, 13, 15, 16, and 21 (Group III) were not properly rejected under Section 103 in view of Kitai combined with Albright and Pearce

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The Reopening Action fails to give any further basis for adding Pearce to this combination. For example, in paragraph 15, the Reopening Action merely asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths." Paragraph 32 of the Reopening Action asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would detect and improve network security, traffic and failure." These are general statements, which do not suggest any combination of references. They merely suggest goals without suggesting ways to meet them.

The rejections fail to identify anything specific in one reference or in the art that would have led one of skill to the particular other references. It is well-established patent law that a rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. *See, e.g.,* M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient or more secure is not specific **evidence** that one of skill would have combined these particular references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 5 (Group IV) was not properly rejected under Section 103 in view of Kitai combined with Albright and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 17 (Group V) was not properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claims 6 and 7 (Group VI) were not properly rejected under Section 103 in view of Kitai combined with Albright and Goldszmidt

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 19 (Group VII) was not properly rejected under Section 103 in view of Kitai combined with Pearce and Goldszmidt

The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Conclusion

For at least the reasons explained above, all rejections should be withdrawn or reversed. If any questions might be answered by telephone, the undersigned invites a call at the Office's convenience.

Please note that the **correspondence address below is different** than in earlier Briefs.

Dated this September 12, 2006.

Respectfully submitted,

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CLAIMS APPENDIX

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the

selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two

carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

EVIDENCE APPENDIX

(contains non-patent literature from third party submission, requested by Examiner in Notification mailed 06/14/2006, filed by Appellant 06/19/2006)

RELATED PROCEEDINGS APPENDIX

(empty)

Electronic Acknowledgement Receipt

EFS ID:	1196026
Application Number:	10034197
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	12-SEP-2006
Filing Date:	28-DEC-2001
Time Stamp:	10:31:09
Application Type:	Utility
International Application Number:	

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Supplemental Appeal Brief	TwiceRevSubAppBrief.pdf	1053069	no	27

Warnings:	
Information:	
Total Files Size (in bytes):	1053069

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

5

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 01/11/2007

OGILVIE LAW FIRM
1320 EAST LAIRD AVENUE
SALT LAKE CITY, UT 84105

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 01/11/2007

Please find below and/or attached an Office communication concerning this application or proceeding.

Notification of Non-Compliant Appeal Brief (37 CFR 41.37)	Application No.	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on *12 September 2006* is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file anamended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.

2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).

3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).

4. ☒ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).

5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi))

6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).

7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).

8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).

9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).

10. ☒ Other (including any explanation in support of the above items):

See Continuation Sheet.

ThuHa Nguyen
Primary Examiner
Art Unit 2155

Continuation of 10. Other (including any explanation in support of the above items): The appeal brief does not contain a explanation of the subject matter as defined in the independent claims involved in the appeal brief, The appeal brief fails to set forth the structrure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings such as in independent claims 13 and 19, the appellant fails to set forth the structurem material or acts described in the specification as corresponding to each claimed functions/limitaitons such as "connecting a first private newtork interface of the controller to a first private network; connecting a first private network interface of the controller to a second private network which is parallel to and independent of the first private network" and "...selects between network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: as security criterion, a reliability criterion, a load-balancing criterion".
Also applicant is requested to provide another supplemental "Artifact of 10/034/197ZA" which is clearly printed since the previous supplement "Artifact 10/034/197ZA" filed on June 19, 2006 was not clear to read.

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**THRICE REVISED SUBSTITUTE APPEAL BRIEF** **CERTIFICATE OF TRANSMISSION** I certify that this paper is being submitted through EFS-WEB to the Commissioner for Patents on January 17, 2007. Printed Name: John W. Ogilvie

Commissioner for Patents:

This case was **made special** by a Decision mailed October 8, 2003.

On August 17, 2004, Appellants filed an Original Brief appealing from a Final Action mailed April 19, 2004. On December 23, 2004, the Examiner reopened prosecution by mailing a Reopening Action. On March 4, 2005, Appellants filed a Supplemental Brief. An Examiner's Answer was mailed three months later, on June 17, 2005, and Appellants' Reply was filed ten days after that, on June 27, 2005. Several months later, on November 10, 2005, the Board remanded the case to the Examiner. Appellants filed a Substitute Appeal Brief eleven days later, on November 21, 2005. Almost six months after that, on June 14, 2006, the Office mailed a Notification of Non-Compliant Brief. A Revised

Substitute Brief was filed five days later, in response to the Notification. Appellants submit that the Substitute Brief was adequate for appeal, but to avoid further delay added material shown in the Revised Substitute Brief in underlined italics. A second Notification of Non-Compliant Brief was mailed September 8, 2006, and a Twice Revised Substitute Brief was filed in response.

After a third Notification of Non-Compliant Brief was mailed January 11, 2007, the undersigned contacted the Examiner's supervisor, SPE Saleh Najjar, on January 16, 2007 by leaving a voicemail request for clarification. SPE Najjar responded the following day, identifying during a phone conference three claim limitations for which no reference numbers had been included in the recitation of independent claims in the Summary of Claimed Subject Matter. The Office's request for "another supplemental 'Artifact of 10/034/197ZA'" made in the Notification was also clarified by SPE Najjar. The undersigned thanks SPE Najjar for making clear the reasons for objecting to the appeal briefs. The objections have been addressed by changes below.

Real Party in Interest

The real party in interest in this appeal is Assignee, Ragula Systems (FatPipe Networks).

Related Appeals and Interferences

None.

Status of Claims

Claims 1-21 were rejected in the Final Action, were rejected in the

Reopening Action (December 23, 2004), are still pending, and are appealed.

Status of Amendments

No amendments were filed after the Final Action or the Reopening Action.

Summary of Claimed Subject Matter

The present invention relates to tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration, as shown for instance in Figure 5 or Figure 6. Frame relay networks 106 and point-to-point networks are each "private networks"; *see* application at page 9 lines 10-12. In some embodiments a controller 502 according to the invention comprises a site interface 702 connecting the controller to a site 102, at least two private network interfaces 706, and a packet path selector 704 which selects between private network interfaces according to a specified criterion. A site may include a local area network; *see* discussion of Figure 7 on pages 13-14, and page 17 lines 15-17.

The controller receives 804 a packet through the site interface and sends 814 the packet through the private network interface that was selected 806 by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion 808 that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability criterion 810 that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion 812 that promotes use of multiple private

networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

In response to point 4 of the first Notification, figure reference numbers are used in corresponding text in this application, as is the case in many patent applications, and correlating the above information with the independent claims readily yields the following:

1. A controller (502) which controls access to multiple independent private networks (application at page 9 lines 10-12) in a parallel network configuration, the controller comprising:

a site interface (702) connecting the controller to a site (102);

at least two private network interfaces (706); and

a packet path selector (704) which selects between private network interfaces according to a specified criterion;

wherein the controller receives (804) a packet through the site interface and sends (814) the packet through the private network interface that was selected (806) by the packet path selector.

13. A method for combining connections for access to multiple parallel private networks (application at page 9 lines 10-12), the method comprising the steps of:

obtaining a controller (502), the controller comprising a site interface (702), at least two private network interfaces (706), and a packet path selector (704) which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site (102) to receive (804) packets from a computer at the site;

connecting a first private network interface (706) of the controller to a first private network;

connecting a second private network interface (706) of the controller to a second private network which is parallel to and independent of the first private network; and

sending (814) a packet to the site interface which then sends the packet through a private network interface selected (806) by the packet path selector.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending (814) a packet to a site interface of a controller (502), the controller comprising the site interface (702) which receives (804) packets, at least two network interfaces (706), and a packet path selector (704) which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector (704), wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

The invention also provides other controller embodiments, and it provides method embodiments. The claims define the invention; this summary is provided merely as an introduction and to assist in understanding the claims.

Grounds of Rejection to be Reviewed on Appeal

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 9, 15 properly rejected under Section 103 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 1-3, 8, 10-12, 14, 18, and 20 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?
4. Were claims 4, 13, 16, and 21 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?
5. Was claim 5 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
6. Was claim 17 properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta?
7. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
8. Was claim 19 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?

Note: The foregoing statement of issues resolves inconsistencies in the Reopening Action by following the actual reference citations that were made claim-by-claim in the Reopening Action, rather than following the summary paragraphs therein. For instance, summary paragraph 4 of the Reopening

Action asserts that several claims, including claim 9, are rejected in view of Kitai and Albright, but the actual rejection in paragraph 9 of the Reopening Action only cites Kitai. Therefore, claim 9 is treated here as being rejected in view of Kitai alone. Several similar inconsistencies in the Reopening Action are likewise resolved by addressing the references that were actually discussed in a rejection, rather than the references that a summary paragraph merely asserted (wrongly) would be discussed.

Argument

By way of context, the following papers are among those filed or mailed in this case:

Provisional	provisional application, filed December 29, 2000
Application	non-provisional application, filed December 28, 2001
First IDS	information disclosure statement, filed April 29, 2002
Second IDS	information disclosure statement, filed March 14, 2003
Third IDS	information disclosure statement, filed April 9, 2003
Fourth IDS	information disclosure statement, filed April 11, 2003
Petition	petition to accelerate examination, filed April 21, 2003
Fifth IDS	information disclosure statement, filed June 3, 2003
Petition Grant	decision granting Petition, mailed October 8, 2003
First Action	first office action on the merits, mailed November 5, 2003
Response	response, filed February 4, 2004
Third-Party	third party submission, filed on or about April 5, 2004
Final Action	final office action, mailed April 19, 2004
Interview Summary	interview summary, filed May 25, 2004

Appeal Notice	notice of appeal, filed July 14, 2004
Advisory Action	advisory office action, mailed July 23, 2004
Original Brief	appeal brief, filed August 17, 2004
Reopening Action	office action, mailed December 23, 2004
Supplemental Brief	appeal brief, filed March 4, 2005
Examiner's Answer	answer, mailed June 16, 2005
Supplemental Reply	reply, filed June 27, 2005
Remand Order	Board order, mailed October 10, 2005
Substitute Brief	appeal brief, filed November 21, 2005
Second Substitute Brief	filed September 12, 2006
Third Substitute Brief	present brief

The shortcomings of the rejections are reviewed below. Arguments and statements by Applicants made earlier but not repeated here are also part of the record for this appeal and are not waived, although they may be modified or supplemented here. To keep this brief short while still trying to provide an adequate basis for review, some observations and arguments that might have been presented are not included. Accordingly, Applicants' silence here with respect to particular statements by the Office does not indicate their agreement or acquiescence.

Third Party Submission

The Final Action does not refer to the third-party submission that was filed, on behalf of an unidentified third party, on or about April 5, 2004. References were submitted to the Office by a third party in each of the following applications of the

Assignee: 10/034190, 10/034197, 10/361837, 10/263497. That submission was made two weeks before the mailing of the Final Action, but it was not clear to the undersigned whether the Examiner had received and considered the submission's references. In response to the Examiner's Request in the Notification mailed June 14, 2006, a copy of the third party submission's non-patent references was submitted with the Revised Substitute Brief. In response to SPE Najjar's request, a higher-contrast (more easily read) copy of the third party submission is given here, in the Evidence Appendix.

Grouping of Claims

The grouping of claims for the appeal has been unsettled.

The Examiner's Answer states one grouping of claims on page 2, asserts on that page that this claim grouping was recited in Appellants' brief, and then repeats the grounds for rejection that were stated in the Reopening Action. However, the grouping of claims stated on page 2 of the Examiner's Answer was *not* recited in Appellants' brief, and it does *not* follow the structure of the rejections stated in the Reopening Action.

Page 2 of the Examiner's Answer identifies three claim groups:

Claims 1, 2-12;
Claims 13, 14-18; and
Claims 19, 20-21.

But these three groups are not consistent with Appellants' Brief or with the stated grounds for rejection. This claim grouping (three groups: 1-12, 13-18, 19-21) given in the Answer is not accepted by Appellants.

Page 4 of the Supplemental Brief identified seven claim groups:

Group I: claims 9, 15
Group II: claims 1-3, 8, 10-12, 14, 18, and 20
Group III: claims 4, 13, 16, and 21
Group IV: claim 5
Group V: claim 17
Group VI: claims 6 and 7
Group VII: claim 19

This grouping generally tracks the Reopening Action grounds, by grouping claims that are rejected on the same grounds and for which there is also clearly a discussion of all cited references. This approach is explained in the Supplemental Brief on pages 3 and 4, in the presentation of issues and claim groupings. However, this approach could be seen as departing from the rejections' structure by separating claims 9 and 15 into their own group.

Arrival at an appropriate claim grouping is further complicated by the fact that the Examiner's Answer is not internally consistent. On page 2, the Answer identifies three claim groupings, but on pages 3-17 it repeats rejections (made in the Reopening Action) that use more than three groupings.

In short, without further action, the Board will face multiple inconsistent claim groupings. This could hamper a full, efficient, and fair review of the claims. In the interest of promoting such review, and in a spirit of compromise with the Examiner, Appellants hereby agree to modify the claim grouping of their Supplemental Brief by treating claim 9 as standing or falling with its parent claim 1, and by treating claim 15 as standing or falling with its parent claim 13. The resulting claim grouping follows the structure of the rejections and reduces the number of claim groups by one.

Pursuant to M.P.E.P. § 1206, Appellants therefore submit the six (not seven) claim groups shown below. Please refer to the Reopening Action and the appeal Briefs for identification and discussion of the specific claim limitations involved. Within each of these six groups, the claims stand or fall together.

(Group) claims	References cited	Sample reasons for patentability
(II) claims 1-3, 8, 9, 10-12, 14, 18, and 20	Kitai + Albright	Kitai + Albright combination is not supported; see Supp. Appeal Brief at 6-7, Orig. Appeal Brief at 13-14: no motive to combine frame relay reference Albright w/ LAN reference Kitai; no motive to combine serial reference Albright w/ parallel reference Kitai
(III) claims 4, 13, 15, 16, and 21	Kitai + Albright + Pearce	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11
(IV) claim 5	Kitai + Albright + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(V) claim 17	Kitai + Albright + Pearce + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(VI) claims 6 and 7	Kitai + Albright + Goldszmidt	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Goldszmidt, see Orig. Appeal Brief at 12-13
(VII) claim 19	Kitai + Pearce + Goldszmidt	Kitai + Pearce combination is not supported, see Orig. Appeal Brief at 10-11; Kitai + Goldszmidt combination is not supported, see Orig. Appeal Brief at 12-13

Reply to Examiner's Responses

On pages 17-24, the Examiner's Answer responds to arguments made by Appellants. It may be helpful to begin with these arguments, and work backward from there as needed. In reply to the Answer, Appellants respectfully submit that the claims are patentable and the rejections are flawed.

Examiner's response (A) seeks to reverse the Examiner's position by arguing that local area networks as disclosed in Kitai are actually "private networks" as claimed. The only basis given for this reversal in the Answer is that "the examiner reopened the Office action with new ground of rejection." This is not a sufficient basis to support the change in position. Indeed, the Reopening Action admits in its discussion of claim 1 that "Kitai does not explicitly teach at least two private network interfaces" and it then relies on Albright to teach private network interfaces. As explained at length in both the Original Brief at pages 5-9 and the Supplemental Brief at pages 5-6, Kitai does not teach private networks. This lack of teaching in Kitai is pertinent, not only because it makes Kitai unusable as a Section 102 reference, but also under Section 103 because it draws one of skill away from the asserted Kitai-Albright combination, as explained in the appeal Briefs.

Examiner's response (B) argues that Kitai taken alone under Section 103 is grounds for rejecting claims 9 and 15, because private networks are not mentioned in those claims. But this argument fails to recognize that claims 9 and 15 include the limitations of their respective parent claims, which do expressly require private networks.

Examiner's response (C) misunderstands Appellants' argument. The Examiner treats the argument as one that states the combination fails to teach the claimed invention because Albright teaches serial networks rather than parallel networks. The response therefore understandably notes that the failure of one reference in a combination to teach a contested feature does not show that the combination as a whole fails to teach the feature, and thus to teach the invention. That is, the Examiner's answer is basically that it doesn't matter that Albright fails to teach parallel networks, because Kitai does teach parallel networks.

But this answer is directed at the wrong argument. Appellants are not arguing that Kitai combined with Albright fails to teach parallel networks. Rather, Appellants argue that Kitai and Albright were not properly combined.

Appellants' claims were improperly used as a blueprint. In the Office Action mailed 11/05/2003, the Examiner made rejections using Kitai as a Section 102 reference. In the next Response, Appellants pointed out that Kitai does not teach private networks, and hence cannot support rejections under Section 102. In the final action mailed 04/19/2004, the Examiner asserted again that Kitai was a Section 102 reference. The Original Appeal Brief followed, in which pages 5 through 9 explained in detail and with supporting evidence why Kitai does not teach parallel networks and thus could not – by itself – support rejections. Instead of letting the appeal go to the Board, the Examiner then reopened prosecution. In the Reopening Action, the Examiner did *not* assert Kitai as a Section 102 reference. Instead, the Examiner made Section 103 rejections, supplementing Kitai by pointing to Albright for the necessary teaching of private networks. Of course, Albright cannot be used as a ground for rejection in combination with Kitai unless

there is some suggestion or motivation **in the art** for combining those references. There is not.

Appellants argue that Albright and Kitai were not properly combined, not merely because the Examiner failed to give any specific evidence of a motivation or suggestion in the art supporting that combination, but also because of the undisputed fact that Albright deals with *serial* networks – a fact which would have led those of skill in the art away from combining Albright with Kitai when they were trying to build a *parallel* network configuration.

In short, Appellants argue against making the Kitai + Albright combination in the first place, not against the teachings of that (improper) combination once it is made. This argument has not been rebutted. The Kitai + Albright combination is improper, regardless of what it teaches or fails to teach.

Examiner's response (D) cites a portion of Pearce as a suggestion or motivation for adding Pearce to the Kitai + Albright combination. But this fails to support the rejection.

As noted in the Appeal Briefs, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Pearce does not point toward the teachings of Kitai or Albright as possible solutions to some problem. Indeed, even if one interprets Pearce as treating the need for a prioritized list of qualifying networks as a problem, one sees that Pearce promptly provides its own solution in the form of a filter 38. The undersigned did not find in Pearce any suggestion that a reader should look elsewhere for serial network-to-network interfaces as described in Albright, or for a LAN switch as described in Kitai. Pearce is self-contained in this respect, and thus would not have instilled a motive to look elsewhere to enhance or

replace the filter 38. Accordingly, the combination of Pearce with Kitai and Albright is not proper.

Examiner's response (E) cites a portion of Dutta as a suggestion or motivation for adding Dutta to the Kitai + Albright combination. This fails to support the rejection.

As noted, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Dutta does not point toward the teachings of Kitai or Albright. As noted, e.g., on page 12 of the Original Brief, Dutta discusses firewalls and security while Kitai does not mention either. Albright discusses frame relay networks but Dutta does not. There is no evidence of any suggestion or motivation in Dutta that would have led one of skill to Kitai and Albright rather than somewhere else, and those of skill in the art did not have the claims to use as a blueprint. The combination of Dutta with Kitai and Albright is not proper.

Examiner's response (F) attempts to justify the even larger combination of Kitai, Albright, Pearce, and Dutta. As noted above and in the appeal Briefs (which are incorporated as part of the record before the Board), the sub-combination of Kitai with Albright is not proper, and neither are the combinations of three references obtained by adding Pearce or Dutta alone to Kitai and Albright. The only basis for combining these four references is impermissible hindsight, which is driven by Appellants' claims, not by the prior art.

Examiner's response (G) fails to rebut the argument made at pages 12-13 of the Original Brief. Goldszmidt does not teach *sending* packets out of sequence as claimed. Rather, Goldszmidt views such non-sequential packets as an unfortunate problem and concerns itself with ways to handle *receiving* packets out of sequence. Nor is there a motivation for combining the references – as noted, Kitai fails to

mention packet sequence, and the Kitai + Albright combination is not properly motivated.

Examiner's response (H) again tries to defend combining Kitai, Albright, and Dutta. As noted above, e.g., in regard to response (E), this combination is not proper.

Examiner's response (I) tries to defend combining Kitai, Pearce, and Goldszmidt. As noted above, e.g., in regard to responses (D) and (G), this combination is not proper.

We turn now to other arguments exchanged before this Substitute Appeal, and repeated here for convenience.

A local area network is not a "private network"

Despite the well-documented and detailed explanation of Kitai's shortcomings at pages 5-9 of the Original Appeal Brief (incorporated herein), the Examiner continues to assert Kitai in every rejection. The examiner now concedes (e.g., on pages 3, 5, 9 of the Reopening Action) that Kitai does not teach private networks; the LANs of Kitai are not private networks. The failure of Kitai to discuss private networks is one reason those of skill in the art would not have combined Kitai with other references, such as Albright, that do discuss frame relay or other private networks. Kitai's failure to discuss private networks is also a reason why the asserted combinations, even if they were proper, would fail to teach the claimed invention. However, these points are made at length in the Original Appeal Brief and below, so it suffices at this time to note that the Reopening Action (unlike the Final Action) does not argue that Kitai's local area networks are actually private networks as claimed by Applicants. Indeed, by withdrawing the rejections

under Section 102 which were based solely on Kitai, the Examiner has implicitly acknowledged that Kitai fails to teach private networks.

Claims 9 and 15 were not properly rejected under Section 103 in view of Kitai

The Reopening Action is inconsistent as to the basis for rejecting these claims. Although the preceding summary paragraphs in the Reopening Action (paragraphs 4 and 14) assert that these claims are rejected based on more references than just Kitai, the rejections themselves (paragraphs 9 and 18) only discuss Kitai. Accordingly, for purposes of appeal, the rejections are based solely on Kitai. However, if the Board wishes to consider other grounds *sua sponte*, with regard to these or other claims, then Applicants respectfully request that the Board please also consider the arguments here and in the Original Appeal Brief against combining Kitai with other cited references.

As noted, the Examiner concedes that Kitai fails to teach private networks. Moreover, the leap from Kitai's LANs to the claimed invention's private networks is a large and nonobvious leap, for at least the reasons discussed in the Original Appeal Brief at pages 6-9. Thus, the claims are not obvious in view of Kitai.

Claims 1-3, 8, 9, 10-12, 14, 18, and 20 (Group II) were not properly rejected under Section 103 in view of Kitai combined with Albright

The Original Appeal Brief noted on pages 13-14 the failure of the office actions up to that point to provide a proper justification for combining Kitai and Albright. The Reopening Action asserts different reasons, but they likewise fail to establish the necessary suggestion or motivation in the art for combining these references. On page 4 of the Reopening Action, the reason given is that the

combination "would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25)." But as in the Final Action, this rejection confuses serial networks with parallel networks. The cited section of Albright actually teaches routing *within* a network, not routing that selects between two parallel networks. Moreover, the rejection again fails to explain any reason why the cited section of Albright would have led one of skill in the art to Kitai, as opposed to any other reference.

Accordingly, the rejections based on Albright and Kitai should be withdrawn or reversed. The combination is improper because the cited section of Albright (a frame relay reference) does not suggest combination with Kitai (a LAN reference). Moreover, the combination fails to teach the claimed parallel private network innovations, because Albright teaches serial networks (they are in fact the very reason for Albright's network-to-network interface) rather than teaching networks placed in parallel as claimed.

Claims 4, 13, 15, 16, and 21 (Group III) were not properly rejected under Section 103 in view of Kitai combined with Albright and Pearce

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The Reopening Action fails to give any further basis for adding Pearce to this combination. For example, in paragraph 15, the Reopening Action merely asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths."

Paragraph 32 of the Reopening Action asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would detect and improve network security, traffic and failure." These are general statements, which do not suggest any combination of references. They merely suggest goals without suggesting ways to meet them.

The rejections fail to identify anything specific in one reference or in the art that would have led one of skill to the particular other references. It is well-established patent law that a rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. *See, e.g.,* M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient or more secure is not specific **evidence** that one of skill would have combined these particular references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 5 (Group IV) was not properly rejected under Section 103 in view of Kitai combined with Albright and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 17 (Group V) was not properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claims 6 and 7 (Group VI) were not properly rejected under Section 103 in view of Kitai combined with Albright and Goldszmidt

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 19 (Group VII) was not properly rejected under Section 103 in view of Kitai combined with Pearce and Goldszmidt

The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Conclusion

For at least the reasons explained above, all rejections should be withdrawn or reversed. If any questions might be answered by telephone, the undersigned invites a call at the Office's convenience.

Please note that the **correspondence address below is different** than in earlier Briefs.

Dated this January 17, 2007.

Respectfully submitted,

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CLAIMS APPENDIX

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the

selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two

carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

EVIDENCE APPENDIX

(contains non-patent literature from third party submission, requested by Examiner in Notification mailed 06/14/2006, and filed by Appellant on 06/19/2006; this copy is a re-scanned high-contrast copy per SPE Najjar's request)

Attorney Docket No.: 101092-00074

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	SANCHAITA DATTA
Confirmation No.:	7746
Serial No.:	10/034,197
Filed:	December 28, 2001
Title:	COMBINING CONNECTIONS FOR PARALLEL ACCESS...
Examiner:	THU HA T. NGUYEN
Group Art Unit:	2155

April 2, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

THIRD PARTY SUBMISSION

SIR:

Please withdraw the fees for this third party submission from deposit account 50-1290, as set forth in 37 CFR 1.17(p) and 37 CFR 1.17(i).

Submitted for consideration is the following documents and publication date:

1) U.S. Patent No. 6,665,702B1 Issued December 16, 2003;

2) "Radware announces LinkProof: The first IP Load Balancing Solution for networks with multiple ISP connection" Published October 7, 1999;

3) "Radware Balances the Network" Published January 7, 2000;

4) "Global Product Spotlight: Radware Linkproof" Published December 1, 1999;

5) "Radware Seeks Solutions to Easy-Access Problems" Published December 1, 1999;

This submission has been served upon the applicant in accordance with 37 CFR 1.248. Proof of service is attached.

This submission is after the two months from the time the application was published because:

1. The publication of the application only became known to the third party submitter on or about January 30, 2004; and
2. The U.S. patent issued on December 16, 2003, which was after the two month period had expired and therefore could not have been submitted within the time period.

Respectfully submitted,

_____
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Docket No.: 101092-00074
BSM:fd

Radware announces LinkProof: The first IP Load Balancing Solution for networks with multiple ISP connection

Mahwah, NJ; October 7, 1999. To ensure 7x24 availability many enterprises, e-commerce sites and regional ISPs are utilizing multiple Internet router connections. The LinkProof by Radware (Nasdaq: RDWR) is the first technology designed to intelligently load balance IP traffic between these "multi-homed" sites, creating redundancy and eliminating single points of failure.

Deploying independent router connections to two or more ISPs creates these multi-homed sites. This diversity ensures 7x24 availability and an uninterrupted packet delivery to and from the enterprise in the event one or more ISP connection fails. While this adds redundancy, it also creates configuration complexity that may necessitate intricate routing protocols such as BGP (Border Gateway Protocol) and/or coordination between the contracted ISPs.

LinkProof removes this complexity by taking responsibility for the packet delivery through a healthy ISP connection. Sitting logically between the enterprise network and a farm of Internet routers, the LinkProof verifies ISP health and intelligently load balances all inbound and outbound traffic. In addition, it performs Smart NAT to ensure the uninterrupted packet delivery to and from the enterprise network. Smart NAT allows the LinkProof to perform network address translation according to the ISP connection selected to carry the session to the Internet. For example, if the LinkProof chooses ISP_1 for outbound session delivery, then the translated source address will belong to the ISP_1 IP address pool for the inbound response.

Internet traffic is optimized by the LinkProof through intelligent load balancing based on the current session and/or load per verified ISP connection. Additionally, network proximity is measured to determine the closest and fastest route. Network proximity is calculated in both router hops and round trip latency. This allows multi-homed sites to transmit information through a fast, healthy route.

LinkProof also uses proximity detection to perform inbound traffic management. For Internet users attempting to access a resource on the enterprise network (such as a Web server), the LinkProof uses DNS to assure the most optimal ISP connection. This feature allows the LinkProof to consistently use the best and quickest path to satisfy user requests for information.

The LinkProof continuously monitors the health of all routers in the farm, and periodically checks each router path and the health of user defined nodes beyond the router. This monitoring allows the LinkProof to continually send sessions through healthy routers on a healthy Internet path.

About Radware

Radware develops, manufacturers and markets products that manage and direct Internet traffic among network resources to enable continuous access to Web sites and other services, applications and content based on the Internet protocol. Radware offers a broad range of Internet traffic management solutions to service providers, e-commerce businesses and corporate enterprises that require uninterrupted availability and optimal

performance of IP-based applications that are critical to their business. Radware's Internet traffic management solutions enable its customers to manage their network infrastructure to bypass system failures and to scale their network infrastructure to accommodate increasing IP traffic. Radware's products improve the productivity of network infrastructure by distributing traffic within a network to optimize the use of available network resources. Radware's products can be deployed either as independent solutions to address specific application needs at a particular location within a network or as an end-to-end integrated solution to manage traffic throughout a network.

This press release contains forward-looking statements that are subject to risks and uncertainties. Factors that could cause actual results to differ materially from these forward-looking statements include, but are not limited to, general business conditions in the Internet traffic management industry, changes in demand for Internet traffic management products, the timing and amount or cancellation of orders and other risks detailed from time to time in Radware's filings with the Securities and Exchange Commission, including Radware's Form F-1.

Radware Balances the Network

Internet Traffic Management Center, January 1, 2000.

By Peter Christy

One of the absolutely thrilling parts of our job is being exposed to the continuing innovation of in the industry. We love watching the process of application invention - new ideas, seemingly out of the blue, that redefine "common knowledge" on what the product category is good for.

In the past, Alteon had some of our favorite inventions: cache redirection and balancing was certainly a good idea, and they invented a particularly cute DNS request capture application. This time we focus on Radware with LinkProof -- their invention for balancing and managing multi-homed connections out to the Internet.

Multi-homing is a simple concept. You want to have multiple connections to the Internet, provided by multiple ISPs. But multi-homing quickly gets very complicated, is difficult to configure, and is certainly not something you would want to reconfigure casually. Radware looked at this problem and developed an innovative application of traffic management.

For this discussion, let's assume a fairly simple multi-homing configuration: a branch office LAN connected to the Internet through two different ISPs. The obvious application of traffic management is simple life testing of the two links, and assuring that no traffic is sent to an ISP if a link is down. And you can imagine how a traffic manager could look at the load on the two links and balance it suitably.

But Radware goes well beyond this, using their DNS technology to determine which of the ISPs is the better path for specific traffic, and then routing traffic accordingly. This is clearly an innovative and clever use of traffic management, and certainly one we had never come close to imagining before. (See Radware's white paper for more interesting details.)

This kind of innovation is particularly important given a question we are regularly asked: "Won't the traffic management product category disappear over time as the functionality migrates into conventional routers and switches?" The answer we give is "Yes, if a traffic management company invents nothing new, then over time the value of that product will diminish." But we strongly feel that this is the wrong way to look at traffic management. In the server room, we see traffic management systems in effect becoming the operating system of the clustered computers that are serving out a return to centralized information systems. That's a big deal and a big future. And at the global level, we see the DNS solutions evolving into fairly full-blown content-directed routing schemes (as in the Akamai network), and that's also a very big deal. So the future of traffic management lies in innovation, and it's a significant and exciting future, if an unknown one.

Global Product Spotlight: Radware Linkproof

NetworkMagazine.com, December 1, 1999

Radware's new load balancer maximizes backup Internet links

By David Greenfield

What's an easy way to strengthen an Internet hookup? Add a link to another upstream Internet provider. That might be smart planning, but it doesn't make for great accounting. Backup links sit idle most of the time, which means ISPs pay full tariffs for rarely used lines.

Radware (www.radware.com) thinks there's a better business solution. Its new LinkProof is the first load balancer to make running parallel links to the Internet easy and cost-effective. For starters, LinkProof optimally distributes traffic across multiple access lines. What's more, if a line or router fails, LinkProof rolls the traffic over to the backup connections.

That might not sound like such a big deal. After all, tweaking the Border Gateway Protocol 4 (BGP4) routing protocol can yield similar benefits. But not everyone runs BGP4, and those who do spend considerable time and expense configuring the protocol. Finally, while BGP4 will switch to a backup link, the protocol won't let you weight your traffic distribution to maximize your connections. LinkProof will do all of that, and it doesn't require a Ph.D. to deploy.

Or so says Radware. Although there are plenty of users briefed on the product, nobody has tested it. What's more, none of these users are the second-tier ISPs that are supposed to adopt the product. Finally, because LinkProof only works with links on its subnet, the box can't distribute traffic loads across lines on other networks or offices.

Still, that's not stopping some major networkers from getting excited about the product. "On paper at least, LinkProof sounds like just what we want," says George Kurian, consultant of architecture and technology planning at Pacific Corp., a utility company in Portland, OR. Pacific currently runs its Internet access out of Portland, while paying for a backup link out of Salt Lake City, UT.

LinkProof, a modular box with two Ethernet or Fast Ethernet ports, sits between the firewall protecting the corporate backbone and in front of the routers connected to the Internet. At install-time, the network manager assigns a weight to each link that indicates the speed or cost of each line.

The rest of the configuration depends on the particular application. When load balancing incoming traffic, as is common with an e-commerce site, the LinkProof appears as the default DNS server. DNS queries from users looking to access the site are sent to LinkProof. It has IP addresses that are associated with each of the ISPs' links. LinkProof determines the optimum link based on latency and packet loss and then responds with the appropriate destination IP address.

When balancing outgoing Internet traffic, LinkProof is defined as the default router. It receives all outgoing packets and determines

the optimal link. LinkProof then changes the packet's source address to an address associated with an ISP's line and forwards the packet to the appropriate router.

So what happens in the event of a failure? LinkProof constantly monitors the health of each connection by testing the availability of up to 10 IP addresses along the path. If the address doesn't respond after some user-defined period of time, the traffic is directed to the alternative link. By default, the switch time is two seconds.

The key in both cases is Smart Network Address Translation (SmartNAT), which is the ability to reply with an IP address specific to a link. With SmartNAT, LinkProof insures that the client's responses return along the same link as the outgoing request. This enables LinkProof to account for traffic flowing in both directions when making a load-balancing decision. "Without SmartNAT, you don't get real load balancing," says Kurian.

Radware certainly isn't the only vendor in the load-balancing market. A number of other companies—including Alteon WebSystems, Foundry Networks, and F5 Networks —deliver products that distribute traffic across Web sites and firewalls.

However, they stumble when it comes to delivering SmartNAT capabilities. Alteon is close, but the implementation is too cumbersome, says Kurian. Foundry and F5 don't offer products with SmartNAT today. F5 says it will add the SmartNAT feature in the next release of BIG/ip, which is expected to ship in December 1999. Foundry has not announced plans for releasing SmartNAT.

Radware Seeks Solutions to Easy-Access Problems

South China Morning Post, December 7, 1999.

South China Morning Post
INTERNET EDITION

By Veronique Saunier

Continuous access to Web sites is at the core of every product developed by Radware, a small Israeli company that claims to be the second-largest vendor of Internet traffic-management solutions. "The Internet is cruel. For a company cashing on e-commerce, a down time of even one minute means lost business and lost customers who may never come back," said Yaron Danieli, Radware's vice-president of sales for Asia Pacific.

"Yet the Internet is vulnerable. Everything from traffic overload to a pulled Ethernet cable can make a Web server unavailable."

Maintaining Web sites to keep them up and running continuously has become a business in itself for many companies, including France Telecom Hebergement - the host of the prestigious Presidency of Republic of France site - or Sprint IP Web hosting.

These carriers guarantee 100 per cent availability and offer their customers financial compensation if their sites are down for even a few seconds.

The way they keep their promises without bankruptcy is by making every machine and circuit of the network redundant by ensuring if one machine breaks the other still operates.

They also place so-called "load balancers" at strategic points of the network to make the Internet as fluid and fast as possible.

Although the concept of load balancing is quite simple - it directs Internet traffic to the server that is less busy - Radware claims it pioneered the concept and has been perfecting it since the launch of Web Server Director (WSD) four years ago.

WSD won Radware top honours from several United States technical magazines for its management, configuration, and ability to act as both primary and secondary load balancer at once.

Follow-up products include WSD Pro, which supports multiple networks, WSD DS which dispatches traffic to the nearest server in

the case of distributed sites, and Cache Server Director which intercepts Web users' requests and directs them to the most available cache server.

High availability also has become a critical component of firewalls deployed across enterprise networks to provide secure connectivity for Internet, and intranet and extranet communications.

Last year Radware launched FireProof, which load balances data to the best available firewall of the network.

According to Mr Danieli, many Cisco Systems' firewalls are load balanced by Radware's FireProof.

"While we were installing FireProof, we realised many companies wished to have multiple connections to the Internet instead of relying on one single ISP but were not ready to go through the hassles," Sharon Trachtman, vice-president marketing, said.

Using multiple ISPs adds redundancy abilities but necessitates complex configuration and routing protocols as well as close co-ordination between the contracted ISPs.

To make things easier, Radware designed a dedicated product that determined the closest, fastest and healthiest route for incoming and out-bound IP traffic between different ISPs.

That product, LinkProof, was launched globally last month.

Such responsiveness is the key to Radware's success.

RELATED PROCEEDINGS APPENDIX

(empty)

Electronic Acknowledgement Receipt

EFS ID:	1446058
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	17-JAN-2007
Filing Date:	28-DEC-2001
Time Stamp:	19:35:51
Application Type:	Utility

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	ThriceRevSubAppBrief-3003-2-9A.pdf	14232855	no	37

Warnings:

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 03/01/2007

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EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 03/01/2007

Please find below and/or attached an Office communication concerning this application or proceeding.

Notification of Non-Compliant Appeal Brief (37 CFR 41.37)	Application No.	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	Thu Nguyen	2155	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on *17 January 2006* is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file anamended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.

2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).

3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).

4. ☒ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).

5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi))

6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).

7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).

8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).

9. ☒ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).

10. ☐ Other (including any explanation in support of the above items):

1.)The summary of claimed of claimed subject matter fails to map independent claim 19 to the specification by page and line number and to the drawings,if any.
2.)The indication "none" should be included after the related proceeding appendix.

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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**FOURTH REVISED SUBSTITUTE APPEAL BRIEF** **CERTIFICATE OF TRANSMISSION** I certify that this paper is being submitted through EFS-WEB to the Commissioner for Patents on March 6, 2007. Printed Name: Thanh V. Nguyen

Commissioner for Patents:

This case was **made special** by a Decision mailed October 8, 2003.

On August 17, 2004, Appellants filed an Original Brief appealing from a Final Action mailed April 19, 2004. On December 23, 2004, the Examiner reopened prosecution by mailing a Reopening Action. On March 4, 2005, Appellants filed a Supplemental Brief. An Examiner's Answer was mailed three months later, on June 17, 2005, and Appellants' Reply was filed ten days after that, on June 27, 2005. Several months later, on November 10, 2005, the Board remanded the case to the Examiner. Appellants filed a Substitute Appeal Brief eleven days later, on November 21, 2005. Almost six months after that, on June 14, 2006, the Office mailed a Notification of Non-Compliant Brief. A Revised

Substitute Brief was filed five days later, in response to the Notification. Appellants submit that the Substitute Brief was adequate for appeal, but to avoid further delay added material shown in the Revised Substitute Brief in underlined italics. A second Notification of Non-Compliant Brief was mailed September 8, 2006, and a Twice Revised Substitute Brief was filed in response.

After a third Notification of Non-Compliant Brief was mailed January 11, 2007, the undersigned contacted the Examiner's supervisor, SPE Saleh Najjar, on January 16, 2007 by leaving a voicemail request for clarification. SPE Najjar responded the following day, identifying during a phone conference three claim limitations for which no reference numbers had been included in the recitation of independent claims in the Summary of Claimed Subject Matter. The Office's request for "another supplemental 'Artifact of 10/034/197ZA'" made in the Notification was also clarified by SPE Najjar. The undersigned thanks SPE Najjar for making clear the reasons for objecting to the appeal briefs. The objections were believed to have been addressed by changes made after speaking with SPE Najjar.

However, a fourth Notification of Non-Compliant Brief was mailed, by Patent Appeal Center Specialist Timothy Cole, on March 1, 2007. That fourth Notification rejected the word "empty" as a description of the related proceedings, and required use of the word "none" instead. That change is made below. No explanation was provided as to why this change was not requested earlier by the Office. The fourth Notification also asserted that the summary of claimed subject matter failed to map independent claim 19 to the specification by page and line number and to the drawings. This was asserted despite the fact that the summary's recital of claim 19 includes drawing reference numbers, and the fact that those numbers are used in corresponding text in this application, as submitted. The

amended summary below includes a mapping between claim 19 and the specification by page and line number and to the drawings.

Real Party in Interest

The real party in interest in this appeal is Assignee, Ragula Systems (FatPipe Networks).

Related Appeals and Interferences

None.

Status of Claims

Claims 1-21 were rejected in the Final Action, were rejected in the Reopening Action (December 23, 2004), are still pending, and are appealed.

Status of Amendments

No amendments were filed after the Final Action or the Reopening Action.

Summary of Claimed Subject Matter

The present invention relates to tools and techniques for accessing multiple independent frame relay networks and/or point-to-point (e.g., T1 or T3) network connections in a parallel network configuration, as shown for instance in Figure 5 or Figure 6. Frame relay networks 106 and point-to-point networks are each "private networks"; *see* application at page 9 lines 10-12. In some embodiments a controller 502 according to the invention comprises a site interface 702 connecting the controller to a site 102, at least two private network interfaces 706, and a packet

path selector 704 which selects between private network interfaces according to a specified criterion. A site may include a local area network; *see* discussion of Figure 7 on pages 13-14, and page 17 lines 15-17.

The controller receives 804 a packet through the site interface and sends 814 the packet through the private network interface that was selected 806 by the packet path selector. The controller's packet path selector selects between private network interfaces according to various criteria, such as (a) a load-balancing criterion 808 that promotes balanced loads on devices that carry packets after the packets leave the selected private network interfaces; (b) a reliability criterion 810 that promotes use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning, and (c) a security criterion 812 that promotes use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

In response to point 4 of the first Notification, figure reference numbers are used in corresponding text in this application, as is the case in many patent applications, and correlating the above information with the independent claims readily yields the following:

1. A controller (502) which controls access to multiple independent private networks (application at page 9 lines 10-12) in a parallel network configuration, the controller comprising:

a site interface (702) connecting the controller to a site (102);

at least two private network interfaces (706); and

a packet path selector (704) which selects between private network interfaces according to a specified criterion;

wherein the controller receives (804) a packet through the site interface and sends (814) the packet through the private network interface that was selected (806) by the packet path selector.

13. A method for combining connections for access to multiple parallel private networks (application at page 9 lines 10-12), the method comprising the steps of:

obtaining a controller (502), the controller comprising a site interface (702), at least two private network interfaces (706), and a packet path selector (704) which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site (102) to receive (804) packets from a computer at the site;

connecting a first private network interface (706) of the controller to a first private network;

connecting a second private network interface (706) of the controller to a second private network which is parallel to and independent of the first private network; and

sending (814) a packet to the site interface which then sends the packet through a private network interface selected (806) by the packet path selector.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method (application at page 9 line 10 through page 20 line 17, Figures 5-8) comprising the steps of:

sending (814) a packet to a site interface of a controller (502), the controller comprising the site interface (702) which receives (804) packets, at least two network interfaces (706), and a packet path selector (704) which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector (704), wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

The invention also provides other controller embodiments, and it provides method embodiments. The claims define the invention; this summary is provided merely as an introduction and to assist in understanding the claims.

Grounds of Rejection to be Reviewed on Appeal

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 9, 15 properly rejected under Section 103 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 1-3, 8, 10-12, 14, 18, and 20 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?
4. Were claims 4, 13, 16, and 21 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?

5. Was claim 5 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
6. Was claim 17 properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta?
7. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
8. Was claim 19 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?

Note: The foregoing statement of issues resolves inconsistencies in the Reopening Action by following the actual reference citations that were made claim-by-claim in the Reopening Action, rather than following the summary paragraphs therein. For instance, summary paragraph 4 of the Reopening Action asserts that several claims, including claim 9, are rejected in view of Kitai and Albright, but the actual rejection in paragraph 9 of the Reopening Action only cites Kitai. Therefore, claim 9 is treated here as being rejected in view of Kitai alone. Several similar inconsistencies in the Reopening Action are likewise resolved by addressing the references that were actually discussed in a rejection, rather than the references that a summary paragraph merely asserted (wrongly) would be discussed.

Argument

By way of context, the following papers are among those filed or mailed in this case:

Provisional	provisional application, filed December 29, 2000
Application	non-provisional application, filed December 28, 2001
First IDS	information disclosure statement, filed April 29, 2002
Second IDS	information disclosure statement, filed March 14, 2003
Third IDS	information disclosure statement, filed April 9, 2003
Fourth IDS	information disclosure statement, filed April 11, 2003
Petition	petition to accelerate examination, filed April 21, 2003
Fifth IDS	information disclosure statement, filed June 3, 2003
Petition Grant	decision granting Petition, mailed October 8, 2003
First Action	first office action on the merits, mailed November 5, 2003
Response	response, filed February 4, 2004
Third-Party	third party submission, filed on or about April 5, 2004
Final Action	final office action, mailed April 19, 2004
Interview Summary	interview summary, filed May 25, 2004
Appeal Notice	notice of appeal, filed July 14, 2004
Advisory Action	advisory office action, mailed July 23, 2004
Original Brief	appeal brief, filed August 17, 2004
Reopening Action	office action, mailed December 23, 2004
Supplemental Brief	appeal brief, filed March 4, 2005
Examiner's Answer	answer, mailed June 16, 2005
Supplemental Reply	reply, filed June 27, 2005
Remand Order	Board order, mailed October 10, 2005
Substitute Brief	appeal brief, filed November 21, 2005
Second Substitute Brief	filed September 12, 2006
Third Substitute Brief	filed January 17, 2007

Fourth Substitute Brief present brief

The shortcomings of the rejections are reviewed below. Arguments and statements by Applicants made earlier but not repeated here are also part of the record for this appeal and are not waived, although they may be modified or supplemented here. To keep this brief short while still trying to provide an adequate basis for review, some observations and arguments that might have been presented are not included. Accordingly, Applicants' silence here with respect to particular statements by the Office does not indicate their agreement or acquiescence.

Third Party Submission

The Final Action does not refer to the third-party submission that was filed, on behalf of an unidentified third party, on or about April 5, 2004. References were submitted to the Office by a third party in each of the following applications of the Assignee: 10/034190, 10/034197, 10/361837, 10/263497. That submission was made two weeks before the mailing of the Final Action, but it was not clear to the undersigned whether the Examiner had received and considered the submission's references. In response to the Examiner's Request in the Notification mailed June 14, 2006, a copy of the third party submission's non-patent references was submitted with the Revised Substitute Brief. In response to SPE Najjar's request, a higher-contrast (more easily read) copy of the third party submission is given here, in the Evidence Appendix.

Grouping of Claims

The grouping of claims for the appeal has been unsettled.

The Examiner's Answer states one grouping of claims on page 2, asserts on that page that this claim grouping was recited in Appellants' brief, and then repeats the grounds for rejection that were stated in the Reopening Action. However, the grouping of claims stated on page 2 of the Examiner's Answer was *not* recited in Appellants' brief, and it does *not* follow the structure of the rejections stated in the Reopening Action.

Page 2 of the Examiner's Answer identifies three claim groups:

Claims 1, 2-12;
Claims 13, 14-18; and
Claims 19, 20-21.

But these three groups are not consistent with Appellants' Brief or with the stated grounds for rejection. This claim grouping (three groups: 1-12, 13-18, 19-21) given in the Answer is not accepted by Appellants.

Page 4 of the Supplemental Brief identified seven claim groups:

Group I: claims 9, 15
Group II: claims 1-3, 8, 10-12, 14, 18, and 20
Group III: claims 4, 13, 16, and 21
Group IV: claim 5
Group V: claim 17
Group VI: claims 6 and 7
Group VII: claim 19

This grouping generally tracks the Reopening Action grounds, by grouping claims that are rejected on the same grounds and for which there is also clearly a discussion of all cited references. This approach is explained in the Supplemental Brief on pages 3 and 4, in the presentation of issues and claim groupings. However, this approach could be seen as departing from the rejections' structure by separating claims 9 and 15 into their own group.

Arrival at an appropriate claim grouping is further complicated by the fact that the Examiner's Answer is not internally consistent. On page 2, the Answer identifies three claim groupings, but on pages 3-17 it repeats rejections (made in the Reopening Action) that use more than three groupings.

In short, without further action, the Board will face multiple inconsistent claim groupings. This could hamper a full, efficient, and fair review of the claims. In the interest of promoting such review, and in a spirit of compromise with the Examiner, Appellants hereby agree to modify the claim grouping of their Supplemental Brief by treating claim 9 as standing or falling with its parent claim 1, and by treating claim 15 as standing or falling with its parent claim 13. The resulting claim grouping follows the structure of the rejections and reduces the number of claim groups by one.

Pursuant to M.P.E.P. § 1206, Appellants therefore submit the six (not seven) claim groups shown below. Please refer to the Reopening Action and the appeal Briefs for identification and discussion of the specific claim limitations involved. Within each of these six groups, the claims stand or fall together.

(Group) claims	References cited	Sample reasons for patentability
(II) claims 1-3, 8, 9, 10-12, 14, 18, and 20	Kitai + Albright	Kitai + Albright combination is not supported; see Supp. Appeal Brief at 6-7, Orig. Appeal Brief at 13-14: no motive to combine frame relay reference Albright w/ LAN reference Kitai; no motive to combine serial reference Albright w/ parallel reference Kitai
(III) claims 4, 13, 15, 16, and 21	Kitai + Albright + Pearce	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11

(IV) claim 5	Kitai + Albright + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(V) claim 17	Kitai + Albright + Pearce + Dutta	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Pearce, see Orig. Appeal Brief at 10-11; no evidence showing motive to add Dutta, see Orig. Appeal Brief at 11-12
(VI) claims 6 and 7	Kitai + Albright + Goldszmidt	Kitai + Albright combination is not supported per Group II arguments; no evidence showing motive to add Goldszmidt, see Orig. Appeal Brief at 12-13
(VII) claim 19	Kitai + Pearce + Goldszmidt	Kitai + Pearce combination is not supported, see Orig. Appeal Brief at 10-11; Kitai + Goldszmidt combination is not supported, see Orig. Appeal Brief at 12-13

Reply to Examiner's Responses

On pages 17-24, the Examiner's Answer responds to arguments made by Appellants. It may be helpful to begin with these arguments, and work backward from there as needed. In reply to the Answer, Appellants respectfully submit that the claims are patentable and the rejections are flawed.

Examiner's response (A) seeks to reverse the Examiner's position by arguing that local area networks as disclosed in Kitai are actually "private networks" as claimed. The only basis given for this reversal in the Answer is that "the examiner reopened the Office action with new ground of rejection." This is not a sufficient basis to support the change in position. Indeed, the Reopening Action admits in its discussion of claim 1 that "Kitai does not explicitly teach at least two private network interfaces" and it then relies on Albright to teach private network

interfaces. As explained at length in both the Original Brief at pages 5-9 and the Supplemental Brief at pages 5-6, Kitai does not teach private networks. This lack of teaching in Kitai is pertinent, not only because it makes Kitai unusable as a Section 102 reference, but also under Section 103 because it draws one of skill away from the asserted Kitai-Albright combination, as explained in the appeal Briefs.

Examiner's response (B) argues that Kitai taken alone under Section 103 is grounds for rejecting claims 9 and 15, because private networks are not mentioned in those claims. But this argument fails to recognize that claims 9 and 15 include the limitations of their respective parent claims, which do expressly require private networks.

Examiner's response (C) misunderstands Appellants' argument. The Examiner treats the argument as one that states the combination fails to teach the claimed invention because Albright teaches serial networks rather than parallel networks. The response therefore understandably notes that the failure of one reference in a combination to teach a contested feature does not show that the combination as a whole fails to teach the feature, and thus to teach the invention. That is, the Examiner's answer is basically that it doesn't matter that Albright fails to teach parallel networks, because Kitai does teach parallel networks.

But this answer is directed at the wrong argument. Appellants are not arguing that Kitai combined with Albright fails to teach parallel networks. Rather, Appellants argue that Kitai and Albright were not properly combined.

Appellants' claims were improperly used as a blueprint. In the Office Action mailed 11/05/2003, the Examiner made rejections using Kitai as a Section 102 reference. In the next Response, Appellants pointed out that Kitai does not teach

private networks, and hence cannot support rejections under Section 102. In the final action mailed 04/19/2004, the Examiner asserted again that Kitai was a Section 102 reference. The Original Appeal Brief followed, in which pages 5 through 9 explained in detail and with supporting evidence why Kitai does not teach parallel networks and thus could not – by itself – support rejections. Instead of letting the appeal go to the Board, the Examiner then reopened prosecution. In the Reopening Action, the Examiner did *not* assert Kitai as a Section 102 reference. Instead, the Examiner made Section 103 rejections, supplementing Kitai by pointing to Albright for the necessary teaching of private networks. Of course, Albright cannot be used as a ground for rejection in combination with Kitai unless there is some suggestion or motivation **in the art** for combining those references. There is not.

Appellants argue that Albright and Kitai were not properly combined, not merely because the Examiner failed to give any specific evidence of a motivation or suggestion in the art supporting that combination, but also because of the undisputed fact that Albright deals with *serial* networks – a fact which would have led those of skill in the art away from combining Albright with Kitai when they were trying to build a *parallel* network configuration.

In short, Appellants argue against making the Kitai + Albright combination in the first place, not against the teachings of that (improper) combination once it is made. This argument has not been rebutted. The Kitai + Albright combination is improper, regardless of what it teaches or fails to teach.

Examiner's response (D) cites a portion of Pearce as a suggestion or motivation for adding Pearce to the Kitai + Albright combination. But this fails to support the rejection.

As noted in the Appeal Briefs, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Pearce does not point toward the teachings of Kitai or Albright as possible solutions to some problem. Indeed, even if one interprets Pearce as treating the need for a prioritized list of qualifying networks as a problem, one sees that Pearce promptly provides its own solution in the form of a filter 38. The undersigned did not find in Pearce any suggestion that a reader should look elsewhere for serial network-to-network interfaces as described in Albright, or for a LAN switch as described in Kitai. Pearce is self-contained in this respect, and thus would not have instilled a motive to look elsewhere to enhance or replace the filter 38. Accordingly, the combination of Pearce with Kitai and Albright is not proper.

Examiner's response (E) cites a portion of Dutta as a suggestion or motivation for adding Dutta to the Kitai + Albright combination. This fails to support the rejection.

As noted, the underlying Kitai + Albright combination is not proper.

Moreover, the cited portion of Dutta does not point toward the teachings of Kitai or Albright. As noted, e.g., on page 12 of the Original Brief, Dutta discusses firewalls and security while Kitai does not mention either. Albright discusses frame relay networks but Dutta does not. There is no evidence of any suggestion or motivation in Dutta that would have led one of skill to Kitai and Albright rather than somewhere else, and those of skill in the art did not have the claims to use as a blueprint. The combination of Dutta with Kitai and Albright is not proper.

Examiner's response (F) attempts to justify the even larger combination of Kitai, Albright, Pearce, and Dutta. As noted above and in the appeal Briefs (which

are incorporated as part of the record before the Board), the sub-combination of Kitai with Albright is not proper, and neither are the combinations of three references obtained by adding Pearce or Dutta alone to Kitai and Albright. The only basis for combining these four references is impermissible hindsight, which is driven by Appellants' claims, not by the prior art.

Examiner's response (G) fails to rebut the argument made at pages 12-13 of the Original Brief. Goldszmidt does not teach *sending* packets out of sequence as claimed. Rather, Goldszmidt views such non-sequential packets as an unfortunate problem and concerns itself with ways to handle *receiving* packets out of sequence. Nor is there a motivation for combining the references – as noted, Kitai fails to mention packet sequence, and the Kitai + Albright combination is not properly motivated.

Examiner's response (H) again tries to defend combining Kitai, Albright, and Dutta. As noted above, e.g., in regard to response (E), this combination is not proper.

Examiner's response (I) tries to defend combining Kitai, Pearce, and Goldszmidt. As noted above, e.g., in regard to responses (D) and (G), this combination is not proper.

We turn now to other arguments exchanged before this Substitute Appeal, and repeated here for convenience.

A local area network is not a "private network"

Despite the well-documented and detailed explanation of Kitai's shortcomings at pages 5-9 of the Original Appeal Brief (incorporated herein), the Examiner continues to assert Kitai in every rejection. The examiner now concedes

(e.g., on pages 3, 5, 9 of the Reopening Action) that Kitai does not teach private networks; the LANs of Kitai are not private networks. The failure of Kitai to discuss private networks is one reason those of skill in the art would not have combined Kitai with other references, such as Albright, that do discuss frame relay or other private networks. Kitai's failure to discuss private networks is also a reason why the asserted combinations, even if they were proper, would fail to teach the claimed invention. However, these points are made at length in the Original Appeal Brief and below, so it suffices at this time to note that the Reopening Action (unlike the Final Action) does not argue that Kitai's local area networks are actually private networks as claimed by Applicants. Indeed, by withdrawing the rejections under Section 102 which were based solely on Kitai, the Examiner has implicitly acknowledged that Kitai fails to teach private networks.

Claims 9 and 15 were not properly rejected under Section 103 in view of Kitai

The Reopening Action is inconsistent as to the basis for rejecting these claims. Although the preceding summary paragraphs in the Reopening Action (paragraphs 4 and 14) assert that these claims are rejected based on more references than just Kitai, the rejections themselves (paragraphs 9 and 18) only discuss Kitai. Accordingly, for purposes of appeal, the rejections are based solely on Kitai. However, if the Board wishes to consider other grounds *sua sponte*, with regard to these or other claims, then Applicants respectfully request that the Board please also consider the arguments here and in the Original Appeal Brief against combining Kitai with other cited references.

As noted, the Examiner concedes that Kitai fails to teach private networks. Moreover, the leap from Kitai's LANs to the claimed invention's private networks

is a large and nonobvious leap, for at least the reasons discussed in the Original Appeal Brief at pages 6-9. Thus, the claims are not obvious in view of Kitai.

Claims 1-3, 8, 9, 10-12, 14, 18, and 20 (Group II) were not properly rejected under Section 103 in view of Kitai combined with Albright

The Original Appeal Brief noted on pages 13-14 the failure of the office actions up to that point to provide a proper justification for combining Kitai and Albright. The Reopening Action asserts different reasons, but they likewise fail to establish the necessary suggestion or motivation in the art for combining these references. On page 4 of the Reopening Action, the reason given is that the combination "would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25)." But as in the Final Action, this rejection confuses serial networks with parallel networks. The cited section of Albright actually teaches routing *within* a network, not routing that selects between two parallel networks. Moreover, the rejection again fails to explain any reason why the cited section of Albright would have led one of skill in the art to Kitai, as opposed to any other reference.

Accordingly, the rejections based on Albright and Kitai should be withdrawn or reversed. The combination is improper because the cited section of Albright (a frame relay reference) does not suggest combination with Kitai (a LAN reference). Moreover, the combination fails to teach the claimed parallel private network innovations, because Albright teaches serial networks (they are in fact the very reason for Albright's network-to-network interface) rather than teaching networks placed in parallel as claimed.

Claims 4, 13, 15, 16, and 21 (Group III) were not properly rejected under Section 103 in view of Kitai combined with Albright and Pearce

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The Reopening Action fails to give any further basis for adding Pearce to this combination. For example, in paragraph 15, the Reopening Action merely asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths." Paragraph 32 of the Reopening Action asserts that it would have been obvious to combine Kitai, Albright and Pearce "because it would detect and improve network security, traffic and failure." These are general statements, which do not suggest any combination of references. They merely suggest goals without suggesting ways to meet them.

The rejections fail to identify anything specific in one reference or in the art that would have led one of skill to the particular other references. It is well-established patent law that a rejection under Section 103 requires evidence of a suggestion or motivation in the prior art to combine the references. *See, e.g.,* M.P.E.P. §§ 2142, 2143.01, and cases cited therein. A general unsupported assertion that the combination would be efficient or more secure is not specific **evidence** that one of skill would have combined these particular references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 5 (Group IV) was not properly rejected under Section 103 in view of Kitai combined with Albright and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 17 (Group V) was not properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Dutta is discussed in the Original Appeal Brief on pages 11-12. The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claims 6 and 7 (Group VI) were not properly rejected under Section 103 in view of Kitai combined with Albright and Goldszmidt

The failure to justify combining Kitai and Albright is discussed above with respect to Group II claims, and in the Original Appeal Brief on pages 13-14. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Claim 19 (Group VII) was not properly rejected under Section 103 in view of Kitai combined with Pearce and Goldszmidt

The failure to justify combining Kitai and Pearce is discussed in the Original Appeal Brief on pages 10-11. The failure to justify combining Kitai and Goldszmidt is discussed in the Original Appeal Brief on pages 12-13. The Reopening Action fails to add any grounds for combining these references. For at least these reasons, the rejections should be withdrawn or reversed.

Conclusion

For at least the reasons explained above, all rejections should be withdrawn or reversed. If any questions might be answered by telephone, the undersigned invites a call at the Office's convenience.

Please note that the **correspondence address below is different** than in earlier Briefs.

Dated this March 6, 2007.

Respectfully submitted,

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CLAIMS APPENDIX

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the

selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two

carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.

EVIDENCE APPENDIX

(contains non-patent literature from third party submission, requested by Examiner in Notification mailed 06/14/2006, and filed by Appellant on 06/19/2006; the Third Substitute Brief includes a re-scanned high-contrast copy per SPE Najjar's request)

RELATED PROCEEDINGS APPENDIX

(none)

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Customer Number:	23484
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/034,197
Filing Date: December 28, 2001
Appellant(s): DATTA ET AL.

Ragula Systems (FatPipe Networks)
John W. Ogilvie
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 06, 2007 appealing from the Office action mailed December 23, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,948,069	Kitai et al	09-1999
6,209,039	Albright et al	03-2001
5,910,951	Peace et al	04-2003

6,195,680	Goldszmidt et al	02-2001
6,546,423	Dutta et al	04-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, and 8-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

3. As to claim 1, **Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

a packet path selector which selects between network interfaces according to a specified criterion (abstract, figures 3, 7, 15, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3);

wherein the controller receives a packet through the site interface (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach at least two private network interfaces, a packet path selector which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector. **Albright** teaches at least two private network interfaces (figure 3, elements 310, 314), a packet path selector (figure 3, processors 204, 306) a packet path selector which selects between private network interfaces (figure 3, interface 310, 314, col. 5, lines 65-col. 6, lines 21, lines 39-51 [processor selects links/frame relay interface between links/frame relay interfaces]) and sends the packet through the private network interface that was selected by the packet path selector (col. 5, lines 24-35, col. 6, lines 22-38, col. 7, lines 17-25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include a packet path selector which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25).

4. As to claim 2, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network

interfaces comprises a frame relay network interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

5. As to claim 3, **Kitai** teaches the invention as claimed, wherein the packet path selector selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59). However, **Kitai** does not explicitly teach private network interfaces. **Albright** teaches private network interfaces (figure 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include private network interfaces because it would provide an efficient communications system that the selection of private network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

6. As to claim 8, **Kitai** teaches the invention as claimed, wherein the controller comprises at least three network interfaces, each of which is selectable by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57). **Kitai** does not explicitly teach frame relay network interfaces; however, **Albright** teaches frame relay network interfaces (col. 6, lines 64-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay network interfaces because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

7. As to claim 9, **Kitai** teaches the invention as claimed, wherein the controller operates in a system providing at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

8. As to claim 10, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data

Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

9. As to claim 11, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is an indirect interface tailored to a particular type of frame relay network (figure 3, col. 7, lines 6-16). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliability and dynamically interface/paths among multiple interfaces/paths.

10. As to claim 12, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have each private network interface is a direct

interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure.

11. Claims 4, 13-16 and 18 are rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, **Albright et al.** (hereinafter Albright) U.S. Patent No. 6,209,039, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**.

12. As to claim 4, **Kitai** does not teach the invention as claimed; however, **Albright** teaches private network interfaces (figure 3, col. 6, lines 65-col. 7, lines 3). **Pearce** teaches wherein the packet path selector selects between network interfaces according to a reliability criterion thereby promoting use of devices that will still carry packets alter the packets leave the selected network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

13. As to claim 13, **Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, and a packet path selector which selects between network interfaces according to a specified criterion (abstract, figures 3, 7, 15, 22, 24, col. 5 lines 29-63);

connecting the controller site interface to a site to receive packets from a computer at the site (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7);

sending a packet to the site interface which then sends the packet through a network interface selected by the packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57).

However, **Kitai** does not explicitly teach at least two private network interfaces, a packet path selector which selects between private network interfaces, then sends the packet through a private network interface selected by the packet path selector and connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network.

Pearce teaches connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

Albright teaches at least two private network interfaces (figure 3, elements 310, 314), a packet path selector (figure 3, processors 204, 306), a packet path selector which selects between private network interfaces (figure 3, interface 310, 314, col. 5, lines 65-col. 6, lines 21, lines 39-51 [processor selects links/frame relay interface between links/frame relay interfaces]), then sends the packet through a private network interface selected by the packet path selector (col. 5, lines 24-35, col. 6, lines 22-38, col. 7, lines 17-25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce and Albright** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (col. 2, lines 15-25).

14. As to claim 14, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein the private networks are frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

15. As to claim 15, **Kitai** teaches the invention as claimed, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion-is a load balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

16. As to claim 16, **Kitai** does not explicitly teach the invention as claimed; however, **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

17. As to claim 18, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to have a the controller connects the controller to a

User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

18. Claim 5 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai, Albright,** in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

19. As to claim 5, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches private networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Dutta** teaches wherein specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion, thereby promoting use of multiple networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Dutta** to have private networks and the packet path selector selects between network interfaces according to a security criterion because it would improve the data transferring more secure and efficient between networks.

20. Claim 17 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai, Albright, Pearce,** in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

21. As to claim 17, **Kitai, Albright and Pearce** do not explicitly teach the invention as claimed; however, **Dutta** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright, Pearce and Dutta** to have the packet path selector selects between private network interfaces according to a security criterion because it would improve the data transferring more secure and efficient.

22. Claims 6-7 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai**, and **Albright**, in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680**.

23. As to claim 6, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches private networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Albright and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient

communication system to process, control and monitor the delivery of packet to control the traffic load.

24. As to claim 7, **Kitai** and **Albright** do not explicitly teach the invention as claimed; however, **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure.

25. Claim 19 is rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai**, and **Pearce** U.S. Patent No. **5,910,951**, in view of **Goldszmidt** U.S Patent No. **6,195,680**.

26. As to claim 19, **Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a packet path

selector which selects between network interfaces according to a specified criterion; and specifying the criterion for use by the packet path selector, wherein the specified criterion is load balancing (abstract, figures 3, 7, 9, 15, 19, 22, 24, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-63, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

However, **Kitai** does not explicitly teach wherein the specified criterion is one of: reliability criterion, a security criterion.

Pearce teaches the specified criterion is reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12).

Goldszmidt teaches the specified criterion is a security criterion (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Goldszmidt** to specified criterion is one of reliability and security because it would have an efficient communication system to control, select and transfer data over the reliability, qualification and security network amongst multiple networks.

27. Claims 20-21 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Kitai**, **Pearce and Goldszmidt**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

28. As to claim 20, **Kitai** teaches the invention as claimed, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, and the controller sends different packets of a given message to different networks (abstract, col. 3 lines 6-42). **Kitai** does not explicitly teach frame relay networks. However, **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers

29. As to claim 21, **Kitai** does not explicitly teach the invention as claimed; however, **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). **Pearce** teaches the step of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network (abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Albright** to include frame relay networks and the step of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

(10) Response to Argument

Applicant argues that the Examiner's response (A) seeks to reverse the Examiner's position by arguing that local area networks as disclosed in Kitai are actually "private networks" as claimed. The only basis given for this reversal in the Answer is that "the examiner reopened the office action with network ground of rejection". This is not a sufficient basis to support the change in position. Also applicant refers to both Original Brief, filed August 20, 2004, at pages 5-9 and the Supplemental Brief, filed March 07, 2005.

Before addressing the applicant's argument, the examiner submits the prosecution history of the application as following: The examiner had made final action under 102(e) as being anticipated by Kitai (mailed date 04/19/04), applicant filed Original Brief (filed date 08/20/04), after the Original Brief filed the examiner had withdrawn the final action made on 04/19/04 and reopened the prosecution with new ground(s) rejection under 103(a) as unpatentable over Kitai in view of Albright (mailed date 12/23/04). Applicant subsequently filed a Supplemental Brief on 03/07/05 and the latest Supplemental Brief filed on 03/06/07.

In response to applicant's argument, the examiner asserts that since in the Supplemental Brief (filed March 06, 2007) applicant's argument refers to the Original Brief's argument (filed August 20, 2004) that Kitai does not teach private networks, wherein the Original Brief's argument based on 102(e) ground of rejection. The examiner had reopened the prosecution by change a new ground of rejection from

102(e) to 103(a) as unpatentable over Kitai in view of Albright. In the reopening prosecution the examiner admitted that Kitai does not explicitly teach at least two private network interfaces; however, Albright teaches the deficiency of Kitai as discussed in the Non-final action mailed date December 23, 2204. Thus, the examiner concludes that the applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant's arguments according to Examiner response's (A)-(I) have been fully considered but they are not persuasive because of the following reasons as set forth below:

(**A**) A local area network, as disclosed in Kitai, is not a "private network" and also appellant refers back to original Appeal Brief for "private network" issue.

As to point (**A**), examiner disagrees with appellant's argument since the examiner reopened the prosecution with new ground of rejection. So that the argument is not persuasive by attacking the references individually where the rejection is based on combination of Kitai and Albright references.

(**B**) Claims 9 and 15 were not properly rejected under section 103 in view of Kitai. Kitai fails to teach private networks.

As to point (**B**), before addressing the argument, the examiner submits that in the Reopening Office Action in paragraphs 5 and 16 (as independent claims 1 and 13) the

examiner stated that the primary reference Kitai teaches a site interface connecting...; a packet path selector which selects...; a controller receives a packet...However, Kitai does not explicitly teach private network interface (see the Reopening Office Action paragraphs 5, and 16 dated 12/23/04). Claim 9 depends on claim 1, recited point-to-point connection and claim 15 depends on independent claim 13, recited the specified criterion is a load balancing criterion as disclosed in Kitai reference (see the Reopening Office Action paragraphs 9 and 18). There is nothing mentioned about private network interface in claims 9 and 15. Therefore, only Kitai as a primary reference is properly rejected claims 9 and 15.

(**C**) Claims 1-3, 8, 10-12, 14, 18 and 20 were not properly rejected under section 103 in view of Kitai combined with Albright. The Reopening Office Action fails to establish the necessary suggestion or motivation in the art for combining theses references.

As to point (**C**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate at least two private network interfaces, a packet path selector

which selects between private network interfaces and sends the packet through the private network interface that was selected by the packet path selector, as disclosed by Albright into system of Kitai because it were conventionally employed in the art to provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks (see Albright col. 2, lines 15-25).

Appellant agues the combination fails to teach the claimed parallel network, because Albright teaches serial network rather than teaching parallel network.

Examiner asserts that Kitai teaches parallel network (see Kitai col. 2, lines 48-54) and moreover, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

(**D**) Claims 4, 13, 16, and 21 were not properly rejected under section 103 in view of Kitai combined with Albright and Pearce. The rejection fails to suggestion or motivation of combination of references.

As to point (**D**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so

found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate a selector to select paths/interfaces according to a reliability criterion, as disclosed by Pearce into Kitai and Albright system because it would have conventionally employed in the art to have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths (see Pearce col. 2, lines 24-30, col. 2, line 61-col. 3, line 5).

(**E**) Claim 5 was not properly rejected under section 103 in view of Kitai combined with Albright and Dutta. The rejection fails to suggestion or motivation to combine the references.

As to point (**E**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the specified criterion is a security criterion, as disclosed by Dutta into Kitai and Albright system because it were conventionally employed in the art

to provide an efficient system to improve the data transferring more secure and efficient between networks (see Dutta col. 1, lines 4-52, col. 2, lines 14-16).

(**F**) Claim 17 was not properly rejected under section 103 in view of Kitai combined with Albright, Pearce and Dutta. The rejection fails to suggestion or motivation to combine the references.

As to point (**F**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the specified criterion is a security criterion, as disclosed by Dutta into Kitai and Albright and Pearce system because it were conventionally employed in the art to provide an efficient system to improve the data transferring more secure and efficient between networks (see Dutta col. 1, lines 4-52, col. 2, lines 14-16).

(**G**) Claims 6 and 7 were not properly rejected under section 103 in view of Kitai combined with Albright and Goldszmidt. The rejection fails to suggestion or motivation to combine the references.

As to point (**G**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the feature of sending packets out of sequence, as disclosed by Goldszmidt into Kitai and Albright system because it were conventionally employed in the art to provide an efficient system to process, control and monitor the delivery of packet to control the traffic load (see Goldszmidt col. 2, lines 55-62, col. 3, lines 12-15).

(**H**) Claim 5 was not properly rejected under section 103 in view of Kitai combined with Albright and Dutta. The rejection fails to suggestion or motivation to combine the references.

As to point (**H**), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,

the reason to incorporate the specified criterion is a security criterion, as disclosed by Dutta into Kitai and Albright system because it were conventionally employed in the art to provide an efficient system to improve the data transferring more secure and efficient between networks (see Dutta col. 1, lines 4-52, col. 2, lines 14-16).

(I) Claim 19 was not properly rejected under section 103 in view of Kitai combined with Pearce and Goldszmidt. The rejection fails to suggestion or motivation to combine the references.

As to point (I), in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reason to incorporate the specified criterion is a reliability and security criterion, as disclosed by Pearce and Goldszmidt into Kitai system because it would have conventionally employed in the art to have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths (see Pearce col. 2, lines 24-30, col. 2, line 61-col. 3, line 5).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Thuhanguyen

THU HA NGUYEN
PRIMARY EXAMINER

ThuHa Nguyen
April 26, 2007

SALEH NAJJAR
SUPERVISORY PATENT EXAMINER

Conferees

Khanh Dinh
Primary Examiner

Search Notes

Application/Control No.	Applicant(s)/Patent under Reexamination	
10/034,197	DATTA ET AL.	
Examiner	**Art Unit**	
Thu Ha T. Nguyen	2155	

SEARCHED			
Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
appeal conference with Lynne Browne; Saleh Najjar; Zarni Maung	4/18/2007	THN

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**REPLY BRIEF** **CERTIFICATE OF TRANSMISSION** I certify that this paper is being submitted through EFS-WEB to the Commissioner for Patents on May 17, 2007. Printed Name: John W. Ogilvie

Commissioner for Patents:

In reply to the Examiner's Answer mailed 05/04/2007, and more specifically in reply to the Examiner's arguments regarding points (A) through (I) on pages 18-24 of the Examiner's Answer, the Board's attention is respectfully directed to pages 12-16 of the Fourth Revised Substitute Appeal Brief filed on March 6, 2007.

In addition, Appellants respectfully submit that the rejections are improper under the recent decision in *KSR Int'l. v. Teleflex*, 550 U.S. __ (2007). In *KSR*, the Court emphasizes the continuing importance of the analytic factors set out in *Graham v. John Deere*, 383 U.S. 1 (1966). One of *Graham*'s requirements is that the "level of ordinary skill in the art [be] resolved." But the rejections provide little or no analysis of the level of ordinary skill, and no evidence regarding it. This

failure illustrates the insistence on selecting features of the references that appear in the claims, while ignoring other more prominent features, to cobble together something resembling the claimed invention. Thus, the rejections brush aside Albright's teaching of network-to-network interfaces, in order to highlight the presence of frame relay networks, even though those frame relay networks are not in parallel and – given the nature of network-to-network interfaces – are arranged serially. The difference between parallel and serial circuits is a basic one, which would have led one of skill away from Albright when parallelism is important.

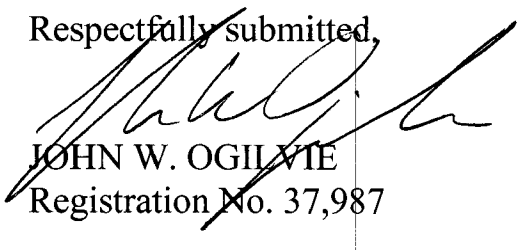
In *KSR*, the Court also recognizes that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR*, slip opinion at 14. Appellants' arguments rebutting the attempted combination of Kitai and Albright, for example, compel withdrawal of the rejections under *KSR*, just as they did under the teaching, suggestion, or motivation analysis. Parallelism is a key feature of the claimed invention. Albright deals with serial networks, an undisputed fact which would have led one of skill away from combining Albright with Kitai to create the claimed invention with parallel private networks.

If the Board requests a detailed briefing on the application of *KSR* to the facts of the present application, the undersigned prepare and will submit such a briefing. If not, expedited action by the Board is respectfully requested, as this application was made special on October 8, 2003.

For at least the reasons explained above and elsewhere in the appeal, all rejections should be withdrawn or reversed.

Dated this May 17, 2007.

Respectfully submitted,



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Electronic Acknowledgement Receipt

EFS ID:	1784915
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	17-MAY-2007
Filing Date:	28-DEC-2001
Time Stamp:	13:22:15
Application Type:	Utility

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1	Reply Brief Filed	ReplyBrief-3003-2-9A.pdf	102991	no	3

Warnings:

Information:	
Total Files Size (in bytes):	102991

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 08/09/2007

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EXAMINER	
NGUYEN, THU HA T	
ART UNIT	**PAPER NUMBER**
2155	

MAIL DATE	DELIVERY MODE
08/09/2007	PAPER

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The time period for reply, if any, is set in the attached communication.

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10034197	12/28/2001	DATTA ET AL.	3003.2.9A

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EXAMINER	
Thu Ha T. . Nguyen	
ART UNIT	**PAPER**
2155	20070802

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Commissioner for Patents

The reply brief filed on May 17, 2007 has been entered and considered. The application has been forwarded to the Board of Patent Appeals and Interferences for decision on the appeal.

Thuhanguyen
THU HA NGUYEN
PRIMARY EXAMINER

August 2, 2007

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FAX TRANSMISSION

To:	**Hon. Deborah Vega, BPAI, USPTO**	**From:**	John Ogilvie
Fax:	571-273-4681	**Pages:**	4 , including cover page
Phone:	571-272-4681	**Date:**	26 September 2007
Re:	**10/034,197**	**cc:**	

Correction of the Record for Appeal Brief (3/6/07)
Grounds of Rejection to Be Reviewed on Appeal

PATENT APPLICATION
ATTORNEY DOCKET NO. 22971.NP / 3003.2.9A

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ART UNIT: 2155 EXAMINER: Thu Ha Nguyen APPLICANT: Sanchaita Datta and Ragula Bhaskar SERIAL NO.: 10/034,197 FILED: December 28, 2001 FOR: COMBINING CONNECTIONS FOR PARALLEL ACCESS TO MULTIPLE FRAME RELAY AND OTHER PRIVATE NETWORKS	**APPEAL BRIEF CORRECTION OF RECORD** CERTIFICATE OF TRANSMISSION I certify that this paper is being transmitted by fax to 571-273-8681 on September 26, 2007. Printed Name: John W. Ogilvie

Commissioner for Patents:

This case was **made special** by a Decision mailed October 8, 2003.

This Correction is submitted in response to a telephonic request made today by the Board. The Grounds of Rejection section is amended to conform with the December 23, 2004 Reopening Action.

Grounds of Rejection to be Reviewed on Appeal

(corrected)

1. Is a local area network a "private network" as that term is defined by applicants?
2. Were claims 9, 15 properly rejected under Section 103 in view of U.S. Patent No. 5,948,069 by Kitai et al. ("Kitai")?
3. Were claims 1-3, 8-12 properly rejected under Section 103 in view of Kitai combined with U.S. Patent No. 6,209,039 to Albright et al. ("Albright")?
4. Were claims 4, 13-16, and 18 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 5,910,951 to Pearce et al. ("Pearce")?
5. Was claim 5 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,546,423 to Dutta et al. ("Dutta")?
6. Was claim 17 properly rejected under Section 103 in view of Kitai combined with Albright, Pearce, and Dutta?
7. Were claims 6 and 7 properly rejected under Section 103 in view of Kitai combined with Albright and with U.S. Patent No. 6,195,680 to Goldszmidt et al. ("Goldszmidt")?
8. Was claim 19 properly rejected under Section 103 in view of Kitai combined with Pearce and also combined with Goldszmidt?
9. Were claims 20 and 21 properly rejected under Section 103 in view of Kitai combined with Pearce, Goldszmidt, and Albright?

Dated this September 26, 2007.

Respectfully submitted,

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SALT LAKE CITY, UT 84105

Appeal No: 2008-0069
Application: 10/034,197
Appellant: Sanchaita Datta et al.

Board of Patent Appeals and Interferences
Docketing Notice

Application 10/034,197 was received from the Technology Center at the Board on August 25, 2007 and has been assigned Appeal No: 2008-0069.

A review of the file indicates that the following documents have been filed by appellant:

Appeal Brief filed on:	March 06, 2007
Reply Brief filed on:	May 17, 2007
Request for Hearing filed on:	NONE

In all future communications regarding this appeal, please include both the application number and the appeal number.

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The facsimile number of the Board is 571-273-0052. Because of the heightened security in the Washington D.C. area, facsimile communications are recommended. Telephone inquiries can be made by calling 571-272-9797 and should be directed to a Program and Resource Administrator.

By order of the Board of Patent Appeals and Interferences

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 07/08/2008

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EXAMINER	
NGUYEN, THU HA T	
ART UNIT	PAPER NUMBER
2153	
MAIL DATE	DELIVERY MODE
07/08/2008	PAPER

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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SANCHAITA DATTA and RAGULA BHASKAR

Appeal 2008-0069
Application 10/034,197
Technology Center 2100

Decided: July 8, 2008

Before JEAN R. HOMERE, JAY P. LUCAS, and STEPHEN C. SIU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-21. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

A. INVENTION

The invention at issue involves computer network data transmission (Spec. 1). In particular, data sites are connected over multiple parallel private networks (*id.* 9). When one network fails, the failure is sensed by a controller, and traffic is automatically routed through one or more other private networks (*id.* 10).

B. ILLUSTRATIVE CLAIM

Claim 1, which further illustrates the invention, follows:

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

C. REJECTION

Claims 1-3 and 8-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,948,069 ("Kitai") and U.S. Patent No. 6,209,039 ("Albright"). Claims 4, 13-16 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitai, Albright, and U.S. Patent

No. 5,910,951 ("Pearce"). Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitai, Albright, and U.S. Patent No. 6,546,423 ("Dutta"). Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitai, Albright, and U.S. Patent No. 6,195,680 ("Goldszmidt"). Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitai, Albright, Pearce, and U.S. Patent No. 6,546,423 ("Dutta"). Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitai, Pearce, and Goldszmidt. Claims 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitai, Albright, Pearce and Goldszmidt.

II. CLAIM GROUPING

"When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone. Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(vii) (2006).[1]

[1] We cite to the version of the Code of Federal Regulations in effect at the time of the Appeal Brief. The current version includes the same rules.

Appellants argue claims 1-3, 8-12, 14, 18, and 20 as a group (Fourth Revised Substitute App. Br. 18).[2] Claims 1-3 and 8-12 of the group are subject to one ground of rejection, claims 14 and 18 of the group are subject to a second ground of rejection, and claim 20 is subject to a third ground of rejection. We group claims 1-3 and 8-12, which are subject to the same ground of rejection, as a first group. Because Appellants do not provide additional arguments for claims 14 and 18, we group claims 14 and 18 with claims 1-3 and 8-12. Appellants also do not provide additional arguments for claim 20. Therefore, we group claim 20 with claims 1-3, 8-12, 14, and 18.

Appellants also argue claims 4, 13, 15, 16 and 21 as a group (Fourth Revised Substitute App. Br. 19). Claims 4, 13, 15, and 16 are subject to one ground of rejection and claim 21 is subject to a different ground of rejection. We group claims 4, 13, 15, and 16, which are subject to the same ground of rejection, as a second group. Because Appellants do not provide additional arguments for claim 21, we consider claim 21 with claims 4, 13, 15, and 16.

Appellants argue 6 and 7 as a group and claims 5, 17, and 19 separately (Fourth Revised Substitute App. Br. 20-21). We group claims 6 and 7 as a third group.

---

[2] We rely on the "Fourth Revised Substitute Appeal Brief," filed March 6, 2007 in lieu of the original and previously filed briefs.

We select claim 1 as the sole claim on which to decide the appeal of the first group, claim 4 as the sole claim on which to decide the appeal of the second group, and claim 6 as the sole claim on which to decide the appeal of the third group. We decide claims 5, 17, 19, 20, and 21 separately.

III. CLAIMS 1-3, 8-12, 14, 18, AND 20

Appellants assert that "Kitai does not teach private networks" (Fourth Revised Substitute App. Br. 13) because "the LANs of Kitai are not private networks" (Fourth Revised Substitute App. Br. 17).

The Specification discloses "private networks such as frame relay networks and/or point-to-point network connections" (Spec. 9). The Specification, while disclosing two examples of "private networks," fails to define "private networks" as limited to only frame relay networks and point-to-point networks. Therefore, we decline to adopt this limited interpretation of the term "private network."

In the absence of an explicit definition of the term "private network," we broadly but reasonably interpret the term "private network" using an ordinary and customary meaning of the term to include any interconnected system of devices or components (i.e., "network") that is private. We further construe the term "private" to include anything that is kept secret, is not open to the public, or is maintained with at least some degree of restricted access. For example, Webster's New International Dictionary, Second Edition (1934) defines the term "network" as meaning "any system

of lines or channels interlacing or crossing" and the term "private" as meaning "belonging to, or concerning, an individual person, company, or interest." "[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). Hence, a "private network" includes any system in which access may be restricted in some way or in which the system belongs or concerns an individual person, company, or interest.

As Appellants point out, Kitai discloses a Local Area Network (LAN). We do not find that Kitai's LANs are necessarily open to the public or cannot be restricted. Thus, we do not find that Kitai's LAN cannot be a "private network." Absent any evidence to the contrary, we agree with the Examiner that one of ordinary skill in the art would have construed "private networks" to include LANs.

In addition, Albright discloses a "first frame relay network and a second frame relay network" (Abstract, Fig. 3) and "a logical switch **312** connecting . . . to either Frame Relay interface **310** terminating link **350**, or Frame Relay interface **314** terminating link **351**" (col. 6, ll. 54-58). Hence, Albright discloses multiple interfaces (e.g., "Frame Relay interface 310" and "Frame Relay interface 314") and selecting between the interfaces (i.e., connecting to either Frame Relay interface 310 or Frame Relay interface 314). Therefore, even assuming that a "private network" includes only a Frame Relay network and nothing else, and even assuming that a Frame

Relay network can never be a LAN, Albright discloses Frame Relay networks and selecting between Frame relay interfaces, as recited in claim 1.

Appellants further argue that "Albright and Kitai were not properly combined . . . because . . . Albright deals with serial networks" which, according to Appellants "would have led those of skill in the art away from combining Albright and Kitai when they were trying to build a parallel network configuration" (Fourth Revised Substitute App. Br. 14).

Kitai discloses known methods and systems in which "communication paths . . . connect the client computer with the server computer" and "a selector . . . (selects) . . . one of the communication paths" (Abstract). As set forth above, Albright discloses additional known methods and system in which multiple frame relay networks are connected via a Frame Relay interface. Because combining the known elements of Kitai with known elements of Albright merely entails the combination of familiar elements (e.g., communication networks, frame relay interfaces, data communication) according to known methods to perform known functions to achieve a predictable and expected result (i.e., data communication via communication networks), we find that the combination of the references would have been obvious. "[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740 (2007) (citing *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282 (1976)).

We disagree with Appellants' contention that one of ordinary skill in the art would have been led away from combining Kitai and Albright because "Albright deals with serial networks" (Fourth Revised Substitute App. Br. 14). The determination of obviousness must consider, *inter alia*, whether a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so. *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000). *Medichem S.A. v. Rolabo S.L.*, 77 USPQ2d 1865, 1869 (Fed. Cir. 2006). Where the teachings of two or more prior art references conflict, the Examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another. *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991). If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984.) Furthermore, our reviewing court has held that "[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). *See also Para-Ordnance Mfg. v. SGS Importers Int'l,* 73 F.3d 1085, 1090 (Fed. Cir. 1995).

In the present case, we do not find that a person of ordinary skill after reading either Kitai or Albright would have been discouraged from combining the references. Neither Kitai nor Albright indicates the undesirability of the combination or other form of discouragement.

We disagree with Appellants' contention that the mere disclosure of a serial connection between networks in Albright would have discouraged the person of ordinary skill in the art from utilizing network interfaces in a parallel network of Kitai. Appellants do not argue that Albright discloses that the network interfaces cannot be used in the parallel network configuration of Kitai or that applying network interfaces to parallel networks would be disadvantageous. Therefore, we see no reason why one of ordinary skill in the art would have been discouraged from implementing network interfaces in any network and in any configuration. Appellants have failed to provide a convincing rationale as to why one of ordinary skill in art would have been discouraged from utilizing Frame Relay network interfaces in a serial format merely because Albright discloses one example of utilizing the interfaces in a serial configuration.

Appellants do not provide additional arguments in support of claims 14, 18 or 20.

It follows that Appellants have failed to demonstrate that the Examiner erred in rejecting claim 1. We therefore affirm the rejection of claim 1, and of claims 2, 3, 8-12, 14, 18, and 20, which fall therewith.

IV. CLAIM 4, 13, 15, 16, AND 21

Appellants argue, with reference to Kitai, Albright, and Pearce, that "the rejections fail to identify anything specific in one reference or in the art that would have led one of skill to the particular other references" (Fourth Revised Substitute App. Br. 19).

As indicated above, Appellants have not shown that the Examiner erred in combining the Kitai and Albright references. As set forth above, Kitai and Albright disclose data communication in multiple networks including selecting between network interfaces. The Examiner finds that Pearce also discloses data communication in a network "wherein the packet path selector selects between network interfaces according to a reliability criterion" (Ans. 8). We find that combining Pearce with Kitai and Albright to achieve data communication in multiple networks including selecting between network interfaces (Kitai and Albright) in which the selecting is performed according to a reliability criterion (Pearce) would have entailed no more than rearrangement of known elements performing known functions to achieve an expected result. We agree with the Examiner that this combination would have been obvious. *KSR*, 127 S. Ct. at 1740 (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)).

It follows that Appellants have failed to demonstrate that the Examiner erred in rejecting claim 4. We therefore affirm the rejection of claim 4, and of claims 13, 15, 16, and 21, which fall therewith.

V. CLAIM 6 AND 7

Appellants allege a "failure to justify combining Kitai and Albright" and a "failure to justify combining Kitai and Goldszmidt" (Fourth Revised Substitute App. Br. 20).

Goldszmidt discloses "deliver of real-time or continuous data streams" in which the data communication is switched between servers "in order to continue receiving the real-time multimedia stream with minimal disruption and while maintaining a balanced load across multiple servers" (Abstract). Hence, Goldszmidt discloses switching paths of data communication if a load imbalance is detected in a network. As set forth above, Kitai and Albright disclose data communication in data networks including switching data communication paths between network interfaces. Also as above, we find that the combination of Kitai and/or Albright with Goldszmidt involves no more than rearrangement of known elements (e.g., data communication via data communication networks, switching between different network interfaces or data communication paths, and switching paths to optimize load balancing) by performing known functions to achieve predictable and expected results. We therefore find that the combination of references would have been obvious to one of ordinary skill in the art. *KSR*, 127 S. Ct. at 1740 (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)).

It follows that Appellants have failed to demonstrate that the Examiner erred in rejecting claim 6. We therefore affirm the rejection of claim 6, and of claim 7, which falls therewith.

VI. CLAIM 5

Appellants argue a "failure to justify combining Kitai and Dutta" (Fourth Revised Substitute App. Br. 20).

Dutta discloses "a system and method for load balancing" (Abstract). For reasons set forth above, we disagree with Appellants' contention that it would not have been obvious to one of ordinary skill in the art to have rearranged known elements (e.g., data communication networks, switching between data communication paths or network interfaces, or optimizing load balancing in a network) that perform known functions to achieve predictable results. *KSR*, 127 S. Ct. at 1740 (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)). Therefore we are unconvinced by Appellants argument.

It follows that Appellants have failed to demonstrate that the Examiner erred in rejecting claim 5.

VII. CLAIM 17

Appellants argue a "failure to justify combining Kitai and Dutta" and a "failure to justify combining Kitai and Pearce" (Fourth Revised Substitute App. Br. 20).

We disagree with Appellants' argument for reasons already discussed above. It follows that Appellants have failed to demonstrate that the Examiner erred in rejecting claim 17.

VIII. CLAIM 19

Appellants argue a "failure to justify combining Kitai and Goldszmidt" (Fourth Revised Substitute App. Br. 21).

We disagree with Appellants' argument for reasons already discussed above. It follows that Appellants have failed to demonstrate that the Examiner erred in rejecting claim 19.

IX. ORDER

In summary, we affirm the rejections of claims 1-21 under § 103(a).

No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

pgc

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PTO/SB/30EFS (03/08)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	10034197	Filing Date	2001-12-28	Docket Number (if applicable)	3003.2.9A	Art Unit	2153
First Named Inventor	DATTA, Sanchaita			Examiner Name	NGUYEN, Thu Ha T		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☐ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (03/08)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Signature of Registered U.S. Patent Practitioner			
Signature	/John W. Ogilvie/	Date (YYYY-MM-DD)	2008-07-23
Name	John W. Ogilvie	Registration Number	37987

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks

AMENDMENT (RCE Submission)

Honorable Commissioner for Patents:

This case was **made special** by a Petition Decision mailed October 8, 2003.

On July 8, 2008 a Decision of the Board of Patent Appeals and Interferences was mailed affirming rejections of claims 1-21 under Section 103.

Applicants hereby submit new claims for consideration. Remarks are also submitted explaining why the new claims are not in conflict with the Board's Decision.

Applicants also respectfully request that an Examiner Interview be granted to the undersigned prior to the first office action on the merits in this RCE.

IN THE CLAIMS

Please amend the claims of this application as indicated below.

1-21. (canceled)

22. (new) A controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two network interfaces connecting the controller to respective independent parallel networks; and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by sending different packets of the message over different network interfaces;

whereby the controller uses multiple networks to carry different pieces of a given message so that unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

23. (new) The controller of claim 22, wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface.

24. (new) The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces.

25. (new) The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning.

26. (new) The controller of claim 22, wherein the controller sends packets out of sequence over the parallel networks.

27. (new) The controller of claim 26, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

28. (new) The controller of claim 22, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

29. (new) The controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection.

30. (new) The controller of claim 22, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

31. (new) The controller of claim 22, wherein each network interface is an indirect interface tailored to a particular type of frame relay network.

32. (new) The controller of claim 22, wherein each network interface is a direct interface comprising an Ethernet card.

33. (new) A method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site, the controller having a site interface, at least two network interfaces, and a packet path selector; and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by sending different packets of the message over different network interfaces.

34. (new) The method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel frame relay networks.

35. (new) The method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector.

36. (new) The method of claim 33, further comprising the step of specifying a reliability criterion for use by the packet path selector.

37. (new) The method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site;

connecting a first network interface of the controller to a first network; and

connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

38. (new) The method of claim 37, wherein at least one of the steps connecting a network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

39. (new) The method of claim 33, further comprising the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network.

40. (new) A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message to a site interface of a controller, the controller having the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by sending different packets of the message over different network interfaces; and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion.

Remarks

The claims ruled on in the Board's Decision have been canceled. It does not follow that the Decision's holding was correct, or that every statement made in the Decision is correct. Instead of going to the additional time and expense of exposing flaws in the Decision through an appeal, however, Applicants have chosen to focus here on claims that were not ruled on by the Board, to more rapidly find common ground with the Office.

Each of the claims now presented has language requiring "a packet path selector which selects between the network interfaces to split the message between the networks by sending different packets of the message over different network interfaces" or similar language. That is, each claim has a message-splitting requirement.

Previously presented claims 5 and 20, whose rejection was affirmed by the Board's Decision, included similar message-splitting limitations. However, the Board did not address those limitations. In the Decision, claim 20 was grouped with claim 1 and ruled on in Section III; the limitations specific to claim 20 were not ruled on separately. Claim 5 was discussed in Section VI, but the question ruled on was whether the Kitai and Dutta references had been properly combined to reject claim 5; limitations specific to claim 5 were not analyzed. In short, the claims now presented are not contrary to the Board's Decision, because they include limitations not addressed by that Decision.

The Examiner has previously argued that the limitations of claim 5 and claim 20 are taught by the cited art. For example, paragraph 19 of the Examiner's Answer mailed May 4, 2007 argues that Dutta teaches claim 5's requirement of "promoting use of multiple networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the networks used to carry the message will not provide the total content of the message". The Answer cites Dutta's abstract, figures 1-2, col. 1 lines 29-64, and col. 5 lines 31-54. Paragraph 28 of the Examiner's Answer argues that Kitai teaches "sending a packet to the controller site interface is repeated as multiple packets are sent, and the controller sends different packets of a given message to different frame relay networks." The Answer cites Kitai's abstract and col. 3 lines 6-42.

In both cases, the Answer is mistaken. Neither Dutta nor Kitai teaches dividing a particular message between networks as claimed. Merely sending different packets over

different networks is not enough – these claims require more. A message must be split between networks. The packets of a given message must be sent over different networks. This message-splitting is not taught in the art.

If anything, Dutta and Kitai teach away from splitting a message. Splitting a message could compromise the Quality of Service emphasized in Kitai; by contrast, the present invention splits a message to enhance security even if splitting the message degrades Quality of Service. Splitting a message could compromise the speed sought in Dutta, because Dutta uses the first packet of a message to set the load balancing rule for the entire message: "Subsequent packets in the message are then filtered in accordance with the rule constructed for the first packet of the message." Dutta col. 4 lines 47-57.

In view of the above, Applicants submit that each of pending claims is patentable, and respectfully request their prompt allowance. The fact that this Amendment is silent as to any particular statement of the Office (including in particular any statement in the Board's Decision) does not indicate agreement with that statement. Applicants expressly reserve all arguments not made here.

The undersigned is available for a telephone conference at the Examiner's convenience.

Dated July 23, 2008.

\pm2-RCEAmend-3003-2-9A

Respectfully submitted,

CERTIFICATE OF SUBMISSION

I hereby certify that this Amendment (RCE Submission) and RCE Transmittal are being submitted to the USPTO, through EFS-WEB, on July 23, 2008.

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Electronic Patent Application Fee Transmittal

Application Number:	10034197
Filing Date:	28-Dec-2001
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Filer:	John Ogilvie
Attorney Docket Number:	3003.2.9A

Filed as Small Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	405	405
		Total in USD ($)		**405**

Electronic Acknowledgement Receipt

EFS ID:	3667838
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	23-JUL-2008
Filing Date:	28-DEC-2001
Time Stamp:	23:07:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$405
RAM confirmation Number	4223
Deposit Account	
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/Message Digest	Multi Part /.zip	Pages (if appl.)

1	Request for Continued Examination (RCE)	RCE-Transmittal-3003-2-9A.pdf	708171 ed6c5d0836c6b767a6ef34d06422b8a537758e48	no	3
Warnings:					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	pm2-RCEAmend-3003-2-9A.pdf	256684 77befde6be910635b61e9a5cba114bc73c18bb06	no	7
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	8201 88c400baf336f37a80b5c88e08840390441348e8	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	973056	

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/034,197	12/28/2001	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 07/23/2008	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 19	Minus	** 21	= 0	X $25 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $105 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

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** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/KIM WATSON SAUNDERS/

PTO/SB/08a (03-08)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	10034197
Filing Date	2001-12-28
First Named Inventor	DATTA, Sanchaita
Art Unit	2153
Examiner Name	NGUYEN, Thu Ha T
Attorney Docket Number	3003.2.9A

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6771597	B2	2004-08-03	Makansi et al.	
	2	5822433		1998-10-13	Bottle et al.	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020141585	A1	2002-10-03	Carr	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	10034197
	Filing Date	2001-12-28
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	Art Unit	2153
	Examiner Name	NGUYEN, Thu Ha T
	Attorney Docket Number	3003.2.9A

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	10034197
	Filing Date	2001-12-28
	First Named Inventor	DATTA, Sanchaita
	Art Unit	2153
	Examiner Name	NGUYEN, Thu Ha T
	Attorney Docket Number	3003.2.9A

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John W. Ogilvie/	Date (YYYY-MM-DD)	2008-07-26
Name/Print	John W. Ogilvie	Registration Number	37987

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	10034197
Filing Date:	28-Dec-2001
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Filer:	John Ogilvie
Attorney Docket Number:	3003.2.9A

Filed as Small Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	3682655
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	26-JUL-2008
Filing Date:	28-DEC-2001
Time Stamp:	16:50:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	4342
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/Message Digest	Multi Part /.zip	Pages (if appl.)

1	Information Disclosure Statement (IDS) Filed	IDS-3003-2-9A-from-3003-2-14B-OA-26jul2008.pdf	574035 6e131c42b0dd2869adc4d5c69dddc9b72b7ac811	no	4
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8202 d1dc7ddd711c071d369ffc4a9c84508a5381b3b7	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	582237	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 11/25/2008

OGILVIE LAW FIRM
1320 EAST LAIRD AVENUE
SALT LAKE CITY, UT 84105

EXAMINER	
NGUYEN, THU HA T	
ART UNIT	PAPER NUMBER
2453	
MAIL DATE	DELIVERY MODE
11/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	THU HA T. NGUYEN	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/26/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **22-40** are presented for examination.

2. Claims 1-21 are cancelled.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on July 23, 2008 has been entered.

Response to Arguments

4. Applicant's arguments filed July 23, 2008 have been fully considered but they are not persuasive because of the following reasons:

5. Applicant argues the neither Kitai nor Dutta teaches dividing a particular message between networks. In response to applicant's argument, the examiner submits that Kitai does teach the feature of dividing a message between the networks as shown in figure 17, col. 3 lines 6-42, 14, line 21-51, col. 16, line 62-col. 17, line 19.

6. Therefore, the examiner asserts that cited prior art teaches or suggests the subject matter broadly recited in independent claims 22, 33 and 40. Claims 23-32, and 34-39 are also rejected at least by virtue of their dependency on independent claims and by other reasons set forth in this office action below. Accordingly, claims 22-40 are rejected.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 33, 35 and 40 are rejected under 35 U.S.C. §102(e) as being anticipated by **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**.

9.

10. As to claim **33, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site, the controller having a site interface, at least two network interfaces, and a packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57); and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by sending different packets of the message over different network interfaces (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 17, line 19).

11. As to claim **35, Kitai** teaches the method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

12. As to claim **40, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message to a site interface of a controller, the controller having the site interface which receives packets (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57), at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by sending different packets of the message over different network interfaces (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 17, line 19); and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 22, 24-25 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

15. As to claim **22, Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

at least two network interfaces connecting the controller to respective independent parallel networks (figures 3, 22, elements 3000, 3050 and 3074); and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by sending different packets of the message over different network interfaces (col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51);

whereby the controller uses multiple networks to carry different pieces of a given message (figure 17, col. 3 lines 6-42, 14, line 21-51, col. 16, line 62-col. 17, line 19).

However, **Kitai** does not explicitly teach unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

Dutta teaches unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Dutta** to include a security feature into **Kitai**'s system because it would improve the data transferring more secure and efficient between networks

16. As to claim **24, Kitai** teaches the controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

17. As to claim **25,** the combination of **Kitai and Dutta** does not explicitly teach wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning. **Pearce** teaches wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces,

when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

18. As to claim **29, Kitai** teaches the controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

19. Claims 23, 28 and 30-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

20. As to claim **23,** the combination of **Kitai and Dutta** does not explicitly teach wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface. However, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network

interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

21. As to claim **28, Kitai and Dutta** teaches the controller of claim 22; however the combination of **Kitai and Dutta** does not explicitly teach wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector. **Albright** teaches wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector (figure 3, col. 6, lines 65-col. 7, line 25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

22. As to claim **30, Kitai and Dutta** teaches the controller of claim 22; however **Kitai and Dutta** does not explicitly teach wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network. **Albright** teaches the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

23. As to claim **31,** the combination of **Kitai and Dutta** does not explicitly teach wherein each network interface is an indirect interface tailored to a particular type of frame relay network. **Albright** teaches each network interface is an indirect interface tailored to a particular type of frame relay

network (figure 3, col. 7, lines 6-16). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliability and dynamically interface/paths among multiple interfaces/paths.

24. As to claim **32,** the combination of **Kitai and Dutta** does not explicitly teach each network interface is a direct interface comprising an Ethernet card. **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure

25. Claims 26 and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680.**

26. As to claim **26,** the combination of **Kitai and Dutta** does not explicitly teach the controller sends packets out of sequence over the parallel networks. **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load

27. As to claim **27,** the combination of **Kitai and Dutta** does not explicitly teach the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence. **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure

28. Claim 34 is rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

29. As to claim **34, Kitai** teaches the method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel networks (figure 17, col. 16, line 62-col. 17, line 19). However, **Kitai** does not explicitly teach frame relay networks. **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

30. Claim 36-37 and 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951.**

31. As to claim **36, Kitai** does not explicitly teach the feature of specifying a reliability criterion for use by the packet path selector. **Pearce**

teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to include the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

32. As to claim **37, Kitai** teaches the method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7).

However, **Kitai** does not explicitly teach connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

Pearce teaches connecting a second network interface of the controller to a second network which is parallel to and independent of the first network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks.

33. As to claim **39,** the combination of **Kitai and Pearce** teaches the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network (Pearce, abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Pearce into Kitai** to include the feature of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

34. Claim 38 is rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

35. As to claim **38, Kitai and Pearce** does not explicitly teach connecting a network interface of the controller connects the controller to a User-

to- Network Interface in a router of a frame relay network. **Albright** teaches connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Albright** to have a the controller connects the controller to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (571) 272-3989. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne, can be reached at (571) 272-4001.

The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/THUHA T. NGUYEN/

Primary Examiner, Art Unit 2453

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	Art Unit
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008							
	1	A	-							
	2	A	-							
	3	A	-							
	4	A	-							
	5	A	-							
	6	A	-							
	7	A	-							
	8	A	-							
	9	A	-							
	10	A	-							
	11	A	-							
	12	A	-							
	13	A	-							
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	22		✓							
	23		✓							
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	25		✓							
	26		✓							
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	28		✓							
	29		✓							
	30		✓							
	31		✓							
	32		✓							
	33		✓							
	34		✓							
	35		✓							
	36		✓							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008							
	37		✓							
	38		✓							
	39		✓							
	40		✓							
	41									
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	Art Unit
	THU HA T NGUYEN	2453

SEARCHED			
Class	Subclass	Date	Examiner
Update	search	11/08/08	THN

SEARCH NOTES		
Search Notes	Date	Examiner
East update search	11/08/08	THN

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

PTO/SB/08a (03-08)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	10034197
Filing Date	2001-12-28
First Named Inventor	DATTA, Sanchaita
Art Unit	2153
Examiner Name	NGUYEN, Thu Ha T
Attorney Docket Number	3003.2.9A

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6771597	B2	2004-08-03	Makansi et al.	
	2	5822433		1998-10-13	Bottle et al.	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020141585	A1	2002-10-03	Carr	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	10034197
	Filing Date	2001-12-28
	First Named Inventor	DATTA, Sanchaita
	Art Unit	2153
	Examiner Name	NGUYEN, Thu Ha T
	Attorney Docket Number	3003.2.9A

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/Thu Ha Nguyen/	Date Considered	11/23/2008

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TN/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For: Com	bining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks

AMENDMENT

Commissioner for Patents:

This case was **made special** by a Petition Decision mailed October 8, 2003.

In response to the Office Action mailed November 25, 2008, Applicants submit the following amendments and remarks.

IN THE CLAIMS

Please amend the claims of this application as indicated below.

1-21. (canceled)

22. (currently amended) A controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection;

at least two network interfaces connecting the controller to respective independent parallel networks; and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by sending different packets of the message over different network interfaces without requiring packet segmentation and without requiring firewall usage;

whereby the controller uses multiple networks to carry different pieces of a given message so that unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

23. (previously presented) The controller of claim 22, wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface.

24. (previously presented) The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces.

25. (previously presented) The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning.

26. (previously presented) The controller of claim 22, wherein the controller sends packets out of sequence over the parallel networks.

27. (previously presented) The controller of claim 26, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

28. (previously presented) The controller of claim 22, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

29. (previously presented) The controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection.

30. (previously presented) The controller of claim 22, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

31. (previously presented) The controller of claim 22, wherein each network interface is an indirect interface tailored to a particular type of frame relay network.

32. (previously presented) The controller of claim 22, wherein each network interface is a direct interface comprising an Ethernet card.

33. (currently amended) A method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector; and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by sending different packets of the message over different network interfaces, without requiring packet segmentation and without requiring firewall usage.

34. (previously presented) The method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel frame relay networks.

35. (previously presented) The method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector.

36. (previously presented) The method of claim 33, further comprising the step of specifying a reliability criterion for use by the packet path selector.

37. (currently amended) The method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site over the single logical connection;

connecting a first network interface of the controller to a first network; and

connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

38. (previously presented) The method of claim 37, wherein at least one of the steps connecting a network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

39. (previously presented) The method of claim 33, further comprising the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network.

40. (currently amended) A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by sending different packets of the message over different network interfaces without requiring packet segmentation and without requiring firewall usage; and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion.

Remarks

Single Connection

Each of the claims now presented has language requiring "a single logical connection" between the site and the inventive controller. Thus, the claims are limited such that more than one logical connection is **not** required. Basis for this limitation is found in the application as filed at least at page 8 lines 15-19, and Figures 5 – 7.

By contrast, Kitai Figure 17, and Kitai Figure 3 which is referenced in the discussion of Figure 17 at column 14 lines 21 – 51, **requires multiple** such connections. See also Kitai column 5 lines 40 – 57, discussing "a plurality of virtual channels present" from the server 3000.

Kitai's approach requires special servers. Servers having a single outgoing connection will not operate as taught by Kitai. By contrast, special servers having multiple connections or multiple buffers (e.g., Kitai buffers 6031, 6032, 6033) are not required by the present invention. Servers having a single outgoing connection will operate fine with the present claimed invention.

No Packet Segmentation

The Office Action asserts on page 2 that Kitai teaches dividing a message between networks. However, careful reading of the cited discussion reveals that Kitai teaches splitting packets, not splitting messages. Kitai splits packets into segments based on segment lengths specified by an application; see, e.g., column 14 lines 36 – 41.

By contrast, one finds no such packet segmentation requirement anywhere in the present application. One of skill reading the claims previously presented would also have understood that segmentation of packets is not involved, because the claims and the specification speak of sending "packets" not packet segments, and they speak of splitting a "message" not of splitting a packet. However, to make this point absolutely crystal clear, the claims are amended to expressly state that packet segmentation is not required.

No Firewall Needed

Dutta teaches away from a known load balancer that "receives a packet of information, performs some analysis on the packet to select a destination server, and then

forwards the packet to the selected server" (column 1 lines 15 – 28). After discussing disadvantages of this approach, Dutta teaches use of load balancing using a firewall. See, e.g., column 4 line 63 – column 5 line 30.

By contrast, one finds no such firewall requirement anywhere in the present application. One of skill reading the claims previously presented would accordingly have understood that a firewall is not involved. However, to make this point absolutely crystal clear, the claims are amended to expressly state that a firewall is not required.

Conclusion

In view of the above, Applicants submit that each of pending claims is patentable, and request their prompt allowance. The fact that this Amendment is silent as to any particular statement of the Office does not indicate agreement with that statement. Previous arguments are not waived. Applicants also expressly reserve all arguments not made here.

The undersigned is available for a telephone conference at the Examiner's convenience.

Dated April 22, 2009.

\pm3-3003-2-9A

Hereby submitted,

John W. Ogilvie
Reg. No. 37,987
Attorney for Applicants
OGILVIE LAW FIRM
1320 East Laird Avenue
Salt Lake City, UT 84105
801-706-2546 (voice)
801-583-0393 (fax)

CERTIFICATE OF SUBMISSION

I hereby certify that this Amendment is being submitted to the USPTO, through EFS-WEB, on April 22, 2009.

PTO/SB/22 (03-09)
Approved for use through 04/30/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** ***(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)***	Docket Number (Optional) 3003.2.9A
Application Number 10/034,197	Filed 2001-12-28
For Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks	
Art Unit 2453	Examiner Thu Ha T NGUYEN

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☐ One month (37 CFR 1.17(a)(1))	$130	$65	$
☑ Two months (37 CFR 1.17(a)(2))	$490	$245	$ 245
☐ Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐ Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐ Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☑ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☑ Payment by credit card. ~~Form PTO-2038 is attached.~~ → EFS-WEB

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 37987

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/John Ogilvie/ — Signature

22 April 2009 — Date

John Ogilvie — Typed or printed name

801-706-2546 — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

Electronic Patent Application Fee Transmittal

Application Number:	10034197
Filing Date:	28-Dec-2001
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Filer:	John Ogilvie
Attorney Docket Number:	3003.2.9A

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	2252	1	245	245

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**245**

Electronic Acknowledgement Receipt

EFS ID:	5201247
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	22-APR-2009
Filing Date:	28-DEC-2001
Time Stamp:	17:42:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$245
RAM confirmation Number	3572
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Amendment/Req. Reconsideration-After Non-Final Reject	pm3-3003-2-9A.pdf	118395 bf4d79a9ef1c56f53fc57ce4f14341da93cfe893	no	7
Warnings:					
Information:					
2	Extension of Time	pm3-extn-3003-2-9A.pdf	62284 1890bbcc51f4c96bf7d3c7947b46d43d6e1e1f7e	no	1
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	30000 f9db256da72121858b47d58505b257e6fe67b725	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	210679	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/034,197	12/28/2001	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	04/22/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 21	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/VIOLA ROGERS/

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

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EXAMINER	
NGUYEN, THU HA T	
ART UNIT	PAPER NUMBER
2453	
MAIL DATE	DELIVERY MODE
08/17/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	THU HA T. NGUYEN	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **22-40** are presented for examination.

2. Claims 22, 33, 37 and 40 are currently amended.

3. Claims 1-21 are cancelled.

Response to Arguments

4. Applicant's arguments filed on April 22, 2009 have been fully considered but they are not persuasive.

5. Applicant argues that Kitai does not teach single logical connection. In response to applicant's argument, the examiner submits that Kitai does teach the feature of single logical connection as shown in col. 8, line 54-col. 9, line 50.

6. Applicant argues that Kitai does not teach splitting a message …without requiring packet segmentation and without requiring firewall usage. In response to applicant's argument, the examiner submits that Kitai does teach the feature of splitting a message …without requiring packet segmentation and without firewall usage as shown in figure 17, col. 3 lines 6-42, 14, line 21-51, col. 16, line 62-col. 17, line 19.

7. Therefore, the examiner asserts that cited prior art teaches or suggests the subject matter broadly recited in independent claims 22, 33 and 40. Claims 23-32, and 34-39 are also rejected at least by virtue of their dependency on independent claims and by other reasons set forth in this office action below. Accordingly, claims 22-40 are rejected.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. The analysis under 35 U.S.C. 112, first paragraph, requires that the scope of protection sought be supported by the specification disclosure. The pertinent inquiries include determining (1) whether the subject matter defined in the claims is described in the specification and (2) whether the specification disclosure as a whole is to enable one skilled in the art to make and use the claimed invention.

(1) Claims 22, 33 and 40 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The "invention" for the purpose of the first paragraph analysis is defined by the claims. The description requirement is simply that the claimed subject matter must be described in the specification. The function of the description requirement is to ensure that the applicant had possession of the invention on the filing date of the application. The application need not describe the claim limitations exactly, but must be sufficiently clear for one of ordinary skill in the art to recognize that the applicant's invention encompasses the recited limitations.

The description requirement is not met if the application does not expressly or inherently disclose the claimed invention.

Specification does not explicitly describe nor is sufficiently clear for one of ordinary skill in art to recognize the limitation as recited in claims 22, 33 and 40 "to split a message ...by sending different packets of the message …**without requiring packet segmentation**":

Claims 22, 33 and 40 are unclear that the one ordinarily skilled in the art cannot recognize the encompassed claim limitations. While adding negative limitations like "**without requiring packet segmentation**" to the claimed language, the instant application's specification clearly shows dividing the packets of a given message so they travel over different networks (figure 7, page 16). The controller 502 at the receiving en of the network connection between two sites A and B has the ability to re-sequence the packets…the system can send packets out of order and re-sequence them at the other end (figure 5, page 13). Thus, there is a contradiction.

(2) Claims 22, 33 and 40 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The enablement requirement necessitates a determination that the disclosure contains sufficient teaching regarding the subject matter claimed as to enable one skilled in the pertinent art to make and use the claimed invention. In essence, the scope of enablement provided to one ordinarily skilled in the art by

the disclosure must be commensurate with the scope of protection sought by the claims.

Currently, the most prevalent standard for measuring sufficient enablement to meet the requirements of 112 is that of "undue experimentation". The test is whether, at the time of the invention, there was sufficient working procedure for one skilled in the art to practice the claimed invention without undue experimentation. It is important to note that the test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, is it undue. An skilled artisan is given sufficient direction or guidance in the disclosure. Moreover, the experimentation required, in addition to not being undue, must not require ingenuity beyond that expect of one of ordinary skill in the art.

Undue experimentation and ingenuity would be required beyond one ordinarily skilled in the art to practice the limitation as recited in claims 22, 33 and 40 as “to split a message ...by sending different packets of the message …**without requiring packet segmentation**“.

Undue experimentation would be needed to allow a packet path selector which selects between the network interfaces to **split a message** …by sending different packets of the message over different network interfaces **without requiring packets segmentation** and without requiring firewall usage. While adding negative limitations like “**without requiring packet segmentation**” to the claimed language, the instant application’s specification clearly shows digital signature as defined as encrypted message. Thus, there is a contradiction.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. Claims 33, 35 and 40 are rejected under 35 U.S.C. §102(e) as being anticipated by **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**.

12. As to claim **33, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57, col. 8, line 54-col. 9, line 50); and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by sending different packets of the message over different network interfaces, without requiring packet segmentation and without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 17, line 19).

13. As to claim **35, Kitai** teaches the method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

14. As to claim **40, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57), at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by sending different packets of the message over different network interfaces without requiring packet segmentation and without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 17, line 19); and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 22, 24-25 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

17. As to claim **22, Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

at least two network interfaces connecting the controller to respective independent parallel networks (figures 3, 22, elements 3000, 3050 and 3074); and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by sending different packets of the message over different network interfaces without requiring packet segmentation and without requiring firewall usage (col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51);

whereby the controller uses multiple networks to carry different pieces of a given message (figure 17, col. 3 lines 6-42, 14, line 21-51, col. 16, line 62-col. 17, line 19).

However, **Kitai** does not explicitly teach unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

Dutta teaches unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total

content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Dutta** to include a security feature into **Kitai**'s system because it would improve the data transferring more secure and efficient between networks

18. As to claim **24, Kitai** teaches the controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

19. As to claim **25,** the combination of **Kitai and Dutta** does not explicitly teach wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning. **Pearce** teaches wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill

in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

20. As to claim **29, Kitai** teaches the controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

21. Claims 23, 28 and 30-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

22. As to claim **23,** the combination of **Kitai and Dutta** does not explicitly teach wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface. However, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to

combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

23. As to claim **28, Kitai and Dutta** teaches the controller of claim 22; however the combination of **Kitai and Dutta** does not explicitly teach wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector. **Albright** teaches wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector (figure 3, col. 6, lines 65-col. 7, line 25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

24. As to claim **30, Kitai and Dutta** teaches the controller of claim 22; however **Kitai and Dutta** does not explicitly teach wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network. **Albright** teaches the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

25. As to claim **31,** the combination of **Kitai and Dutta** does not explicitly teach wherein each network interface is an indirect interface tailored to a particular type of frame relay network. **Albright** teaches each network interface is an indirect interface tailored to a particular type of frame relay network (figure 3, col. 7, lines 6-16). It would have been obvious to one of

ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliability and dynamically interface/paths among multiple interfaces/paths.

26. As to claim **32,** the combination of **Kitai and Dutta** does not explicitly teach each network interface is a direct interface comprising an Ethernet card. **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure

27. Claims 26 and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680.**

28. As to claim **26,** the combination of **Kitai and Dutta** does not explicitly teach the controller sends packets out of sequence over the parallel networks. **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load

29. As to claim **27,** the combination of **Kitai and Dutta** does not explicitly teach the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence. **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure

30. Claim 34 is rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

31. As to claim **34, Kitai** teaches the method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel networks (figure 17, col. 16, line 62-col. 17, line 19). However, **Kitai** does not explicitly teach frame relay networks. **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

32. Claim 36-37 and 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951.**

33. As to claim **36, Kitai** does not explicitly teach the feature of specifying a reliability criterion for use by the packet path selector. **Pearce**

teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to include the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

34. As to claim **37, Kitai** teaches the method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site over the single connection (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7).

However, **Kitai** does not explicitly teach connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

Pearce teaches connecting a second network interface of the controller to a second network which is parallel to and independent of the first network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks.

35. As to claim **39,** the combination of **Kitai and Pearce** teaches the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network (Pearce, abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Pearce into Kitai** to include the feature of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

36. Claim 38 is rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

37. As to claim **38, Kitai and Pearce** does not explicitly teach connecting a network interface of the controller connects the controller to a User-

to- Network Interface in a router of a frame relay network. **Albright** teaches connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Albright** to have a the controller connects the controller to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

Conclusion

38. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (571) 272-3989. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne, can be reached at (571) 272-4001.

The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/THUHA T. NGUYEN/

Primary Examiner, Art Unit 2453

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	Art Unit
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009						
	1	A	-	-						
	2	A	-	-						
	3	A	-	-						
	4	A	-	-						
	5	A	-	-						
	6	A	-	-						
	7	A	-	-						
	8	A	-	-						
	9	A	-	-						
	10	A	-	-						
	11	A	-	-						
	12	A	-	-						
	13	A	-	-						
	14		-	-						
	15		-	-						
	16		-	-						
	17		-	-						
	18		-	-						
	19		-	-						
	20		-	-						
	21		-	-						
	22		✓	✓						
	23		✓	✓						
	24		✓	✓						
	25		✓	✓						
	26		✓	✓						
	27		✓	✓						
	28		✓	✓						
	29		✓	✓						
	30		✓	✓						
	31		✓	✓						
	32		✓	✓						
	33		✓	✓						
	34		✓	✓						
	35		✓	✓						
	36		✓	✓						

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009						
	37		✓	✓						
	38		✓	✓						
	39		✓	✓						
	40		✓	✓						
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	Art Unit
	THU HA T NGUYEN	2453

SEARCHED			
Class	Subclass	Date	Examiner
Update	search	08/12/09	THN

SEARCH NOTES		
Search Notes	Date	Examiner
East update search	08/12/09	THN

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

PTO/SB/30EFS (01-09)
Approved for use through 02/28/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	10/034,197	Filing Date	2001-12-28	Docket Number (if applicable)	3003.2.9A	Art Unit	2453
First Named Inventor	DATTA, Sanchaita			Examiner Name	NGUYEN, Thu Ha T		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☒ Other Petition for Extension of Time

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☐ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (01-09)
Approved for use through 02/28/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Signature of Registered U.S. Patent Practitioner			
Signature	/John Ogilvie/	Date (YYYY-MM-DD)	2010-01-09
Name	John Ogilvie	Registration Number	37987

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks

AMENDMENT (RCE Submission)

Commissioner for Patents:

This case was **made special** by a Petition Decision mailed October 8, 2003.

In response to the Final Office Action mailed August 17, 2009, Applicants submit the following amendments and remarks.

IN THE CLAIMS

Please amend the claims of this application as indicated below.

1-21. (canceled)

22. (currently amended) A controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection;

at least two network interfaces connecting the controller to respective independent parallel networks; and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by concurrently sending different packets of the message over different network interfaces ~~without requiring packet segmentation and~~ without requiring firewall usage;

whereby the controller uses multiple networks to concurrently carry different pieces of a given message so that unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

23. (previously presented) The controller of claim 22, wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface.

24. (previously presented) The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces.

25. (previously presented) The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning.

26. (previously presented) The controller of claim 22, wherein the controller sends packets out of sequence over the parallel networks.

27. (previously presented) The controller of claim 26, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

28. (previously presented) The controller of claim 22, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

29. (previously presented) The controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection.

30. (previously presented) The controller of claim 22, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

31. (previously presented) The controller of claim 22, wherein each network interface is an indirect interface tailored to a particular type of frame relay network.

32. (previously presented) The controller of claim 22, wherein each network interface is a direct interface comprising an Ethernet card.

33. (currently amended) A method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector; and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by concurrently sending different packets of the message over different network interfaces, ~~without requiring packet segmentation and~~ without requiring firewall usage.

34. (previously presented) The method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel frame relay networks.

35. (previously presented) The method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector.

36. (previously presented) The method of claim 33, further comprising the step of specifying a reliability criterion for use by the packet path selector.

37. (previously presented) The method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site over the single logical connection;

connecting a first network interface of the controller to a first network; and

connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

38. (previously presented) The method of claim 37, wherein at least one of the steps connecting a network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

39. (previously presented) The method of claim 33, further comprising the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network.

40. (currently amended) A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by concurrently sending different packets of the message over different network interfaces ~~without requiring packet segmentation and~~ without requiring firewall usage; and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion.

Remarks

Concurrently Sending

Each of the claims now presented has language requiring concurrently sending packets over different network interfaces of a controller. Basis for this limitation is found in the application as filed at least at page 11 lines 3-10, and page 18, lines 13-16.

By contrast, Kitai does not even mention the word "concurrent".

Section 112

The Office Action asserts on page 2 that Kitai teaches certain activities without firewall usage. Kitai does not contain the word "firewall", but that does not mean the Office Action is wrong. In order to be a reference, Kitai must satisfy Section 112 requirements – a reference that is vague or non-enabling is not a proper reference. See, e.g., M.P.E.P. § 2121. Accordingly, by citing Kitai the Office Action presumes that a document which does not mention "firewall" can enable activities that occur "without firewall usage". Applicants agree: in the absence of any reason to believe otherwise, a document that describes how to perform a particular activity without mentioning some X does indeed describe how to perform that particular activity without requiring X.

By the same reasoning, the present application satisfies Section 112 with respect to performing the claimed processes without requiring a firewall, because the application describes how to perform those claimed processes without mentioning firewalls.

The Office Action must be consistent. It must apply the same clarity and enablement standard to the present application document that it applies to prior art documents. If Kitai can be relied on to teach an activity "without firewall usage" by describing the activity without mentioning firewalls, then the present application can equally well teach its claimed activities "without requiring firewall usage" by describing those activities without mentioning firewalls.

Conclusion

In view of the above, Applicants submit that each of pending claims is patentable, and request their prompt allowance. The fact that this Amendment is silent as to any particular statement of the Office does not indicate agreement with that statement.

Previous arguments are not waived. Applicants also expressly reserve all arguments not made here.

The undersigned is available for a telephone conference at the Examiner's convenience.

Dated January 9, 2010.

\pm4-RCEAmend-3003-2-9A

CERTIFICATE OF SUBMISSION

I hereby certify that this Amendment (RCE Submission), RCE Transmittal, and time extension are being submitted to the USPTO, through EFS-WEB, on January 9, 2010.

Respectfully submitted,

JOHN W. OGILVIE
Registration No. 37,987

OGILVIE LAW FIRM
2552 Wilshire Circle
Salt Lake City, Utah 84109
801-706-2546 (voice)
801-583-0393 (fax)

PTO/SB/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) 3003.2.9A
Application Number 10034197	Filed 2001-12-28
For Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks	
Art Unit 2453	Examiner Nguyen, Thu Ha T

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$130	$65	$
☑	Two months (37 CFR 1.17(a)(2))	$490	$245	$ 245
☐	Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐	Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐	Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☑ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☑ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 37987

☐ attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

/John Ogilvie/	9 January 2010
Signature	Date
John Ogilvie	801-706-2546
Typed or printed name	Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

Electronic Patent Application Fee Transmittal

Application Number:	10034197
Filing Date:	28-Dec-2001
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Filer:	John Ogilvie
Attorney Docket Number:	3003.2.9A

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	2252	1	245	245

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**245**

Electronic Acknowledgement Receipt

EFS ID:	6780705
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	09-JAN-2010
Filing Date:	28-DEC-2001
Time Stamp:	14:08:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$245
RAM confirmation Number	5966
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Request for Continued Examination (RCE)	pm4-RCEAmend-xmit-09jan2010-3003-2-9A.pdf	697937 c12fb2383df54b24e1648dd3a14189c2e2de59bc	no	3
Warnings:					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	pm4-RCEAmend-3003-2-9A.pdf	119130 3d491766948a1650783c3327f89c99b42430c792	no	7
Warnings:					
Information:					
3	Extension of Time	pm4-RCEAmend-extension-3003-2-9A-image.pdf	539746 d2b59b66d10ae3ee9d1ee8339af58d4bb16e6a6d	no	1
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	30000 3571c5371b5ddfe2000731c67ec223808c930b81	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	1386813	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Patent Application Fee Transmittal

Application Number:	10034197
Filing Date:	28-Dec-2001
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Filer:	John Ogilvie
Attorney Docket Number:	3003.2.9A

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	405	405
		Total in USD ($)		**405**

Electronic Acknowledgement Receipt

EFS ID:	6780711
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	09-JAN-2010
Filing Date:	28-DEC-2001
Time Stamp:	14:19:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$405
RAM confirmation Number	5970
Deposit Account	
Authorized User	

File Listing:

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/034,197	12/28/2001	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 01/09/2010	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 19	Minus	** 21	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $110 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/STEFANIE BRYCE/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

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EXAMINER	
NGUYEN, THU HA T	
ART UNIT	PAPER NUMBER
2453	
MAIL DATE	DELIVERY MODE
01/21/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	THU HA T. NGUYEN	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **22-40** are presented for examination.

2. Claims 22, 33 and 40 are currently amended.

3. Claims 1-21 are cancelled.

Response to Arguments

4. Applicant's arguments filed on January 09, 2010 have been fully considered but they are not persuasive.

5. Applicant argues that Kitai does not teach even mention the word "concurrent". In response to applicant's argument, the examiner submits that Kitai does teach three connections are established (5790) and data communication is performed in accordance with **parallel** SEND/RECEIVE as shown in col. 17, line 63-col. 18 line 17.

6. Applicant argument regarding to rejection 112, 1st paragraph. In response to applicant's amendment, the rejection is now withdrawn.

7. Therefore, the examiner asserts that cited prior art teaches or suggests the subject matter broadly recited in independent claims 22, 33 and 40. Claims 23-32, and 34-39 are also rejected at least by virtue of their dependency on independent claims and by other reasons set forth in this office action below. Accordingly, claims 22-40 are rejected.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claim 40 is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process. The claim recited a method including steps of sending packets of message…; and specifying … is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent.

10. Appropriate correction is required.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 33, 35 and 40 are rejected under 35 U.S.C. §102(e) as being anticipated by **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**.

13. As to claim **33, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57, col. 8, line 54-col. 9, line 50); and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by concurrently sending different packets of the message over different network interfaces, without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 18, line 17 –*three*

connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE).

14. As to claim **35, Kitai** teaches the method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

15. As to claim **40, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57), at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 18, line 17 – *three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*); and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 22, 24-25 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

18. As to claim **22, Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

at least two network interfaces connecting the controller to respective independent parallel networks (figures 3, 22, elements 3000, 3050 and 3074); and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by concurrently sending different packets

of the message over different network without requiring firewall usage (col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 17, line 63-col. 18, line 17—*three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*);

whereby the controller uses multiple networks to carry different pieces of a given message (figure 17, col. 3 lines 6-42, 14, line 21-51, col. 16, line 62-col. 17, line 19).

However, **Kitai** does not explicitly teach unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

Dutta teaches unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Dutta** to include a security feature into **Kitai**'s system because it would improve the data transferring more secure and efficient between networks

19. As to claim **24, Kitai** teaches the controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the

packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

20. As to claim **25,** the combination of **Kitai and Dutta** does not explicitly teach wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning. **Pearce** teaches wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

21. As to claim **29, Kitai** teaches the controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

22. Claims 23, 28 and 30-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

23. As to claim **23,** the combination of **Kitai and Dutta** does not explicitly teach wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface. However, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

24. As to claim **28, Kitai and Dutta** teaches the controller of claim 22; however the combination of **Kitai and Dutta** does not explicitly teach wherein the controller comprises at least three frame relay network interfaces, each of which is

selectable by the packet path selector. **Albright** teaches wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector (figure 3, col. 6, lines 65-col. 7, line 25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

25. As to claim **30, Kitai and Dutta** teaches the controller of claim 22; however **Kitai and Dutta** does not explicitly teach wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network. **Albright** teaches the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta**

and Albright to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

26. As to claim **31,** the combination of **Kitai and Dutta** does not explicitly teach wherein each network interface is an indirect interface tailored to a particular type of frame relay network. **Albright** teaches each network interface is an indirect interface tailored to a particular type of frame relay network (figure 3, col. 7, lines 6-16). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliability and dynamically interface/paths among multiple interfaces/paths.

27. As to claim **32,** the combination of **Kitai and Dutta** does not explicitly teach each network interface is a direct interface comprising an Ethernet card. **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai,**

Dutta and Albright to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure

28. Claims 26 and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680.**

29. As to claim **26,** the combination of **Kitai and Dutta** does not explicitly teach the controller sends packets out of sequence over the parallel networks. **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load

30. As to claim **27,** the combination of **Kitai and Dutta** does not explicitly teach the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence. **Goldszmidt** teaches wherein the controller

places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure

31. Claim 34 is rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

32. As to claim **34, Kitai** teaches the method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel networks (figure 17, col. 16, line 62-col. 17, line 19). However, **Kitai** does not explicitly teach frame relay networks. **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system

will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

33. Claim 36-37 and 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951.**

34. As to claim **36, Kitai** does not explicitly teach the feature of specifying a reliability criterion for use by the packet path selector. **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to include the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

35. As to claim **37, Kitai** teaches the method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site over the single connection (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7).

However, **Kitai** does not explicitly teach connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

Pearce teaches connecting a second network interface of the controller to a second network which is parallel to and independent of the first network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks.

36. As to claim **39,** the combination of **Kitai and Pearce** teaches the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network (Pearce, abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Pearce into**

Kitai to include the feature of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

37. Claim 38 is rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

38. As to claim **38, Kitai and Pearce** does not explicitly teach connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network. **Albright** teaches connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Albright** to have a the controller connects the controller to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (571) 272-3989. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas, can be reached at (571) 272-6776.

The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/THUHA T. NGUYEN/

Primary Examiner, Art Unit 2453

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009	01/19/2010					
	1	A	-	-	-					
	2	A	-	-	-					
	3	A	-	-	-					
	4	A	-	-	-					
	5	A	-	-	-					
	6	A	-	-	-					
	7	A	-	-	-					
	8	A	-	-	-					
	9	A	-	-	-					
	10	A	-	-	-					
	11	A	-	-	-					
	12	A	-	-	-					
	13	A	-	-	-					
	14		-	-	-					
	15		-	-	-					
	16		-	-	-					
	17		-	-	-					
	18		-	-	-					
	19		-	-	-					
	20		-	-	-					
	21		-	-	-					
	22		✓	✓	✓					
	23		✓	✓	✓					
	24		✓	✓	✓					
	25		✓	✓	✓					
	26		✓	✓	✓					
	27		✓	✓	✓					
	28		✓	✓	✓					
	29		✓	✓	✓					
	30		✓	✓	✓					
	31		✓	✓	✓					
	32		✓	✓	✓					
	33		✓	✓	✓					
	34		✓	✓	✓					
	35		✓	✓	✓					
	36		✓	✓	✓					

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009	01/19/2010					
	37		✓	✓	✓					
	38		✓	✓	✓					
	39		✓	✓	✓					
	40		✓	✓	✓					
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	Art Unit
	THU HA T NGUYEN	2453

SEARCHED			
Class	Subclass	Date	Examiner
Update	search	1/19/10	THN

SEARCH NOTES		
Search Notes	Date	Examiner
East update search	1/19/10	THN

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks

RESPONSE

Commissioner for Patents:

This case was **made special** by a Petition Decision mailed October 8, 2003.

In response to the Office Action mailed January 21, 2010, Applicants submit the following remarks.

Remarks

Concurrently Sending

As noted in Applicants' previous submission, each of the claims now presented has language requiring concurrently sending packets over different network interfaces of a controller. By contrast, Kitai does not even mention the word "concurrent".

In response to this argument, the Office Action asserted on page 2 that "Kitai does teach three connections are established (5790) and data communication is performed in accordance with **parallel** SEND/RECEIVE as shown in col. 17, line 63-col. 18 line 17." (emphasis in original)

However, "parallel" is not the same as "concurrent". Neighboring driveways are often parallel strips of concrete, but in many neighborhoods these parallel driveways are not used concurrently, because neighbors rarely if ever leave home or return home at the same time as one another. Likewise, in the computing world, a laptop may have a CPU containing parallel processors, but much software runs on only one processor at a time. Indeed, sometimes parallel circuits are intended for non-concurrent use, e.g., for failover.

"Parallel" means "being everywhere equidistant and not intersecting" in space, whereas "concurrently" means "at the same time, overlapping in duration" (*see* attached

exhibits). Regardless of whether Kitai teaches parallel connections, Kitai fails to teach concurrently sending packets over different network interfaces of a controller as claimed.

Section 101

The Examiner asserts on page 3 that method claim 40 is not patentable subject matter under Section 101 and the Bilski case. The Supreme Court should speak soon on the machine or transformation test set forth in Bilski. Even under that test, however, claim 40 is patentable subject matter. The Examiner clearly errs by asserting that sending packets could be performed "mentally, verbally, or without a machine." The undersigned challenges the Examiner to provide any credible documentary evidence whatsoever that computer network packets can be sent by purely mental efforts over controller interfaces without using a machine. In effect, the rejection asserts that a person can telepathically create packets on the internet or another packet-switched network. The assertion is absurd, and the rejection should be withdrawn before it embarrasses the Office.

Conclusion

In view of the above, Applicants submit that each of pending claims is patentable, and request their prompt allowance. The fact that this Response is silent as to any particular statement of the Office does not indicate agreement with that statement. Previous arguments are not waived. Applicants also expressly reserve all arguments not made here.

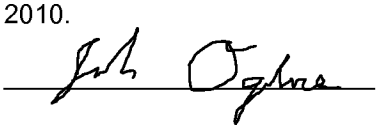
The undersigned is available for a telephone conference at the Examiner's convenience.

Dated April 7, 2010.

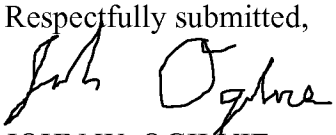
\pm5-3003-2-9A

CERTIFICATE OF SUBMISSION

I hereby certify that this Response (with exhibits) is being submitted to the USPTO, through EFS-WEB, on April 7, 2010.



Respectfully submitted,



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801-706-2546 (voice)
801-583-0393 (fax)

WordNet Search - 3.0 - WordNet home page - Glossary - Help

Word to search for: concurrently Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Adverb

- S: (adv) **concurrently**, at the same time (overlapping in duration) *"concurrently with the conference an exhibition of things associated with Rutherford was held"; "going to school and holding a job at the same time"*

WordNet home page

WordNet Search - 3.0 - WordNet home page - Glossary - Help

Word to search for: parallel Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Noun

- S: (n) analogue, analog, **parallel** (something having the property of being analogous to something else)
- S: (n) latitude, line of latitude, parallel of latitude, **parallel** (an imaginary line around the Earth parallel to the equator)
- S: (n) **parallel** ((mathematics) one of a set of parallel geometric figures (parallel lines or planes)) *"parallels never meet"*

Verb

- S: (v) **parallel** (be parallel to) *"Their roles are paralleled by ours"*
- S: (v) **parallel**, collimate (make or place parallel to something) *"They paralleled the ditch to the highway"*
- S: (v) twin, duplicate, **parallel** (duplicate or match) *"The polished surface twinned his face and chest in reverse"*

Adjective

- S: (adj) **parallel** (being everywhere equidistant and not intersecting) *"parallel lines never converge"; "concentric circles are parallel"; "dancers in two parallel rows"*
- S: (adj) **parallel** (of or relating to the simultaneous performance of multiple operations) *"parallel processing"*

WordNet home page

Electronic Acknowledgement Receipt

EFS ID:	7371178
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	07-APR-2010
Filing Date:	28-DEC-2001
Time Stamp:	17:13:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	pm5-3003-2-9A.pdf	156411 32fe5c17415d050b85d30f798f67b56239056424	no	5

Warnings:	
Information:	

Total Files Size (in bytes):	156411

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 07/07/2010

OGILVIE LAW FIRM
2552 South Wilshire Circle
SALT LAKE CITY, UT 84109

EXAMINER	
NGUYEN, THU HA T	
ART UNIT	PAPER NUMBER
2453	
MAIL DATE	DELIVERY MODE
07/07/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/034,197	DATTA ET AL.	
	Examiner	Art Unit	
	THU HA T. NGUYEN	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **22-40** are presented for examination.

2. Claims 22, 33 and 40 are currently amended.

3. Claims 1-21 are cancelled.

Response to Arguments

4. Applicant's arguments filed on April 7, 2010 have been fully considered but they are not persuasive.

5. Applicant argues that “parallel” is not the same as “concurrent” as asserted on page 2 of the office action. In response to applicant’s argument, the examiner submits that the specification does not teach or disclose "concurrently sending different packets of the message over different network interfaces", and since the specification just broadly discloses the concurrent use of two or more frame relay networks (see application’s publication paragraphs 0030, 0044). Moreover, the entire of specification teaches the using or parallel networks and transmitting data between two or more parallel networks. Thus, the examiner has given the reasonable interpretation as the “the data packets are transmitted over different parallel network interfaces". Therefore, in response to applicant’s argument, the examiner submits that Kitai does teach three connections are established (5790) and data communication is performed in accordance with **parallel** SEND/RECEIVE as shown in col. 17, line 63-col. 18 line 17.

6. Therefore, the examiner asserts that cited prior art teaches or suggests the subject matter broadly recited in independent claims 22, 33 and 40.

Claims 23-32, and 34-39 are also rejected at least by virtue of their dependency on independent claims and by other reasons set forth in this office action below. Accordingly, claims 22-40 are rejected.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 33, 35 and 40 are rejected under 35 U.S.C. §102(e) as being anticipated by **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**.

9. As to claim **33, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57, col. 8, line 54-col. 9, line 50); and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by concurrently sending different packets of the message over different network interfaces, without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 18, line 17 *–three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*).

10. As to claim **35, Kitai** teaches the method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

11. As to claim **40, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57), at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 18, line 17 – *three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*); and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 22, 24-25 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

14. As to claim **22, Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

at least two network interfaces connecting the controller to respective independent parallel networks (figures 3, 22, elements 3000, 3050 and 3074); and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by concurrently sending different packets of the message over different network without requiring firewall usage (col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 17, line 63-col. 18, line 17—*three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*);

whereby the controller uses multiple networks to carry different pieces of a given message (figure 17, col. 3 lines 6-42, 14, line 21-51, col. 16, line 62-col. 17, line 19).

However, **Kitai** does not explicitly teach unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

Dutta teaches unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Dutta** to include a security feature into **Kitai**'s system because it would improve the data transferring more secure and efficient between networks

15. As to claim **24, Kitai** teaches the controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

16. As to claim **25,** the combination of **Kitai and Dutta** does not explicitly teach wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning. **Pearce**

teaches wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Pearce** to include private network interfaces and selector to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

17. As to claim **29, Kitai** teaches the controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

18. Claims 23, 28 and 30-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

19. As to claim **23,** the combination of **Kitai and Dutta** does not explicitly teach wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises

a frame relay network interface. However, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

20. As to claim **28, Kitai and Dutta** teaches the controller of claim 22; however the combination of **Kitai and Dutta** does not explicitly teach wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector. **Albright** teaches wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector (figure 3, col. 6, lines 65-col. 7, line 25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic

load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

21. As to claim **30, Kitai and Dutta** teaches the controller of claim 22; however **Kitai and Dutta** does not explicitly teach wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network. **Albright** teaches the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

22. As to claim **31,** the combination of **Kitai and Dutta** does not explicitly teach wherein each network interface is an indirect interface tailored to a particular type of frame relay network. **Albright** teaches each network interface is an indirect interface tailored to a particular type of frame relay network (figure 3, col. 7, lines 6-16). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control and select the reliability and dynamically interface/paths among multiple interfaces/paths.

23. As to claim **32,** the combination of **Kitai and Dutta** does not explicitly teach each network interface is a direct interface comprising an Ethernet card. **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure

24. Claims 26 and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680.**

25. As to claim **26,** the combination of **Kitai and Dutta** does not explicitly teach the controller sends packets out of sequence over the parallel networks. **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load

26. As to claim **27,** the combination of **Kitai and Dutta** does not explicitly teach the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence. **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the controller places an encrypted

sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure

27. Claim 34 is rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

28. As to claim **34, Kitai** teaches the method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel networks (figure 17, col. 16, line 62-col. 17, line 19). However, **Kitai** does not explicitly teach frame relay networks. **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

29. Claim 36-37 and 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951.**

30. As to claim **36, Kitai** does not explicitly teach the feature of specifying a reliability criterion for use by the packet path selector. **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to include the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

31. As to claim **37, Kitai** teaches the method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site over the single connection (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7).

However, **Kitai** does not explicitly teach connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

Pearce teaches connecting a second network interface of the controller to a second network which is parallel to and independent of the first network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks.

32. As to claim **39,** the combination of **Kitai and Pearce** teaches the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network (Pearce, abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Pearce into Kitai** to include the feature of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

33. Claim 38 is rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

34. As to claim **38, Kitai and Pearce** does not explicitly teach connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network. **Albright** teaches connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Albright** to have a the controller connects the controller to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

Conclusion

35. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (571) 272-3989. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas, can be reached at (571) 272-6776.

The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/THUHA T. NGUYEN/

Primary Examiner, Art Unit 2453

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009	01/19/2010	07/01/2010				
	1	A	-	-	-	-				
	2	A	-	-	-	-				
	3	A	-	-	-	-				
	4	A	-	-	-	-				
	5	A	-	-	-	-				
	6	A	-	-	-	-				
	7	A	-	-	-	-				
	8	A	-	-	-	-				
	9	A	-	-	-	-				
	10	A	-	-	-	-				
	11	A	-	-	-	-				
	12	A	-	-	-	-				
	13	A	-	-	-	-				
	14		-	-	-	-				
	15		-	-	-	-				
	16		-	-	-	-				
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	18		-	-	-	-				
	19		-	-	-	-				
	20		-	-	-	-				
	21		-	-	-	-				
	22		✓	✓	✓	✓				
	23		✓	✓	✓	✓				
	24		✓	✓	✓	✓				
	25		✓	✓	✓	✓				
	26		✓	✓	✓	✓				
	27		✓	✓	✓	✓				
	28		✓	✓	✓	✓				
	29		✓	✓	✓	✓				
	30		✓	✓	✓	✓				
	31		✓	✓	✓	✓				
	32		✓	✓	✓	✓				
	33		✓	✓	✓	✓				
	34		✓	✓	✓	✓				
	35		✓	✓	✓	✓				
	36		✓	✓	✓	✓				

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
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☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009	01/19/2010	07/01/2010				
	37		✓	✓	✓	✓				
	38		✓	✓	✓	✓				
	39		✓	✓	✓	✓				
	40		✓	✓	✓	✓				
	41									
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	43									
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	45									
	46									
	47									
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	51									
	52									

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	Art Unit
	THU HA T NGUYEN	2453

SEARCHED			
Class	Subclass	Date	Examiner
Update	search	07/1/10	THN

SEARCH NOTES		
Search Notes	Date	Examiner
East update search	07/1/10	THN

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

PTO/SB/31 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket Number (Optional): 3003.2.9A

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]
on _____

Signature _____

Typed or printed name _____

In re Application of: DATTA et al.

Application Number	Filed
10034197	2001-12-28

For: Combining Connections for Parallel Access ...

Art Unit	Examiner
2453	Nguyen, Thu Ha T

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 540

☑ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ 270

☐ A check in the amount of the fee is enclosed.

☑ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. _____ .

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☑ attorney or agent of record.
Registration number 37987.

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34. _____

/John Ogilvie/
Signature

John Ogilvie
Typed or printed name

801-706-2546
Telephone number

6 December 2010
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** (*Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).*)	Docket Number (Optional) 3003.2.9A
Application Number 10034197	Filed 2001-12-28
For Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks	
Art Unit 2453	Examiner Nguyen, Thu Ha T

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$130	$65	$
☑	Two months (37 CFR 1.17(a)(2))	$490	$245	$ 245
☐	Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐	Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐	Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☑ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☑ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 37987

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/John Ogilvie/	6 December 2010
Signature	Date
John Ogilvie	801-706-2546
Typed or printed name	Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	8968672
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	06-DEC-2010
Filing Date:	28-DEC-2001
Time Stamp:	05:35:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Notice of Appeal Filed	Notice-of-Appeal-06dec2010-3003-2-9A.pdf	245250 09a66d3fb0a74aebb4a9964828a1abef1e77ed7c	no	2

Warnings:	
Information:	

2	Extension of Time	pm6-NoticeofAppeal-extension-3003-2-9A.pdf	313056 6e7b9d245070fff32ab9ee67eca18fb9a0f9ad97	no	2

Warnings:	
Information:	
Total Files Size (in bytes):	558306

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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Electronic Patent Application Fee Transmittal

Application Number:	10034197
Filing Date:	28-Dec-2001
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Filer:	John Ogilvie
Attorney Docket Number:	3003.2.9A

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of appeal	2401	1	270	270
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 2 months with $0 paid	2252	1	245	245
Miscellaneous:				
			Total in USD ($)	**515**

Electronic Acknowledgement Receipt

EFS ID:	8968674
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	06-DEC-2010
Filing Date:	28-DEC-2001
Time Stamp:	05:38:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Fee Worksheet (PTO-875)	fee-info.pdf	31624 28703de4798476980b1cafaf85ff5b0f542e22ee	no	2

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks
Art Unit:	2453
Examiner:	Thu Ha T Nguyen

APPELLANT'S BRIEF

Honorable Commissioner for Patents:

In response to a Final Office Action mailed July 7, 2010 and pursuant to a Notice of Appeal and Extension Petition filed December 6, 2010, and 37 C.F.R. §§ 41.30 *et seq.*, Assignee appeals to the Board for relief from decisions of the Examiner.

Real Party in Interest

The real party in interest in this appeal is Assignee FatPipe Networks.

Related Appeals and Interferences

There are no pending related appeals or interferences. The Board rendered a decision July 8, 2008 (Appeal 2008-0069) regarding different claims of this application.

Status of Claims

Claims 22-40 are pending, are rejected, and are appealed.

Status of Amendments

No claim amendment was filed after final rejection.

Summary of Claimed Subject Matter

The claimed invention relates to computer network data transmission, and more particularly relates to tools and techniques for point-to-point or switched connection communications such as those using two or more frame relay networks in parallel to provide benefits such as load balancing across network connections, greater reliability, and increased security by concurrently sending different packets of the message over different network interfaces. (Application at page 1 lines 11-15, page 15 lines 8-12)

In particular, some embodiments provide the following:

22. (Figures 5-7; page 9 line 21 – page 17 line 5) A controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface (702) connecting the controller to a site by a single logical connection;

at least two network interfaces (706) connecting the controller to respective independent parallel networks; and

a packet path selector (704) which selects between the network interfaces to split a message from the site between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage;

whereby the controller uses multiple networks to concurrently carry different pieces of a given message so that unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

33. (Figure 8; page 17 line 6 – page 20 line 17) A method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving (804) packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector; and

the controller packet path selector selecting (806) between the network interfaces to split the message between parallel networks by concurrently sending different packets of the message over different network interfaces, without requiring firewall usage.

40. (Figure 8; page 17 line 6 – page 20 line 17) A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending (814) packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between the network interfaces to split (812) the message between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage; and

specifying at least one of the following criteria (Page 14 line 18 – page 15 line 23) for use by the packet path selector: a reliability criterion, a load-balancing criterion.

Note that the drawing reference numbers refer not only to the drawings but also to the specific locations in the text where the reference numbers are recited. The Office can readily determine those locations by searching a copy of the application. Also, the citations to drawings and text above are only examples; other parts of the specification may also be pertinent.

Grounds of Rejection to be Reviewed on Appeal

1. Claims 22, 33, and 40 were rejected in the Response to Arguments on the basis that "cited prior art teaches or suggests the subject matter broadly recited", with Kitai (US 5948069) being the only reference actually cited in the Response to Arguments.
2. Claims 33, 35, and 40 were rejected under 35 U.S.C. §102(e) as anticipated by Kitai.
3. Claims 22, 24-25, and 29 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai in view of Dutta (US 6546423).
4. Claims 23, 28, and 30-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai and Dutta in view of Albright (US 6209039).
5. Claims 26 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai and Dutta in view of Goldszmidt (US 6195680).
6. Claim 34 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai and Albright.

7. Claims 36-37 and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai in view of Pearce (US 5910951).
8. Claim 38 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kitai, Pearce and Albright.

Argument

For purposes of this appeal only, the claims are grouped as follows:

Group I: Claims 22-34, 36-39

Group II: Claim 35

Group III Claim 40

Section 101

For clarity of the record, the undersigned notes that the January 21, 2010 Office Action asserted a Section 101 rejection asserting that "sending packets of message … could be completely performed mentally…." That rejection is not mentioned at all in the Final Office Action, and the undersigned therefore assumes the rejection has been withdrawn.

Ground 1 (Claims 22, 33, and 40)

The Final Office Action relies heavily on two errors. Every claim rejection (grounds 1-8, claims 22-40) relies on an erroneous view of the specification's actual teachings about concurrency and message splitting, and on an erroneous interpretation of the term "concurrently".

The first error occurs when the Final Office Action asserts on page 2 that the present application's specification does not teach or disclose "concurrently sending different packets of the message over different network interfaces…." Assignee respectfully disagrees.

For example, the specification teaches and discloses:

> Another difference between the inventive approach and prior approaches may also be noted here, namely, the narrow focus of some prior art on reliability differs from the present document's broader view, which considers load balancing and security as well as reliability. Configurations like those shown in Figure 2 are directed to reliability (which is

also referred to by terms such as "fault tolerance", "redundancy", "backup", "disaster recovery", "continuity", and "failover"). That is, one of the network paths (in this case, the one through the frame relay network) is the primary path, in that it is normally used for most or all of the traffic, while the other path (in this case, the one through the ISDN link) is used only when that primary path fails. Although the inventive configurations can be used in a similar manner, with one frame relay network being on a primary path and the other network(s) being used only as a backup when that first network fails, the **inventive configurations also permit concurrent use of two or more frame relay networks**. **With concurrent use, elements such as** load balancing between frame relay networks, and **increased security by means of splitting pieces of a given message between frame relay networks,** which are not considerations in the prior art of Figure 2, **become possibilities in some embodiments of the present invention**.

Page 10 line 18 – page 11 line 10 (emphasis added)

Concurrent transmission of different pieces of a message over different networks is also taught and disclosed elsewhere, e.g., in the discussion of Figure 8 on pages 18-19.

The Final Office Action relies heavily on the erroneous conclusion that the specification does not teach or disclose "concurrently sending different packets of the message over different network interfaces…." That erroneous conclusion is used, in combination with a mistaken interpretation of the term "concurrently", as the justification for asserting that Kitai teaches all limitations of claims 33, 35, and 40. Kitai's supposed teachings are also relied on in rejecting every other pending claim.

The second error also occurs on page 2, when the Final Office Action treats "concurrently" and "parallel" as if they mean the same thing. The claim specifically requires "**concurrently** sending different packets of the message over different network interfaces" whereas the Final Office Action states that Kitai teaches "**parallel** SEND/RECEIVE". As pointed out in the April 7, 2010 Response, "parallel" is not the same as "concurrent". The Final Office Action acknowledges on page 2 that this argument was presented, but fails to rebut it.

The Final Office Action provided no evidence that "parallel" in Kitai has the same meaning as "concurrent" in the present application. Moreover, even if some document confusing

"parallel" and "concurrent" were provided by the Examiner, Applicants are entitled to be their own lexicographers, and any doubts regarding which interpretation of a claim term is correct must be resolved in favor of Applicants' interpretation so long as that interpretation is consistent with the specification.

The specification uses "parallel" to describe an *arrangement* of networks, e.g., "those networks are in series rather than in parallel" (page 5 line 6), "placing the frame relay networks in parallel" (page 5 line 9), "putting networks in parallel" (page 5 line 11), "configuring private networks in parallel" (page 5 line 16), "a parallel network configuration" (page 5 line 22), "access to multiple parallel frame relay and/or point-to-point networks" (page 6 lines 18-19), "a second private network which is parallel to and independent of the first private network" (page 7 lines 2-3), and so on for many additional instances through the specification, up to and including instances in the claims as originally filed, such as "access to multiple independent private networks in a parallel network configuration" (claim 1), "parallel private networks" (claim 6), "access to multiple parallel private networks" (claim 13), "access to multiple independent parallel frame relay networks" (claim 19), and "sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network" (claim 21).

By contrast, the specification uses "concurrently" to describe a *use* of networks, e.g., "inventive configurations also permit concurrent use of two or more frame relay networks" (page 11 line 6), "With concurrent use, elements such as load balancing between frame relay networks" (page 11 line 7), "networks 106 will be used concurrently" (page 18 line 14).

As noted in the exhibits to the April 7, 2010 Response (which are also provided in the Evidence Appendix), "parallel" means being everywhere equidistant and not intersecting in a *spatial arrangement*, whereas "concurrently" means *using* things at the same *time*, overlapping in duration. See also the Evidence Appendix article "Concurrent and Parallel Are Not The Same", which treats parallelism as a property of a machine and concurrency as a property of a program.

The mere fact that things are arranged in parallel does not mean that they are used concurrently. It is well-known to have two network connections in parallel but use them only one at a time, e.g., using one as a primary connection and the other as a failover when the

primary connection fails. Regardless of whether Kitai teaches parallel connections, Kitai fails to teach concurrently sending packets over different network interfaces of a controller as claimed. Kitai does not even mention the word "concurrent".

At pages 2-3, the Final Office Action relies on these two errors to assert that cited prior art teaches or suggests claims 22, 33, and 40. Claims 23-32, and 34-39 are then also rejected by virtue of their dependency on independent claims and other reasons, but all those rejections likewise rest on the same two errors discussed above.

Ground 2 (Claims 33, 35, 40)

Ground 2 rejects claims 33, 35, 40 under Section 102 as anticipated by Kitai. As noted above, however, Kitai fails to disclose "**concurrently** sending different packets of the message over different network interfaces…." Kitai fails to even mention "concurrent", and this failure evidences a first reason why Kitai fails to anticipate the claims.

A second reason why Kitai fails to anticipate the claims is that each claim requires "a **single logical connection**" between the site and the inventive controller. Thus, the claims are limited such that more than one logical connection is not required. By contrast, Kitai Figure 17, and Kitai Figure 3 which is referenced in the discussion of Figure 17 at column 14 lines 21 – 51, require multiple such connections. See also Kitai column 5 lines 40 – 57, discussing "a plurality of virtual channels present" from the server 3000. Kitai's approach requires special servers. Servers having a single outgoing connection will not operate as taught by Kitai. By contrast, special servers having multiple connections or multiple buffers (e.g., Kitai buffers 6031, 6032, 6033) are not required by the present invention. Servers having a single outgoing connection and otherwise configured appropriately will operate fine with the present claimed invention.

A third reason why Kitai fails to anticipate the claims is that each claim requires one to "split the message" between parallel networks. Careful reading of the cited discussion reveals that Kitai teaches splitting packets, not splitting messages. Kitai splits packets into segments based on segment lengths specified by an application; see, e.g., column 14 lines 36 – 41. By contrast, one finds no such packet segmentation requirement in the present application.

Each of these reasons provides an independent basis for reversing the rejections. Kitai fails to anticipate the claims.

Grounds 3-8 (Claims 23-32, 34, 36-39)

These grounds reject the claims under Section 103. However, the additional references cited fail to address the errors noted above. The Section 103 rejections still rely on Kitai to teach (a) concurrently sending different packets of the message over different network interfaces as claimed, (b) splitting messages as claimed, and (c) using a single logical connection as claimed. Accordingly, the Section 103 rejections should also be reversed.

Group I (claims 22-34, 36-39)

These claims were rejected under Section 102 and/or Section 103. However, all of the rejections rely on Kitai to teach (a) concurrently sending different packets of the message over different network interfaces as claimed, (b) splitting messages as claimed, and (c) using a single logical connection as claimed. As noted in the discussion of the various grounds above, Kitai fails to provide these teachings, so these claims should be allowed.

Group II (claim 35)

Claim 35 was rejected solely under Section 102 in view of Kitai. However, Kitai fails to teach (a) concurrently sending different packets of the message over different network interfaces as claimed in parent claim 33, (b) splitting messages as claimed in parent claim 33, and (c) using a single logical connection as claimed in parent claim 33. Accordingly, claim 35 should be allowed.

Group III (claim 40)

Claim 40 was rejected solely under Section 102 in view of Kitai. However, Kitai fails to teach (a) concurrently sending different packets of the message over different network interfaces as claimed, (b) splitting messages as claimed, and (c) using a single logical connection as claimed. Accordingly, claim 40 should be allowed.

Conclusion

For at least the reasons explained above, the rejections should all be reversed.

Dated January 7, 2011.

\pmAppealBrief2011-3003-2-9A

CERTIFICATE OF TRANSMISSION

I hereby certify that this Appeal Brief is being submitted to the Commissioner for Patents through EFS-WEB, on January 7, 2011.

_____/John Ogilvie/_____

Respectfully submitted,

/John W. Ogilvie/

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Claims Appendix

1-21. (canceled)

22. A controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection;

at least two network interfaces connecting the controller to respective independent parallel networks; and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage;

whereby the controller uses multiple networks to concurrently carry different pieces of a given message so that unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

23. The controller of claim 22, wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface.

24. The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces.

25. The controller of claim 22, wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning.

26. The controller of claim 22, wherein the controller sends packets out of sequence over the parallel networks.

27. The controller of claim 26, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

28. The controller of claim 22, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

29. The controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection.

30. The controller of claim 22, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

31. The controller of claim 22, wherein each network interface is an indirect interface tailored to a particular type of frame relay network.

32. The controller of claim 22, wherein each network interface is a direct interface comprising an Ethernet card.

33. A method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector; and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by concurrently sending different packets of the message over different network interfaces, without requiring firewall usage.

34. The method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between parallel frame relay networks.

35. The method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector.

36. The method of claim 33, further comprising the step of specifying a reliability criterion for use by the packet path selector.

37. The method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site over the single logical connection;

connecting a first network interface of the controller to a first network; and

connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

38. The method of claim 37, wherein at least one of the steps connecting a network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

39. The method of claim 33, further comprising the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network.

40. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets, at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage; and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion.

Evidence Appendix

(cited at Brief page 6)

WordNet Search - 3.0 - WordNet home page - Glossary - Help

Word to search for: concurrently Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Adverb

- S: (adv) **concurrently**, at the same time (overlapping in duration) *"concurrently with the conference an exhibition of things associated with Rutherford was held"; "going to school and holding a job at the same time"*

WordNet home page

WordNet Search - 3.0 - WordNet home page - Glossary - Help

Word to search for: parallel Search WordNet

Display Options: (Select option to change) Change

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Noun

- S: (n) analogue, analog, **parallel** (something having the property of being analogous to something else)
- S: (n) latitude, line of latitude, parallel of latitude, **parallel** (an imaginary line around the Earth parallel to the equator)
- S: (n) **parallel** ((mathematics) one of a set of parallel geometric figures (parallel lines or planes)) *"parallels never meet"*

Verb

- S: (v) **parallel** (be parallel to) *"Their roles are paralleled by ours"*
- S: (v) **parallel**, collimate (make or place parallel to something) *"They paralleled the ditch to the highway"*
- S: (v) twin, duplicate, **parallel** (duplicate or match) *"The polished surface twinned his face and chest in reverse"*

Adjective

- S: (adj) **parallel** (being everywhere equidistant and not intersecting) *"parallel lines never converge"; "concentric circles are parallel"; "dancers in two parallel rows"*
- S: (adj) **parallel** (of or relating to the simultaneous performance of multiple operations) *"parallel processing"*

WordNet home page

Concurrent and Parallel Are Not The Same

Pick one: portability or efficiency. Neither is guaranteed when writing explicit parallel code

Douglas Eadline, Ph.D.
Tuesday, July 7th, 2009

In case you did not have a chance to read the column from last week, I am taking my yearly vacation at the Jersey Shore. Please refrain from the jokes, lest I pull out the Bruce Springsteen trump card. I try to spend two continuous weeks with family and friends each year. I have found that one week is just too short. I need two weeks. The first week is used to try and forget about all the stuff I did not get done before I threw the laptop in the car and say "let's go." The second week is used to try and remember and organize all the stuff I have to do when I get back. My plan usually breaks down somewhere around 10 AM my first day back to work.

This year I had a bunch of writing to do (including this column), so it was kind of a working vacation. Not to worry, I'll have my feet in the Atlantic Ocean in few hours. In any case, my dilemma is as follows. Write an insightful column quickly and get to the beach. It may surprise some readers, but I do like to research some of the topics I write about. At a minimum, I like to include enough URLs so that if you actually want to investigate a topic further, more information is just a click away. As an aside, I am constantly amazed at how much content on the web has absolutely no external links to supporting material. I thought that was the whole idea. I mean how hard is it to add a Wikipedia link to a discussion of Clos Networks or some other networking technology.

Back to my dilemma. What can talk about that will get me to beach before the water ice guy packs up for day? Although, I don't to like to rehash things I have written about in the past, I will be making a an exception this week. Not necessarily because it is easy, but because I think some messages need reinforcing. Therefore, all I have to decide is what message I should I hammer home on this July morning.

The answer is simple — understanding the difference between *concurrent* and *parallel*. I believe these two terms are often used interchangeably while, in my opinion, they are represent two different concepts.

Let's start with concurrency. A concurrent program or algorithm is one where operations can occur at the same time. For instance, a simple integration, where numbers are summed over an interval. The interval can be broken into many concurrent sums of smaller sub-intervals. As I like to say, concurrency is a property of the program. Parallel execution is when the concurrent parts are *executed* at the same time on separate processors. The distinction is

subtle, but important. And, parallel execution is a property of the machine, not the program.

If execution efficiency is important (i.e. you want things to go faster by adding more cores), then the question you need to ask is "If I run everything that is concurrent in parallel, will my code run faster?" If the answer were "yes" then we would not be having this discussion. And, since the answer, is "no", then the question is "What should run in parallel?" which is obviously, the portions of code that lower execution time.

This decision is one of the reasons cluster parallel computing is *hard*. It really does depend on the machine. Take our integration case. If the integration interval is small, then breaking it up into small sub-intervals and sending them out to other nodes will result in extending the execution time of the program due to parallel overhead. If the integration interval is huge, then parallel execution may make sense. Because parallel overhead can vary from cluster to cluster, there is no easy way to predict overhead beforehand. (i.e. The parallel overhead is larger for GigE vs InfiniBand when sending small packets.)

The same applies to multi-core. The overhead for thread communication is lower, but there is still overhead (see my HPC Hopscotch for background on SMP memory). There is no free lunch — everyone has to deal with overhead.

In summary, the point I want to make is this, *Concurrency is a property of the program and parallel execution is a property of the machine*. What concurrent parts *should* and *should not* be executed in parallel can only be answered when the exact hardware is known. Which I might like to add leads to the most unhappy conclusion when dealing with explicit parallel programming, *There is no guarantee of both efficiency and portability with explicit parallel programs*. Yes, I know, a sad state of affairs. I'll let you wrestle with that for a while, in the mean time, I'm going to the beach.

Douglas Eadline is the Senior HPC Editor for Linux Magazine

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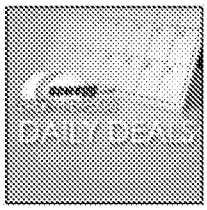

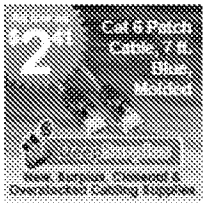

Related Proceedings Appendix
(none)

Electronic Patent Application Fee Transmittal

Application Number:	10034197
Filing Date:	28-Dec-2001
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Filer:	John Ogilvie
Attorney Docket Number:	3003.2.9A

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Filing a brief in support of an appeal	2402	1	270	270
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**270**

Electronic Acknowledgement Receipt

EFS ID:	9188455
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
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First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/034,197
Filing Date: December 28, 2001
Appellant(s): DATTA ET AL.

FatPipe Networks
John W. Ogilvie
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01/07/11 appealing from the Office action mailed 07/07/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 22-40

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(**5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5,948,069	KITAI et al.	9-1999
6,546,423	DUTTA et al.	4-2003
6,209,039	ALBRIGHT et al.	3-2001
6,195,680	GOLDSZMIDT et al.	2-2001
5,910,951	PEARCE et al.	6-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 33, 35 and 40 are rejected under 35 U.S.C. **§**102(e) as being anticipated by **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**.

2. As to claim **33, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple parallel networks, the method comprising the steps of:

a controller receiving packets of a message sent from a site over a single logical connection, the controller having a site interface, at least two network interfaces, and a packet path selector (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57, col. 8, line 54-col. 9, line 50); and

the controller packet path selector selecting between the network interfaces to split the message between parallel networks by concurrently sending different packets of the message over different network interfaces, without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 18, line 17 –*three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*).

3. As to claim **35, Kitai** teaches the method of claim 33, further comprising the step of specifying a load-balancing criterion for use by the packet path selector (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

4. As to claim **40, Kitai** teaches the invention as claimed, including a method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending packets of a message over a single logical connection to a site interface of a controller, the controller having the site interface which receives packets (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57), at least two network interfaces, and a packet path selector which selects between the network interfaces to split the message between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage (figure 17, col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 16, line 62-col. 18, line 17 – *three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*); and

specifying at least one of the following criteria for use by the packet path selector: a reliability criterion, a load-balancing criterion (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

5. Claims 22, 24-25 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**.

6. As to claim **22, Kitai** teaches the invention as claimed, including a controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection (abstract, figures 3, 7, 15, 22, 24, elements 3005, 3006);

at least two network interfaces connecting the controller to respective independent parallel networks (figures 3, 22, elements 3000, 3050 and 3074); and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by concurrently sending different packets of the message over different network without requiring firewall usage (col. 3 lines 6-42, col. 7, lines 44-55, col. 8, lines 14-25, col. 9, lines 22-33, col. 12, lines 66-col. 13, lines 3, col. 14, line 21-51, col. 17, line 63-col. 18, line 17—*three connections are established (5790) and data communication is performed in accordance with parallel SEND/RECEIVE*);

whereby the controller uses multiple networks to carry different pieces of a given message (figure 17, col. 3 lines 6-42, 14, line 21-51, col. 16, line 62-col. 17, line 19).

However, **Kitai** does not explicitly teach unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

Dutta teaches unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message (abstract, figures 1-2, col. 1 lines 29-64, col. 5 lines 31-54). It would have

been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Dutta** to include a security feature into **Kitai**'s system because it would improve the data transferring more secure and efficient between networks

7. As to claim **24, Kitai** teaches the controller of claim 22, wherein the packet path selector also selects between network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected network interfaces (abstract, figures 9, 19, col. 8 lines 13-25, col. 14 lines 62-col. 15 lines 8, col. 20 lines 1-col. 21 lines 59).

8. As to claim **25,** the combination of **Kitai and Dutta** does not explicitly teach wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning. **Pearce** teaches wherein the packet path selector also selects between network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected network interfaces, when other devices that could have been selected are not functioning (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Pearce** to include private network interfaces and selector

to select paths/interfaces according to a reliability criterion because it would have an efficient communication system to control and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

9. As to claim **29, Kitai** teaches the controller of claim 22, wherein the controller operates in a system that utilizes at least one point-to-point connection (col. 10 lines 50-65. col. 16 lines 8-23, col. 17 lines 1-10).

10. Claims 23, 28 and 30-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

11. As to claim **23,** the combination of **Kitai and Dutta** does not explicitly teach wherein the controller controls access to multiple independent frame relay networks, and each of the at least two network interfaces comprises a frame relay network interface. However, **Albright** teaches wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because

it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

12. As to claim **28, Kitai and Dutta** teaches the controller of claim 22; however the combination of **Kitai and Dutta** does not explicitly teach wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector. **Albright** teaches wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector (figure 3, col. 6, lines 65-col. 7, line 25). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the private network interfaces comprises a frame relay network interface because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

13. As to claim **30, Kitai and Dutta** teaches the controller of claim 22; however **Kitai and Dutta** does not explicitly teach wherein the controller operates in a

system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network. **Albright** teaches the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network (abstract, figures 2-3, 7, col. 10 lines 36-col. 11 lines 9, col. 13 lines 27-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network because it would have an efficient communications system that provides a number of point-to-point channels with different carriers and clocks through multiplexing network to improve network traffic and failure.

14. As to claim **31,** the combination of **Kitai and Dutta** does not explicitly teach wherein each network interface is an indirect interface tailored to a particular type of frame relay network. **Albright** teaches each network interface is an indirect interface tailored to a particular type of frame relay network (figure 3, col. 7, lines 6-16). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have the process of each private network interface is an indirect interface tailored to a particular type of frame relay network because it would have an efficient communication system to control

and select the reliability and dynamically interface/paths among multiple interfaces/paths.

15. As to claim **32,** the combination of **Kitai and Dutta** does not explicitly teach each network interface is a direct interface comprising an Ethernet card. **Albright** teaches wherein each private network interface is a direct interface comprising an Ethernet card (col. 13 lines 38-52). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Albright** to have each private network interface is a direct interface comprising an Ethernet card because it would have an efficient communications system that provide Ethernet card to improve private network security, traffic and failure

16. Claims 26 and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Dutta et al.,** (hereinafter Dutta) U.S Patent No. **6,546,423**, further in view of **Goldszmidt et al.,** (hereinafter Goldszmidt) U.S Patent No. **6,195,680.**

17. As to claim **26,** the combination of **Kitai and Dutta** does not explicitly teach the controller sends packets out of sequence over the parallel networks. **Goldszmidt** teaches wherein the controller sends packets out of sequence over the parallel networks (abstract, figures 3, 5, col. 14, lines 20-60). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to

combine the teachings of **Kitai, Dutta and Goldszmidt** to have the private networks and the controller sends packets out of sequence order because would have an efficient communication system to process, control and monitor the delivery of packet to control the traffic load

18. As to claim **27,** the combination of **Kitai and Dutta** does not explicitly teach the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence. **Goldszmidt** teaches wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence (abstract, figure 7, col. 1 lines 45-col. 2 lines 18, col. 15 lines 14-43). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Dutta and Goldszmidt** to have the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence because would have an efficient communication system to encrypt packet to improve its tolerance to error, lost and secure

19. Claim 34 is rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039.**

20. As to claim **34, Kitai** teaches the method of claim 33, wherein the packet path selector selects between the network interfaces to split the message between

parallel networks (figure 17, col. 16, line 62-col. 17, line 19). However, **Kitai** does not explicitly teach frame relay networks. **Albright** teaches frame relay networks (figure 3, col. 6, lines 65-col. 7, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Albright** to include frame relay networks because it would provide an efficient communications system that the selection of frame relay network interfaces may vary and dynamically depending on traffic load, failure of links/paths and so on. The system will quickly establish/select another path/link to maintain the levels of service guarantee to subscribers.

21. Claim 36-37 and 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Kitai et al.,** (hereinafter Kitai) U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951.**

22. As to claim **36, Kitai** does not explicitly teach the feature of specifying a reliability criterion for use by the packet path selector. **Pearce** teaches the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion (abstract, col. 2 lines 51-col. 3 lines 12). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai and Pearce** to include the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion because it would have an efficient communication system to control

and select the reliable, qualifiable network/interface/path among multiple networks/interfaces/paths.

23. As to claim **37, Kitai** teaches the method of claim 33, further comprising the steps of:

connecting the controller site interface to a site to receive packets of the message from a computer at the site over the single connection (abstract, figures 3, 7, 15, 22, col. 2 lines 48-col. 3 lines 42, col. 5 lines 29-57);

connecting a first network interface of the controller to a first network (abstract, figures 3, 7).

However, **Kitai** does not explicitly teach connecting a second network interface of the controller to a second network which is parallel to and independent of the first network.

Pearce teaches connecting a second network interface of the controller to a second network which is parallel to and independent of the first network (abstract, figures 1, 5, col. 1 lines 47-col. 2 lines 60).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine features **Pearce** into **Kitai** because it would provide an efficient communications system that the data can be dynamically monitored and routed among links/paths in order to reduce the congestion or failure within the networks.

24. As to claim **39,** the combination of **Kitai and Pearce** teaches the controller sensing failure of one of the parallel networks and automatically sending packets through at least one other parallel network (Pearce, abstract, col. 2 lines 50-col. 3 lines 12, col. 5 lines 33-63). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Pearce into Kitai** to include the feature of sensing failure of one of the parallel networks and automatically sending traffic through at least one other parallel network because it would detect and improve network security, traffic and failure.

25. Claim 38 is rejected under 35 U.S.C. §103 (a) as being unpatentable over **Kitai** U.S. Patent No. **5,948,069**, in view of **Pearce et al.,** (hereinafter Pearce) U.S Patent No. **5,910,951**, further in view of **Albright et al.** (hereinafter Albright) U.S. Patent No. **6,209,039**.

26. As to claim **38, Kitai and Pearce** does not explicitly teach connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network. **Albright** teaches connecting a network interface of the controller connects the controller to a User-to- Network Interface in a router of a frame relay network (abstract, figure1). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of **Kitai, Pearce and Albright** to have a the controller connects the controller

to a User-to-Network Interface in a router of a frame relay network because it would improve private network security, traffic and failure.

(10) Response to Argument

Appellant argues that “parallel” is not the same as “concurrent" by providing Evidence Appendix article “Concurrent and Parallel are not the same”.

In response to appellant’s argument, the examiner submits that according to Internet dictionary "concurrent" defines as "multiple processes are taking place SIMULTANEOUSLY" and "parallel" in the computers environment defines as " pertaining to the SIMULTANEOUSE transmission or processing” (see the attached file).

Therefore, the concurrent” and “parallel” as defined in computer environment are the same as SIMULTANEOUSE processing or transmission...

Appellant argues that Kitai fails to disclose “concurrently sending different packets of the message over different network interfaces…”

In response to appellant’s argument, the examiner submits that According to the application's specification, the invention disclose a parallel accessing to multiple frame networks connections, wherein the packet is sent to one site interface, which then the packet is copies and sent through another site interface or through multiple networks (see spec. par. 0043...pending application PGPUB 2002/0087724).

The application's specification also discloses if the frame relay network 106 will be used concurrently, the controllers 502 provide a connection which comprises multiple conventional virtual circuits (VC) (see par. 0044).

The instant application just discloses the frame relay network can be used concurrently; however, there is no where discloses concurrently sending different packets of the message over different network interfaces.

Given broadest reasonable interpretation, the claimed language means the packet is sent to multiple networks via interfaces in parallel as mentioned above.

Kitai reference teaches the same function as the instant application's specification.

Kitai teaches a data communication can be performed between server and client using different network interfaces in parallel, and different paths can be selected (col. 3, lines 23-42).

Kitai also teaches the client requests for establishing connection, the server selects three communication paths and reserves virtual channels for the LAN switch so that three communication paths can be used (see col. 17, line 21-col. 18, line 17). The three connections are established and data communication is performed in accordance with parallel send/receive.

Appellant argues that Kitai fails to anticipate “a single logical connection".

In response to appellant's argument, the examiner submits that as disclose in the instant application's specification, using a switched connection system with no single point of failure (par. 0028) and also if one frame relay network fails the other network being used as backup. Thus, the examiner has given a broadest reasonable

interpretation this feature discloses in the specification as single logical connection as claimed.

Kitai teaches the data communication between the client and server can be used plurality of communication paths. The system using Guaranteed Burst (GB) or Guaranteed Stream (GS) techniques to ensure that if the request is impossible through the selected communication path the server will select another path. The system also creates plurality of virtual channels (VC) corresponding to plurality of network interfaces/ports in order to carry the data communication without burst or failure. Also, the client communicate with server in parallel using the same program as that of single communication (See col. 9, line 65-col. 10, line 16, col. 14, line 52-61).

Appellant argues that Kitai fails to anticipate the feature “split messages" between parallel networks.

I response to appellant argument, the examiner submits that Kitai teaches the data is divided into segments (see col. 14, line 62-col. 15, line 8).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/THUHA T. NGUYEN/

Primary Examiner, Art Unit 2453

Conferees:

/Krista M. Zele/
Supervisory Patent Examiner, Art Unit 2453

/Philip C Lee/
Primary Examiner, Art Unit 2453

concurrent

Also found in: Dictionary/thesaurus, Medical, Legal, Acronyms, Wikipedia

concurrent

At the same time. It implies that multiple processes are taking place simultaneously. See concurrent operation.

Mentioned in

Concurrent C++ concurrent processing
Concurrent Euclid

References in classic literature

The preceding train of observation will justify the position which has been elsewhere laid down, that "A **CONCURRENT** JURISDICTION in the article of taxation was the only admissible substitute for an entire subordination, in respect to this branch of power, of State authority to that of the Union.
Federalist Papers Authored by Alexander Hamilton by *Hamilton, Alexander* **View in context**

The credit of the former is by common notoriety supported for a long time; and public records, with the **concurrent** testimony of many authors, bear evidence to their truth in future ages.
The History of Tom Jones, a Foundling by *Fielding, Henry* **View in context**

Pursuing the light so fortunately hit upon, and finding the **concurrent** testimony of the whole of Mrs General's acquaintance to be of the pathetic nature already recorded, Mr Dorrit took the trouble of going down to the county of the county-widower to see Mrs General, in whom he found a lady of a quality superior to his highest expectations.
Little Dorrit by *Dickens, Charles* **View in context**

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Concurrent Common LISP
Concurrent Complementary Operators Method
Concurrent computing
Concurrent Constraint Programming
Concurrent Constraint Programming
concurrent conversion

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009	01/19/2010	07/01/2010	04/24/2011			
	1	A	-	-	-	-	-			
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	5	A	-	-	-	-	-			
	6	A	-	-	-	-	-			
	7	A	-	-	-	-	-			
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	21		-	-	-	-	-			
	22		✓	✓	✓	✓	A			
	23		✓	✓	✓	✓	A			
	24		✓	✓	✓	✓	A			
	25		✓	✓	✓	✓	A			
	26		✓	✓	✓	✓	A			
	27		✓	✓	✓	✓	A			
	28		✓	✓	✓	✓	A			
	29		✓	✓	✓	✓	A			
	30		✓	✓	✓	✓	A			
	31		✓	✓	✓	✓	A			
	32		✓	✓	✓	✓	A			
	33		✓	✓	✓	✓	A			
	34		✓	✓	✓	✓	A			
	35		✓	✓	✓	✓	A			
	36		✓	✓	✓	✓	A			

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10034197	DATTA ET AL.
	Examiner	**Art Unit**
	Nguyen, Thu Ha T	2155

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	07/07/2006	11/23/2008	08/14/2009	01/19/2010	07/01/2010	04/24/2011			
	37		✓	✓	✓	✓	A			
	38		✓	✓	✓	✓	A			
	39		✓	✓	✓	✓	A			
	40		✓	✓	✓	✓	A			
	41									
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	46									
	47									
	48									
	49									
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	51									
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Dictionary.com

parallel

Parallel circuit
Difference between se...
Parallel structure
Batteries in series p...
Parallel universe the...
What is a parallel ep...
Parallel universes
5th grade science ser...
Parallel parking
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par al lel

[**par**-*uh*-lel, -*luh*l] Show IPA

adjective, noun, verb, -leled, -lel·ing or (*especially British*) -lelled, -lel·ling.

-adjective

1. extending in the same direction, equidistant at all points, and never converging or diverging: *parallel rows of trees.*
2. having the same direction, course, nature, or tendency;

• lampoon • lugubrious • horripilation • sui generis

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corresponding, similar, analogous. *Canada and the U.S. have many parallel economic interests.*

3. *Geometry*.
   a. (of straight lines) lying in the same plane but never meeting no matter how far extended.
   b. (of planes) having common perpendiculars.
   c. (of a single line, plane, etc.) equidistant from another or others (usually followed by *to* or *with*).
4. *Electricity*. consisting of or having component parts connected in parallel: *a parallel circuit.*
5. *Music*.
   a. (of two voice parts) progressing so that the interval between them remains the same.
   b. (of a tonality or key) having the same tonic but differing in mode.
6. *Computers*.
   a. of or pertaining to the apparent or actual performance of more than one operation at a time, by the same or different devices (distinguished from serial): *Some computer systems join more than one CPU for parallel processing.*
   b. of or pertaining to the simultaneous transmission or processing of all the parts of a whole, as all the bits of a byte or all the bytes of a computer word (distinguished from serial).

–noun

7. a parallel line or plane.
8. anything parallel or comparable in direction, course, nature, or tendency to something else.
9. Also called **parallel of latitude.** *Geography*.
   a. an imaginary circle on the earth's surface formed by the intersection of a plane parallel to the plane of the equator, bearing east and west and designated in degrees of latitude north or south of the equator along the arc of any meridian.

b. the line representing this circle on a chart or map.

10. something identical or similar in essential respects; match; counterpart: *a case history without a known parallel.*

11. correspondence or analogy: *These two cases have some parallel with each other.*

12. a comparison of things as if regarded side by side.

13. *Electricity* . an arrangement of the components, as resistances, of a circuit in such a way that all positive terminals are connected to one point and all negative terminals are connected to a second point, the same voltage being applied to each component. Compare series (def. 9) .

14. *Fortification* . a trench cut in the ground before a fortress, parallel to its defenses, for the purpose of covering a besieging force.

15. *Printing* . a pair of vertical parallel lines (‖) used as a mark for reference.

16. *Theater* . a trestle for supporting a platform (parallel top).

–verb (used with object)

17. to provide or show a parallel for; match.

18. to go or be in a parallel course, direction, etc., to: *The road parallels the river.*

19. to form a parallel to; be equivalent to; equal.

20. to show the identity or similarity of; compare.

21. to make parallel.

Use **parallel** in a Sentence

Origin:

1540–50; < Latin *parall lus* < Greek *par ll los* side by side, equivalent to *par-* par- + *ll los* one another; see allo-, else

–Related forms

par·al·lel·a·ble, *adjective*

par·al·lel·less, *adjective*

par·al·lel·ly, *adverb*

non·par·al·lel, *adjective, noun*

sub·par·al·lel, *adjective*

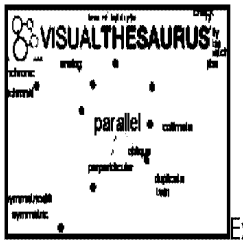
un·par·al·lel, *adjective*

—Synonyms

2. like, alike. 10. equivalent, equal, mate, duplicate, twin, double.

—Antonyms

2. divergent; unlike; unique. 10. opposite.



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NEW: Related Words for : parallel
analog, analogue, collimate, latitude, line of latitude
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para-[1]

1. a prefix appearing in loanwords from Greek, most often attached to verbs and verbal derivatives, with the meanings "at or to one side of, beside, side by side" (*parabola; paragraph; parallel; paralysis*), "beyond, past, by" (*paradox; paragogue*); by extension from these senses, this prefix came to designate objects or activities auxiliary to or derivative of that denoted by the base word (*parody; paronomasia*), and hence abnormal or defective (*paranoia*), a sense now common in modern scientific coinages (*parageusia; paralexia*). As an English prefix, para- 1 may have any of these senses; it is also productive in the naming of occupational roles considered ancillary or subsidiary to roles requiring more training, or of a higher status, on such models as paramedical and paraprofessional: *paralegal; paralibrarian; parapolice.*

2. *Chemistry* . a combining form designating the para (1, 4) position in the benzene ring. *Abbreviation:* p-. Compare meta- (def. 2c) , ortho- (def. 2b) .

Also, *especially before a vowel*, **par-.**

Origin:

< Greek *para-*, combining form representing *par* (preposition) beside, alongside of, by, beyond

World English Dictionary

parallel (•pærə•lɛl) ?

– ***adj*** (when *postpositive, usually foll by to*)

1. separated by an equal distance at every point; never touching or intersecting: *parallel walls*
2. corresponding; similar: *parallel situations*
3. *music*
   a. Also: **consecutive** (of two or more parts or melodies) moving in similar motion but keeping the same interval apart throughout: *parallel fifths*
   b. denoting successive chords in which the individual notes move in parallel motion
4. *grammar* denoting syntactic constructions in which the constituents of one construction correspond to those of the other
5. *computing* Compare serial operating on several items of information, instructions, etc, simultaneously

– ***n***

6. *maths* one of a set of parallel lines, planes, etc
7. an exact likeness
8. a comparison

9. Also called: **parallel of latitude** any of the imaginary lines around the earth parallel to the equator, designated by degrees of latitude ranging from 0° at the equator to 90° at the poles

10. a. a configuration of two or more electrical components connected between two points in a circuit so that the same voltage is applied to each (esp in the phrase **in parallel**)

    b. See series (*as modifier*): *a parallel circuit*

11. *printing* the character (‖) used as a reference mark

12. a trench or line lying in advance of and parallel to other defensive positions

– *vb* , **-lels** , **-leling** , **-leled**

13. to make parallel

14. to supply a parallel to

15. to be a parallel to or correspond with: *your experience parallels mine*

[C16: via French and Latin from Greek *parallēlos* alongside one another, from para- 1 + *allēlos* one another]

Word Origin & History

para-

prefix meaning "alongside, beyond, altered, contrary," from Gk. para- from para (prep.) "beside, near, from, against, contrary to," cognate with Skt. para "beyond;" Hitt. para "on, forth;" L. pro "before, for, in favor of," per- "through;" Goth. faur "along;" O.E. for- "off, away" (see fore).

parallel

1540s, from M.Fr. parallèle , from L. parallelus , from Gk. parallelos "parallel," from para allelois "beside one another," from para "beside" + allelois "each other," from allos "other" (see alias). The verb is first recorded 1590s. Parallel bars as gymnastics apparatus are recorded from 1868.

Medical Dictionary

para- definition

Pronunciation: /•par-ə, •par-ə/
or **par-** Function: *prefix*
1 : closely related to < *par* aldehyde>
2 : involving substitution at or characterized by two opposite positions in the benzene ring that are separated by two carbon atoms < *para* dichlorobenzene>— abbreviation *p*- compare META- 2 , ORTH- 2 ,

para- or **par-**

pref.

1. Beside; near; alongside: *paranucleus.*

2. Beyond: *parapsychology.*
3. Incorrect; abnormal: *paradipsia.*
4. Similar to; resembling: *paratyphoid.*
5. Subsidiary; assistant: *paramedical.*
6. Isomeric; polymeric: *paraldehyde.*
7. A diatomic molecule in which the nuclei have opposite spin directions: *parahydrogen.*
8. *Abbr.* ***p-*** Of or relating to one of three possible isomers of a benzene ring with two attached chemical groups in which the carbon atoms with attached groups are separated by two unsubstituted carbon atoms. Usually in italic: para-*bromoiodobenzene.*

Science Dictionary

parallel (pâr'ə-lĕl') Pronunciation Key

Adjective Of or relating to lines or surfaces that are separated everywhere from each other by the same distance.

Noun Any of the imaginary lines encircling the Earth's surface parallel to the plane of the equator, used to represent degrees of latitude. See illustration at longitude.

Computing Dictionary

parallel definition

parallel processing

Famous Quotations

parallel

"As I look at the human story I see two stories. They ru..."

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PATENT APPLICATION
Docket No.: 3003.2.9A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sanchaita Datta and Ragula Bhaskar
Serial No.:	10/034,197
Filed:	December 28, 2001
For:	Combining Connections for Parallel Access to Multiple Frame Relay and Other Private Networks
Art Unit:	2453
Examiner:	Thu Ha T Nguyen

APPELLANT'S REPLY BRIEF

Honorable Commissioner for Patents:

In response to the Examiner's Answer mailed April 29, 2011, Assignee respectfully submits the following remarks.

"Parallel" vs. "Concurrent"

In the Answer's Response to Argument section on page 16, the Examiner now cites a dictionary in support of the assertion that "concurrent" and "parallel" have the same meaning "in computer environment". Assignee respectfully submits:

(a) The Examiner has merely shown that conflicting evidence exists regarding the ordinary meaning of "concurrent" in the art. The Examiner has not shown any reason why the dictionary cited by the Examiner should be given more weight than the article cited by Assignee.

(b) The article submitted by Assignee deserves greater weight than the dictionary entry submitted by the Examiner because the article provides more detail, and discussion of terminology, than is given in the brief dictionary entry.

(c) In particular, the article compares and contrasts "concurrent" and "parallel" but the dictionary entry only refers to "concurrent".

(d) The article also deserves greater weight because it is from a "computer environment" (to use the Examiner's category) source, namely, a senior editor's article in a trade

magazine. By contrast, the dictionary is not specific to computing, but is merely a general-purpose dictionary, as one sees from the reference to "concurrent jurisdiction", which is not a computing environment use of the word "concurrent".

(e) Accordingly, Assignee's article outweighs the Examiner's dictionary entry for the purpose of interpreting "concurrent" and "parallel".

(f) Regardless of any evidence of ordinary meaning of a claim term, the claim term's interpretation must be consistent with the specification.

(g) The present specification expressly states the following on page 9: *"Parallel" does not rule out the use of NNIs and serial networks, but it does require that at least two of the networks in the configuration be in parallel so that alternate data paths through different private networks are present.*

(h) On pages 5, 8, and 10, the present specification makes a distinction between networks which are arranged "in series" and networks which are "in parallel".

(i) Thus, "in parallel" refers to a spatial arrangement of networks.

(j) With a single exception, all instances of "concurrent" in the present specification are expressly paired with "use", e.g., "concurrent use", "used concurrently". The sole exception is on page 19: "…the steps illustrated and discussed in this document may be performed in various orders, including concurrently…." Thus, each and every instance of the term "concurrent" in the present specification refers to an action.

(k) In short, the present specification makes a distinction between "parallel" and" concurrent" in that "concurrent" refers only to actions, whereas "parallel" refers to an arrangement or configuration of networks.

(l) The Examiner's treatment of "concurrent" as being identical with "parallel" is not correct because it is not consistent with the uses of those terms in the specification, as explained above.

(m) In grammatical terms, the specification treats "concurrent" as an adverb and treats "parallel" as an adjective.

(n) Speakers and writers of correct English recognize a difference between adverbs and adjectives.

(o) The language of examination in the Office is English.

(p) Consistency with the specification in this instance (at least) requires consistency with widely recognized rules and categories of English grammar.

(q) The Examiner's treatment of the adverb "concurrent" as being identical with the adjective "parallel" is also not correct because it is not consistent with correct English.

Conclusion

For at least the reasons explained above, the rejections should all be reversed.

Dated June 7, 2011.

\pmReplyBrief2011-3003-2-9A

CERTIFICATE OF TRANSMISSION

I hereby certify that this Reply Brief is being submitted to the Commissioner for Patents through EFS-WEB, on June 7, 2011.

/John Ogilvie/

Respectfully submitted,

/John W. Ogilvie/

JOHN W. OGILVIE
Registration No. 37,987

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2552 Wilshire Circle
Salt Lake City, Utah 84109
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801-583-0393 (fax)

Electronic Acknowledgement Receipt

EFS ID:	10249111
Application Number:	10034197
International Application Number:	
Confirmation Number:	7746
Title of Invention:	Combining connections for parallel access to multiple frame relay and other private networks
First Named Inventor/Applicant Name:	Sanchaita Datta
Customer Number:	23484
Filer:	John Ogilvie
Filer Authorized By:	
Attorney Docket Number:	3003.2.9A
Receipt Date:	07-JUN-2011
Filing Date:	28-DEC-2001
Time Stamp:	14:05:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Reply Brief Filed	pmReplyBrief2011-3003-2-9A.pdf	163141 107d53eafc355d1ddcfec2c45a4e069475f54dd4	no	3

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 06/30/2011

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EXAMINER	
NGUYEN, THU HA T	
ART UNIT	PAPER NUMBER
2453	

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10/034,197	28 December 2001	DATTA ET AL.	3003.2.9A

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EXAMINER
THU HA NGUYEN

ART UNIT	PAPER
2453	20110624

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Commissioner for Patents

The reply brief filed on June 07, 2011 has been entered and considered. The application has been forwarded to the Board of Patent Appeals and Interferences for decision on the appeal.

/THUHA T. NGUYEN/
Primary Examiner, Art Unit 2453

PTO-90C (Rev.04-03)

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Appeal No: 2011-010799
Application: 10/034,197
Appellant: Sanchaita Datta et al.

Board of Patent Appeals and Interferences
Docketing Notice

Application 10/034,197 was received from the Technology Center at the Board on June 27, 2011 and has been assigned Appeal No: 2011-010799.

In all future communications regarding this appeal, please include both the application number and the appeal number.

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The facsimile number of the Board is 571-273-0052. Because of the heightened security in the Washington D.C. area, facsimile communications are recommended. Telephone inquiries can be made by calling 571-272-9797 and referencing the appeal number listed above.

By order of the Board of Patent Appeals and Interferences.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,197	12/28/2001	Sanchaita Datta	3003.2.9A	7746

23484 7590 02/02/2012

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SANCHAITA DATTA and RAGULA BHASKAR

Appeal 2011-010799
Application 10/034,197
Technology Center 2400

Before LANCE LEONARD BARRY, JEAN R. HOMERE, and STEPHEN C. SIU, *Administrative Patent Judges*.

SIU, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 22-40. Claims 1-21 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

The disclosed invention relates generally to routing information over multiple independent parallel private networks (Spec. 1).

Independent claim 22 reads as follows:

22. A controller which controls access to multiple independent networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site by a single logical connection;

at least two network interfaces connecting the controller to respective independent parallel networks; and

a packet path selector which selects between the network interfaces to split a message from the site between the networks by concurrently sending different packets of the message over different network interfaces without requiring firewall usage;

whereby the controller uses multiple networks to concurrently carry different pieces of a given message so that unauthorized interception of message packets on fewer than all of the networks used to carry the message will not provide the total content of the message.

The Examiner relies upon the following references as evidence in support of the rejections:

Pearce	US 5,910,951	Jun. 8, 1999
Kitai	US 5,948,069	Sep. 7, 1999
Goldszmidt	US 6,195,680 B1	Feb. 27, 2001
Albright	US 6,209,039 B1	Mar. 27, 2001
Dutta	US 6,546,423 B1	Apr. 8, 2003

Under 35 U.S.C. § 102(e), the Examiner rejects claims 33, 35, and 40 as being anticipated by Kitai.

Under 35 U.S.C. § 103(a), the Examiner rejects as unpatentable:

a) claims 22, 24, 25, and 29 over Kitai and Dutta;

b) claims 23, 28, and 30-32 over Kitai, Dutta, and Albright;

c) claims 26 and 27 over Kitai, Dutta, and Goldszmidt;

d) claim 34 over Kitai and Albright;

e) claims 36, 37 and 39 over Kitai and Pearce; and

f) claim 38 over Kitai, Pearce, and Albright.

ISSUE

Did the Examiner err in rejecting claims 22-40?

FINDING OF FACT

Kitai discloses "parallel communication" in which "data in the buffer **6030** is divided into three blocks of data for every segment length" (col. 14, ll. 36-37) and distributed over multiple communication paths "to the buffers **6031**, **6032**, and **6033**" (col. 14, l. 38 and Fig. 17) and further sent on "communication path **6110** respectively through the communication paths **6012**, **6013**, and **6014**" (col. 14, ll. 48-50 and Fig. 17).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 102, "[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation." *Perricone v. Medicis Pharm. Corp.,* 432 F.3d 1368, 1375 (Fed. Cir. 2005) (citation omitted).

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art,

(2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007).

ANALYSIS

Claim 33 recites multiple parallel networks and a selector that splits a message between the parallel networks by concurrently sending different packets of the message over different network interfaces. Appellants argue that Kitai fails to disclose this feature.

As stated above, Kitai discloses splitting a message into segments and sending the segments over respective (and parallel) communication paths (FF). We agree with the Examiner that this disclosure is the same as splitting a message between parallel networks by concurrently sending different packets of the message over different network interfaces, as recited in claim 33.

Appellants argue that the Examiner "treats 'concurrently' and 'parallel" as if they mean the same thing" (App. Br. 5) but that the term "concurrently" is actually used by Appellant "to describe a *use* of networks" (App. Br. 6). Even assuming that the term "concurrently" and "parallel" have different meanings and that "concurrently" refers to "a *use* of

networks" as Appellants argue, Appellants have nevertheless failed to adequately demonstrate that Kitai fails to disclose "concurrent *use* of networks" since, as described above, that is precisely what Kitai appears to disclose (i.e., splitting a message and "concurrently" sending the segments of the split message over different network interfaces and parallel communication paths during "use of the networks" – see FF).

Appellants also argue that Kitai fails to disclose "'**a single logical connection**' between the site and the inventive controller" (App. Br. 7) but does not adequately explain how the claimed "single logical connection" differs from Kitai's single logical connection (Kitai, Fig. 17) illustrated as transmitting data from server 3000 or how the Kitai's connection in which data is collectively received and transmitted to one (or "single") desired destination is not a "single logical connection."

Appellants also argue that Kitai fails to disclose splitting a message because, according to Appellants, "Kitai teaches splitting packets, not splitting messages" (App. Br. 7). As described above, Kitai discloses splitting data into segments (FF). Appellants have not indicated an explicit definition of the term "message" in the Specification or how a "message" as claimed differs from the "data" of Kitai. In the absence of an explicit definition, we adopt a broad but reasonable construction of the term "message" in light of the Specification to include "data." Since Kitai discloses splitting "data" (i.e., "messages") and Appellants have not sufficiently pointed out any differences between the claimed "message" and

Kitai's "data," we are not persuaded by Appellants' assertion that Kitai supposedly fails to disclose this feature.

Claims 22 and 40 recite similar features as claim 33. Appellants do not provide additional arguments in support of dependent claims 23-32 and 34-39. Appellants also do not provide additional arguments with respect to any of claims 22-40 with respect to Dutta, Albright, Goldszmidt, or Pearce.

CONCLUSION OF LAW

We conclude the Examiner did not err in rejecting claims 22-40.

DECISION

We affirm the Examiner's decision rejecting claims 22-40.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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EXAMINER	
NGUYEN, THU HA T	
ART UNIT	PAPER NUMBER
2453	

NOTIFICATION DATE	DELIVERY MODE
04/13/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JOHN@OGILVIELAWFIRM.COM
john.ogilvie@comcast.net

Notice of Abandonment	Application No.	Applicant(s)
	10/034,197	DATTA ET AL.
	Examiner	Art Unit
	THU HA NGUYEN	2453

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on *02 February 2012*.
   (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
   (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.
   (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
   (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
   (d) ☒ No reply has been received.

2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
   (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
   (b) ☐ The submitted fee of $_____ is insufficient. A balance of $_____ is due.
   The issue fee required by 37 CFR 1.18 is $_____. The publication fee, if required by 37 CFR 1.18(d), is $_____.
   (c) ☐ The issue fee and publication fee, if applicable, has not been received.

3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
   (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
   (b) ☐ No corrected drawings have been received.

4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.

5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.

6. ☒ The decision by the Board of Patent Appeals and Interference rendered on *02/02/12* and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. ☐ The reason(s) below:

/THUHA T. NGUYEN/
Primary Examiner, Art Unit 2453

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.