home migration control unit the pointer at the migration of the mobile node preceding the latest migration, while the migration post means posts the above updated address at the latest migration of the mobile node.

32. The migration communication control device of Claim 22, wherein the first migration control unit further comprises address post suppressing means for suppressing transmission of the address post message from the address post means to the third migration control unit, and

the address post suppressing means suppresses transmission of the address post message when none of the first migration control units is attached to the same network as is the mobile node.

33. The migration communication control device of Claim 32, wherein the second migration control unit further comprises detect means for detecting whether or not the first migration control unit is attached to the network to which the mobile node migrates,

the migration post means in the second migration control unit transmits to the home migration control unit the migration post message which includes the detecting result of the above detect means together with the updated address,

the home migration post means in the home migration control unit transmits to the first migration control unit for the latest migration the migration post message which includes the detecting result of the above detect means together with the updated address, and

the address post suppressing means in each of the home migration control unit and the first migration control unit for the latest migration suppress the transmission of the address post message in accordance with the detecting result of the above detect means.

34. The migration communication control device of Claim 22, wherein the first migration control unit further comprises packet transfer suppressing means for suppressing transfer of the packet conducted by the packet transfer means.

35. The migration communication control device of Claim 34, wherein the first migration control unit further comprises address post suppressing means for suppressing transmission of the address post message from the address post means to the third migration control unit, and the address post suppressing means in the first migration control unit being attached to a network to which the mobile node is not attached, suppresses the transmission of the address post message when the packet transfer suppressing means in the first migration control unit for the latest migration suppresses transfer of the packet.

36. The migration communication control device of Claim 35, wherein the second migration control unit further comprises detect means for detecting whether or not the packet transfer suppressing means in the first migration control means suppresses the transfer of the packet, the first migration control means being attached to the network to which the mobile node migrates, and

the migration post means in the second migration control unit transmits to the home migration control unit the migration post message which includes the detecting result of the above detect means together with the updated address,

the home migration post means in the home migration control unit transmits to the first migration control unit for the latest migration the migration post message which includes the detecting result of the detect means together with the updated address, and

the address post suppressing means in each of the home migration control unit and the first migration control unit for the latest migration suppresses the transmission of the address post message in accordance with the detecting result of the above detect means.

37. The communication control device of Claim 36, wherein the packet transfer suppressing means in the first migration control unit for the latest migration suppresses the transfer of the packet conducted by the packet transfer means, when the packet transfer suppressing means in the first migration control unit being attached to the network to which the mobile node migrates suppresses the transfer of the packet.

38. A packet transfer migration control unit in a migration communication control device, the migration communication control device being constructed to control a communication between a mobile node and a partner node, the mobile node migrating across networks and obtaining an address assigned on each network while the partner node being a communication partner of the mobile node, comprising:

packet transfer means for receiving a packet which was transmitted by the partner node to an outdated address of the mobile node, the outdated address being assigned when the mobile node migrated to a network to which the packet transfer migration control unit is attached, generating a conversion packet which holds an updated address instead of the outdated address, and transmitting the conversion packet;

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and

address post means for transmitting an address post message which indicates the updated address of the mobile node to the partner node, the partner node transmitting the packet received by the packet transfer means.

39. A mobile node migration control unit in a migration communication control device, the migration communication control device being constructed to control a communication between a mobile node which migrates across networks and obtains an address assigned on each network and a partner node which is a communication partner of the mobile node, being placed on the mobile node and comprising:

migration post means for transmitting to a packet transfer migration control unit a migration post message which indicates an updated address of the mobile node when the mobile node migrates to another network, the packet transfer migration control unit for receiving a packet which was transmitted by the partner node to an outdated address of the mobile node, the outdated address assigned when the mobile node migrated to a network to which the migration control unit for packet transfer is attached, generating a conversion packet which holds the updated address instead of the outdated address, and transmitting the conversion packet; and

packet resumption means for receiving the conversion packet from both the packet transfer migration control unit and the mobile node, and resuming an original packet from the conversion packet.

40. A partner node migration control unit in a migration communication control device, the migration communication control device being constructed to control a communication between a mobile node which migrates across networks and obtains an address assigned on each network and a partner node which is a communication partner of the mobile node, being placed on the mobile node and comprising:

address post message receiving means for receiving an address post message which indicates an updated address of the mobile node from a packet transfer migration control unit, the packet transfer migration control unit transmitting an address post message which indicates the updated address of the mobile node to the partner node; and

packet conversion means for converting a destination address of a packet, the packet to be transmitted to the mobile node, into the updated address indicated by the address post message, and transmitting it to the mobile node.

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FIG. 1

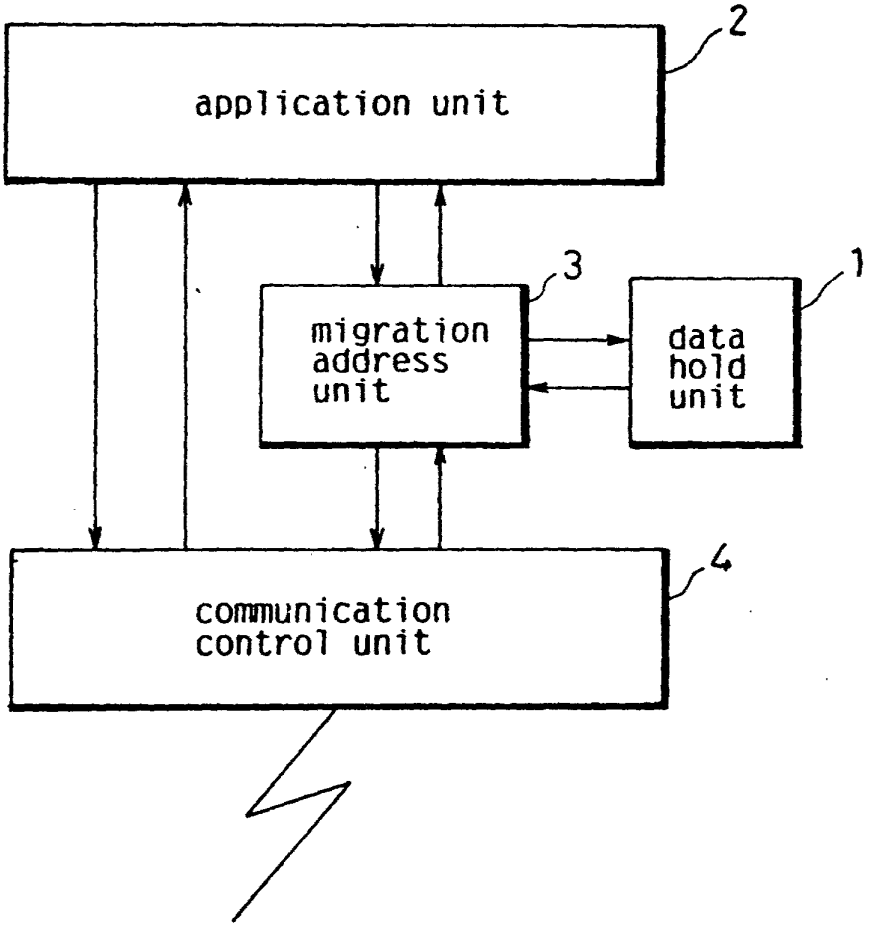

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FIG. 2

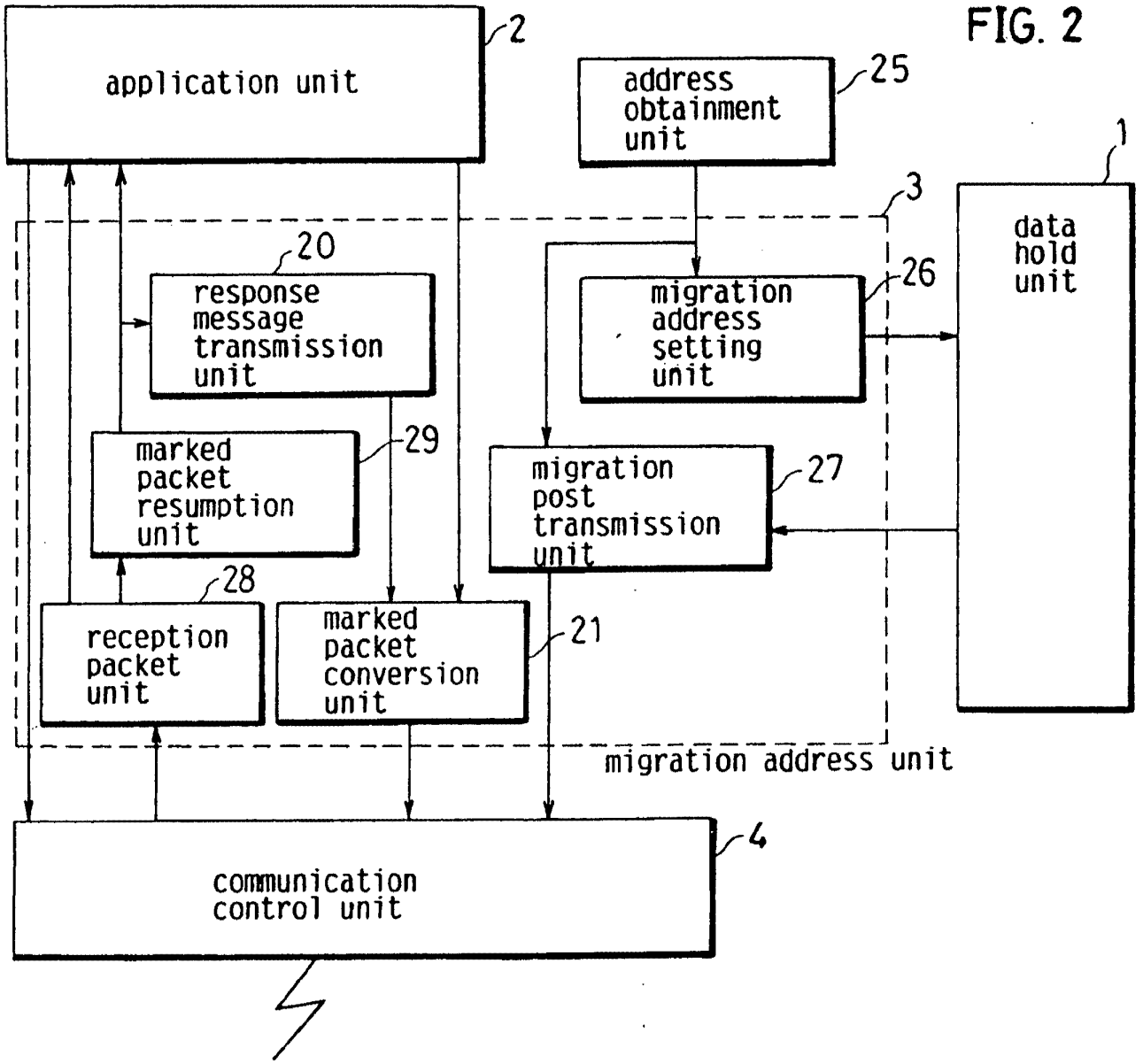
application unit
2
address obtainment unit
25
1
data hold unit
3
20
response message transmission unit
migration address setting unit
26
marked packet resumption unit
29
migration post transmission unit
27
28
reception packet unit
marked packet conversion unit
21
migration address unit
communication control unit
4

FIG. 3

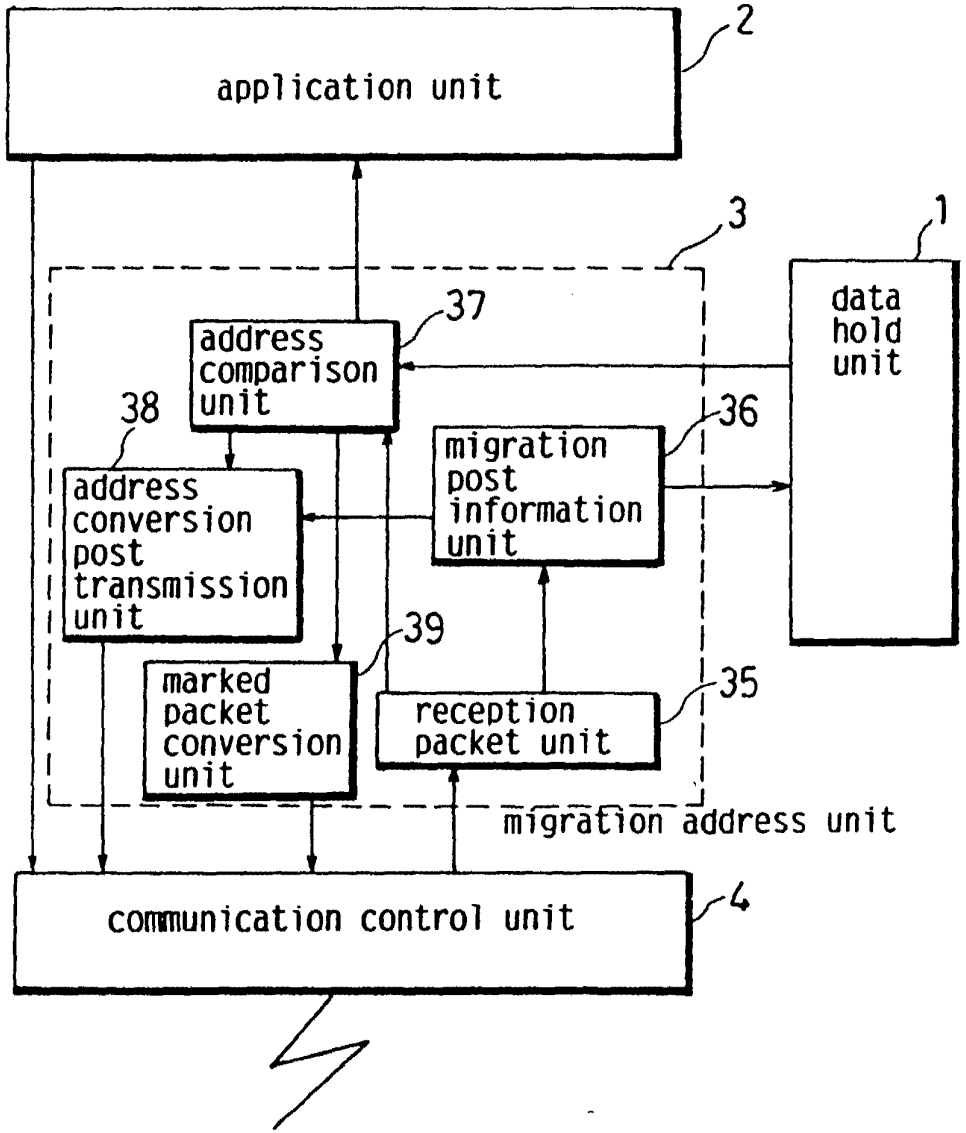
application unit
2
3
1
data hold unit
37
address comparison unit
38
address conversion post transmission unit
migration post information unit
36
39
marked packet conversion unit
reception packet unit
35
migration address unit
communication control unit
4

FIG. 4

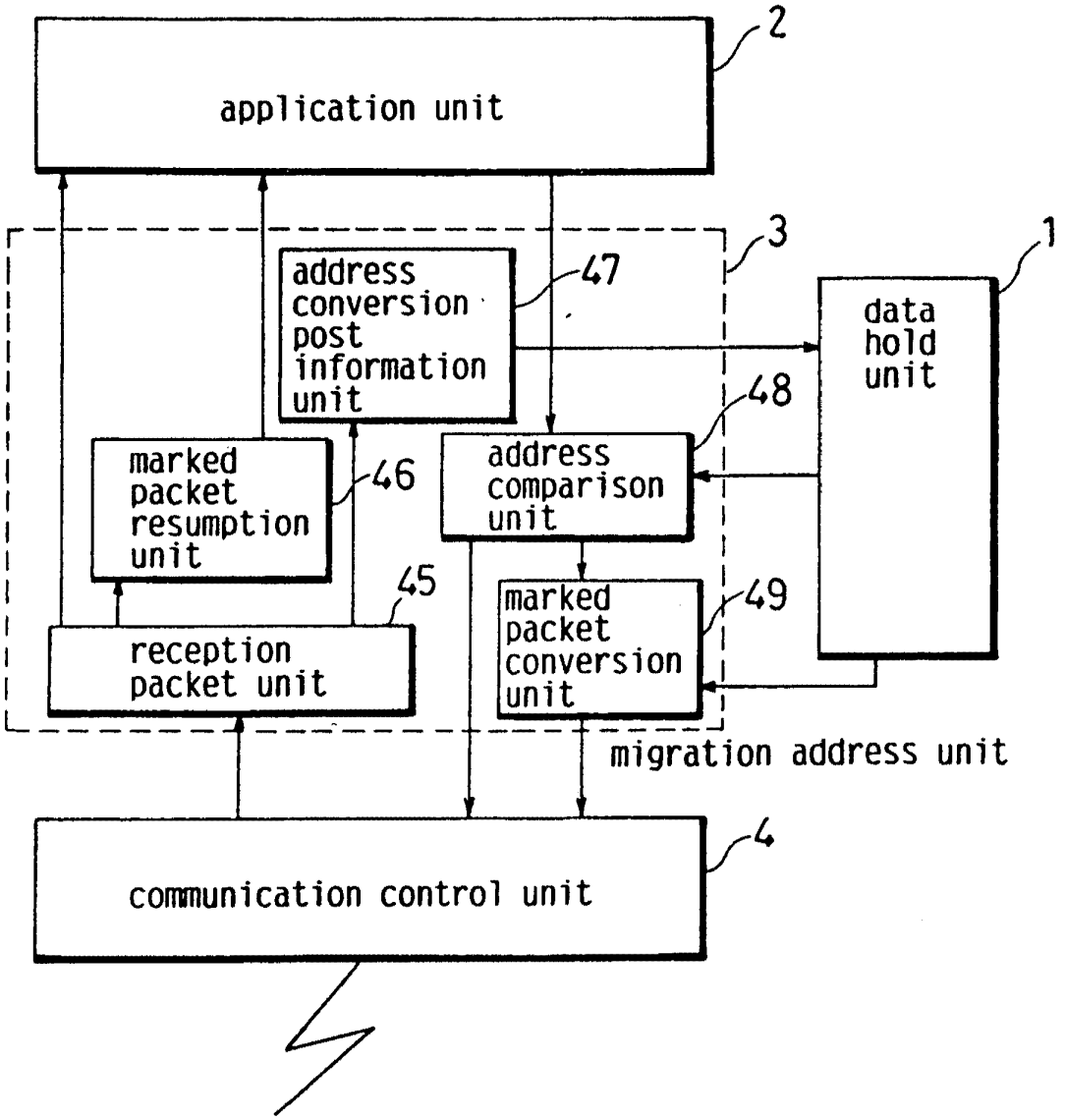
application unit
2
3
1
address conversion post information unit
47
data hold unit
48
marked packet resumption unit
46
address comparison unit
45
marked packet conversion unit
49
reception packet unit
migration address unit
communication control unit
4

FIG. 5

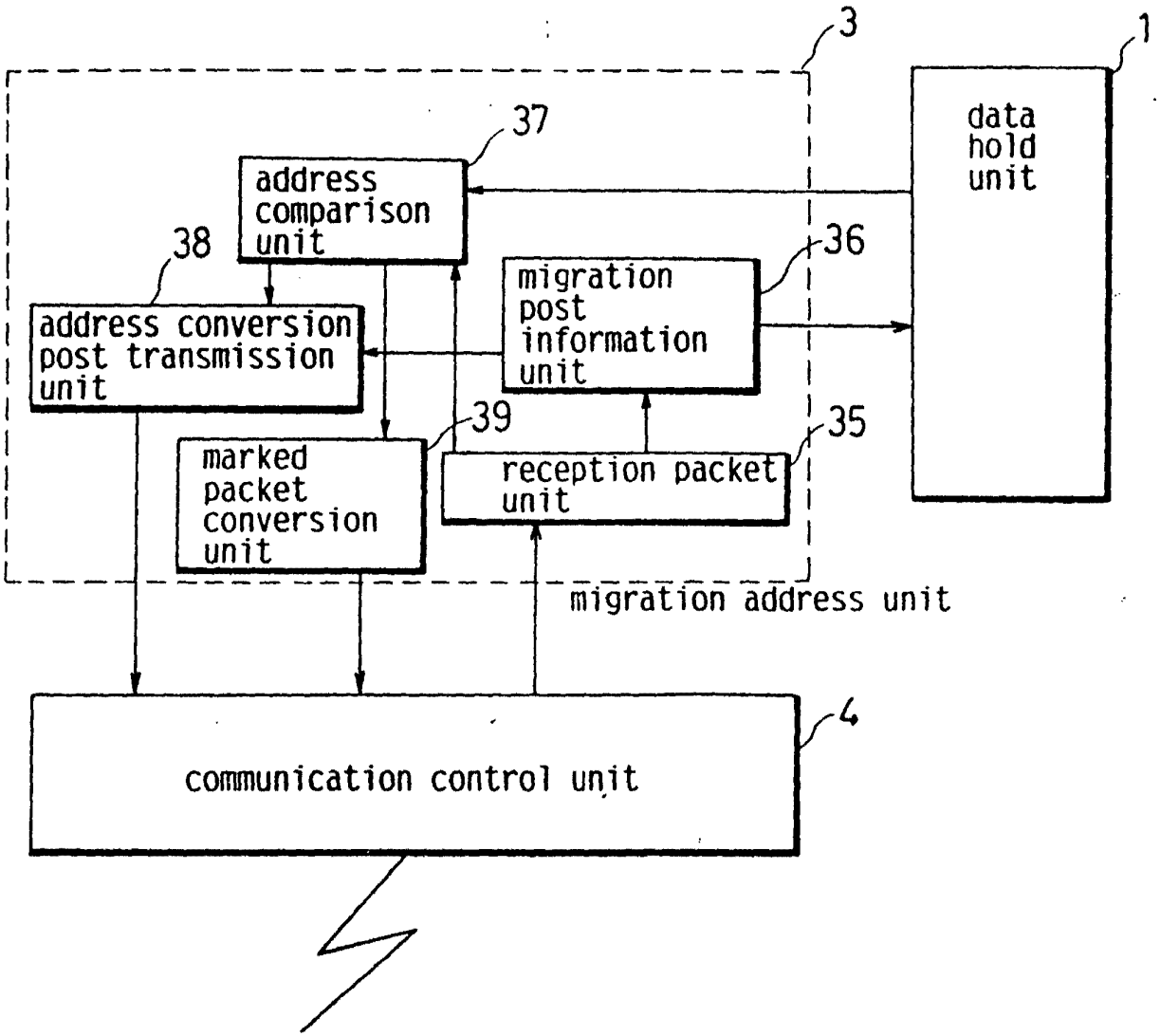
3
1
37
address comparison unit
data hold unit
38
36
address conversion post transmission unit
migration post information unit
39
35
marked packet conversion unit
reception packet unit
migration address unit
4
communication control unit

FIG. 6

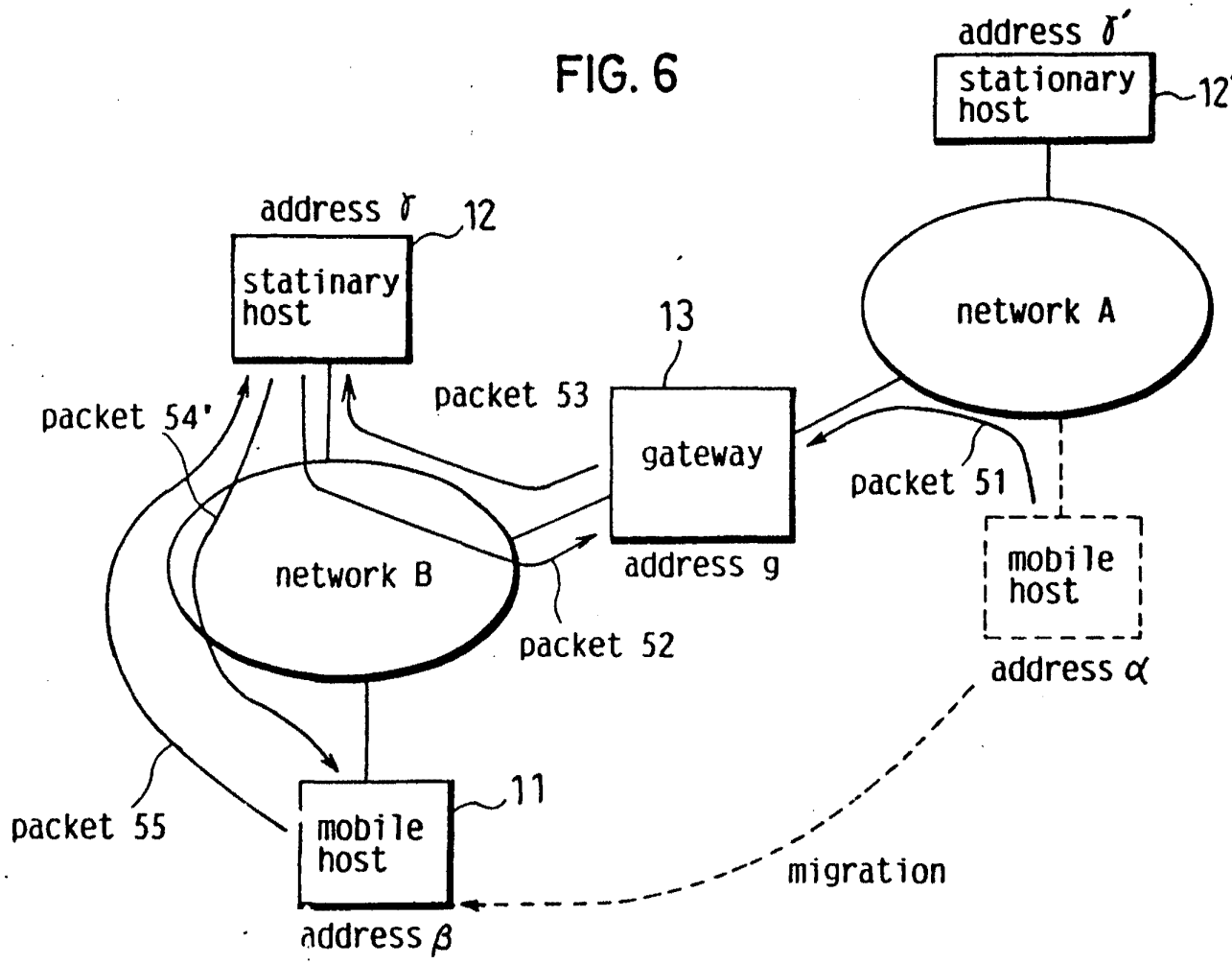
address γ'
stationary host
12'
address γ
12
statinary host
13
network A
packet 53
packet 54'
gateway
packet 51
network B
address g
mobile host
packet 52
address α
11
packet 55
mobile host
migration
address β

FIG. 7

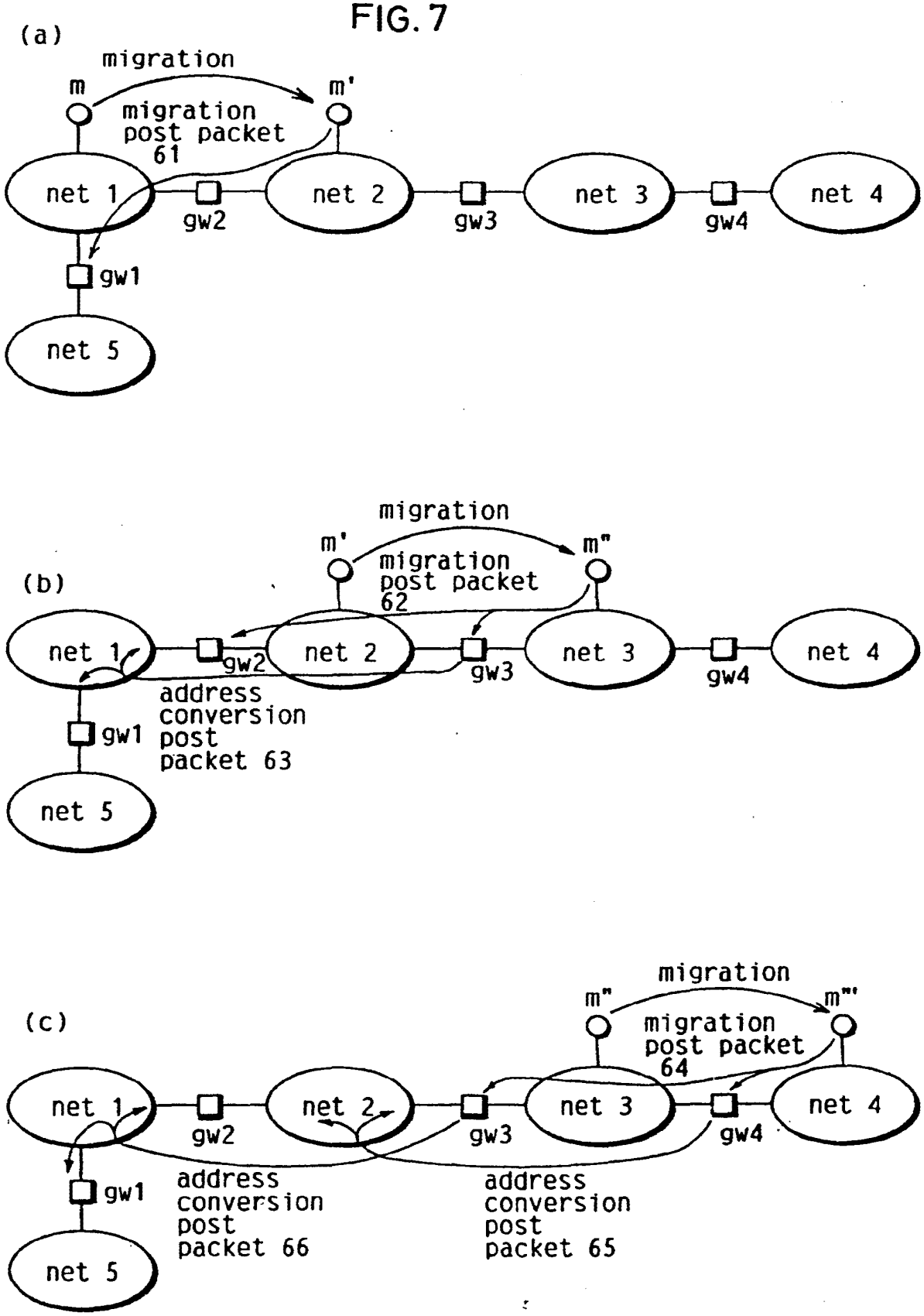

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FIG. 8

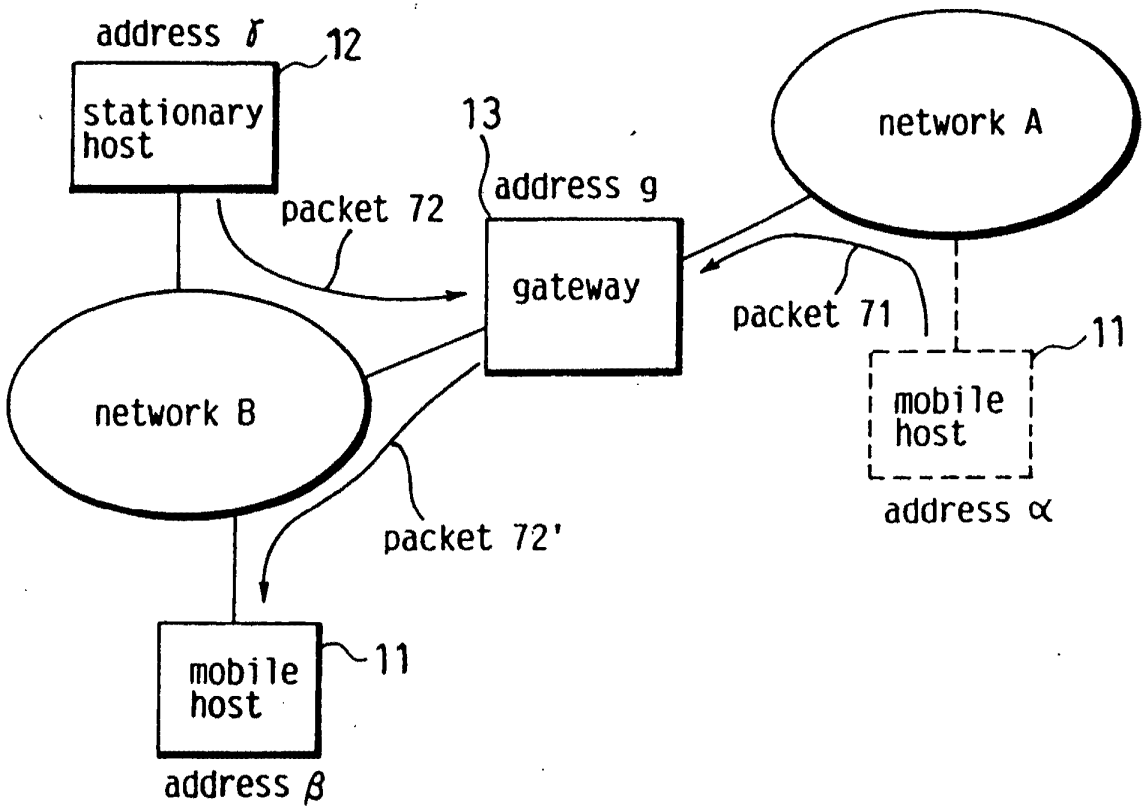
address γ
12
stationary host
13
address g
network A
packet 72
gateway
packet 71
11
mobile host
address α
network B
packet 72'
mobile host
11
address β

FIG. 9

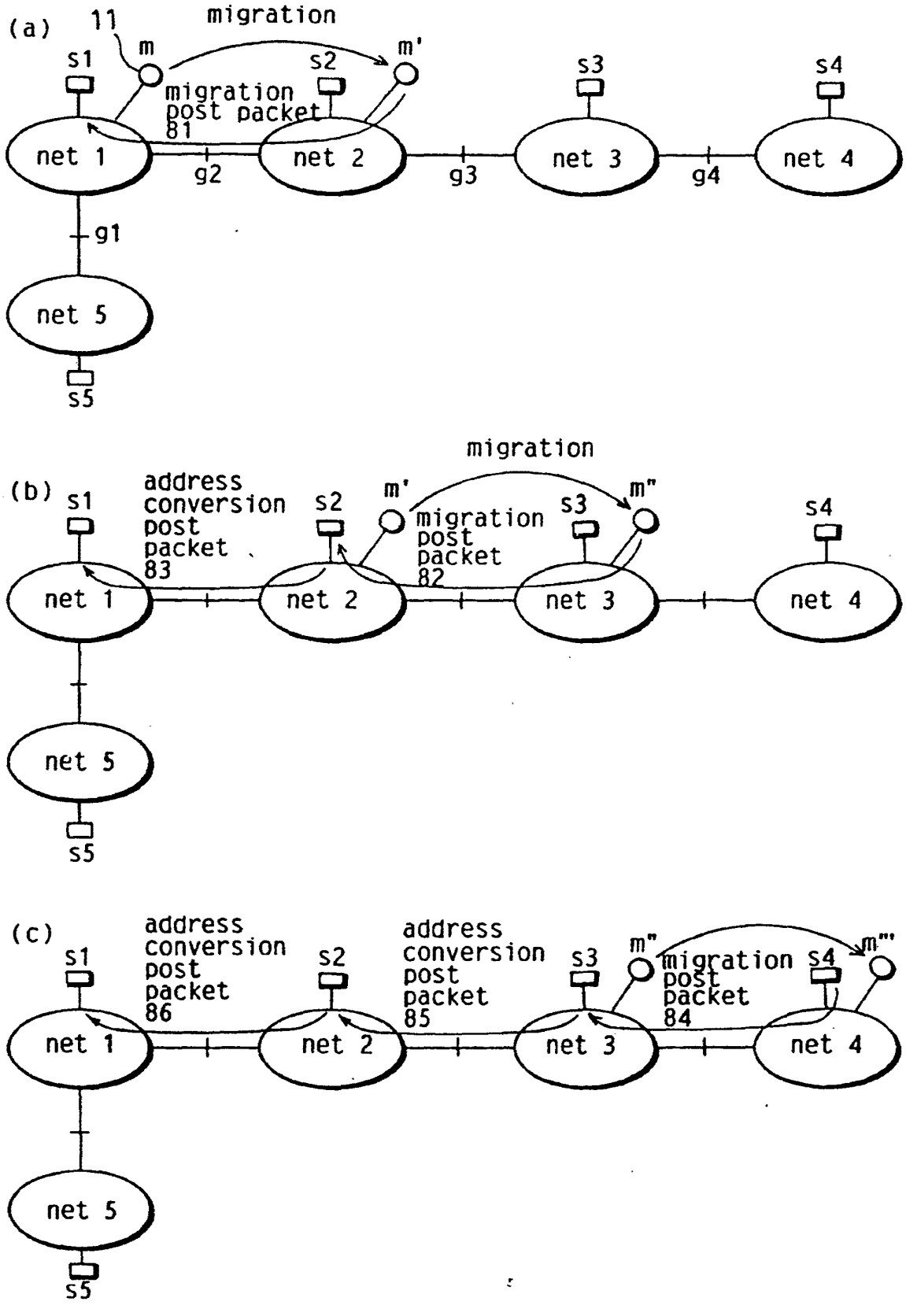

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FIG. 10

(a)

address before migration	address after migration
address α	address β

(b)

address before migration	address after migration
address α	address β
address X	address Y

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Office européen des brevets

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(54) Migration communication control device.

(57) Disclosed is a migration communication control device constructed to control a continuous communication between a mobile node and a node unaffected the mobile node's migration. The migration communication control device comprises a first migration control unit, a second migration control unit on the mobile node, and a third migration control unit on the partner node. The first migration control unit comprises a packet transfer unit and an address post unit. The packet transfer unit receives a packet which was destined for an outdated address of the mobile node, generates a conversion packet which holds an updated address instead of the outdated address, and then transmits the conversion packet, while an address post unit transmits an address post message which indicates the updated address to the third migration control unit. The second migration control unit comprises a migration post unit and a packet resumption unit. The migration post unit transmits to the first migration control unit a migration post message which indicates the updated address when the mobile node migrates to another network while a packet resumption unit receives the conversion packet from both the first migration control unit and the third migration control unit and resumes an original packet from the conversion packet. The third migration control unit comprises a packet conversion unit which converts a destination address of a packet into the updated address, then transmits it to the mobile node.

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European Patent Office

EUROPEAN SEARCH REPORT

Application Number EP 93300919.3

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	DATABASE WPIL, no. 90-311 754, DERWENT PUBLICATIONS LTD., London; & TP-A-99 004 (ANONYMOUS) * Abstract * --	1, 38-40	H 04 Q 7/00 H 04 L 12/56
A	GB - A - 2 236 393 (SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.) * Fig. 2A,2B; abstract; claim 1 * --	1, 38-40	
A	WO - A - 86/01 918 (HOLBERG) * Fig. 1,2; abstract; claim 1 * ----	1, 38-40	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

H 04 Q 7/00
H 04 L 12/00
G 06 F 15/00
G 01 V 1/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	03-02-1995	BERGER

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P0401)

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FIG. 11

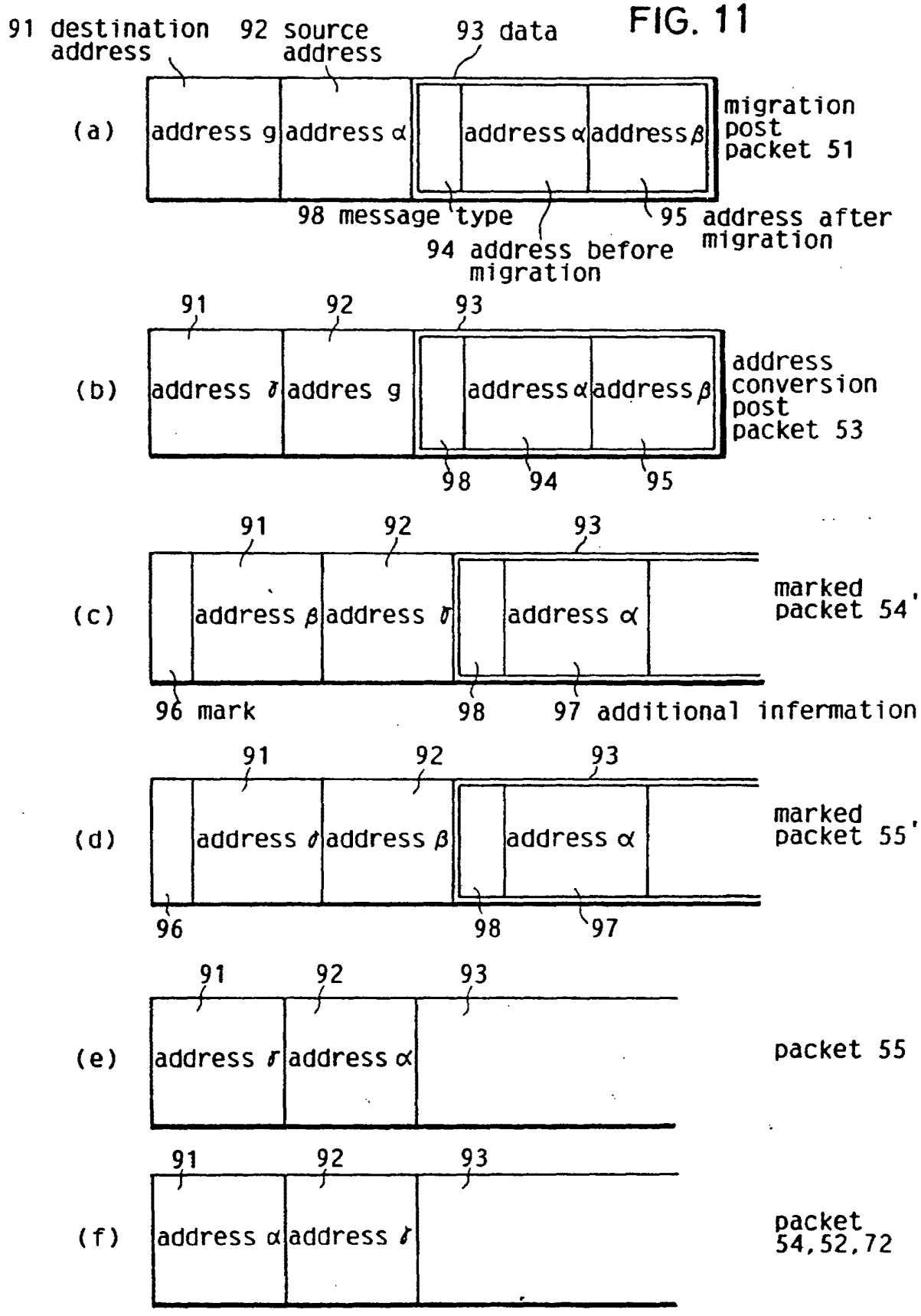

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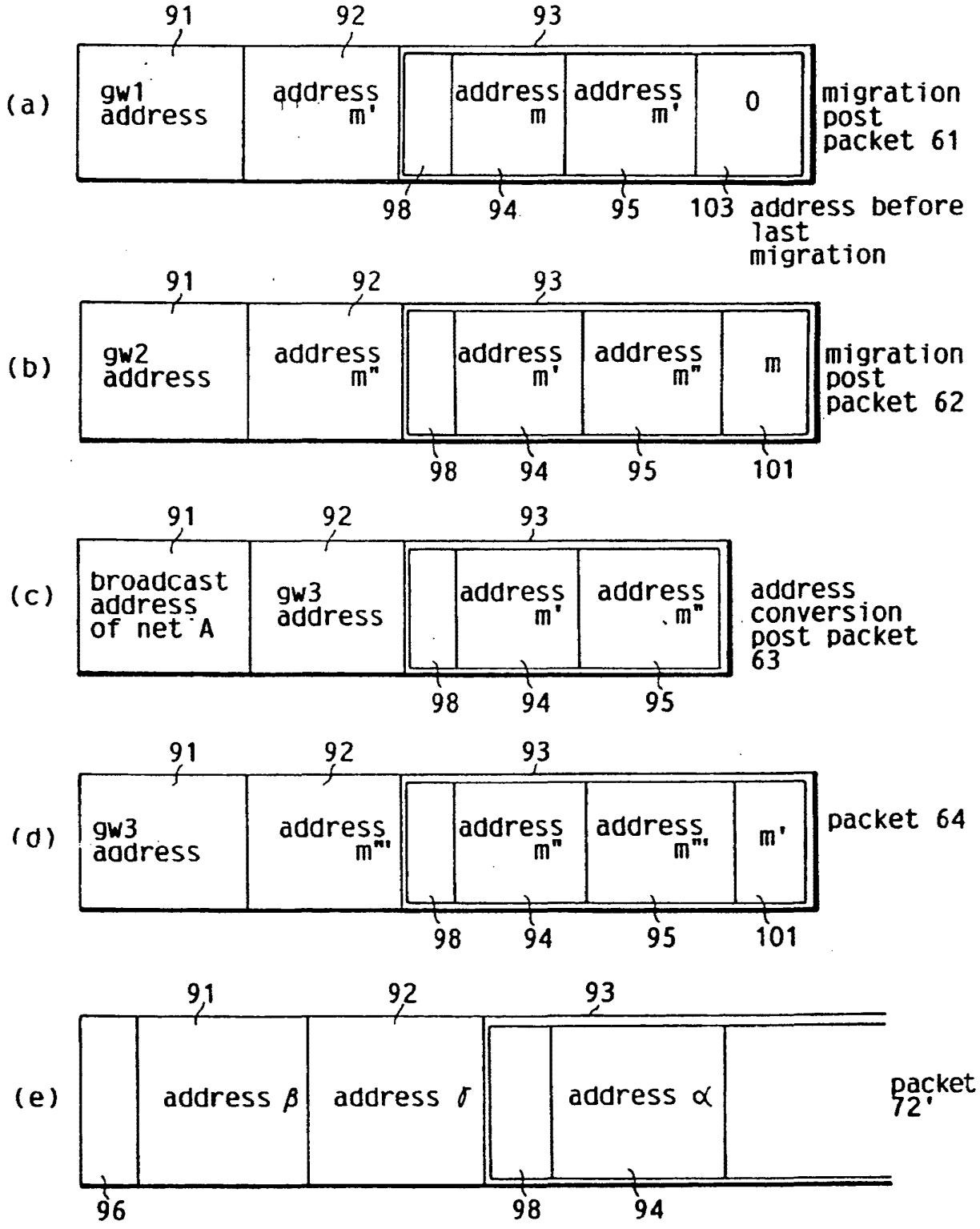
FIG. 12


91
92
93
(a)
gw1 address
address m'
address m
address m'
0
migration post packet 61
98
94
95
103
address before last migration
(b)
gw2 address
address m"
address m'
address m"
m
migration post packet 62
101
(c)
broadcast address of net A
gw3 address
address m'
address m"
address conversion post packet 63
(d)
gw3 address
address m"'
address m"
address m"'
m'
packet 64
(e)
address β
address γ
address α
packet 72'
96

(a) migration from network A to network B

FIG. 13

gateway	address correspon-dence	address before last migration
gw1	m → m'	0
gw2	m → m'	0
gw3	———	——
gw4	———	——

(b) migration from network B to network C

gateway	address correspon-dence	address before last migration
gw1	m → m"	0
gw2	m → m" m' → m"	0 m
gw3	m' → m"	m
gw4	———	——

(c) migration from network C to network D

gateway	address correspon-dence	address before last migration
gw1	m → m'"	0
gw2	m → m'" m' → m'"	0 m
gw3	m' → m'" m" → m'"	m m'
gw4	m" → m'"	m'

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FIG. 14

(a) migration from network A to network B

migration communication control device	content of hold unit	
	address correspon-dence	address before last migration
S1	m → m'	0
S2	——	——
S3	——	——
S4	——	——

(b) migration from network B to network C

migration communication control device	content of hold unit	
	address correspon-dence	address before last migration
S1	m → m"	0
S2	m'→ m"	m
S3	——	——
S4	——	——

(c) migration from network C to network D

migration communication control device	content of hold unit	
	address correspon-dence	address before last migration
S1	m → m"'	0
S2	m'→ m"'	m
S3	m"→ m"'	m'
S4	——	——

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FIG. 15

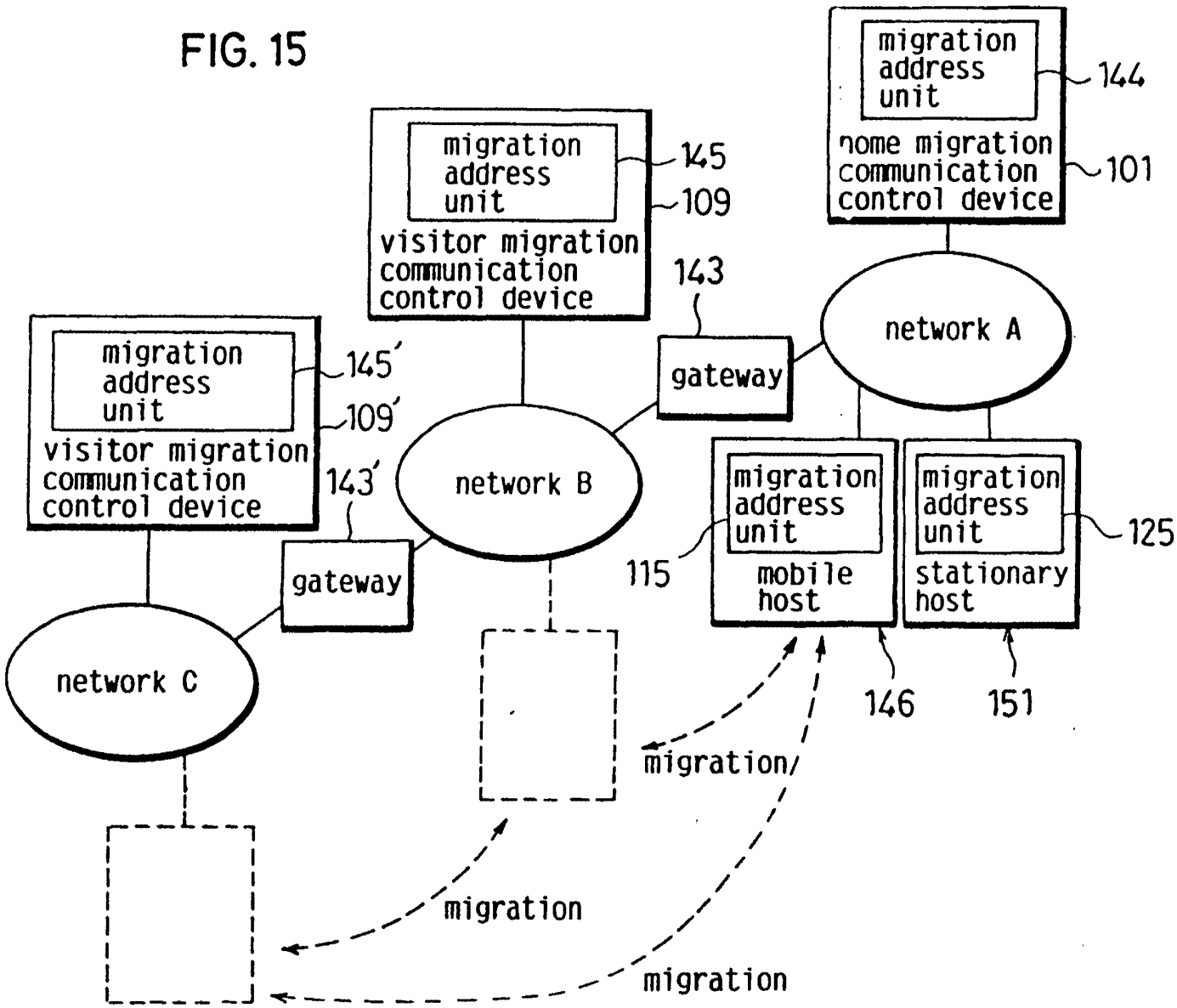

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FIG. 16

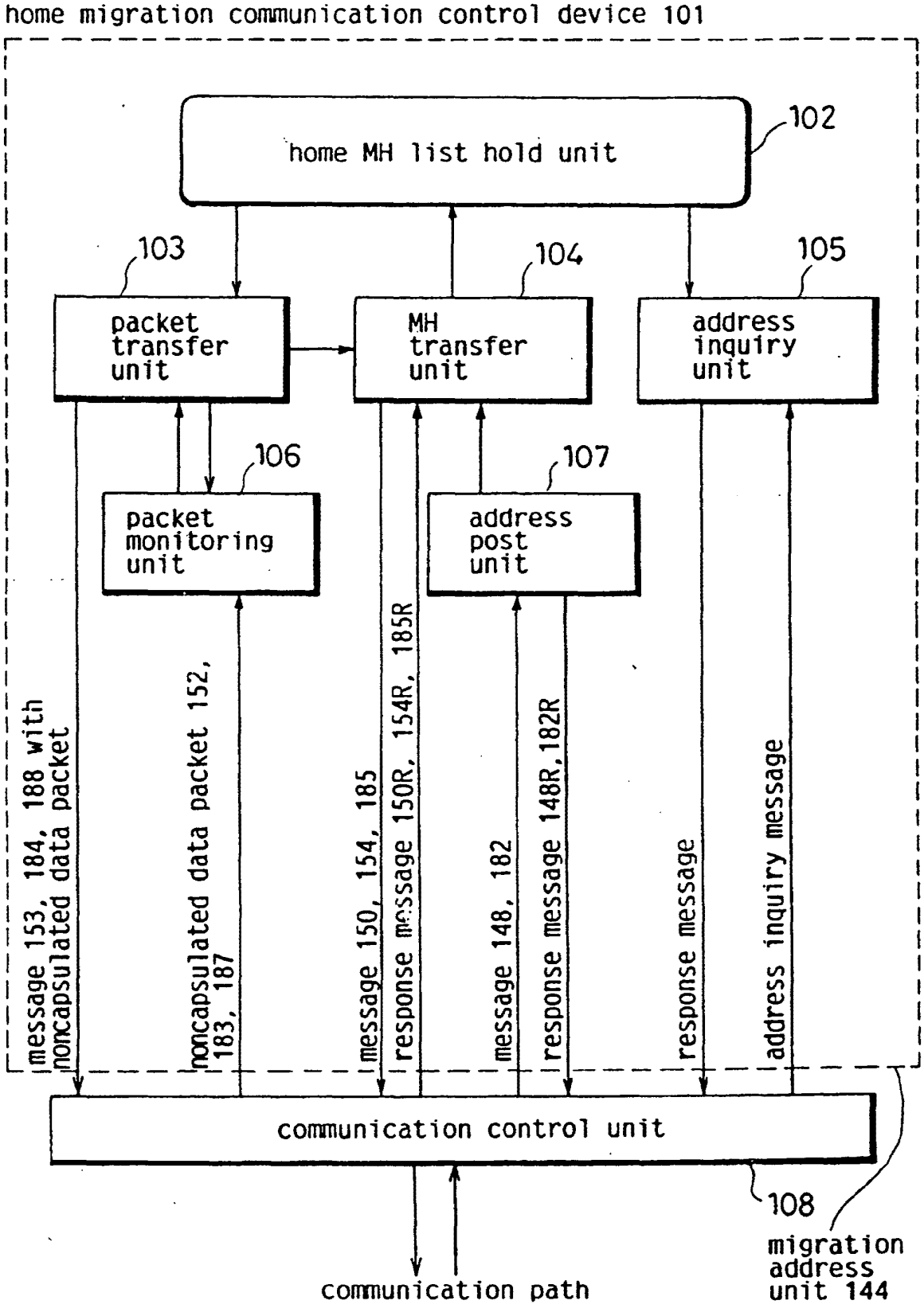

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FIG. 17

MH's home address	MH's current temporary address	autonomous flag F	current broadcast address
α	β or γ	1	Bba or Cba

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FIG. 18

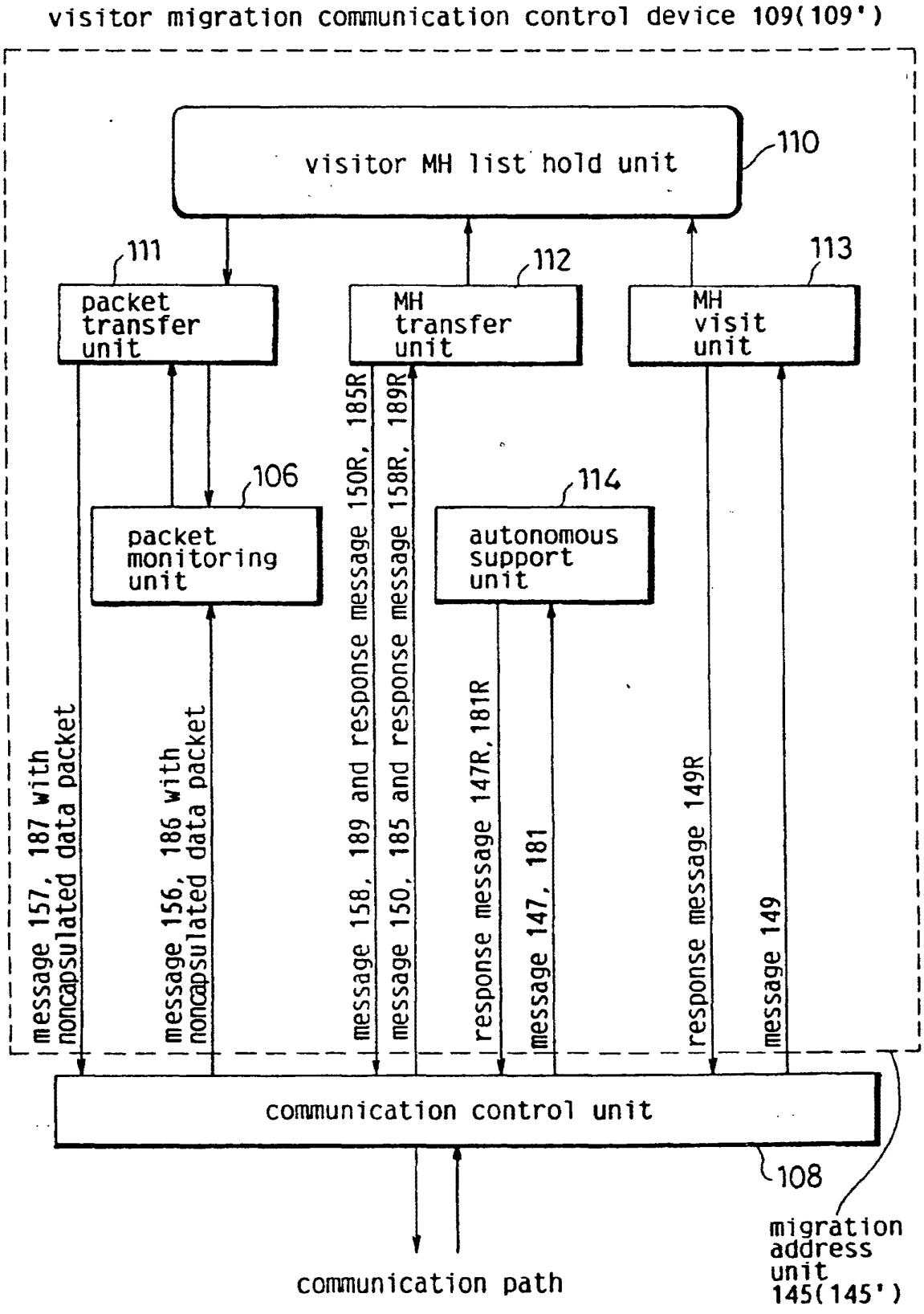

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FIG. 19

MH's home address	temporary address	temporary address after migration	autonomous flag F
α	β	γ	1

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FIG. 20

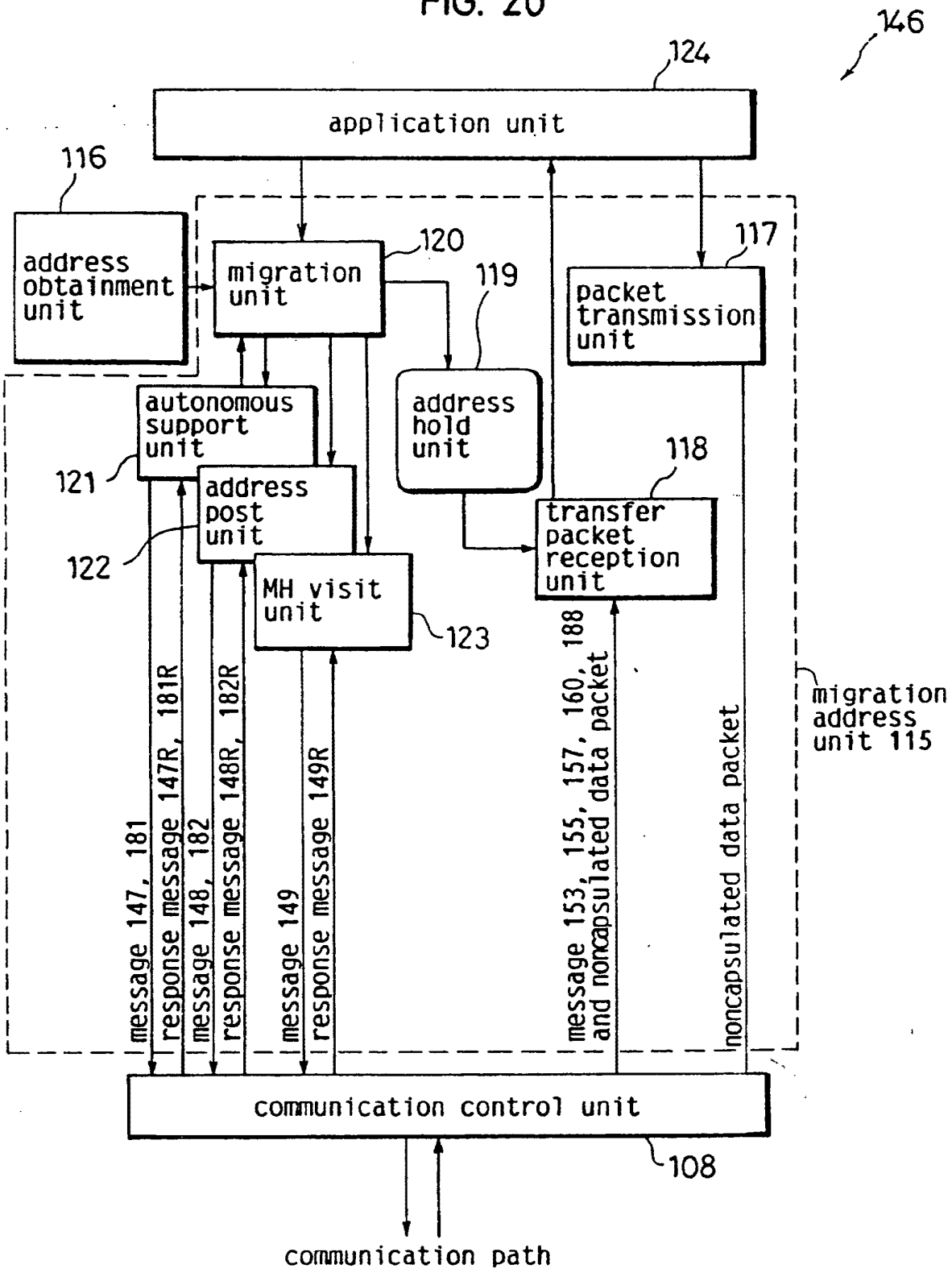

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FIG. 21

home addres	broadcast address of home network	current temporary address	broadcast address
α	Aba	β or γ	Bba or Cba

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FIG. 22

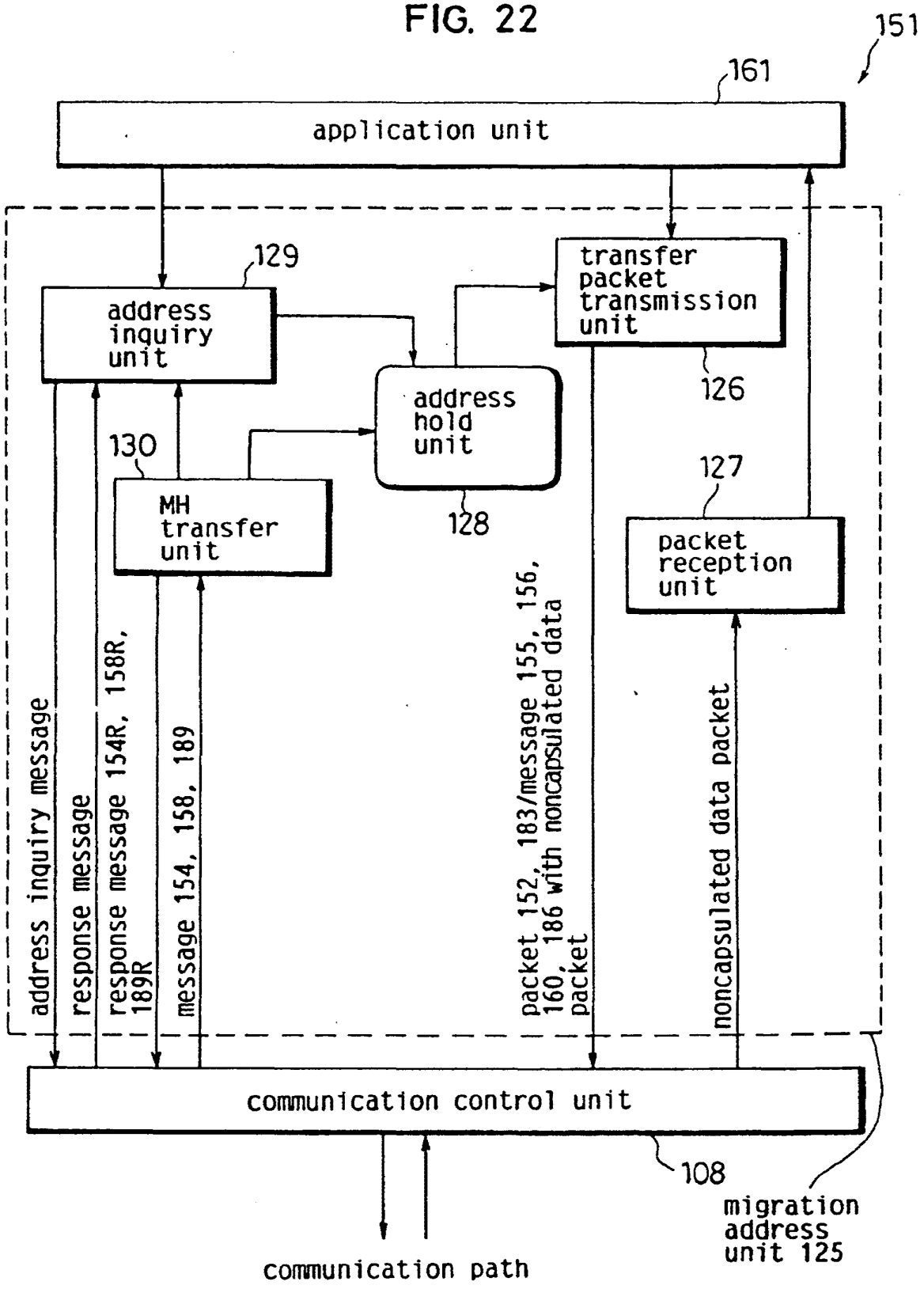

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FIG. 23

MH's home address	MH's temporary address
α	β or γ

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FIG. 24

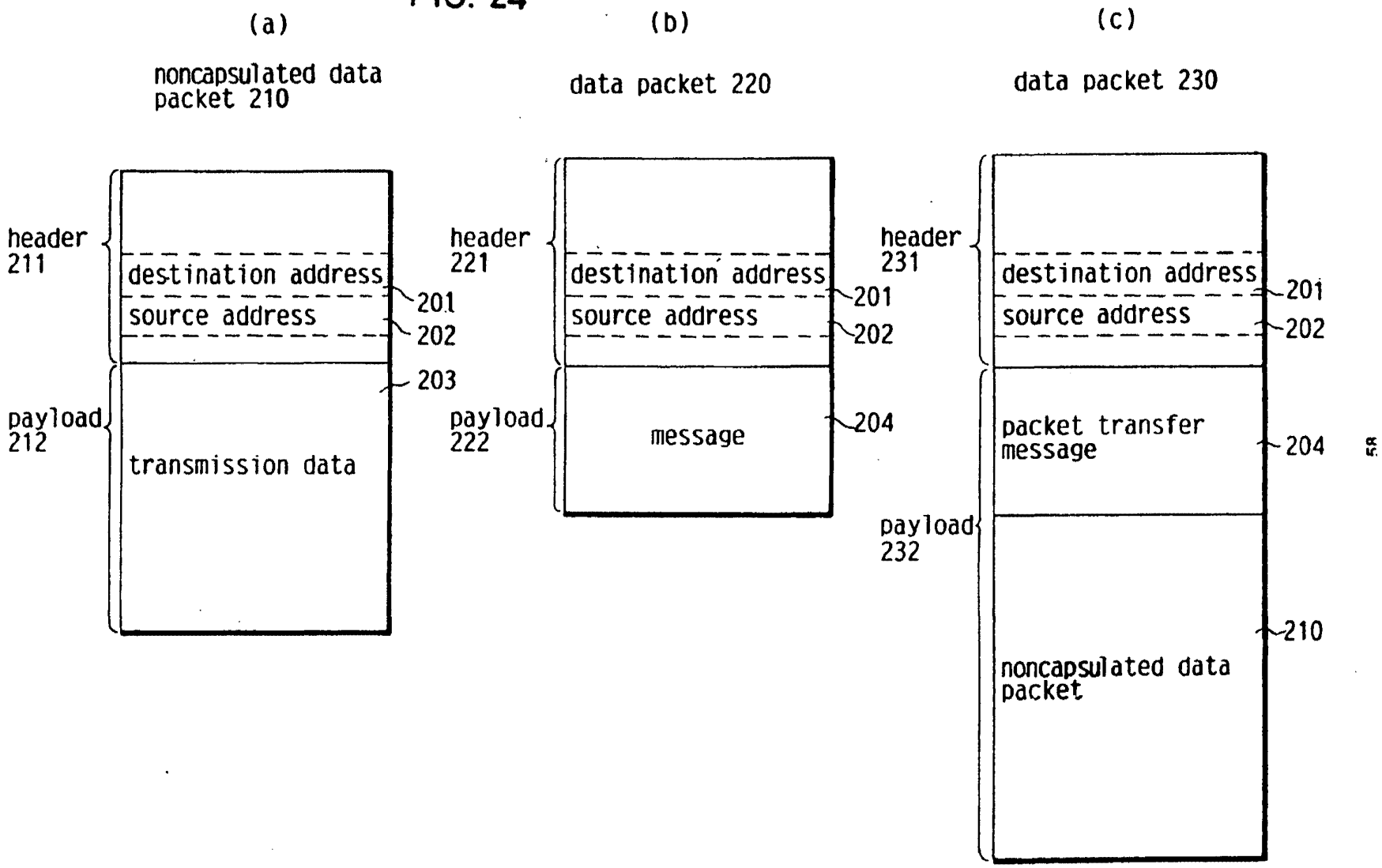

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FIG. 25

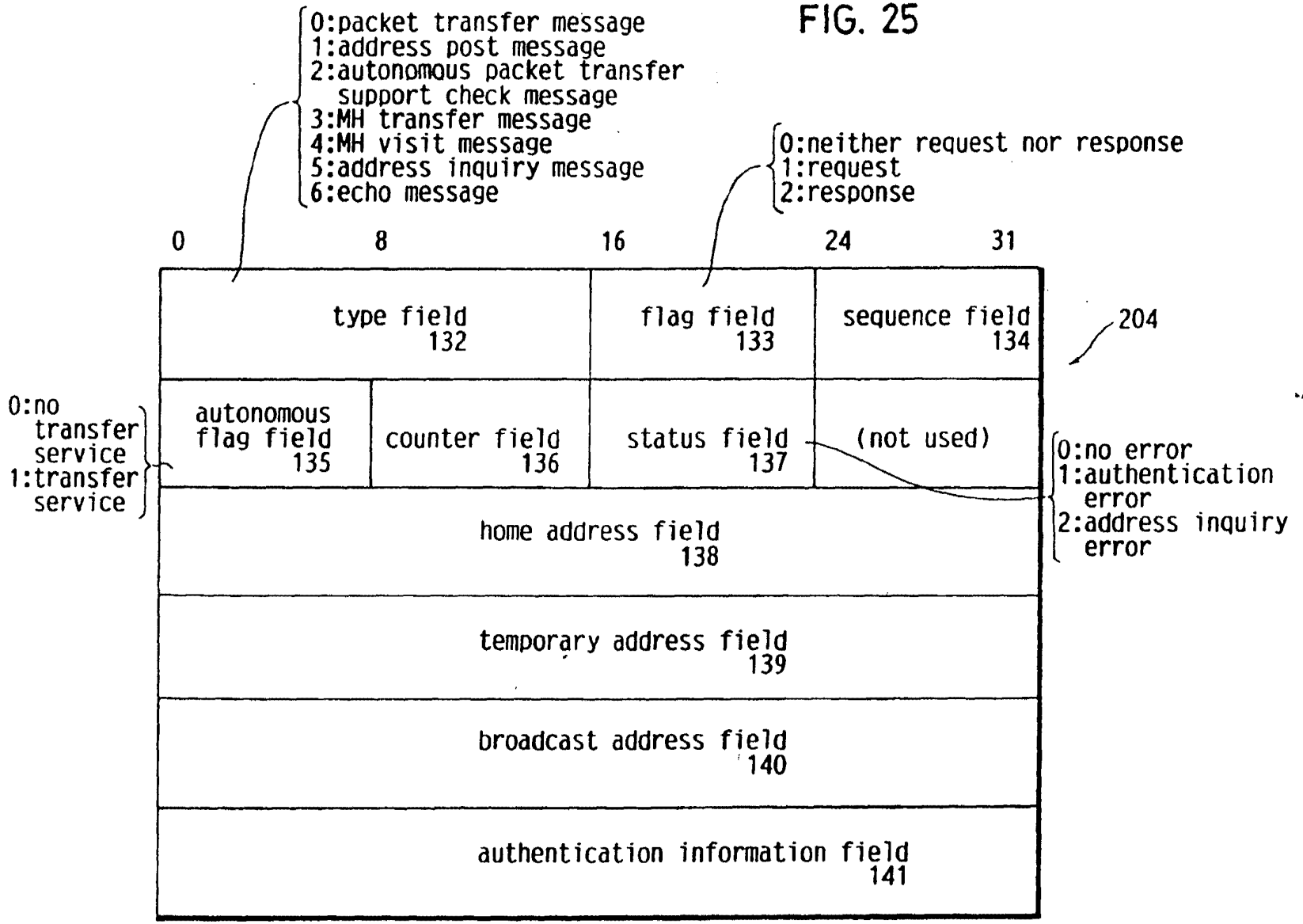
0:packet transfer message
1:address post message
2:autonomous packet transfer support check message
3:MH transfer message
4:MH visit message
5:address inquiry message
6:echo message
0:neither request nor response
1:request
2:response
0
8
16
24
31
type field 132
flag field 133
sequence field 134
204
0:no transfer service
1:transfer service
autonomous flag field 135
counter field 136
status field 137
(not used)
0:no error
1:authentication error
2:address inquiry error
home address field 138
temporary address field 139
broadcast address field 140
authentication information field 141

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FIG. 26

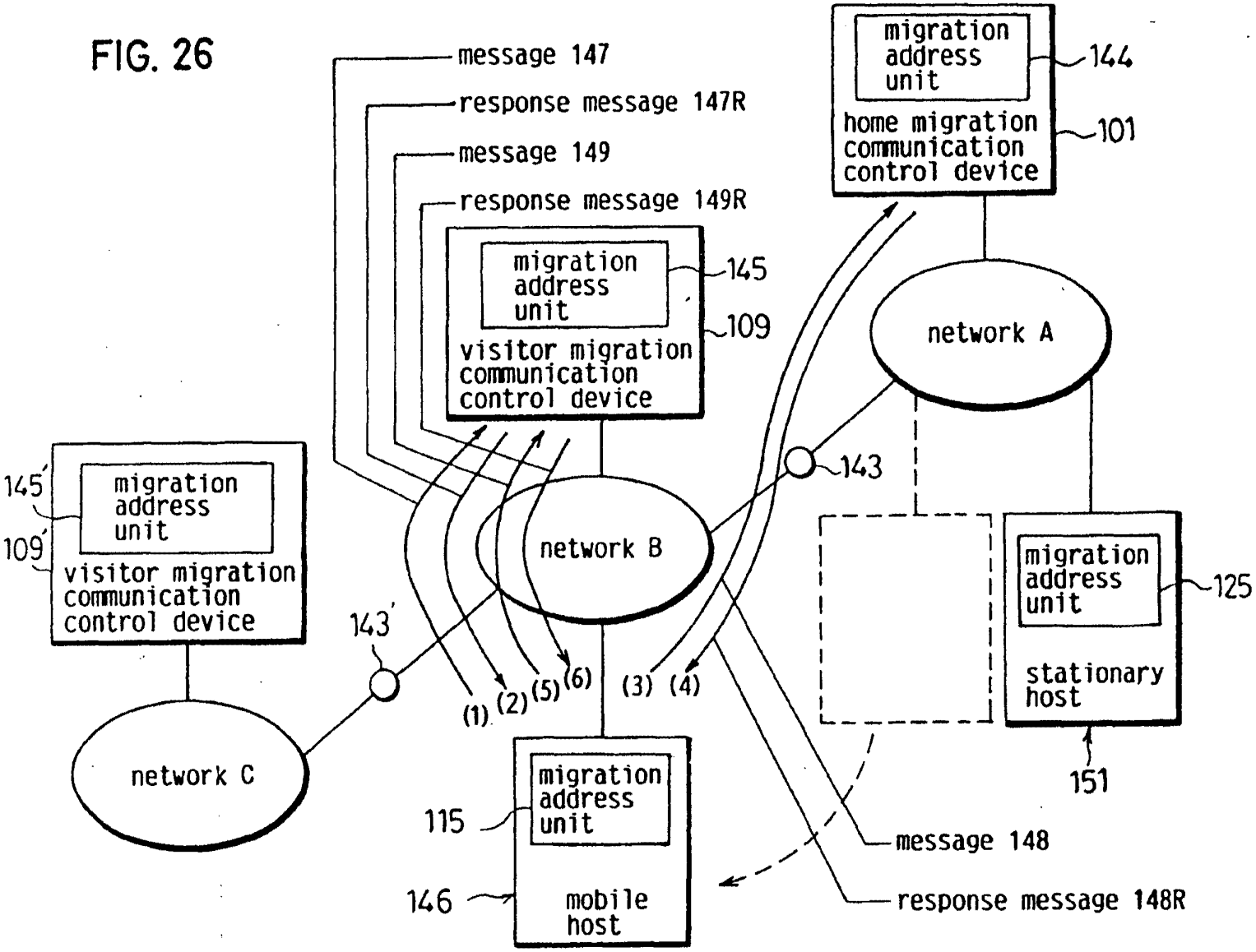
message 147
response message 147R
message 149
response message 149R
migration address unit
144
home migration communication control device
101
network A
migration address unit
145
visitor migration communication control device
109
143
network B
145'
migration address unit
109'
visitor migration communication control device
143'
(1) (2) (5) (6)
(3) (4)
migration address unit
125
stationary host
151
network C
migration address unit
115
mobile host
146
message 148
response message 148R

FIG. 27 migration from network A to network B

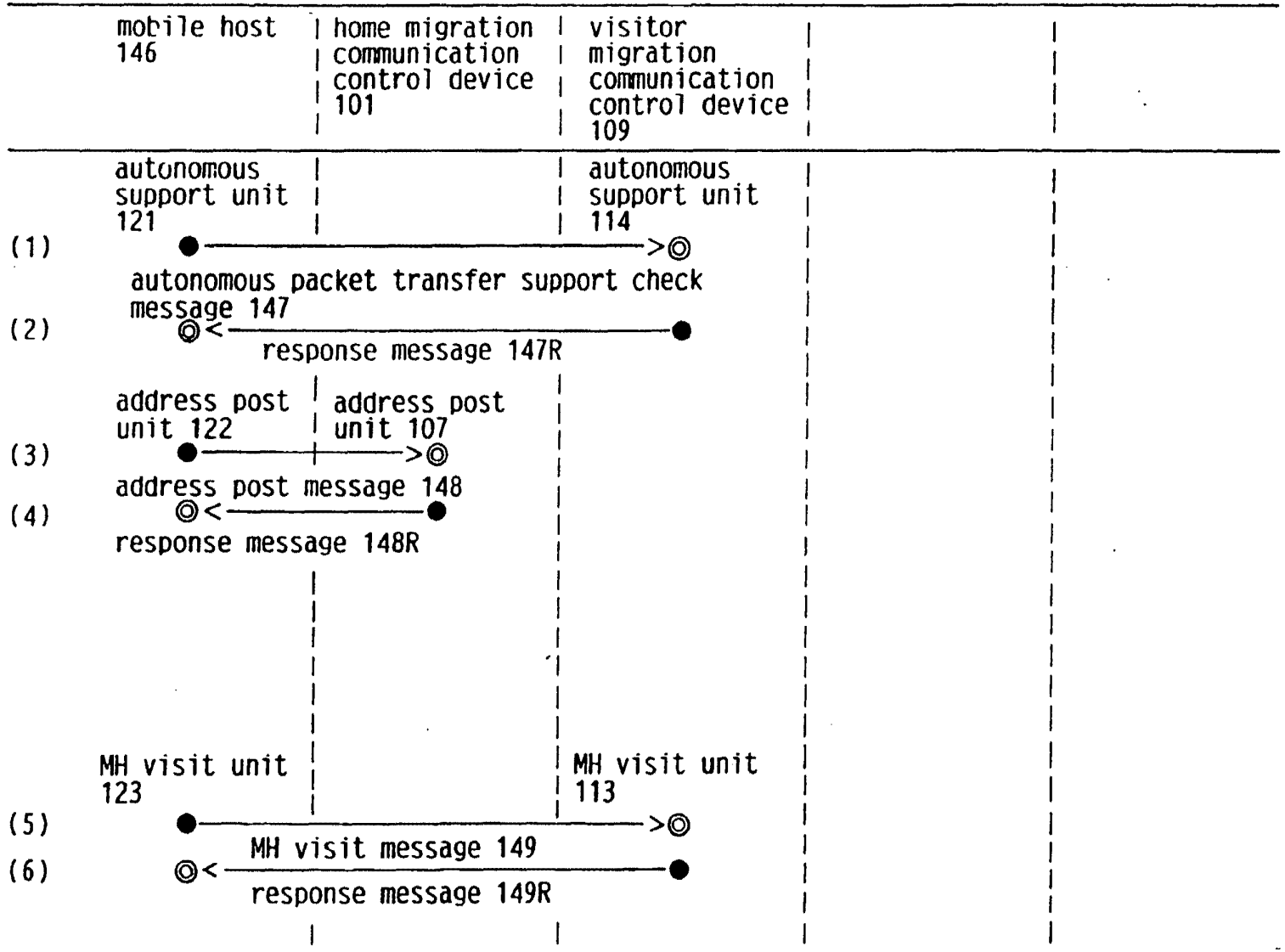

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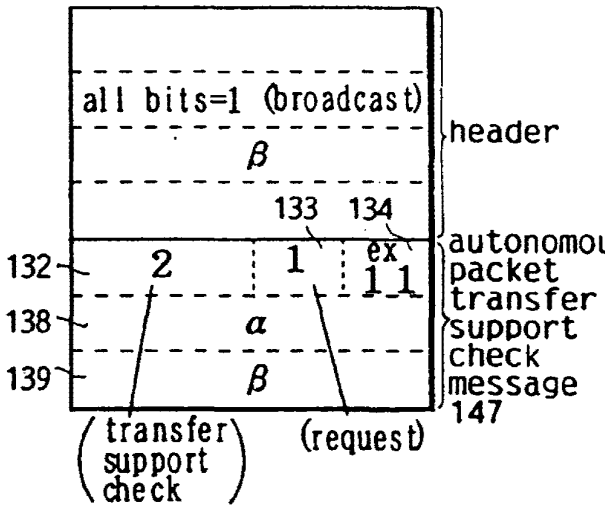
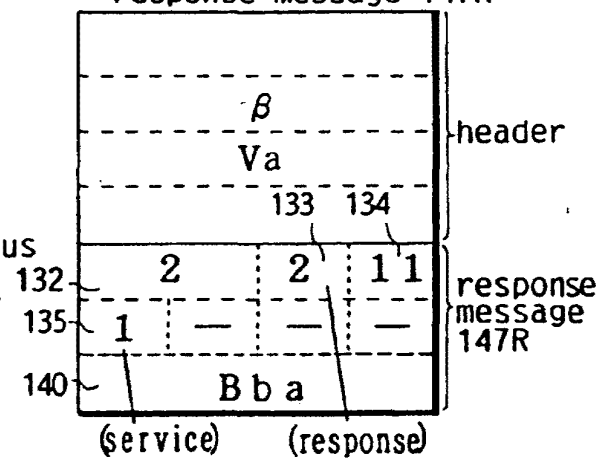
FIG.28

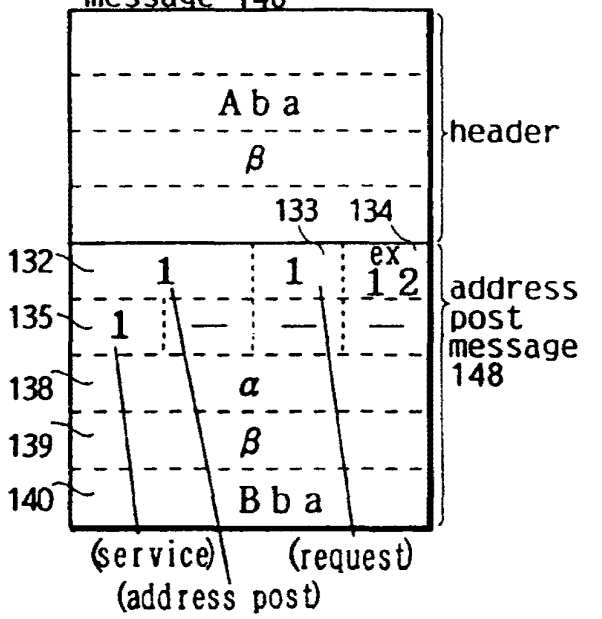
(1) data packet including message 147



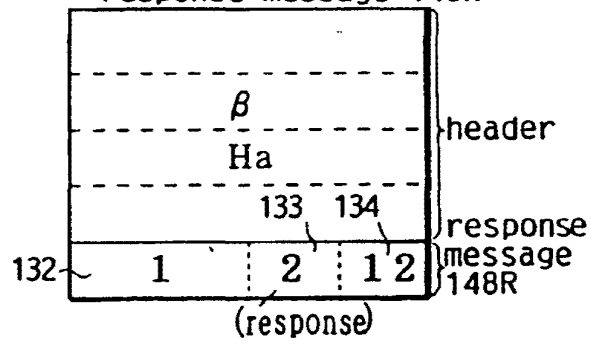
(2) data packet including response message 147R



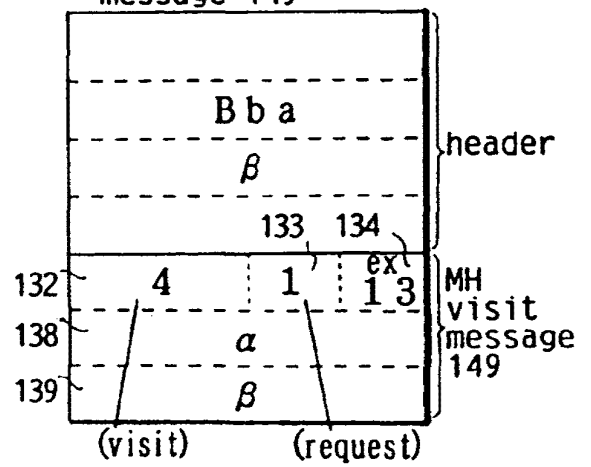
(3) data packet including message 148



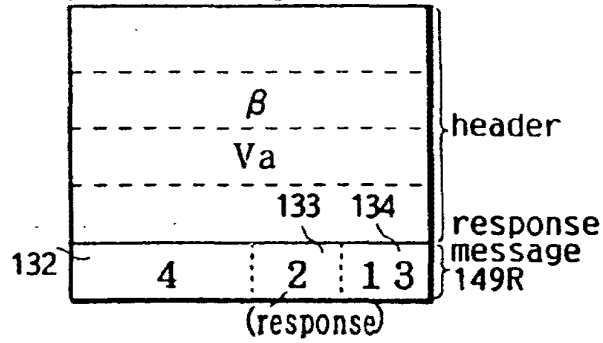
(4) data packet including response message 148R



(5) data packet including message 149



(6) data packet including response message 149R



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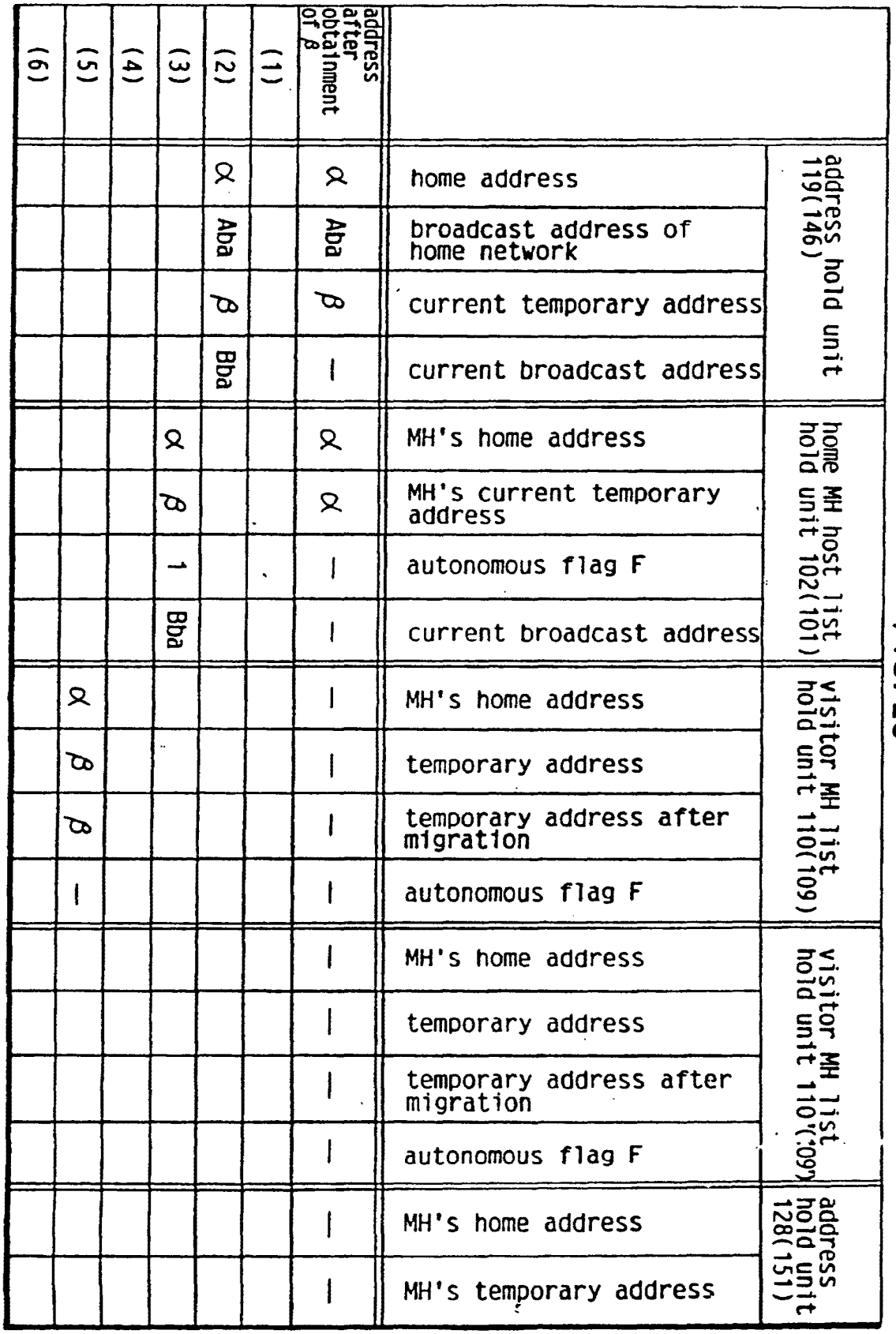

	address after obtainment of β		(1)	(2)	(3)	(4)	(5)	(6)
address hold unit 119(146)	α	home address		α				
	Aba	broadcast address of home network		Aba				
	β	current temporary address		β				
	1	current broadcast address		Bba				
home MH host list hold unit 102(101)	α	MH's home address			α			
	α	MH's current temporary address			β			
	1	autonomous flag F			1			
	1	current broadcast address			Bba			
visitor MH list hold unit 110(109)	1	MH's home address					α	
	1	temporary address					β	
	1	temporary address after migration					β	
	1	autonomous flag F					1	
visitor MH list hold unit 110'(109')	1	MH's home address						
	1	temporary address						
	1	temporary address after migration						
	1	autonomous flag F						
address hold unit 128(151)	1	MH's home address						
	1	MH's temporary address						

FIG. 29

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FIG. 30

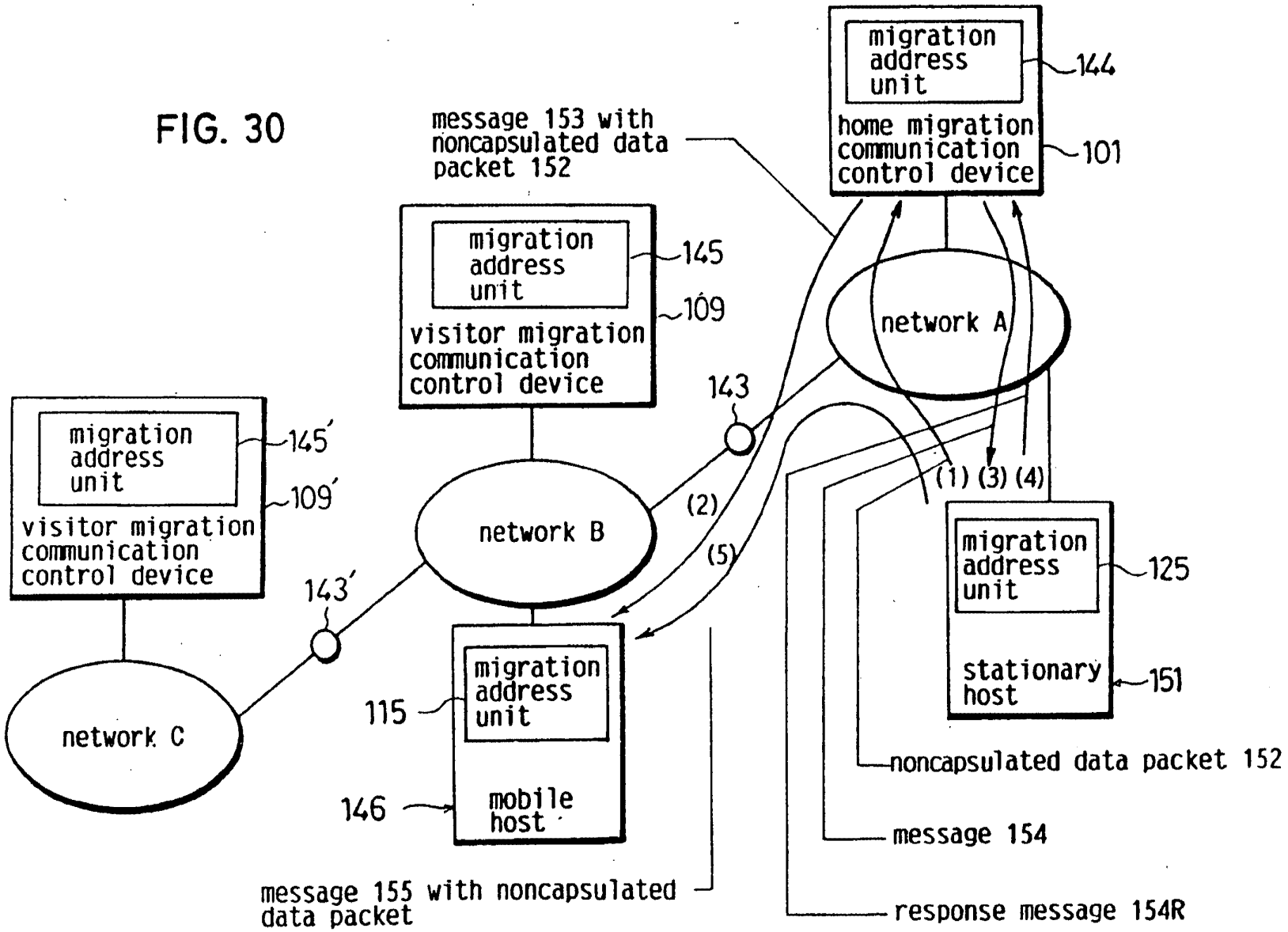
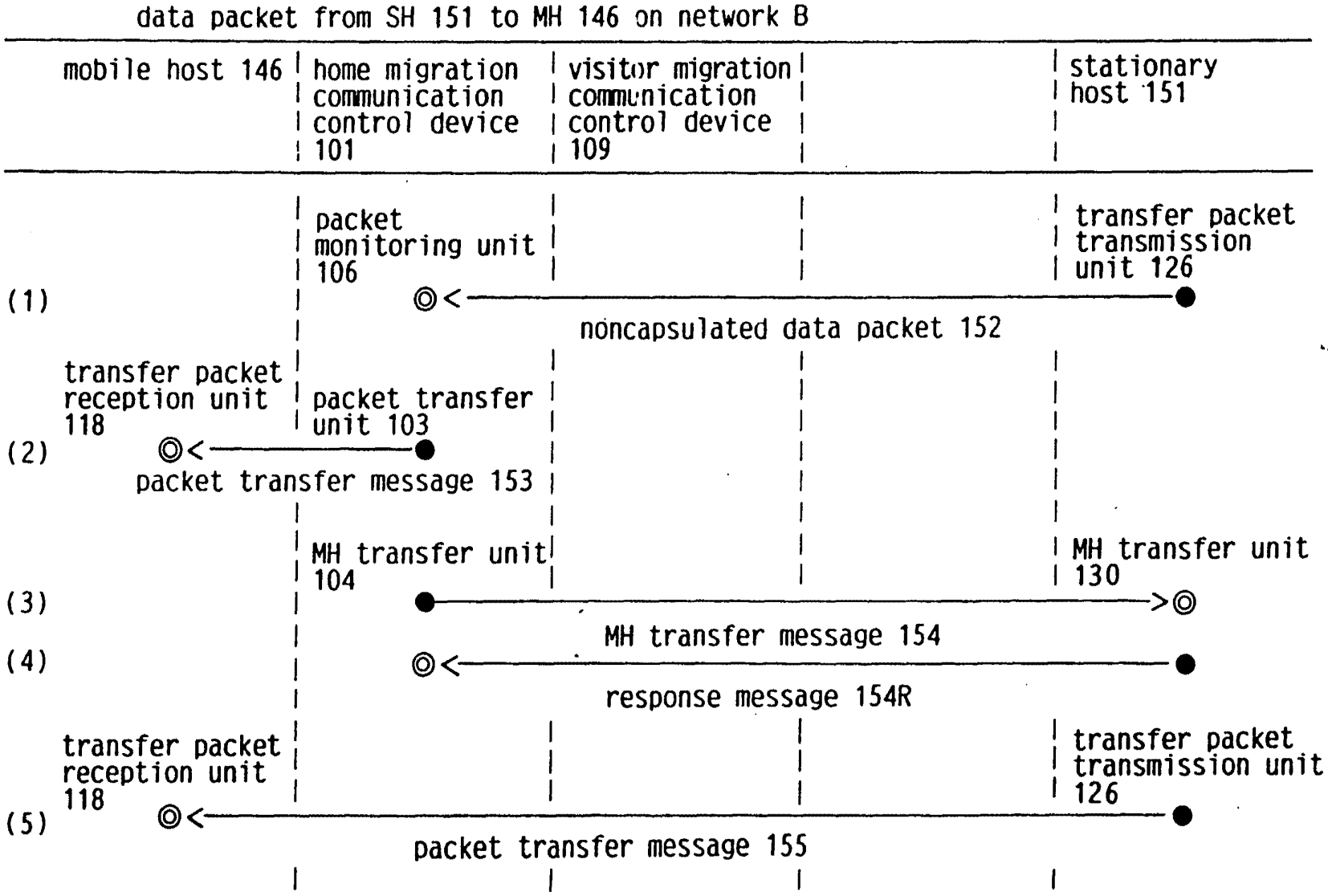

migration address unit
144
home migration communication control device
101
message 153 with noncapsulated data packet 152
migration address unit
145
visitor migration communication control device
109
network A
143
(1) (3) (4)
(2)
(5)
migration address unit
145'
visitor migration communication control device
109'
network B
143'
migration address unit
125
stationary host
151
network C
115
migration address unit
mobile host
146
noncapsulated data packet 152
message 154
message 155 with noncapsulated data packet
response message 154R

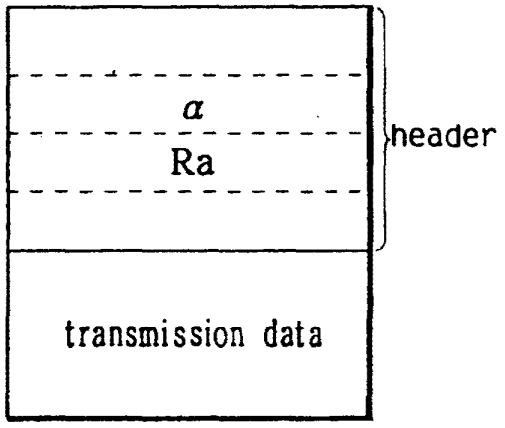
FIG. 31


data packet from SH 151 to MH 146 on network B
mobile host 146
home migration communication control device 101
visitor migration communication control device 109
stationary host 151
packet monitoring unit 106
transfer packet transmission unit 126
(1)
noncapsulated data packet 152
transfer packet reception unit 118
packet transfer unit 103
(2)
packet transfer message 153
MH transfer unit 104
MH transfer unit 130
(3)
MH transfer message 154
(4)
response message 154R
transfer packet reception unit 118
transfer packet transmission unit 126
(5)
packet transfer message 155

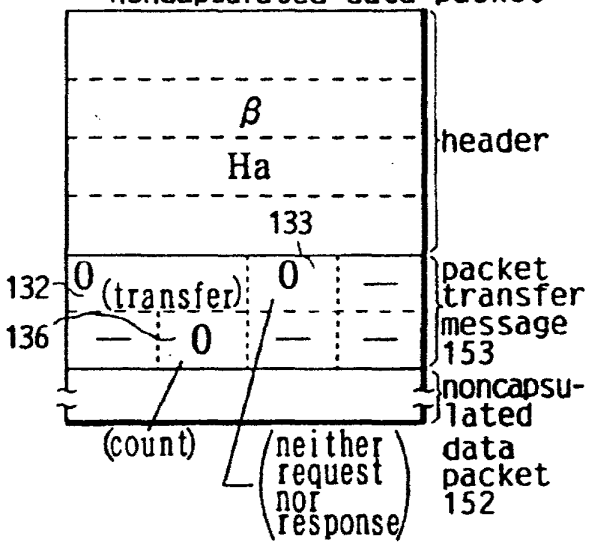
65

FIG. 32

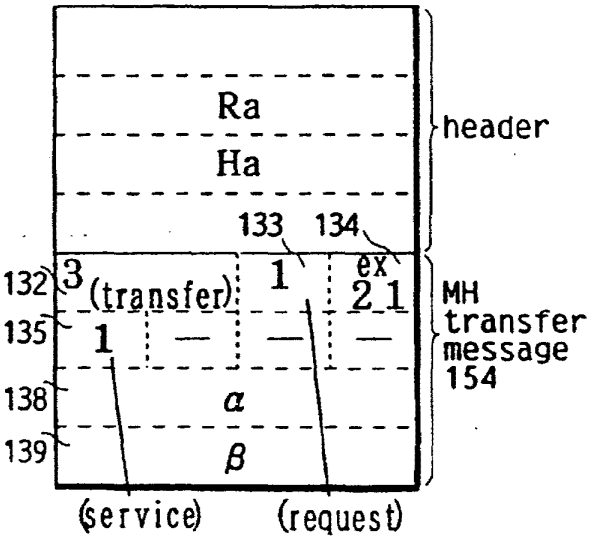
(1) noncapsulated data packet 152



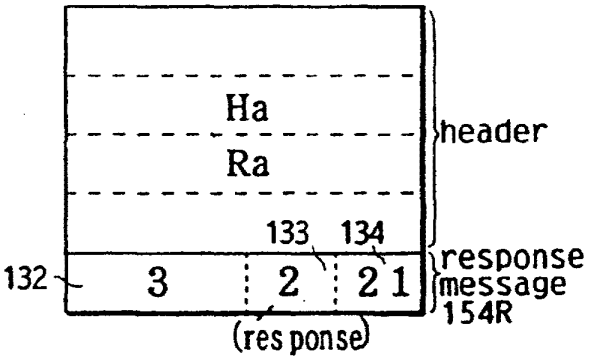
(2) data packet including message 153 and noncapsulated data packet



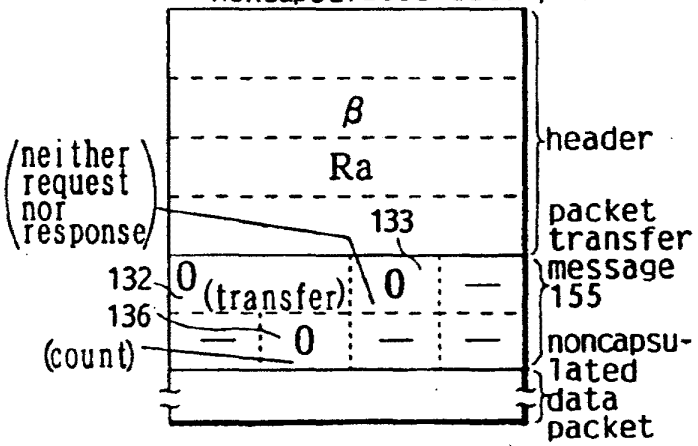
(3) data packet including message 154



(4) data packet including response message 154R



(5) data packet including message 155 and noncapsulated data packet



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		address before communication	(1)	(2)	(3)	(4)	(5)
address hold unit 119(146)	home address	α					
	broadcast address of home network	Aba					
	current temporary address	β					
	current broadcast address	Bba					
home MH list hold unit 102(101)	MH's home address	α					
	current temporary address	β					
	autonomous flag F	1					
	broadcast address	Bba					
visitor MH list hold unit 110(109)	MH's home address	α					
	temporary address	β					
	temporary address after migration	β					
	autonomous flag F	1					
visitor MH list hold unit 110'(109')	MH's home address	1					
	temporary address	1					
	temporary address after migration	1					
	autonomous flag F	1					
address hold unit 128(151)	MH's home address	1			α		
	MH's temporary address	1			β		

FIG. 33

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FIG. 34

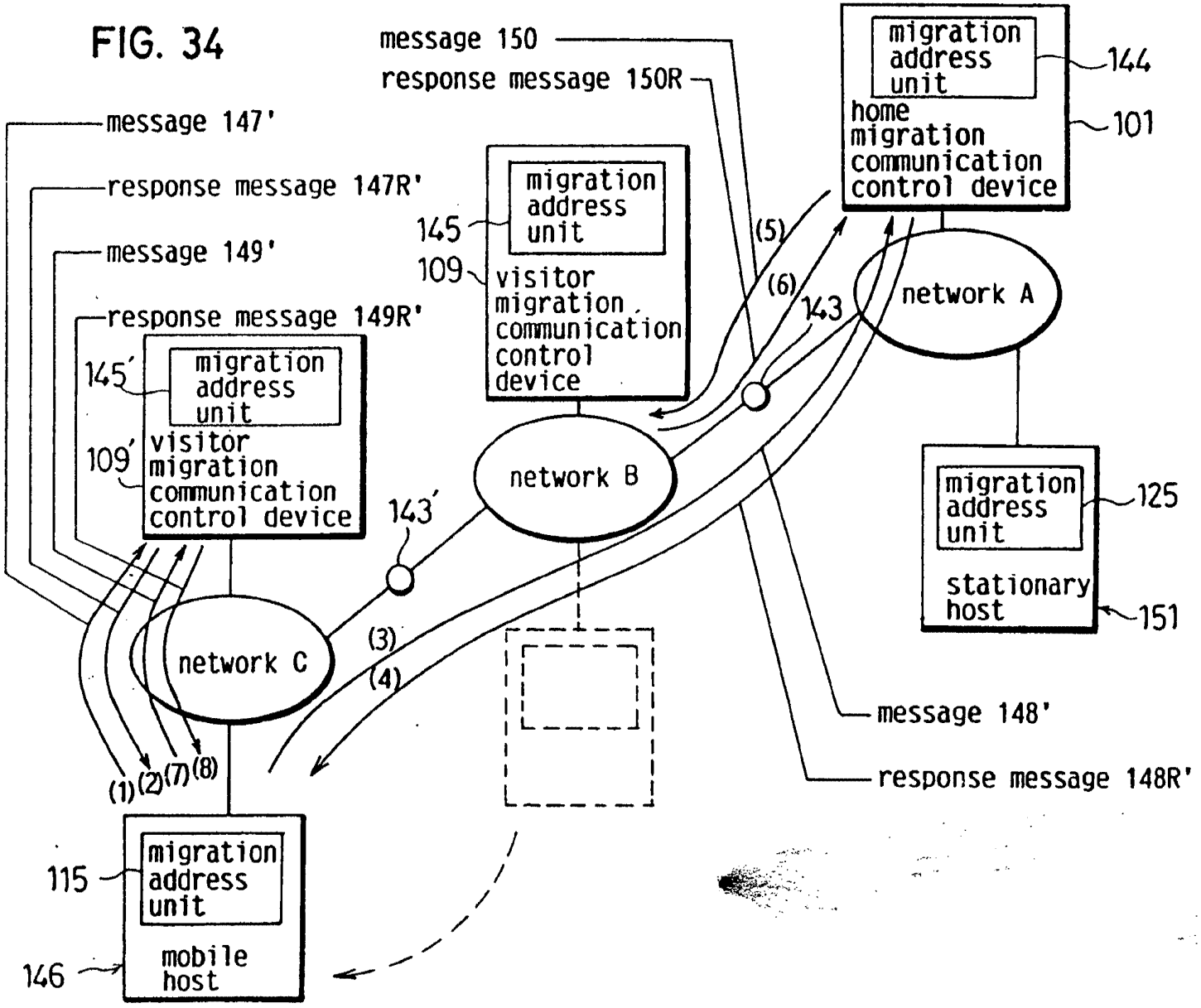

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FIG. 35 migration from network B to network C

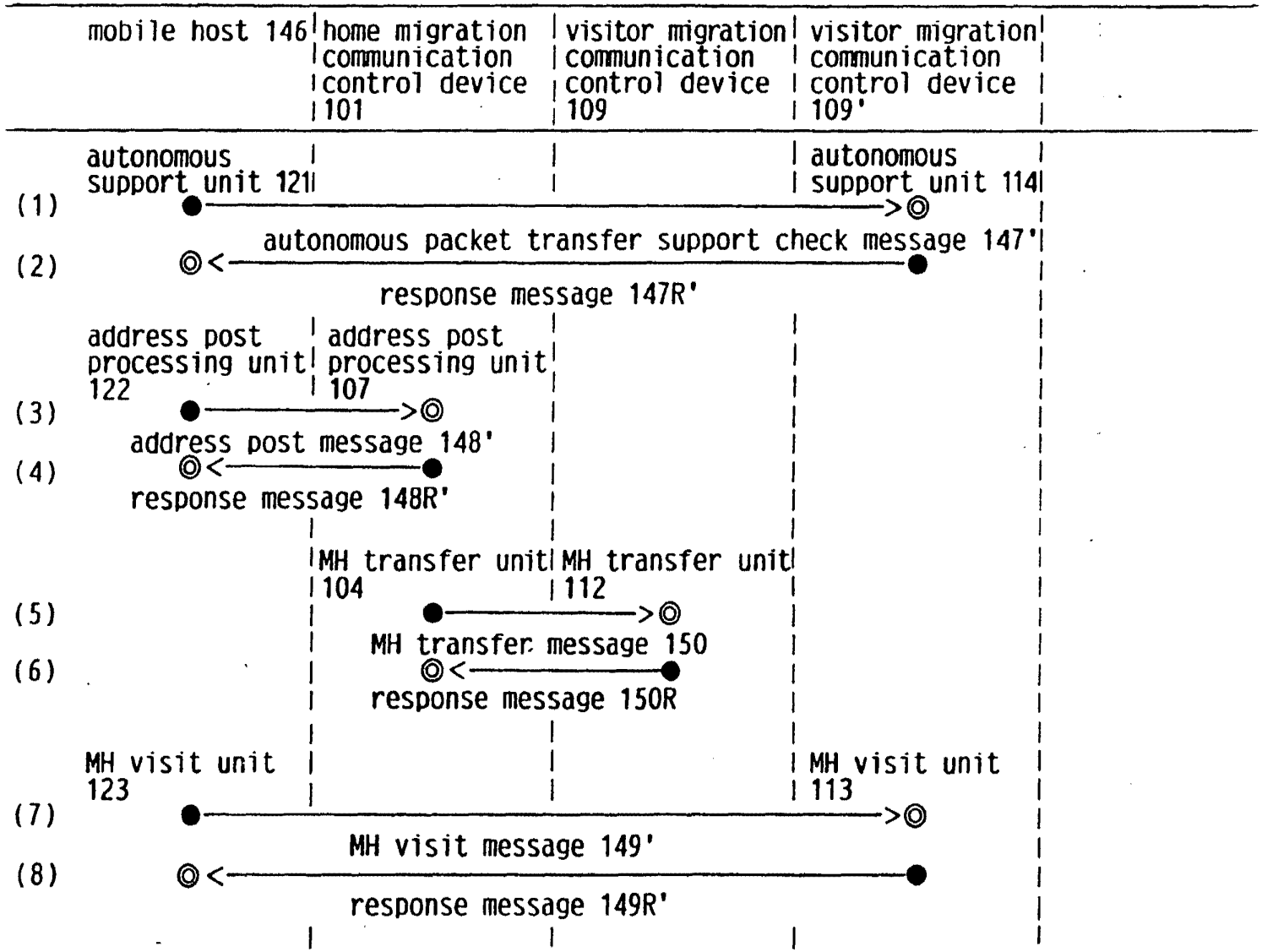

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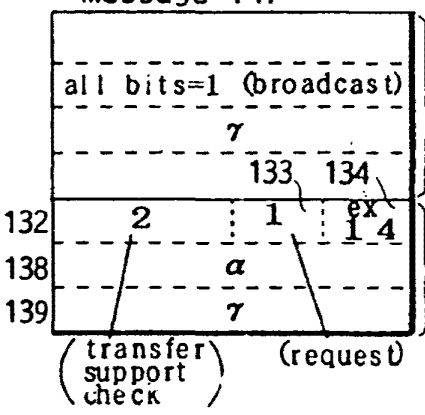
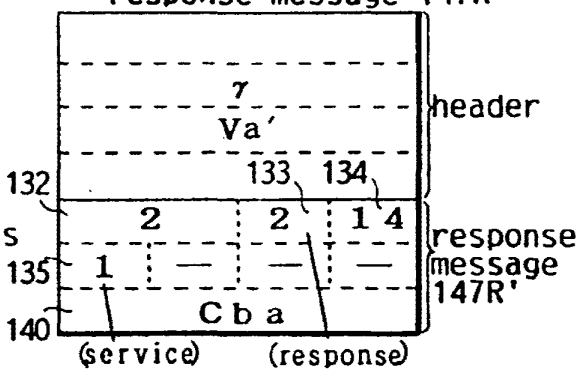
FIG.36

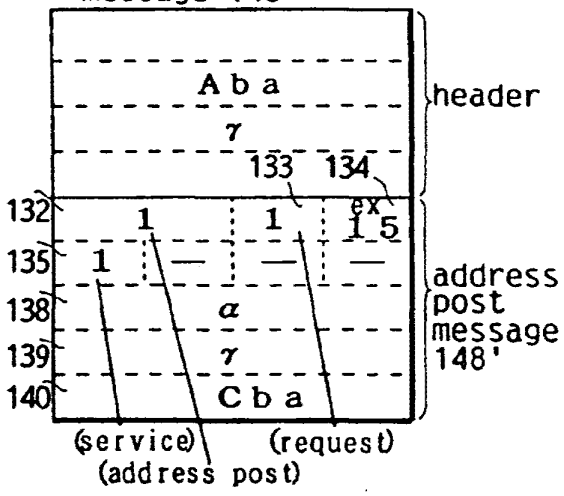
(1) data packet including message 147'



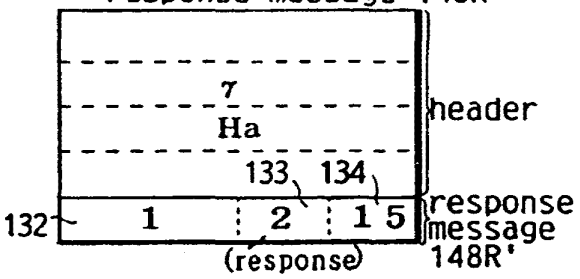
(2) data packet including response message 147R'



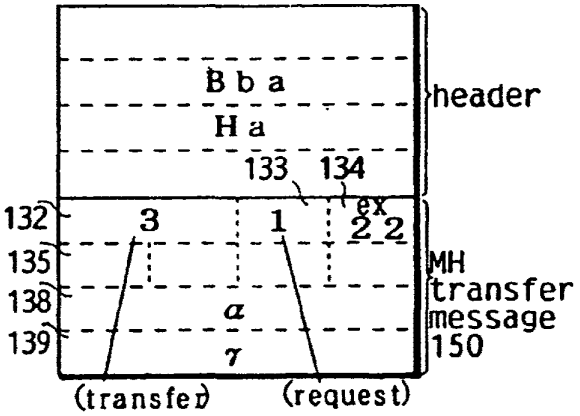
(3) data packet including message 148'



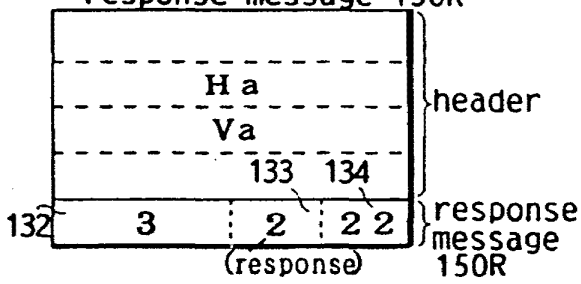
(4) data packet including response message 148R'



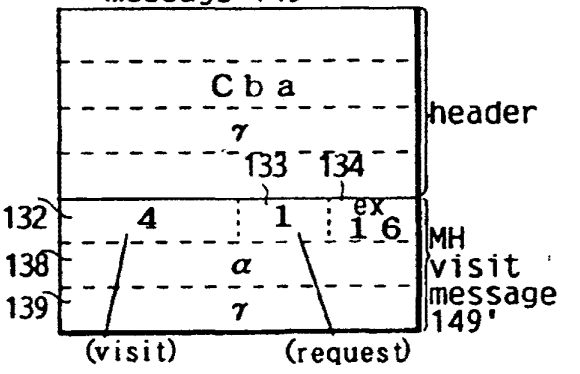
(5) data packet including message 150



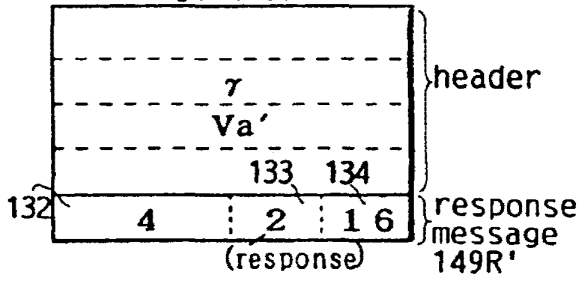
(6) data packet including response message 150R



(7) data packet including message 149'



(8) data packet including message 149R'



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		address after obtainment of γ	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
address hold unit 119(146)	home address	α		α						
	broadcast address of home network	Aba		Aba						
	current temporary address	γ		γ						
	current broadcast address	Bba		Cba						
home MH list hold unit 102(101)	MH's home address	α			α					
	MH's current temporary address	β			δ					
	autonomous flag F	1			1					
	current broadcast address	Bba			Cba					
visitor MH list hold unit 110(109)	MH's home address	α					α			
	temporary address	β					β			
	temporary address after migration	β					δ			
	autonomous flag F	—					1			
visitor MH list hold unit 110'(109')	MH's home address	—							α	
	temporary address	—							δ	
	temporary address after migration	—							ε	
	autonomous flag F	—							—	
address hold unit 128(151)	MH's home address	α								
	MH's temporary address	β								

FIG. 37

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FIG. 38

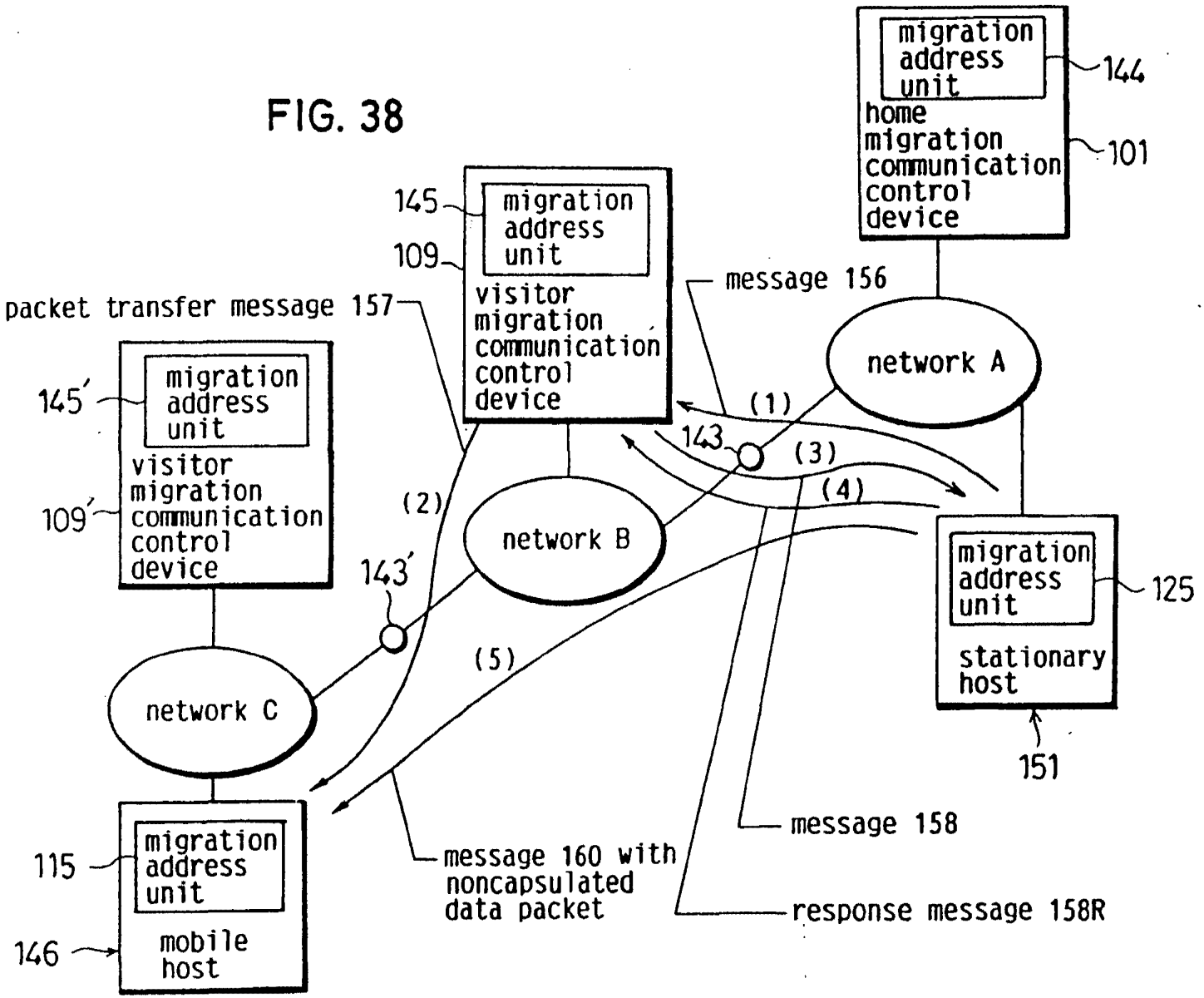
migration address unit
144
home migration communication control device
101
145
109
visitor migration communication control device
message 156
packet transfer message 157
network A
145'
109'
visitor migration communication control device
(1)
143
(3)
(4)
(2)
network B
143'
migration address unit
125
stationary host
(5)
network C
151
115
146
mobile host
message 158
message 160 with noncapsulated data packet
response message 158R

FIG. 39

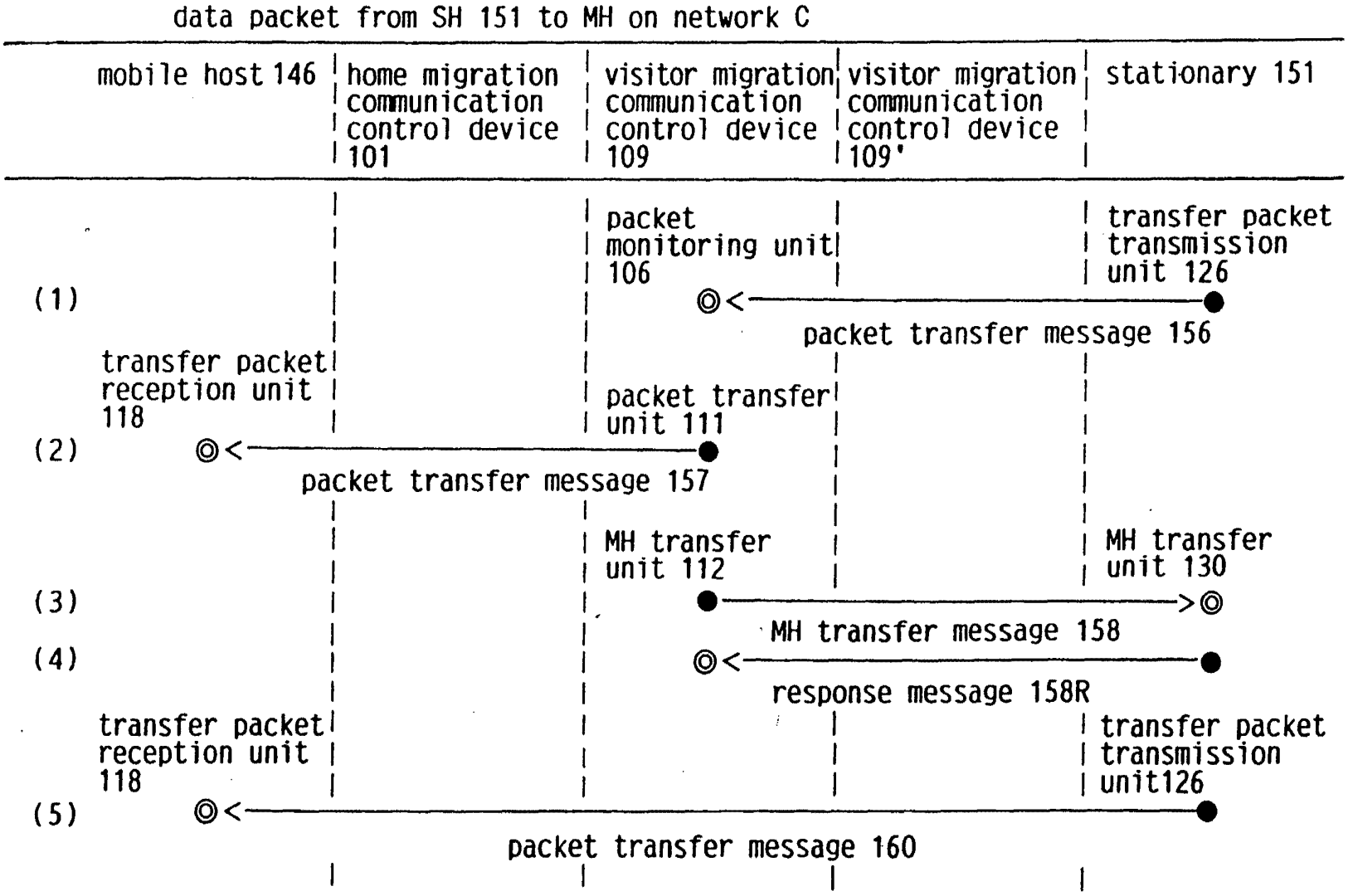

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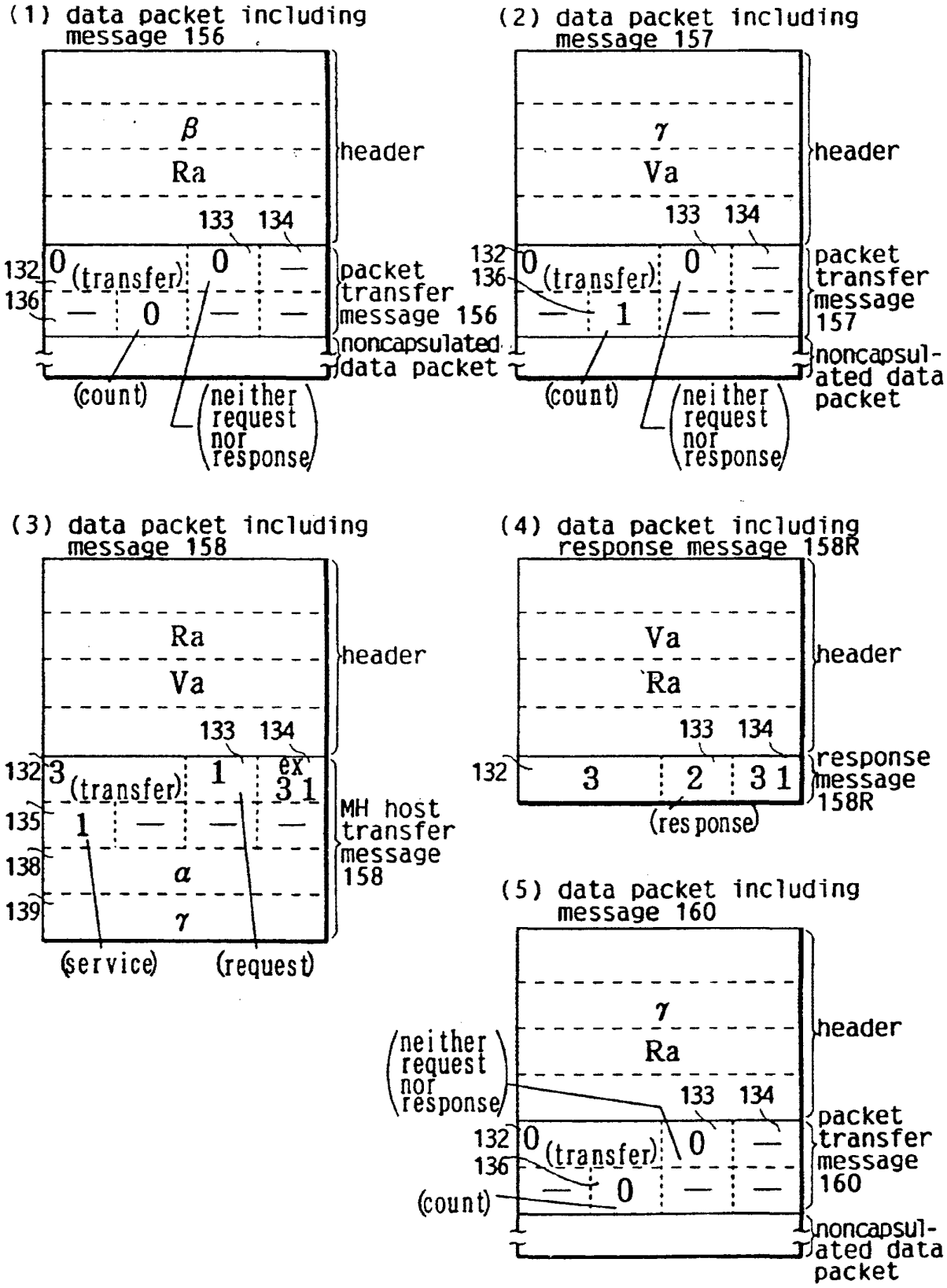
FIG. 40



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					address before communication		
					α	home address	address hold unit 119
					Aba	broadcast address of home network	
					γ	current temporary address	
					Cba	current broadcast address	
					α	MH's home address	home MH list hold unit 102
					γ	MH's current temporary address	
					1	autonomous flag F	
					Cba	broadcast address	
					α	MH's home address	visitor MH list hold unit 110
					β	temporary address	
					γ	temporary address after migration	
					1	autonomous flag F	
					α	MH's home address	visitor MH list hold unit 109'
					δ	temporary address	
					δ	temporary address after migration	
					-	autonomous flag F	
		α			α	MH's home address	address hold unit 128
		δ			β	MH's temporary address	

(1) (2) (3) (4) (5)

FIG. 41

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FIG. 42

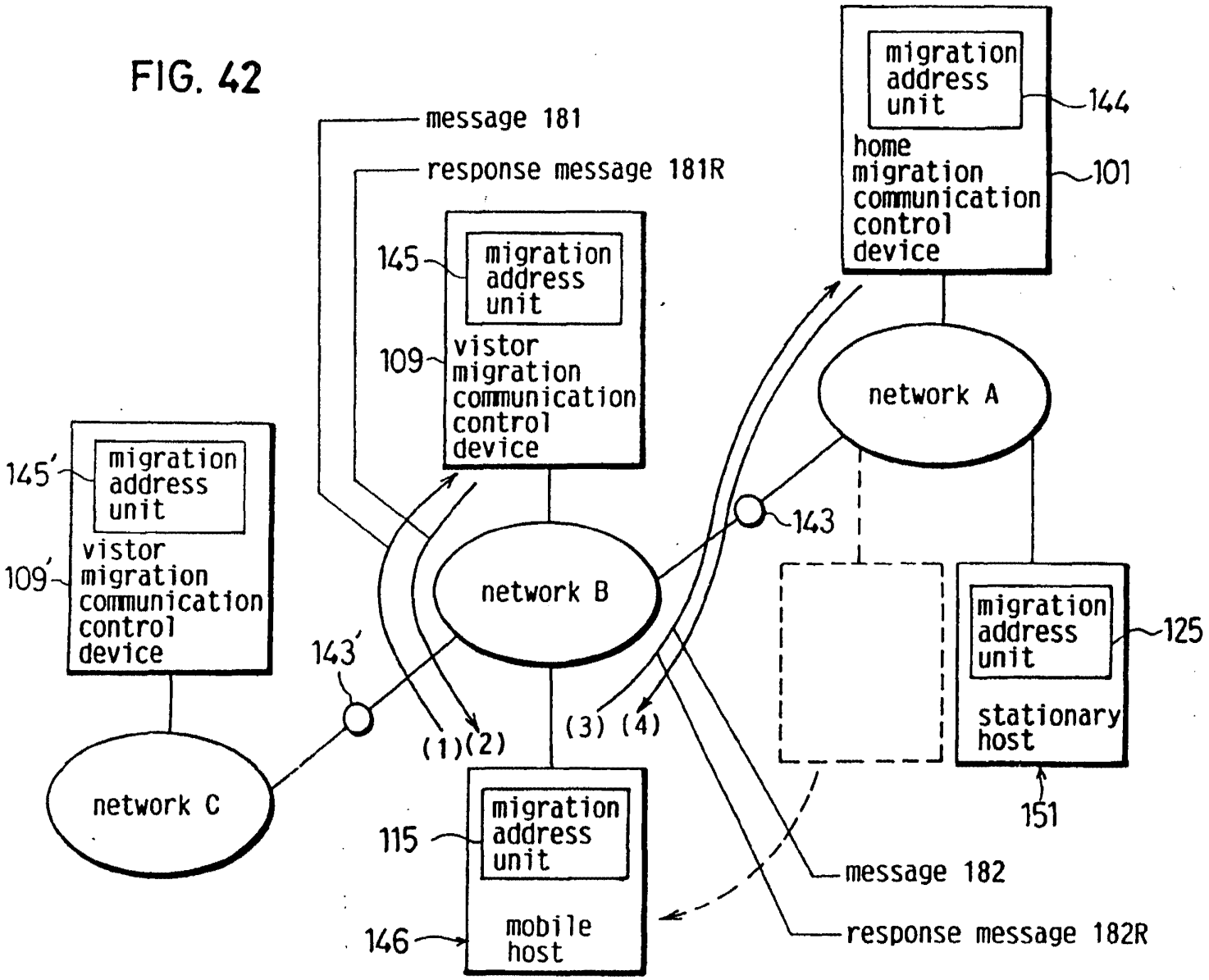

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FIG. 43

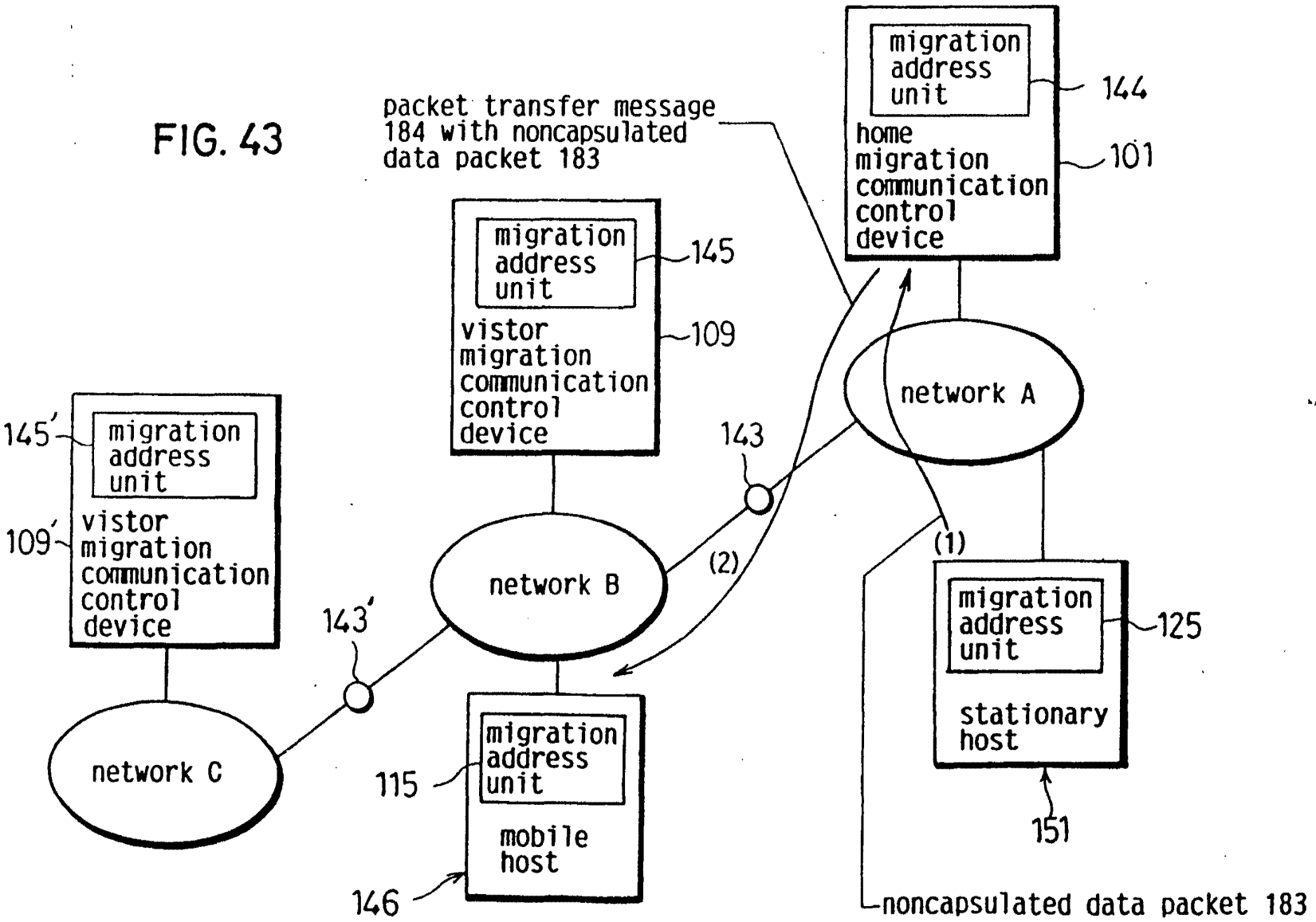

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FIG. 44

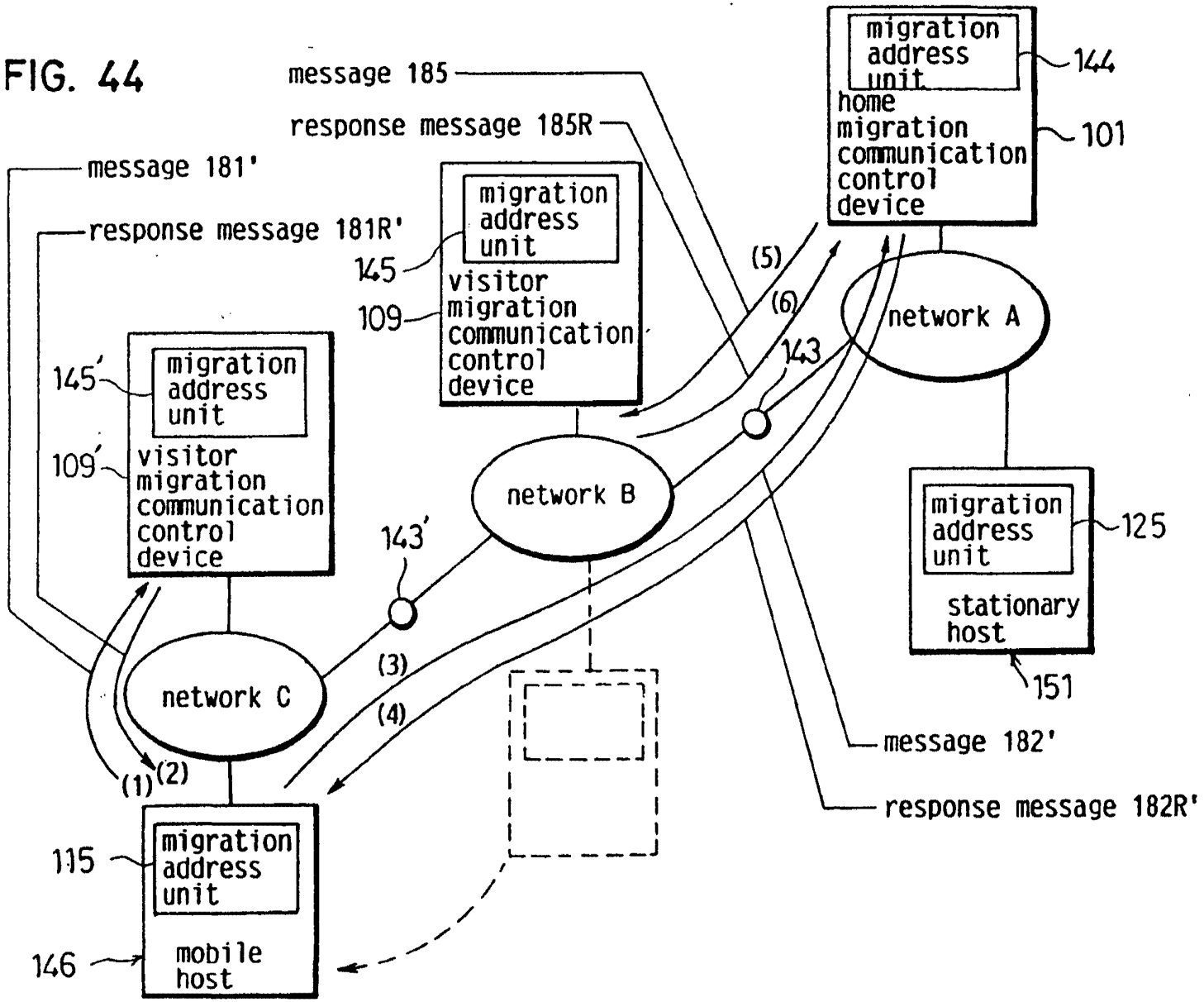

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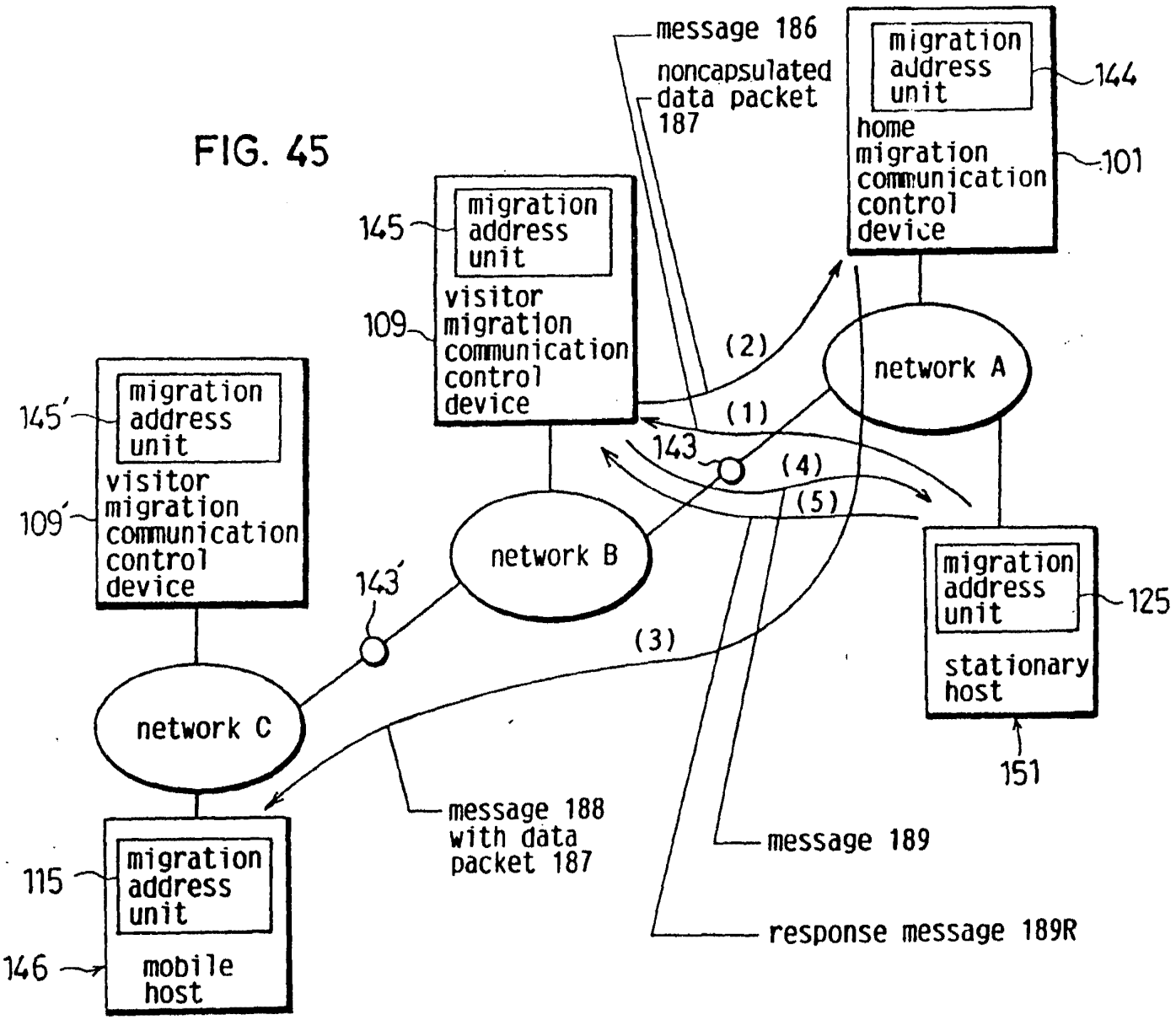
FIG. 45



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(54) Automatic discovery of network elements.

(57) Disclosed is a computer network node discovery system that provides a general way of discovering network elements, or nodes, connected to a computer network, and a specific algorithm for discovering nodes connected to a TCP/IP network, using the SNMP protocol available within the TCP/IP network software. Some nodes on a network, called discovery agents, can convey knowledge of the existence of other nodes on the network. The network discovery system queries these agents and obtains the information they have about other nodes on the network. It then queries each of the nodes obtained to determine if that node is also a discovery agent. In this manner, most of the nodes on a network can be discovered. The process of querying discovery agents to obtain a list of nodes known to the discovery agents is repeated at timed intervals to obtain information about nodes that are not always active. In a TCP/IP network, discovery agents are nodes that respond to queries for an address translation table which translates internet protocol (IP) addresses to physical addresses. The data from each node's address translation table is used to obtain both the IP and the physical address of other nodes on the network. These nodes are then queried to obtain additional information. After all the nodes on a network are discovered, the list of nodes is written to a database where it can be displayed by the network manager or other users of the network.

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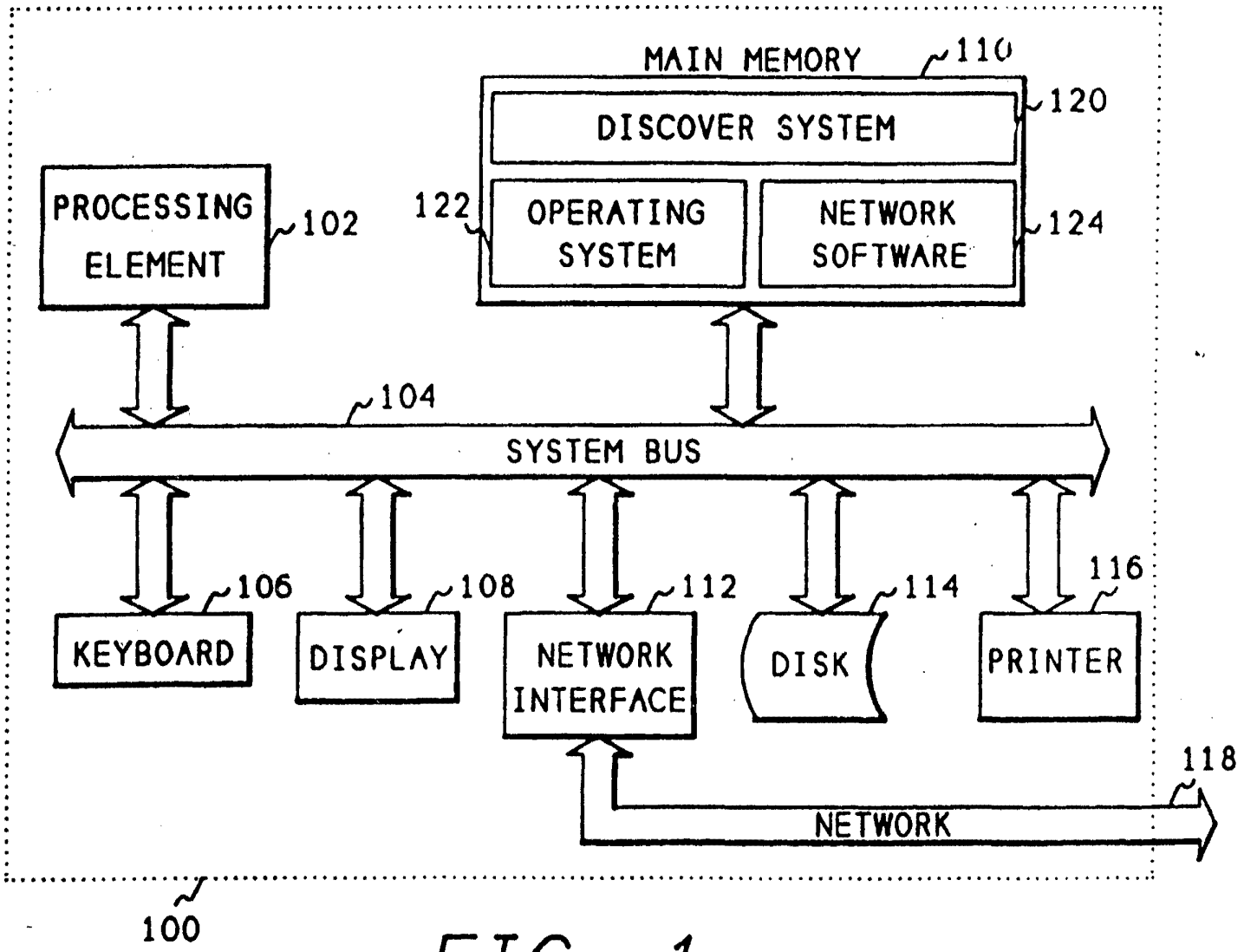
MAIN MEMORY
110
DISCOVER SYSTEM
120
PROCESSING ELEMENT
102
122
OPERATING SYSTEM
NETWORK SOFTWARE
124
104
SYSTEM BUS
106
108
112
114
116
KEYBOARD
DISPLAY
NETWORK INTERFACE
DISK
PRINTER
118
NETWORK
100

FIG. 1

FIELD OF THE INVENTION

This invention relates to computer systems and more particularly to computer networks that interconnect computers. Even more particularly, the invention relates to determining the nodes connected to a network.

BACKGROUND OF THE INVENTION

Computer networks are collections of hardware and software that connect computers and allow them to send information from one computer to another electronically. A computer network is comprised of the physical hardware connections between the various computers, for example telephone lines or a coax cable, and the software used to send and receive data and to route the data to the selected computer on the network.

A local area network (LAN) is a network connection between computers in close proximity, typically less than one mile, and usually connected by a single cable such as coax cable. A wide area network (WAN) is a network of computers located at longer distances, often connected by telephone lines or satellite links. Network software may sometimes be used with both types of networks. For example, a popular network is the Department of Defense internetworking protocol suite, known as Transmission Control Protocol/Internet Protocol (TCP/IP). This system was originally developed by the Defense Advanced Research Projects Agency (DARPA) and has now been widely distributed to Universities and industry.

When a network is fast growing, that is, network elements or nodes are being added frequently, a network administrator may not know all of the nodes connected to the network. Also, a network administrator new to his or her job may not be familiar with the nodes on the network. Determining the nodes manually is a difficult problem. The administrator may contact all the users of the network known to the administrator, however, infrequent users may be forgotten and not contacted. Also, if a node is connected to the network, but not active because the computer is not powered up or is inoperative, that node may not be included in the list. In a very short local area network, a network administrator may physically trace the cable of the network to determine which nodes are located on the network. However, since longer local area networks can extend as far as a mile, through many floors and offices within a building, physical tracing may be impossible. In a wide area network, physical tracing is almost always impossible.

For some commonly used networks, special equipment can be purchased that will determine the nodes located on the network and the distance between them. This equipment, called a probe, is often limited by the other components of the network, however. For example, in a local area network, a repeater unit may be used to extend the effective distance of the local area network to a distance greater than is capable with a single cable. A repeater unit amplifies signals, and therefore will not allow a probe to determine the location of nodes beyond the repeater.

Other units connected to the network may obscure nodes. For example a bridge unit connects two similar networks but only passes messages that are being sent from a node on one side of the bridge to a node on the other side of the bridge. It will not pass messages between nodes on the same side, in order to reduce the traffic on the other side of the bridge. A bridge will prevent a probe from determining the nodes on the other side of the bridge. A gateway is a unit that connects dissimilar networks to pass messages. Because a gateway may have to reformat a message to accommodate a different network protocol, it will prevent a probe from finding nodes beyond the gateway.

There is need in the art then for a method of determining the nodes on a local area network. There is further need in the art for determining such nodes without the use of special equipment. A still further need is for a method that will determine which nodes are located beyond the repeater units, bridges, and gateways on a network.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method of determining the elements or nodes connected to a network.

It is another object of the invention to provide a method of discovering network nodes on a TCP/IP network.

Another object of the invention is to determine which discovered nodes are discovery agents and can convey knowledge of the existence of other nodes on the network.

Another object is to query all discovery agents and ask for other nodes on the network

A further object is to query all TCP/IP nodes to retrieve the address translation table from the TCP/IP node.

The above and other objects of the invention are accomplished in a system which provides a general way of discovering network elements, or nodes, and a specific algorithm for discovering nodes within a TCP/IP network, using a standard Simple Network Management Protocol (SNMP), which is available within the TCP/IP network.

Some nodes on a network can convey knowledge of the existence of other nodes on a network, and are called discovery agents. When a network contains discovery agents, these agents can be queried to obtain the information they have about other nodes on the network. By obtaining a list of nodes from a single

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discovery agent, and querying each of the nodes obtained to determine if it is also a discovery agent, most of the nodes on a network can be discovered.

The process of querying discovery agents to obtain a list of nodes known to be discovery agents, must be repeated at timed intervals. At any given time on a network, one or more nodes may not be responding to the network, either because it is inoperative, or because it is not powered up. Therefore, if the discovery process is attempted during this time, these unavailable nodes will not be discovered. By repeating the discovery process over time at regular intervals, additional nodes on a network can be discovered.

In a TCP/IP network, discovery agents are nodes that respond to queries for an address translation table. Within TCP/IP network, every node will have an internet protocol (IP) address. This address is a 32 bit number and is unique to all nodes within the TCP/IP network. Although the IP address is probably unique to all nodes everywhere that use the TCP/IP protocol, the physical address of a node on a particular network will be different from the IP address. For example, some types of LANs use an 8 bit address, and can therefore use the low order 8 bits of the IP address, however, some other types of LANs use a 48 bit address and cannot use the internet address. Therefore, every node within a TCP/IP network must have an address translation table which translates the IP address to the physical address. The data from each node's address translation table can be used to obtain both the IP and the physical address of other nodes on the network. Again, as described in the above general algorithm, the queries should be repeated at timed intervals to insure that recently activated nodes are discovered. Another reason for repeating the discovery process over timed intervals in a TCP/IP network is that some of the information within a node's address translation table may be purged if the node does not use the information after a period of time. This purge is used to reduce the table size requirements within a node. By repeating the queries at timed intervals, the greatest amount of translation table information may be obtained.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features, and advantages of the invention will be better understood by reading the following more particular description of the invention, presented in conjunction with the following drawings, wherein:

Fig. 1 shows a block diagram of the hardware of the node that runs the process of the present invention;

Fig. 2 shows a diagram of a typical computer interconnection network;

modules of the discovery system of the present invention;

Fig. 6 shows a flowchart of the main module of the invention;

Fig. 7 shows a flowchart of the self-seed module of the invention;

Fig. 8 shows a flowchart of the process-node module of the invention;

Fig. 9 shows a flowchart of the process-ping module of the invention;

Fig. 10 shows a flowchart of the process-IFIP module of the invention;

Fig. 11 shows a flowchart of the store-IP module of the invention;

Fig. 12 shows a flowchart of the store-IF module of the invention;

Fig. 13 shows a flowchart of the invalidnode module of the invention;

Fig. 14 shows a flowchart of the findnode module of the invention;

Fig. 15 shows a flowchart of the addnode module of the invention;

Fig. 16 shows a flowchart of the process-AT module of the invention; and

Fig. 17 shows a flowchart of the store-AT module of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The following description is of the best presently contemplated mode of carrying out the present invention. This description is not to be taken in a limiting sense but is made merely for the purpose of describing the general principles of the invention. The scope of the invention should be determined by referencing the appended claims.

Fig. 1 shows a block diagram of the computer hardware that contains the discovery system of the present invention. Referring now to Fig. 1, a computer system 100 contains a processing element 102. The processing element 102 communicates to other elements within the computer system 100 over a system bus 104. A keyboard 106 is used to input information from a user of the system, and a display 108 is used to output information to the user. A network interface 112 is used to interface the system 100 to a network 118 to allow the computer system 100 to act as a node on a network. A disk 114 is used to store the software of the discovery system of the present invention, as well as to store the data base collected by the discovery system. A printer 116 can be used to provide a hard copy output of the nodes of the network discovered by the discovery system. A main memory 110 within the system 100 contains the discovery system 120 of the present invention. The discovery system 120 communicates with in operating system 122 and

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network 118.

Fig. 2 shows a diagram of a network. Referring now to Fig. 2, a network 202 contains a node 206. Node 206 contains the processor 100 (Fig. 1) which contains the discovery system software of the present invention. Node 206 is attached to a first network segment 118. The network segment 118 is connected to a repeater 212 which is connected to a second network sequent 214. This second network system 214 has nodes 216 and 218 attached to it. A repeater, such as repeater 212, allows network sequents to be connected to allow a network to be extended over a longer distance. An important characteristic of a repeater is that there is no translation of data passing through it. That is, every message that is transmitted on one network segment, will pass unchanged through a repeater to the other network segment. Therefore, any messages broadcast, for example, by node 206 will be received by node 216 and node 218 after these messages pass through repeater 212.

Network segment 118 is also attached to a bridge 208 which connects it to a third network sequent 210. A bridge will only pass messages that are being transmitted from a node on one side of the bridge to a node on the other side of the bridge. It will block messages that are transmitted from a node on one side of the bridge to a node on that same side of the bridge. This characteristic reduces network traffic on various sequents of a network.

Segment 118 is also attached to a router/gateway 220 which connects is to a fourth network segment 222. Routers are devices that connect network segments which have similar characteristics. Gateways are devices which connect networks having different types of characteristics. For example, a gateway might connect a local area network to a wide area network.

Because bridges, routers, and gateways, must process the messages sent over the network, they also must contain information about which nodes are on the network. Therefore, bridges, routers, and gateways are authoritative sources of information for determining the nodes on the network. A protocol defines the format of messages that are sent across a network. One popular protocol is the Department of Defense Internetworking Protocol Suite, popularly known as TCP/IP. Because it was developed by the Department of Defense, this protocol is widely available and used extensively, particularly in a university environment. Also, this suite of protocols is very popular on the UNIX operating system and has seen wide distribution there. The internet protocol (IP) uses a single thirty-two bit address for all nodes that can be connected to the internet at any location. Physical addresses within a particular type of network, are normally different from an IP address. If a network address is very small, perhaps eight bits, it may be the same as the low order eight bits of the IP address. If a network address is large, for example, some LANs use forty-eight bit addresses, it is impossible for these addresses to correspond directly to IP addresses. Therefore, both an IP address and a physical address exist for each node on a network. Devices such as routers, gateways, and bridges, which can send messages from one network to another must be able to translate between IP addresses and physical addresses. Therefore, these devices have translation tables which allow them to translate between these two types of addresses. By accessing these translation tables, one of the nodes on a network can obtain information about the other nodes on the network. The existence of these translation tables allow the method of the present invention to perform its function.

A network probe 224 is also attached to the network 118. A network probe 224 is a device that assists in locating defective nodes and assists in repairing those nodes. Since it is a testing device, it may or may not be attached to a network at any given time. When a probe is attached to a network, the discovery system of the present invention can query the probe and use information obtained from the probe to assist in discovering other nodes on the network.

Figs. 3 through 5 show a hierarchy diagram of the modules of the software of the present invention. Referring now to Figs. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed. Process-node block 306 calls process-ping block 308 to query a node on the network to determine if that node is active. Process-node block 306 also calls process-IFIP block 310 for each IP address that it obtains. Process-IFIP block 310 calls store-IP block 402 for each IP address, and store-IP block 402 calls invalidnode block 406, findnode block 408, and addnode block 410, for each IP address. For each IF entry (physical address) received, process-IFIP block 310 calls store-IF block 404. For each address translation table entry, process-node block 306 calls process-AT block 312 which in turn calls store-AT block 502. Store-AT block 502 calls invalidnode at block 504, findnode block 506, and addnode block 508.

Fig. 6 shows a flowchart of the discovery module block 302 (Fig. 3). Referring now to Fig. 6, after entry block 602 gets any options that the user wishes to enter. Block 604 then initializes the database used to permanently store the nodes, and loads node list from existing entries in the database. If a database for the network does not exist, the discovery system has the ability to create that database. If a database of the network already exists, the discovery system will use the node information which is already available in that database to query other nodes within the system.

Block 606 then initializes domains. A domain

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defines the limit beyond which the user of the discovery system does not wish to find nodes. That is, the domain limits the range of the discovery process. This limitation is necessary on large networks, to keep the amount of processing to reasonable level. Furthermore, a user usually is only interested in the nodes on a particular network segment, or the network segment connected by repeaters and possibly bridges.

Block 608 then calls Fig. 7 to self-seed the system. If no entries were available in the database, the discovery system can self-seed by sending a broadcast message and determine who responds to that message. After returning from self-seed, block 610 points to the first node list entry. As discussed earlier, the node list will contain a list of the nodes already known to the system. This list can be input from the database, or the list can be started from self-seed module. After pointing to the first entry, block 612 determines if there are more entries to process. If there are no more entries to process, block 612 transfers to block 614 which will wait a predetermined period of time before reprocessing the entire node list. Typically, block 614 will wait for approximately thirty seconds. By reprocessing the node list periodically, additional nodes can be discovered. This is because a node may be inactive on the system at any given time and might not be discovered by a single pass through the network. By waiting and reprocessing the node list, nodes that were inactive may now be active and additional information can be obtained.

If more entries in the node list exist, block 612 transfers to block 616 to process one of the nodes. After processing that node, block 616 transfers to block 618 which points to the next node list entry and returns to block 612 to process the next node.

Fig. 7 shows a flowchart for the self-seed block 304 (Fig. 3) which obtains initial information about nodes on the network. Referring now to Fig. 7, after entry, block 702 sends an SP broadcast request to all nodes on the network. SNMP stands for Simple Network Management Protocol, and is a part of the TCP/IP network software. After sending the broadcast request, block 702 transfers to block 704 which receives SNMP messages from the nodes. If more SNMP messages are available, block 704 transfers to block 706 which adds a node to the node list for each message received. In this manner, all nodes that are currently active on the network can be queried to obtain initial information about the node. After all SNMP messages have been received, block 704 returns to the caller.

Another way of self-seeding is to query the address translation table for the node that is executing the discovery system. This table will contain the addresses of other nodes on the network, and these addresses are then used to start the discovery process.

(Fig. 3). The process-node module of Fig. 8 is called from the discovery module of Fig. 6 once for each entry in the node list. Therefore, whin Fig. 8 is called, the address of a single node is passed to it. Referring now to Fig. 8, after entry, block 802 determines whether the node is within a domain. As discussed earlier, the domain defines the limits beyond which the discovery program does not wish to discover new nodes. If the node is within the domain, block 802 transfers to block 804 which calls the process-ping module of Fig. 9 to determine whether the node is active. After returning from Fig. 9, block 804 transfers to block 806 to determine whether the state of the node has changed since the last information was obtained. That is, when the process-ping module queries the node, it determines the state of the node at the present time. This state is compared, in block 806, with the state of the node as it was known previously in the database. If that state has changed, block 806 transfers to block 808 to store the new state in the database. Control then returns to block 810 which calls process-IFIP to retrieve the IF and IP tables from the node. After returning from Fig. 10, block 810 transfers to block 812 which determines whether the node responded to an SNMP request. If the node did respond to the SNMP request, block 812 transfers to block 814 which determines whether the node is currently in the database. If the node is not in the database, block 814 transfers to block 816 to add the node to the database. Control then continues at block 818 which calls Fig. 16 to retrieve the address translation table from the node. Control then returns to the caller.

Fig. 9 shows a flowchart of the process-ping module block 308 (Fig. 3). This module is called to determine whether a node is active on the network. Referring now to Fig. 9, after entry block 902 determines whether the ping interval has elapsed. The ping interval is used to prevent a node from being queried too often. If the ping interval has not elapsed, block 902 returns to the caller. If the ping interval has elapsed, block 902 transfers to block 904 which sends an ICMP-echo message to the node. The ICMP-echo protocol is defined as a part of TCP/IP and is used to cause the node to return an acknowledgement to a message. Block 904 then transfers to block 906 which determines whether a response has been received from the other node. If a response has not been received within a predetermined amount of time, typically block 906 transfers to block 910 which sets a flag to indicates that the node failed to respond. If the node does respond, block 906 transfers to block 908 which sets a flag to indicate that the node did respond and then block 912 sets a new ping interval which will prevent the node from being pinged for the period of the interval. The ping interval is typically five minutes. Block 912 then returns to the caller.

Fig. 10 shows a flowchart of the process-IFIP

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available in a node to define the translation of physical addresses to IP addresses. The information is available as two different tables, with an index contained in the IF table to cross-reference to the IP table within the node. By obtaining these two tables, the discovery system can determine what the other interfaces to which a node is connected, and therefore determine other networks to which the node is connected. Referring now to Fig. 10, after entry, block 1002 determines whether the IFIP interval has elapsed. The IFIP interval is similar to the ping interval described with respect to Fig. 9, and is used to keep a node from being queried too often. If the IFIP interval has not elapsed, block 1002 returns to the caller. If the IFIP has elapsed, block 1002 transfers to block 1004 which sends an SNMP message to request the node to send its next IP table entry to the discovery node. When an entry is received, block 1006 calls store-IP module of Fig. 11 to store the node within the node list. Block 1007 then transfers back to block 1004 if more IP entries are available. After all the entries are all stored in the node list, block 1007 transfers to block 1008 which sets a new IFIP interval of typically greater than 10 hours. Block 1010 then sends an SNMP message to request that the node send its next IF table entry to the discovery node. When an IF table entry is received, block 1012 calls the store-IF module of Fig. 12. Block 1014 then transfers back to block 101 if more entries are available. After receiving and storing all the IF table entries, block 1014 returns to the caller. Each IF table entry contains an index into the IP table. By using this index, physical addresses in the IF table can be matched with the IP address.

Fig. 11 shows a flowchart of the store-IP process block 402 (Fig. 4). Referring now to Fig. 11, after entry block 1102 calls Fig. 14 to find the node in the node list. The node will be found if the discovery system has already encountered this node in its process. Block 1304 then determines whether the node exists, and if the node does not exist, block 1104 transfers to block 1106 which calls Fig. 13 to determine whether the node is valid. Block 1108 then determines if the node is valid and if it is valid, block 1108 transfers to block 1110 to add the node to the node list. After adding the node, or if the node already existed, control goes to block 1112 which updates the state information about the node. After updating the node state information or if the node was not valid, Fig. 11 returns to the caller.

Fig. 12 is a flowchart of the store-IF process of block 404 (Fig. 4). This module is called for each table entry in the IF table received from a node. Referring now Fig. 12, after entry, block 1202 finds the IP index within the IF record. As described earlier, each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record. After updating the state information, or if there were no matching IP record, Fig. 12 returns to its caller.

Fig. 13 shows a flowchart of the invalidnode module block 406 (Fig. 4). Referring now Fig. 13, after entry, block 1302 determines whether the address of the node is simply the loopback address of another node. Each node has a loopback address associated with it for use in testing the node. Because the loopback address refers to the same node, no additional information can be obtained from that node and the loopback address is never stored as a node address. If the IP address is not equal to the loopback address, block 1302 transfers to block 1304 to determine whether the node is within the domain. As described earlier, the domain is used to determine the limits beyond which the discovery system will not attempt to discover new nodes. If the node is within the domain, block 1304 transfers to block 1306 which returns an indication that the node is valid. If the node is not within the domain or if the IP address equals the loopback address, control transfers to block 1308 which returns an error indication indicating that node is not valid. Control then returns to the caller.

Fig. 14 is a flowchart of the findnode module block 408 (Fig. 4). The module is used to find a node within the node list. Referring now Fig. 14, after entry, block 1402 gets the node list entry. Block 1404 then determines whether the IP address matches the entry in the list. If a match does occur, block 1404 transfers to block 1408 which returns an indication that the node is in the node list. If the IP address does not match, block 1404 transfers to block 1406 which gets the next node list entry and block 1410 then determines whether the end of table has been reached. If the end of the list has not been reached, block 1410 transfers back to block 1404 to check the entry just found. If the end of the list has occurred, block 1410 transfers to block 1412 which returns an error indication indicating that the node is not in the node list.

Fig. 15 shows a flowchart of the process of adding a node to the node list. Referring now to Fig. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list. Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address. Block 1506 then returns to the caller.

Fig. 16 shows a flowchart of the process-AT module of block 312 (Fig. 3). This module is called by the process-node module for each entry in the node list. Referring now to Fig. 16, after entry, block 1602 determines whether the AT interval has expired. The AT interval is used to prevent a node from being polled too frequently. If the AT interval has not expired, block

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1602 simply returns to the caller. If the AT interval has expired, block 1602 transfers to block 1604 which sends an SNMP message to request that the node send its next address translation table entry to the discovery node. When an entry is received, block 1606 is called to store the table entry. Block 1607 then transfers back to block 1604 if more table entries are available. After storing all the table entries, block 1607 transfers to block 1608 which updates the node's state information in the node list. Block 1610 then sets a new AT interval, typically fifteen seconds, and returns to the caller.

Fig. 17 shows a flowchart of the store-AT module of block 502 (Fig. 5). Referring now to Fig. 17, after entry, block 1702 calls the findnode module Fig. 14 to determine whether the node is already in the node list. If the node is in the node list, block 1704 transfers to block 1712. If the node is not in the node list, block 1704 transfers to block 1706 which calls Fig. 13 to determine whether the node is a valid node. If the node is not valid, block 1708 returns to the caller. If the node is valid, block 1708 transfers to block 1710 which calls Fig. 15 to add the node to the node list. After adding the node to the node list, or if the node already existed, control transfers block 1712 which updates the state information about the node in the node list before returning to the caller.

In addition to querying nodes on the network, the discovery system can also query any network probes that may be attached to the network. Information about other nodes on the network can be obtained from these probes, and the discovery system can use this information to assist in discovering other nodes on the network.

Having thus described a presently preferred embodiment of the present invention, it will now be appreciated that the objects of the invention have been fully achieved, and it will be understood by those skilled in the art that many changes in construction and circuitry and widely differing embodiments and applications of the invention will suggest themselves without departing from the spirit and scope of the present invention. The disclosures and the description herein are intended to be illustrative and are not in any sense limiting of the invention, more preferably defined in scope by the following claims.

Claims

1. A computer network node discovery process (120) for determining nodes (206, 216, 218) connected to a computer network (118), said process (120) comprising the steps of:
   (a) obtaining (306), from one node of a set of known nodes on said computer network (118), a list of addresses of one or more other nodes
   (b) repeating step (a) for each of said other nodes obtained; and
   (c) storing said list of node addresses in a file (808); whereby said list of node addresses may be displayed to a user of said computer network.

2. The process of claim 1 further comprising the step of:
   (d) repeating steps (a) through (c) at regular time intervals.

3. The process of claim 2 further comprising the step of:
   (a1) obtaining from each bridge unit (208) connected to said network (118) a list of addresses of all nodes accessible by said bridge unit (208).

4. The process of claim 3 further comprising the step of:
   (a2) obtaining from each router unit (220) connected to said network (118) a list of addresses of all nodes accessible by said router unit (220).

5. The process of claim 4 further comprising the step of:
   (a3) obtaining from each gateway unit (220) connected to said network (118) a list of addresses of all nodes accessible by said gateway unit (220).

6. The process of claim 5 further comprising the step of:
   (a4) obtaining from any network probe device (224) connected to said network (118) a list of addresses of all nodes known to said network probe device (224).

7. A computer network node discovery process (120) for determining nodes connected to a TCP/IP computer network (118), said process comprising the steps of:
   (a) obtaining (306), from one node of a set of known nodes on said computer network, an address translation table containing a list of addresses of other nodes with which said one node communicates;
   (b) repeating step (a) for each of said other nodes in said address translation table;
   (c) storing said list of nodes in a file (808); and
   (d) repeating steps (a) through (c) at regular time intervals.

8. The process of claim 7 further comprising the steps of:

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nected to said network (118) an address translation table containing a list of addresses of nodes accessible from said bridge unit (208);

(a2) obtaining from each router unit (220) connected to said network (118) an address translation table containing a list of addresses of nodes accessible from said router unit (220);

(a3) obtaining from each gateway unit (220) connected to said network (118) an address translation table containing a list of addresses of nodes accessible from said gateway unit (220);

(a4) obtaining from any network probe devices (224) attached to said network (118) a list of addresses of all nodes known to said network probe (224); and

(a5) obtaining from each node in said network (118) an interface table and an internet protocol table which defines other networks and nodes to which said node is connected.

9. A computer network node discovery process (120) for determining nodes connected to a computer network (118), said process comprising the steps of:

(a) sending a general response message (307) to all nodes on said network;

(b) creating a node list (410) containing the address of each node responding to said general response message;

(c) obtaining (306), from each node in said node list, a second list of addresses of other nodes with which said node communicates;

(d) adding each node (410) in said second list to said node list;

(e) repeating steps (c) through (d) for each of said nodes in said second list;

(f) storing said node list in a file (808); and

(g) repeating steps (a) through (f) at regular time intervals.

10. The process of claim 9 further comprising the steps of:

(c1) obtaining from each bridge unit (208) connected to said network (118) a list of addresses of all nodes accessible by said bridge unit (208);

(c2) obtaining from each router unit (220) connected to said network (118) a list of addresses of all nodes accessible by said router unit (220);

(c3) obtaining from each gateway unit (220) connected to said network (118) a list of addresses of all nodes accessible by said gateway unit (220); and

(c4) obtaining from any network probe devices (224) attached to said network (118) a list of addresses of all nodes known to the network probe (224).

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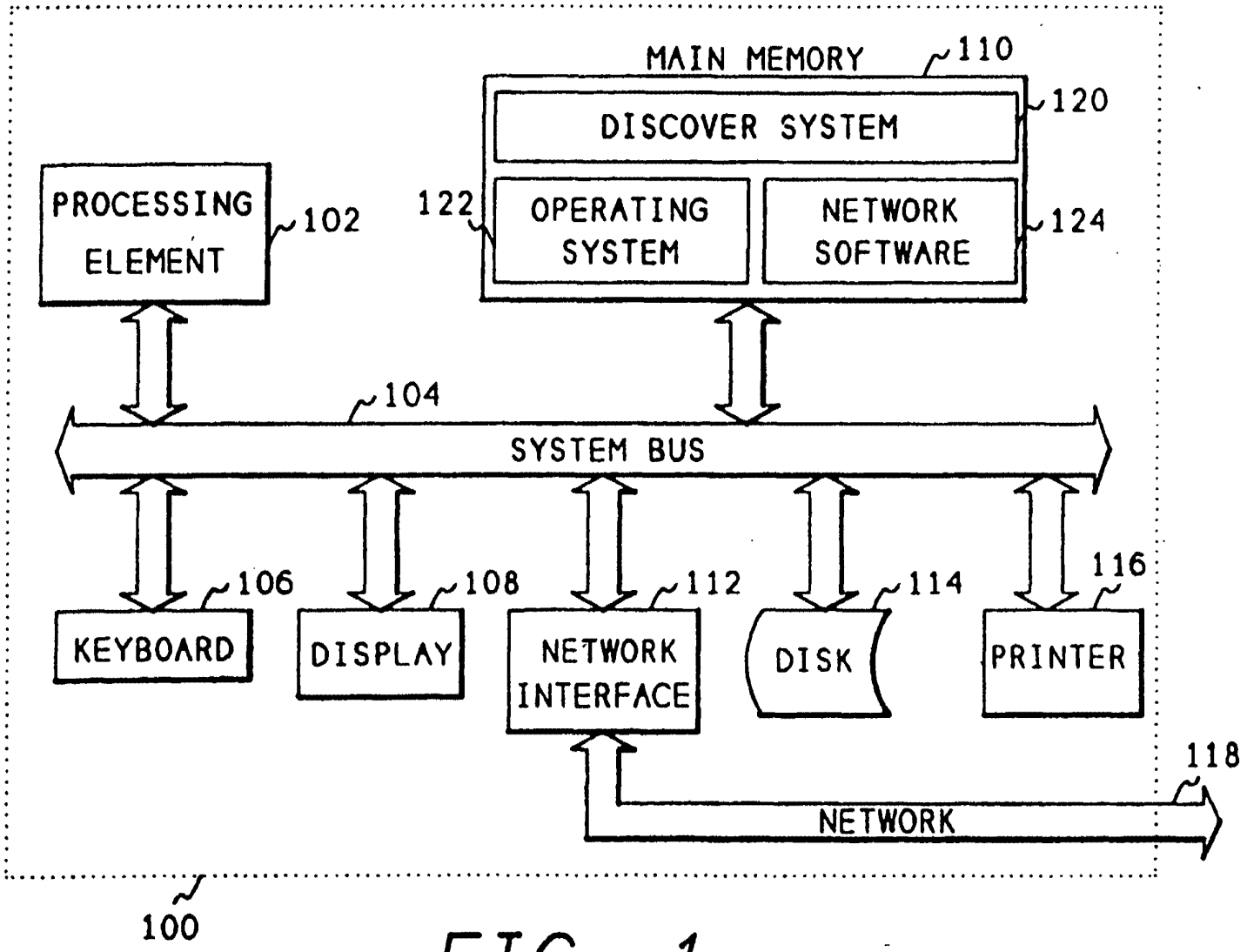

FIG. 1

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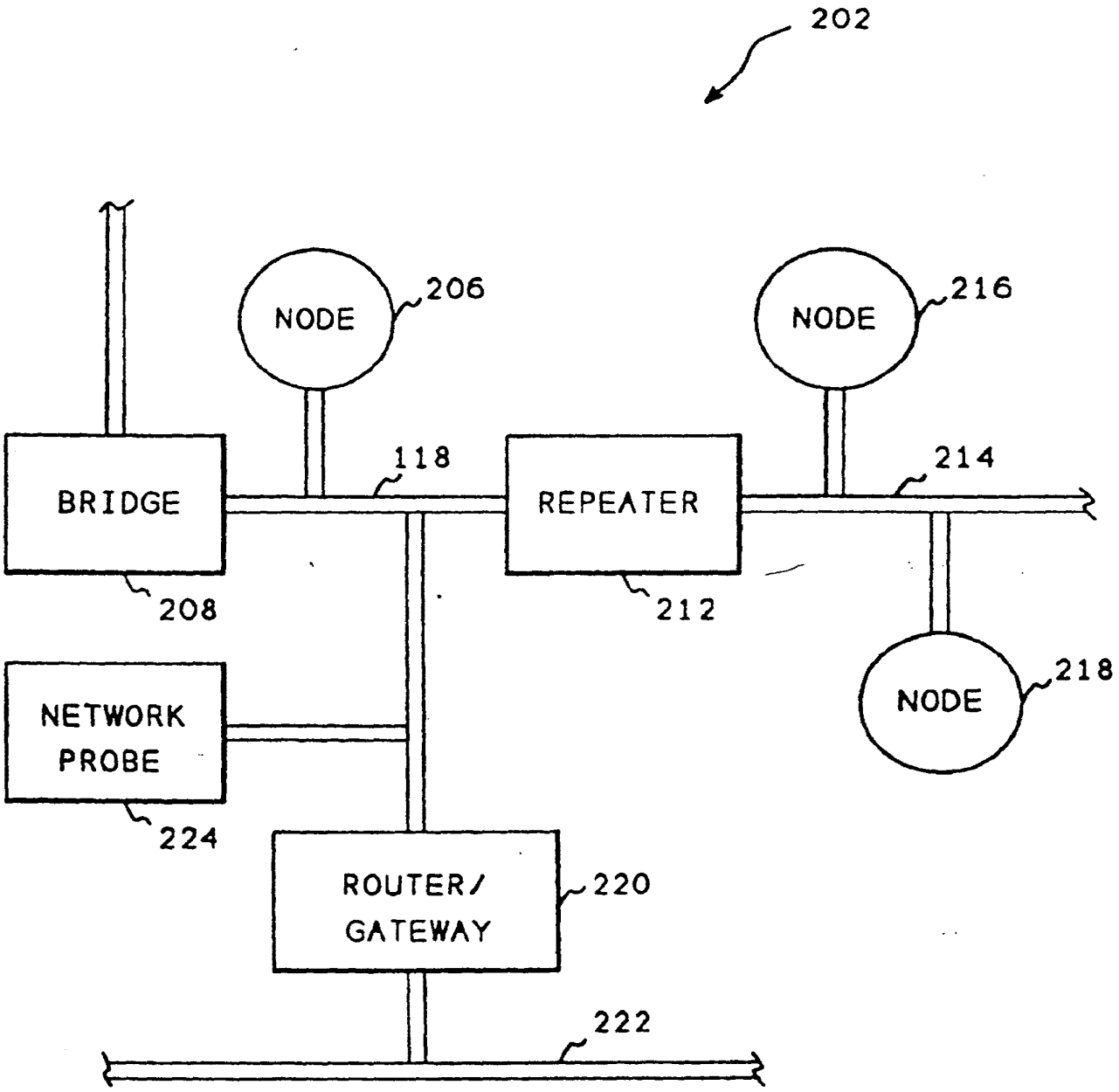

FIG. 2

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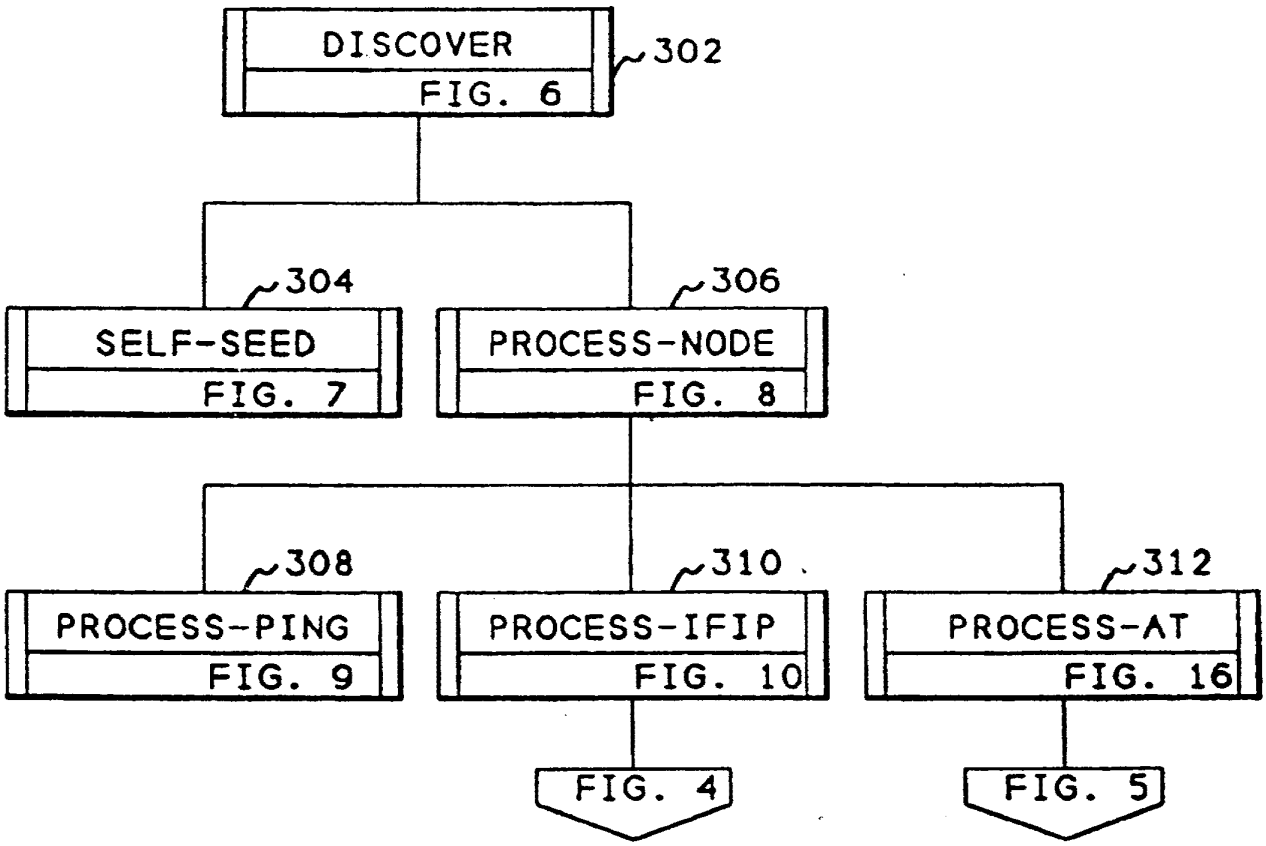
DISCOVER
FIG. 6
302
304
SELF-SEED
FIG. 7
306
PROCESS-NODE
FIG. 8
308
PROCESS-PING
FIG. 9
310
PROCESS-IFIP
FIG. 10
312
PROCESS-AT
FIG. 16
FIG. 4
FIG. 5

FIG. 3

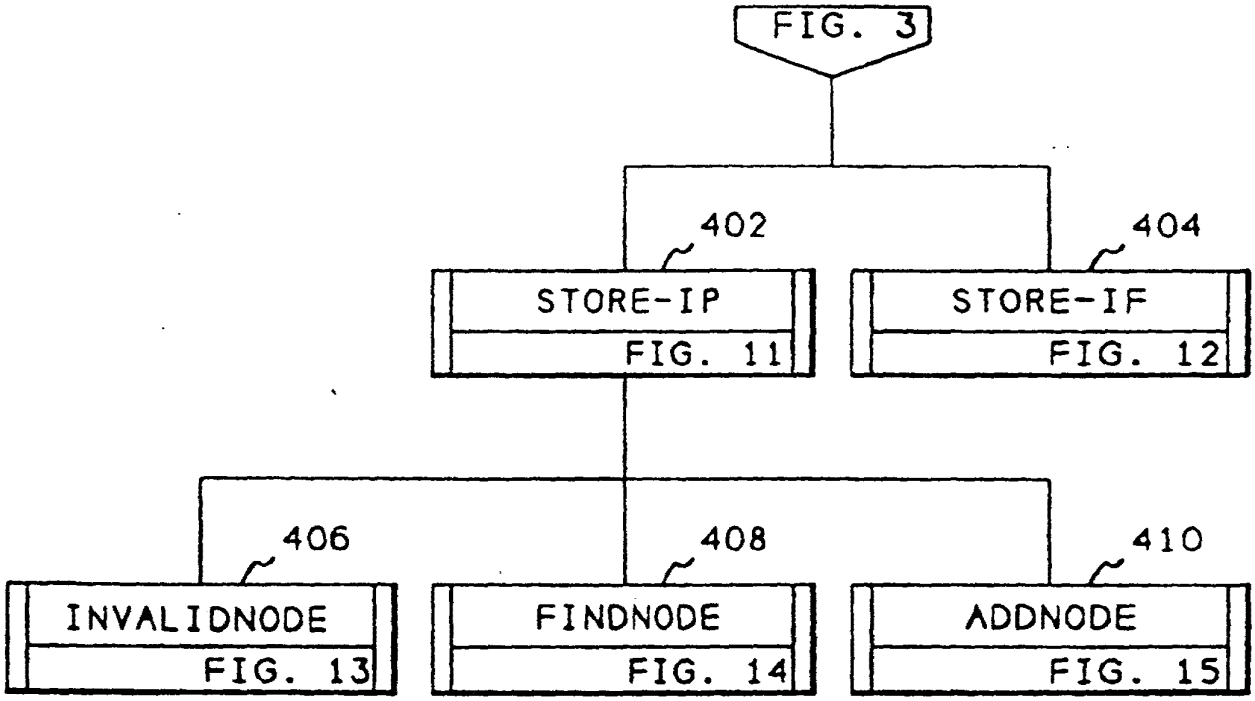

FIG. 4

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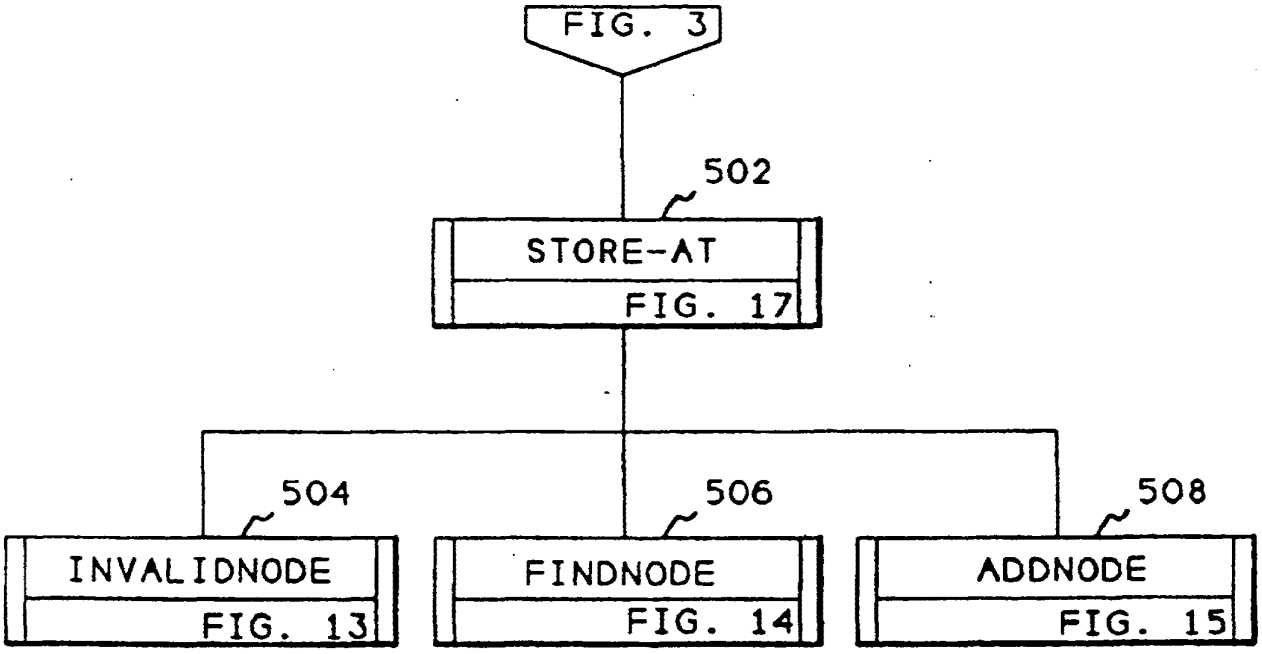
FIG. 3
502
STORE-AT
FIG. 17
504
INVALIDNODE
FIG. 13
506
FINDNODE
FIG. 14
508
ADDNODE
FIG. 15

FIG. 5

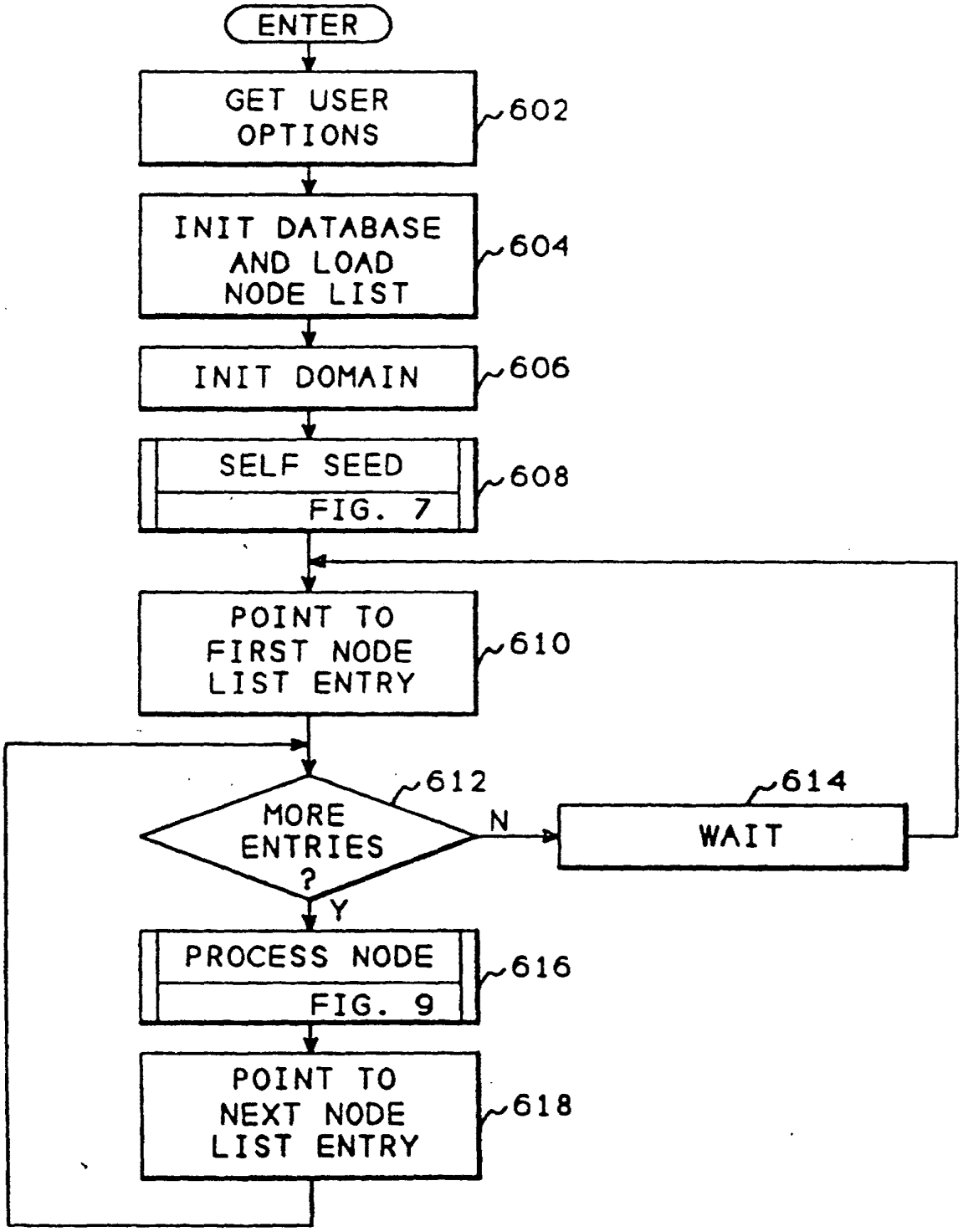

FIG. 6

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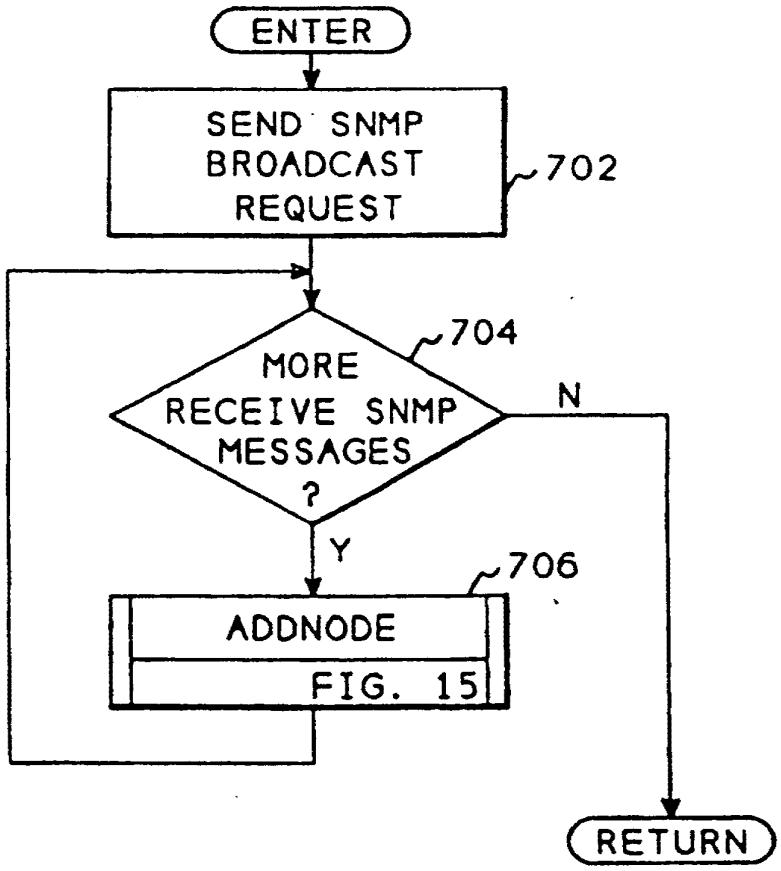
ENTER
SEND SNMP BROADCAST REQUEST
702
MORE RECEIVE SNMP MESSAGES ?
704
N
Y
ADDNODE
FIG. 15
706
RETURN

FIG. 7

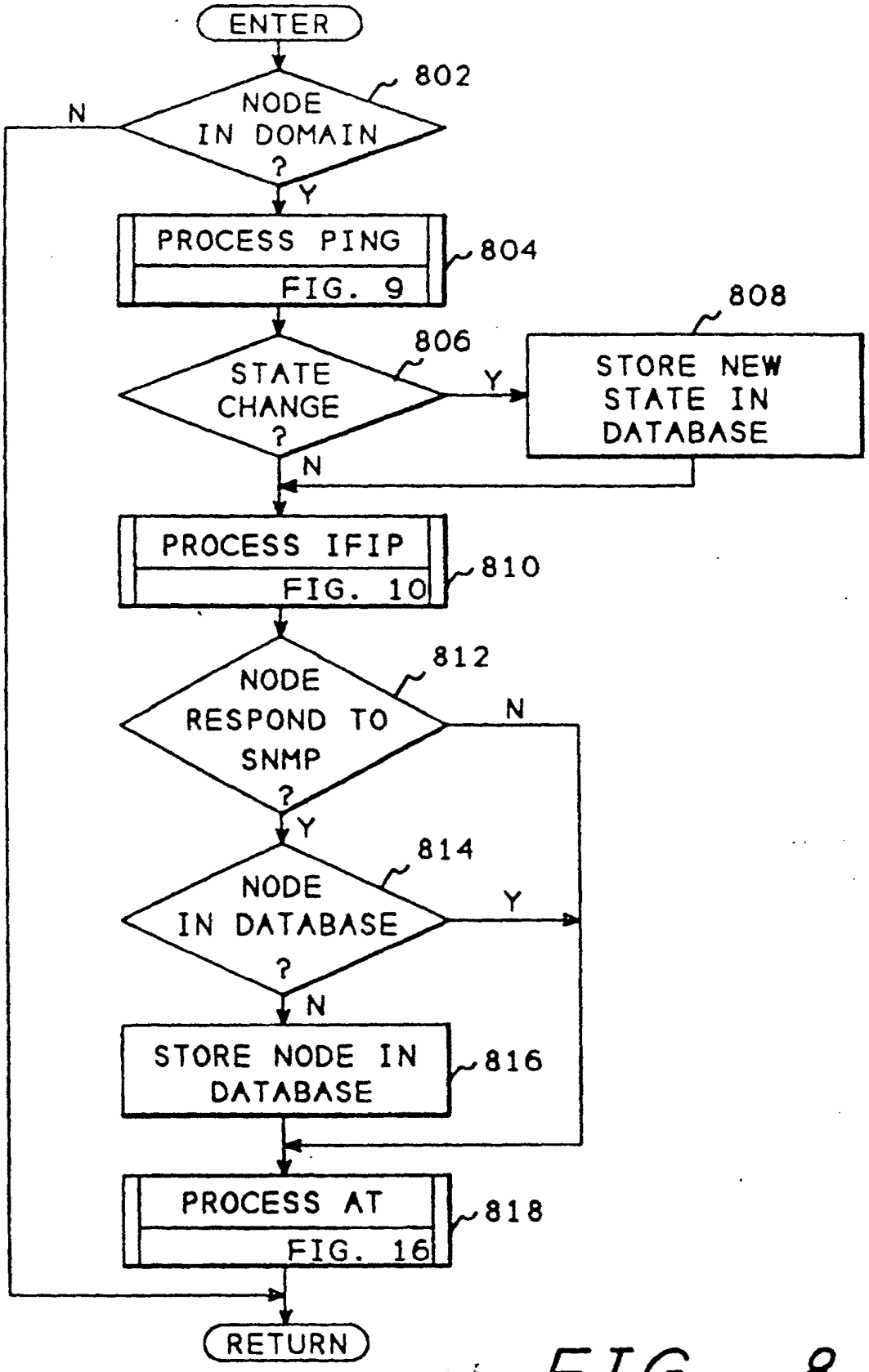

FIG. 8

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 390

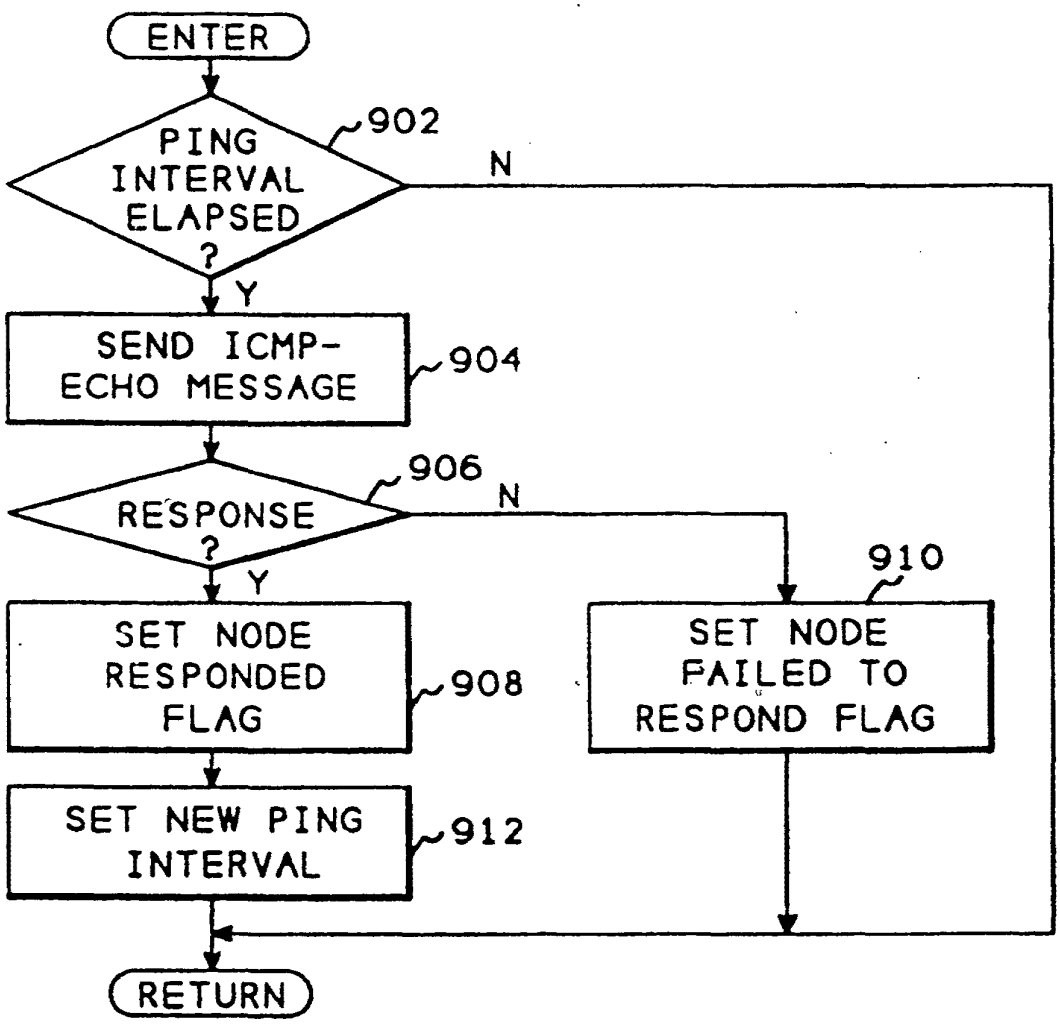

FIG. 9

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 391

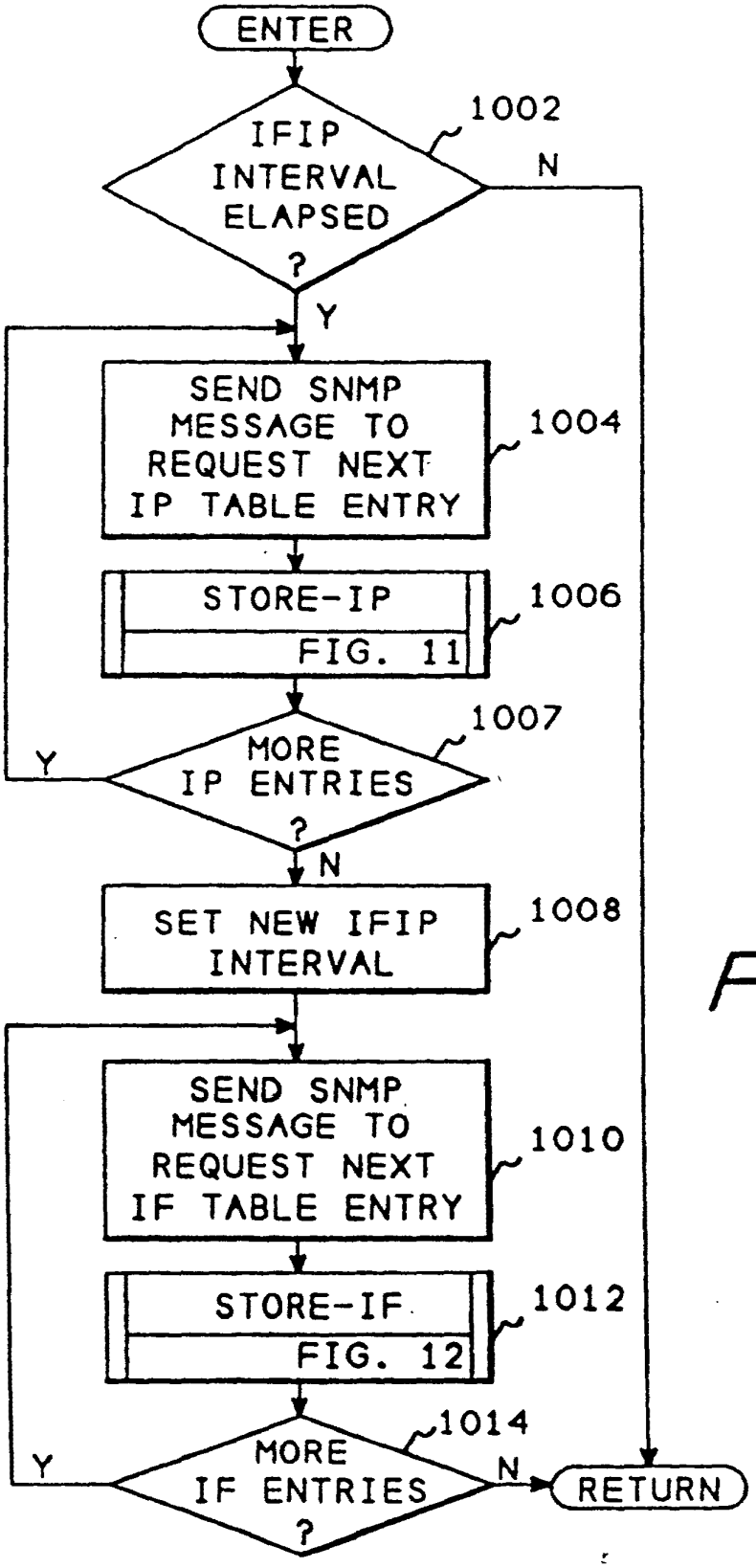

FIG. 10

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 392

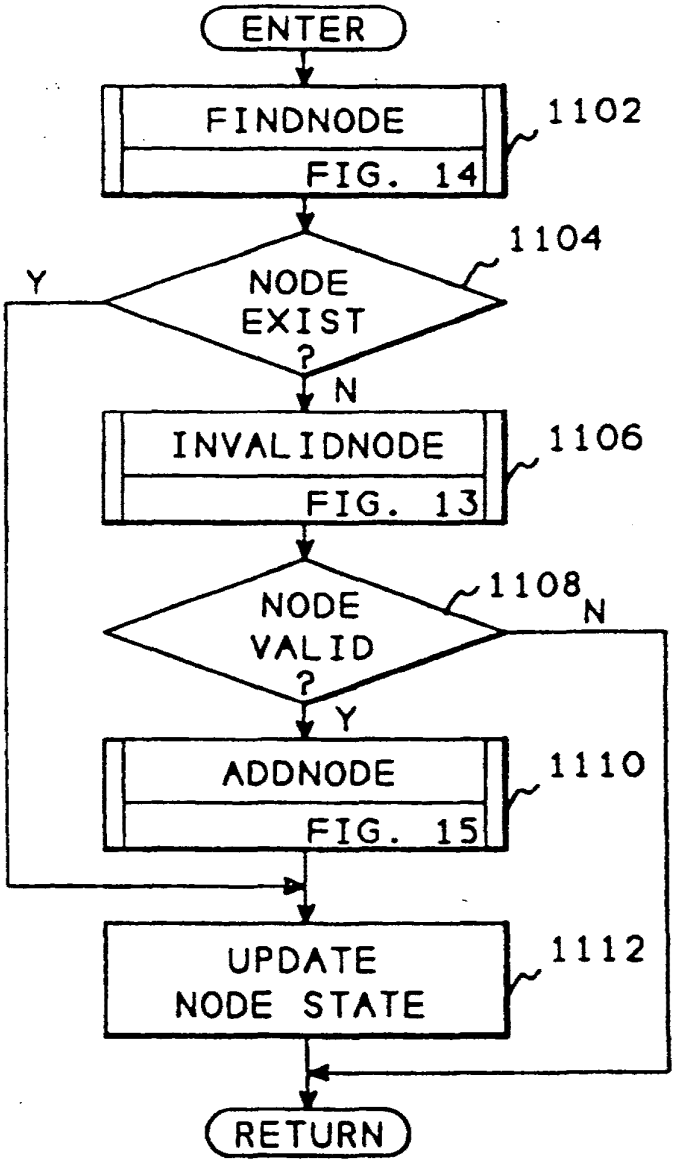
ENTER
FINDNODE
FIG. 14
1102
1104
NODE EXIST ?
Y
N
INVALIDNODE
FIG. 13
1106
1108
NODE VALID ?
N
Y
ADDNODE
FIG. 15
1110
UPDATE NODE STATE
1112
RETURN

FIG. 11

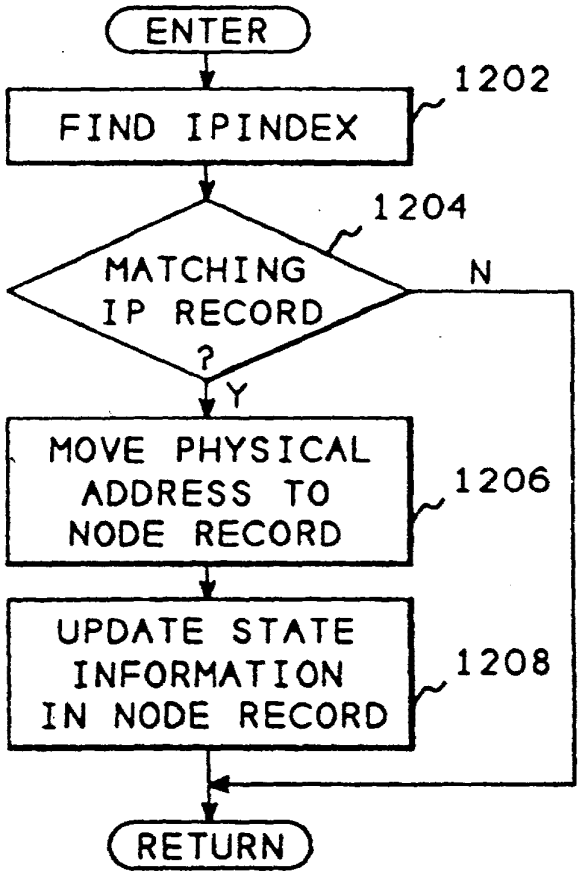

FIG. 12

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 394

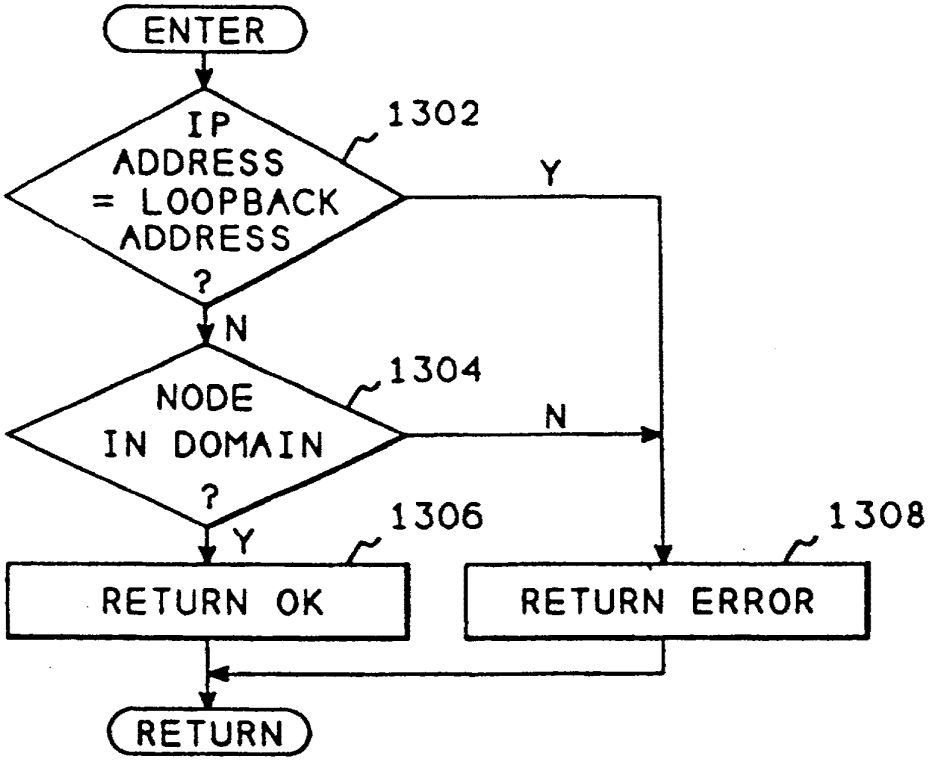
ENTER
IP ADDRESS = LOOPBACK ADDRESS ?
1302
Y
N
NODE IN DOMAIN ?
1304
N
Y
1306
1308
RETURN OK
RETURN ERROR
RETURN

FIG. 13

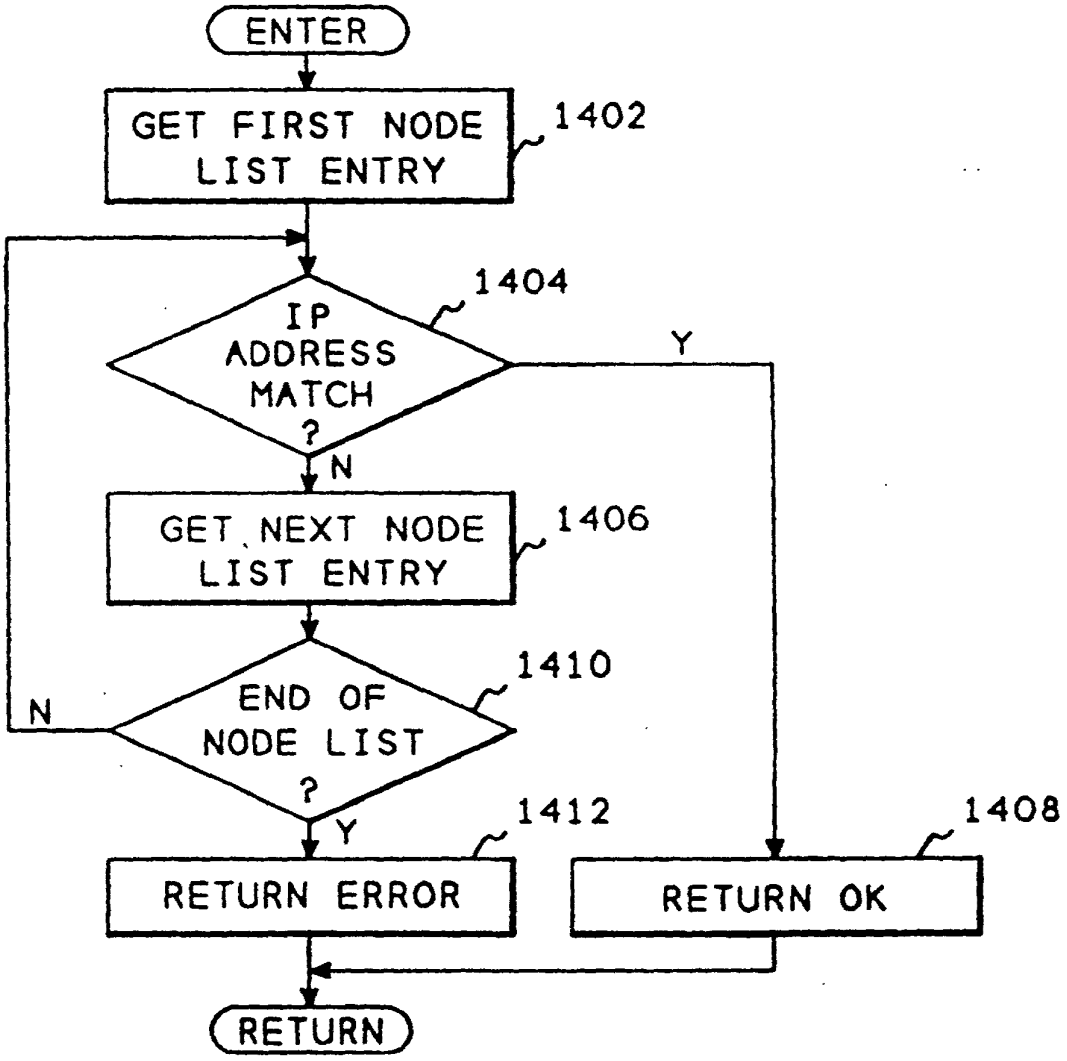

FIG. 14

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 396

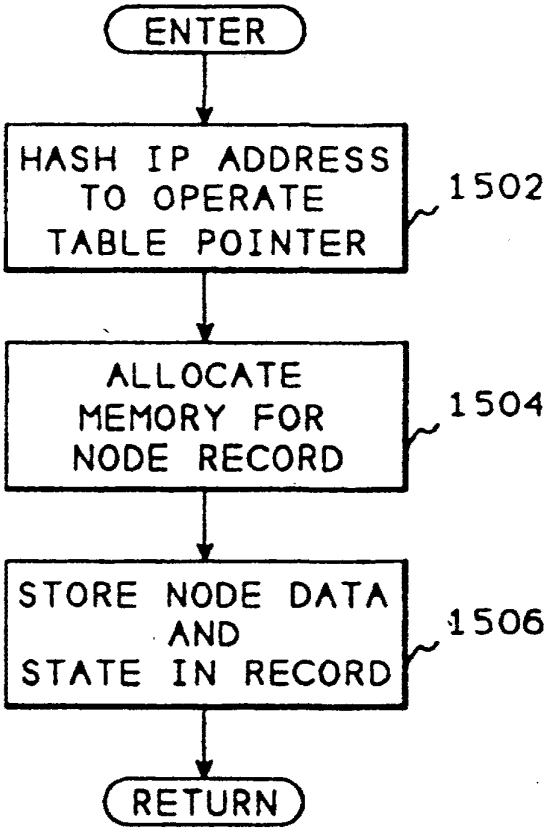
ENTER
HASH IP ADDRESS TO OPERATE TABLE POINTER
1502
ALLOCATE MEMORY FOR NODE RECORD
1504
STORE NODE DATA AND STATE IN RECORD
1506
RETURN

FIG. 15

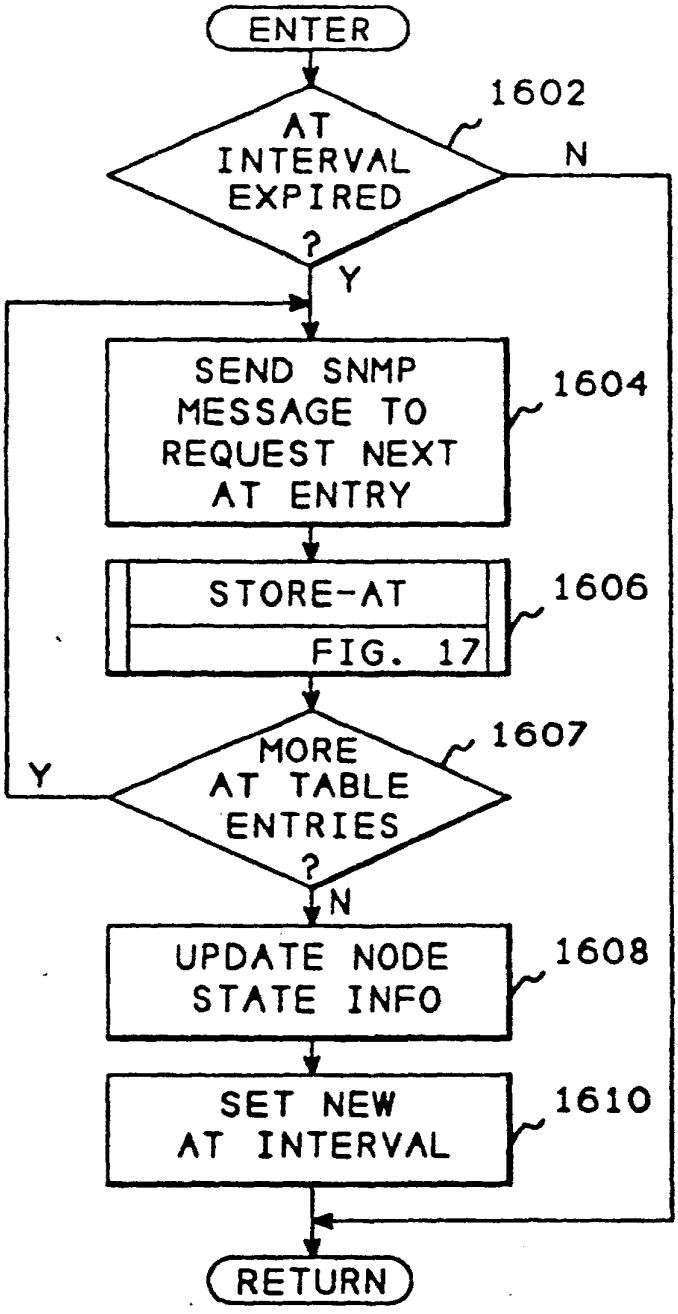

FIG. 16

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 398

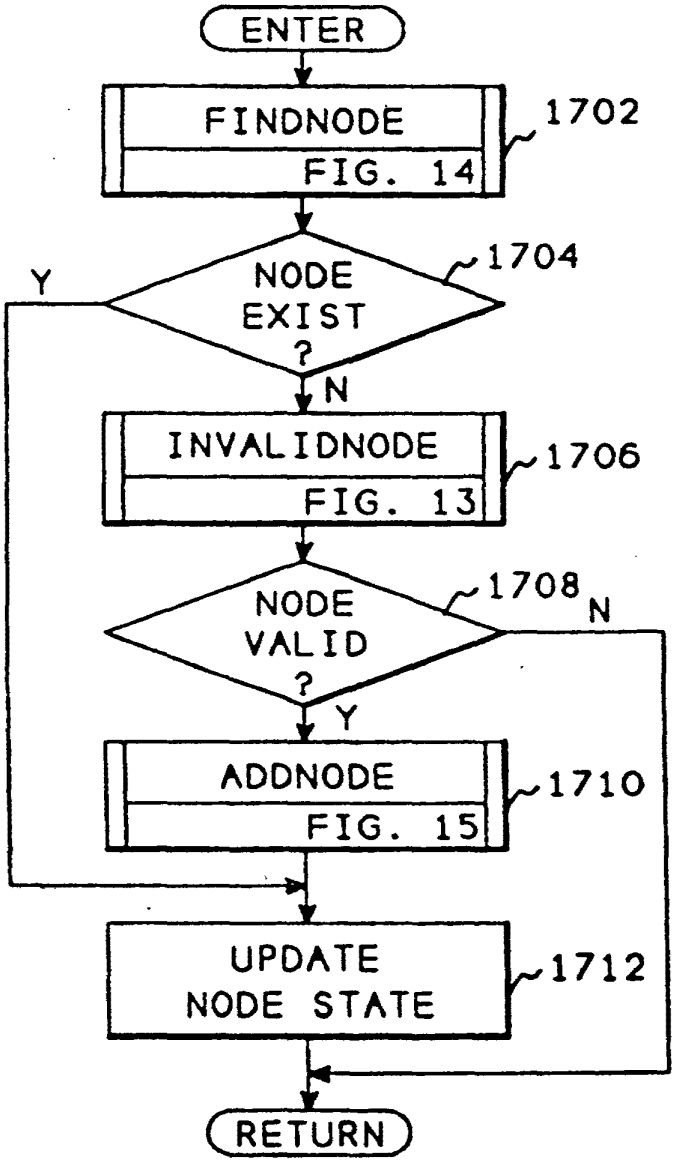
ENTER
FINDNODE
FIG. 14
1702
NODE
EXIST
?
1704
Y
N
INVALIDNODE
FIG. 13
1706
NODE
VALID
?
1708
N
Y
ADDNODE
FIG. 15
1710
UPDATE
NODE STATE
1712
RETURN

FIG. 17

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86605
JUL 14 1997
PATENT & TRADEMARK OFFICE

GP 2302

N0003/7000
PATENT
#13

CERTIFICATE OF MAILING

I hereby certify that the following Transmittal Letter is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Box DD, Washington, D.C. 20231 on July 11, 1997.

Frances M. Cunningham

Frances M. Cunningham

Assistant Commissioner for Patents
Box DD
Washington, DC 20231

TRANSMITTAL LETTER

RECEIVED
AUG - 1 97
GROUP 2600

Sir:

Transmitted herewith for filing in the Patent Application of:

Applicant:	Glenn W. Hutton
Serial No.:	08/533,115
Filed:	September 25, 1995
For:	POINT-TO-POINT INTERNET PROTOCOL
Examiner:	R. Gregson
Art Unit:	2302

are the following papers:

_X_ Information Disclosure Statement, Form PTO-1449 and references.

The Commissioner is hereby authorized to charge any other fees under 37 C.F.R. §§1.16 and 1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse

Bruce D. Jobse, Reg. No. 33,518
BOOKSTEIN & KUDIRKA, P.C.
One Beacon Street
Boston, MA 02108
(617) 367-4600

H:\BDJ\N0003\7000\IDS3TRA.WPD

OIPE
66605
JUL 1 4 1997
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Glenn W. Hutton
Serial No.:	08/533,115
Filed:	September 25, 1995
For:	POINT-TO-POINT INTERNET PROTOCOL
Examiner:	R. Gregson
Art Unit:	2302

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Box DD, Washington, DC 20231 on July 11, 1997.

Frances M. Cunningham

Frances M. Cunningham

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Assistant Commissioner for Patents
Box DD
Washington, DC 20231

STATEMENT FILED PURSUANT TO THE DUTY OF DISCLOSURE UNDER 37 C.F.R. §§1.56, 1.97 AND 1.98

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, the applicant requests consideration of this Information Disclosure Statement.

This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits and thus no certification is required.

The undersigned hereby certifies that each item of Information contained in the attached Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application mailed not more than three months prior to the filing of this Statement. Each item was cited in Annex to Form PCT/ISA/206, Communication Relating to the Results of the Partial International Search mailed June 13, 1997, in International Application No. PCT/US 96/15504, filed September 25, 1996.

The applicant hereby makes of record in the above-identified application the information listed on the attached form PTO-1449 (modified). The order of presentation

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 401

of the references should not be construed as an indication of the relative importance of the references.

Remarks

A copy of each of the above-identified information items is enclosed. It is respectfully requested that:

- The examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;
- The enclosed form PTO-1449 be signed by the examiner to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application;
- The citations for the information be printed on any patent which issues from this application.

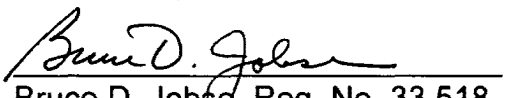
By submitting this information disclosure statement, the applicant makes no representation that a search has been performed, of the extent of any search performed, or that more relevant information does not exist.

By submitting this information disclosure statement, the applicant makes no representation that the information cited in the statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

By submitting this information disclosure statement, the applicant makes no representation that the information cited in the statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

It is understood by applicant that the foregoing information will be considered and, to the extent deemed appropriate by the examiner, will be reflected in the examiner's communication.

Respectfully submitted,



Bruce D. Jobse, Reg. No. 33,518
BOOKSTEIN & KUDIRKA, P.C.
One Beacon Street
Boston, Massachusetts 02108
Tel: (617) 367-4600

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 402

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/533,115	09/25/95	HUTTON	G

E3M1/0818

BOOSTEIN & KUDIRKA, PC
ONE BEACON STREET
BOSTON MA 02108

EXAMINER	
GREGOR, R	
ART UNIT	**PAPER NUMBER**
2302	2

DATE MAILED: 08/18/97

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

Commissioner of Patents and Trademarks

See attached.

KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, MA 02108
Tel (617) 367-4600
Fax (617) 367-4656

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IMMEDIATELY AT (617) 367-4600

Our File Number(s) N0003/7000
Your File Number(s) _____

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
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PATENTS AND TRADEMARKS
Washington, D.C. 20231

FAX RECEIVED
SEP 1 0 1997
GROUP 2600

Bookstein & Kudirka, PC
One Beacon Street
Boston, Mass. 02108

Applicant: Glenn W. Hutton : Decision on Petition Under
Filed: September 25,1995 : 37 CFR Section 1.48 (c)
Serial No. 08/533,115 :
For: Point to Point Internet Protocol :

This is a decision on the petition filed on April 21, 1997 to add originally named inventors under 37 CFR Section 1.48(c). Applicants request that Shane D. Mattaway and Craig B. Strickland be added to the above referenced application as they contributed to the invention subject matter added by preliminary amendment which was filed on April 10,1996, after the original filing of the application.

The petition includes a verified statement of facts but does not include a statement that the error was made without deceptive intention, as required by 37 CFR Section 1.48(a). Also the consent by the assignee is not acceptable at this time because it is not accompanied by a proper certification under 37 CFR Section 3.73(b). The consent must also include a statement specifying that the evidentiary document (assignment paper) has been reviewed and that to the best of the assignee's knowledge and belief, title is in the assignee seeking to take action. The consent must also be verified in the form of a declaration.

Therefore, the petition is DENIED. The petition may be resubmitted in proper form for reconsideration.

Alyssa H. Bowler
Supervisory Patent Examiner
Art Unit 2302

provider--.

Page 13, line 6, change "the connection server 26" to --a connection service provider--.

In the Claims

Please amend the claims as follows:

22. (Amended) A computer program product for use with a computer system, the computer system having first processor operatively coupled to a second processor [and second processors] and a server [operatively coupled] over a computer network, the computer program product comprising:

a computer useable medium having program code means embodied in the medium for establishing a point-to-point communications link between the first processor and a second processor over a computer network, the medium further comprising:

program code means for transmitting an E-mail signal comprising a network protocol address [from] of the first processor to the second processor [server] over the computer network;

program code means for receiving a second network protocol address from the second processor over the computer network; and

program code means, responsive to the second network protocol address, for establishing a point-to-point communication link between the first processor and the second processor over a computer network.

42. (Amended) The method of claim 41 wherein [the elements generated in steps A and B are graphic elements and] the step of establishing a [point-to-communication] point-to-point link as described in step C is performed in response to a user manipulating the graphic elements on the graphic user interface.

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Straight Path - Ex. 2023 - Page 406

Please add the following claims:

54. A method of locating a user over a computer network comprising the steps of :

a. maintaining an Internet accessible list having a plurality of entries, each entry comprising an electronic mail address and a corresponding Internet protocol address for a process currently connected to the Internet; and

b. in response to identification of one of the list entries by a requesting process, providing one of the electronic mail address and the corresponding Internet protocol address of the identified entry to the requesting process.

55. A method for locating users having dynamically assigned network protocol addresses over a computer network, the method comprising the steps of:

a. maintaining in a computer memory, a network accessible compilation of entries, each entry comprising a network protocol address and a corresponding identifier for a user connected to the computer network;

b. in response to identification of one of the entries by a requesting process providing one of the identifier and the network protocol address to the requesting process.

56. The method of claim 55 further comprising the step of:

c. modifying the compilation of entries.

57. The method of claim 56 wherein step c further comprises:

c.1 adding an entry to the compilation upon the occurrence of a predetermined event.

58. The method of claim 57 wherein the predetermined event comprises notification by a user process of an assigned network protocol address.

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 407

59. The method of claim 56 wherein step c further comprises:

c.1 deleting an entry from the compilation upon the occurrence of a predetermined event.

60. A computer program product for use with a server apparatus operatively coupled over a computer network to one or more computer processes, the computer program product comprising a computer usable medium having program code embodied in the medium the program code comprising:

a. program code configured to maintain, in a computer memory, a network accessible compilation of entries, each entry comprising a network protocol address and a corresponding identifier for a process connected to the computer network; and

b. program code responsive to identification of one of the entries by a requesting process and configured to provide one of the identifier and the network protocol address to the requesting process.

61. The computer program product of claim 60 further comprising:

c. program code configured to modify the compilation of entries.

62. The computer program product of claim 61 wherein program code configured to modify comprises:

c.1 program code configured to add an entry to the compilation upon the occurrence of a predetermined event.

63. The computer program product of claim 62 wherein the predetermined event comprises notification by a process of an assigned network protocol address.

64. The computer program product of claim 60 wherein step c further

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Straight Path - Ex. 2023 - Page 408

comprises:

c.1 program code configured to delete an entry from the compilation upon the occurrence of a predetermined event.

65. A computer program product for use with a server operatively coupled over a computer network to a plurality of processes, the computer program product comprising a computer usable medium having program code embodied thereon the program code comprising:

a. program code configured to receive the current network protocol address of one of the processes coupled to the network;

b. program code configured to receive an identifier associated with said one process, and

c. program code configured to receive queries for one of the network protocol address and the associated identifier of said one process from other processes over the computer network.

66. A computer program product for use with a computer system, the computer system including a first process operatively coupled over a computer network to a second process and a server process , the computer program product comprising a computer usable medium having computer readable program code embodied therein, the program code means comprising:

a. program code configured to access a directory database, the database having a network protocol address for a plurality of processes having on-line status with respect to the computer network; and

b. program code responsive to one of the network protocol addresses and configured to establish a point-to-point communication link from the first process to the second process over the computer network.

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 409

67. In a first computer process operatively coupled over a computer network to a second process and an address server, a method of establishing a point-to-point communication between the first and second processes comprising the steps of:

A. querying the address server as to whether the second process is connected to the computer network;

B. receiving a network protocol address of the second process from the address server, when the second process is connected to the computer network; and

C. in responsive to the network protocol address of the second process, establishing a point-to-point communication link with the second process over the computer network.

68. In a first computer process operatively coupled over a computer network to a second process and an E-mail server, a method of establishing a point-to-point communication between the first and second processes comprising the steps of:

A. transmitting an E-mail signal comprising a network protocol address of the first process to the second process over the computer network;

B. receiving a second network protocol address from the second process over the computer network; and

C. in responsive to the second network protocol address, establishing a point-to-point communication link between the first process and the second process over a computer network.

REMARKS

Applicant has considered carefully the Office Action dated June 2, 1997 and the references cited therein. In response, the title, specification, and claims have been amended. Applicant respectfully requests reexamination of the application.

The title of the application has now been changed to "METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 410

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DEC 04 1997
PATENT & TRADEMARK OFFICE 2300

P. Gregg
#17 B
1/8/98

ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

CERTIFICATE OF MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on December 2, 1997.

Bruce D. Jobse

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

DEC 11 1997
GROUP 2300

AMENDMENT

In the Title

Please delete the title as filed and insert -- Method and Apparatus for Establishing Point-to-Point Communications Over a Computer Network --.

In the Specification

01/23/1998 KDUNCAN 00000072 08533115
01 FC:202 287.00 CH
02 FC:203 165.00 CH

Page 1, line 20, after "interfacing" insert --to--.

Page 6, line 18, change "by" to --to--.

Page 7, line 6, change "read-only" to --random access--;

line 14, change "other" to --another--.

Page 12, line 17, change "the connection server 26" to --a connection service

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 411

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ATTORNEY DOCKET NO.:N0003/7000□

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

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Assistant Commissioner for Patents
Washington, D.C. 20231

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The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on the 2nd day of December, 1997.

Bruce D. Jobse

AMENDMENT TRANSMITTAL LETTER

Sir/Madam:

Transmitted herewith for filing in the above identified patent application are the following papers:

[X] Amendment
[X] Petition for 3-Month Extension of Time
[X] Check in the Amount of $950.00
[X] Declaration Under 37 CFR 1.131
[X] Exhibits A and B

The fee is calculated as follows:

		Previously Paid					
Total Claims	68	- 53	=	15	X	$22.00 =	330.00
Independent Claims	19	- 12	=	7	X	$82.00 =	574.00
TOTAL							$904.00

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 412

The Commissioner is hereby authorized to charge any other fees under 37 C.F.R.§§1.16 and 1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse, Esq.
Reg. No. 35,518
KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, MA 02108
(617) 367-4600

December 2, 1997

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 413

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JC30
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ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#16
Dec
w/att.
12/8/98

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

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I hereby certify that the following correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on December 2, 1997.

Bruce D. Jobse

Assistant Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF PRIOR INVENTION IN THE UNITED STATES TO OVERCOME CITED PATENT UNDER 37 CFR 1.131

Sir/Madam:

This declaration is to establish completion of the invention in this application in the United States at a date prior to May 23, 1995, the effective date of prior art patent 5,581,552, cited by the Examiner. The undersigned Declarant is the named Inventor in the above-identified patent application. The Declarant's statements set forth below establishes conception of the invention prior to the effective date of the reference coupled with due diligence from prior to the effective date to filing of the application. Exhibits A and B are submitted herewith to support the Declarant's statements. This Declaration is submitted prior to final rejection of the application.

1. I am the named inventor in the United States Patent Application 08/533,115, filed September 25, 1995, entitled "POINT-TO-POINT INTERNET PROTOCOL".

2. In the early morning hours on a date prior to May of 1995, I conceived of the subject matter disclosed in the above-identified patent application and memorialized the concept in a word processing document entitled "webph.doc" on my computer system, a copy of which is attached hereto as Exhibit A, including a printout of the file properties, the dates of creation and last modification of which have been redacted.

3. The various aspects of the inventive subject matter are set forth in sections 1-5 of Exhibit A, particularly sections 2-4.

4. I authored and edited the document into its final format on the same date the document was created.

5. A number of weeks after the conception of the inventive subject matter, and while refining the inventive concepts, I helped form, and became a principal in the Internet Telephone Company, a Florida Corporation having a place of business at One South Ocean Boulevard, Suite 305, Boca Raton, Florida 33432.

6. Following formation of the Internet Telephone Company, a detailed design specification entitled "Internet Telephone Company Webphone Design", a copy of which is attached hereto as Exhibit B, was generated to memorialize an implementation of the inventive concepts and provided the basis from which coding and testing of a working embodiment of the inventive concepts continued diligently until the filing date of this patent application, September 25, 1995.

I hereby declare that all statements made herein of my 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.

Glenn W. Hutton

12-2-97
Date

Residence: 9725 Hammocks Boulevard, #206
Miami, Florida 33196

Citizenship: CANADA
Post Office Address: 9725 Hammocks Boulevard, #206
Miami, Florida 33196

H:\BDJ\N0003\7000\DLPRINV.WPD

Super Phone mail
Global mail

Concept:

A multi purpose internet mailer package, providing; E-mail, voice mail/answering machine, real-time phone connections over the internet and IRC real-time conversations. and picture mail and text to speach.

* Also users that do not have a sound card might be able to hear sound files played through their PC speaker using the speaker sound driver.**CHECK on file size**

1. Basic E-mail package self explanatory.

2. Voice mail/Answering machine.

When the program is first installed on the users machine their are prompted to record a short out going message. The message is store on the POP server with a standard name such as outmsg.au. When another user calls via the internet phone the users is greeted with the msg and may then leave a voice message for the person they are trying to reach.

If the user they are trying to reach is logged onto the network the users software would automatically log onto the POP server and either ren the outmsg file or delete it from the server. This way when another user tries to call him the msg would not be found and an e-mail would be sent to the receiver of the call. The mail software would then send back to the calling party the IP address of the called party and a connection could be made.

3. Real - Time Phone connections

Just like in the real world sometimes you call and no one is home. The same concept applies here. The setup is a follows;

The party to be called logs onto the network and loads software. Approximately every 30 seconds it polls the POP server to see if anyone has sent a msg (like a query with a small amount of data i.e. the callers IP address). If the program finds such a msg it response with a msg back to the caller POP server with its IP address. Now both parties have each others IP addresses and a real-time connection can be made.

4. Real - Time Phone connections 2

Similar to above however involves a dedicated server or posible network of servers. The setup is as follows;

The party logs onto the network and loads the software. Similar to the POP server comcept the phone software will send a message to the connection server providing the server with the users information, ie, IP address, user name and other user information. A record is kept on the server set with a flag identifying that the user is on line. Again, like the POP server concept the email address of the user is the primary identification for other users to find if a user is on or off line. This interface like the POP server concept does not require the user to be permently connected to the server.

5. Text to speech for reading E-mail.

Just a simple plug in (Viewer) as most sound cards come with the software.

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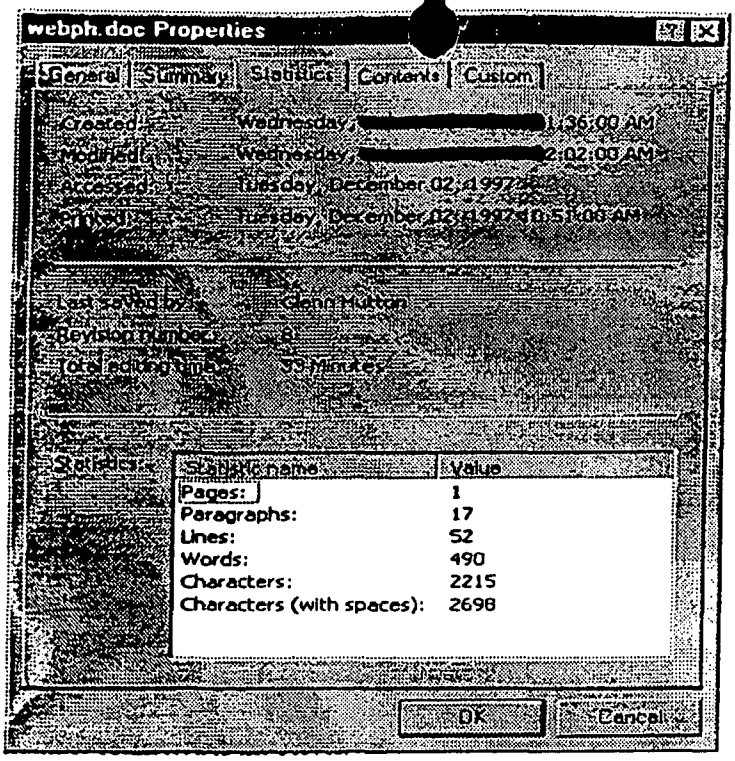
Straight Path - Ex. 2023 - Page 417


webph.doc Properties
General
Summary
Statistics
Contents
Custom
Created:
Modified:
Accessed:
Printed:
Last saved by:
Glenn Hutton
Revision number:
Total editing time:
Statistics:
Statistic name
Value
Pages:
1
Paragraphs:
17
Lines:
52
Words:
490
Characters:
2215
Characters (with spaces):
2698
OK
Cancel

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JC21
PATENT & TRADEMARK OFFICE

#14
Ref. to Contact Inventor
12/19/97

ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Glenn W. Hutton
Serial No.:	08/533,115
Filed:	September 25, 1995
For:	POINT-TO-POINT INTERNET PROTOCOL
Examiner:	Richard J. Gregson, Esq.
Art Unit:	2302

RECEIVED
DEC 9 97
GROUP 230

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on the 2nd day of December, 1997.

Anna Maria Keel

Anna Maria Keel

Assistant Commissioner for Patents
Washington, D.C. 20231

PETITION TO ADD TO ORIGINALLY NAMED INVENTOR(S) UNDER 37 CFR 1.48(c)

Sir/Madam:

Applicant respectfully requests that the above-identified application be amended under 37 CFR 1.48(c) to add inventors for subject matter disclosed in the application but previously unclaimed. This Petition to Add to Originally Named Inventor is being resubmitted following denial of the originally submitted Petition as set forth in paper number 12. The Applicant's attorney has since discussed the subject matter and form of the Petition with Special Petitions Examiner Ken Weider of the USPTO. Applicant's attorney now believes this Petition is in allowable condition. Examiner Gregson, as well as Supervising Patent Examiner Bowler, are requested to contact Examiner Weider if any questions remain as to the allowability of this petition.

04/13/1998 NVILLARI 00000069 023038 08533115
01 FC:122 130.00 CH

Please add the following inventors:

Shane D. Mattaway
826 Periwinkle Street
Boca Raton, FL 33486

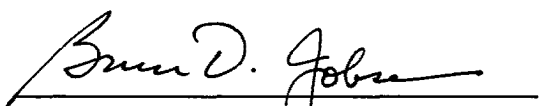
Craig B. Strickland
5713 NW 65th Terrace
Tamarac, FL 33321

Attached with this petition are the following:

A. A copy of the Statement of facts verified by the original-named inventor establishing when the error occurred without deceptive intent and the diligence with which this petition and amendment is being made with respect to these facts, the original signed copy having been submitted to the USPTO on April 17, 1997;
B. A copy of the Declaration by each of the actual inventors as required under 37 CFR §1.63 as originally submitted on April 17, 1997; and
C. Written assent of the assignee in the form of a Certificate under 37 CFR 3.73(b).

Payment of the $130.00 fee for this petition, as required under 37 CFR §1.17(h), was paid with the submission of the original petition on April 17, 1997. If the fee is insufficient, the balance may be charged to the account of the undersigned, Deposit Account No. 02-3038. A duplicate of this sheet is enclosed.

Respectfully submitted,



Bruce D. Jobse, Esq.
Reg. No. 33,518
KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, MA 02108
(617) 367-4600

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DEC 04 1997
PATENT & TRADEMARK OFFICE
TC 2300

Attorney Docket No. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT Glenn W. Hutton
SERIAL NO.: 08/533,115
FILED: September 25, 1995
FOR: POINT-TO-POINT INTERNET PROTOCOL
EXAMINER: R. Gregson
ART UNIT: 2302

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231, on December 2, 1997.

ANNA MARIA Keel
(Typed or printed name of person mailing correspondence)

Anna Maria Keel
(Signature of person mailing correspondence)

Assistant Commissioner for Patents
Washington, D.C. 20231

CERTIFICATE UNDER 37 C.F.R. 3.73(b)

NetSpeak Corporation, a Florida corporation, certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of a chain of title from the inventor as evidenced by a first assignment dated November 27, 1995 from Glenn W. Hutton to the Internet Telephone Company, Reel 7981, Frame 0020, and a second assignment from the Internet Telephone Company to NetSpeak Corporation dated May 14, 1996, Reel 7981, Frame 0053, copies of which are attached.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned is empowered to sign this certificate on behalf of the assignee and to consent to the addition of Shane D.Mattaway and Craig B. Strickland as inventors to the application.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are

punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

11/26/97
Date

Stephen R. Cohen
Chief Executive Officer
NetSpeak Corporation

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DEC 04 1997 TRADEMARK OFFICE 120

GP 2783

ATTORNEY'S DOCKET NO.: N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Glenn W. Hutton
SERIAL NO.: 08/533,115
FILED: September 25, 1995
FOR: POINT-TO-POINT INTERNET PROTOCOL
EXAMINER: Richard J. Gregson, Esq.
ART UNIT: 2302

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on the 2nd day of December, 1997.

Anna Maria Keel
Anna Maria Keel

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir/Madam:

Transmitted herewith for filing are the following documents:

[X] Certificate under 37 C.F.R. 3.73(b)
[X] Corrected Petition to Add to Originally Named Inventor(s)
[X] Copy of Statement of Facts
[X] Copy of Declaration

If the enclosed papers are considered incomplete, the Mail Room and/or the Assignment Branch is respectfully requested to contact the undersigned collect at (617) 367-4600, Boston, Massachusetts.

No fee is enclosed or believed due with this correspondence. Any fee may be charged to the account of the undersigned, Deposit Account No. 02-3038. A duplicate of this sheet is enclosed.

Respectfully submitted,

Bruce D. Jobse

Bruce D. Jobse, Esq.
Reg. No.:33,518
KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, Massachusetts 02108
Tel.: (617) 367-4600

OIPE
DEC 0 4 1997
PATENT & TRAD

DOCKET NUMBER: N0003/7000

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are stated below next to my name:

I believe I am an original, first and joint inventor the subject matter which is claimed and for which a patent is sought on the invention entitled **POINT-TO-POINT INTERNET PROTOCOL**, the specification of which was filed on September 25, 1995 under Attorney's Docket Number N0003/7000, now U.S. Patent Application Serial No. 08/533,115.

I hereby state that I have reviewed and understand the contents of the above identified patent application, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. 1.56.

I hereby claim the benefit of foreign priority under 35 U.S.C. 119 of any foreign application(s) for patent or inventor's certificate having a filing date before that of the application the priority of which is claimed:

Prior Foreign Application(s):			Priority Claimed
_____	_____	_____	_____Yes _____No
(Number)	(Country)	(Filing Date)	

I hereby claim the benefit of United States priority under 35 U.S.C. 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in a listed prior United States application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information material to the patentability of this application as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

_____	_____	_____
(Application Serial #)	(Filing Date)	(Status)
_____	_____	_____
(Application Serial #)	(Filing Date)	(Status)
_____	_____	_____
(Application Serial #)	(Filing Date)	(Status)

I hereby declare that all statements made herein of my 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 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 424

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Bruce D. Jobse	Reg. No. 33,518	Paul E. Kudirka	Reg. No. 26,931
Arthur Z. Bookstein	Reg. No. 22,958	John F. Perullo	Reg. No. 36,265
Philip L. Conrad	Reg. No. 34,567	Steven G. Saunders	Reg. No. 36,265
Paul J. Cook	Reg. No. 20,280		

Send correspondence to Bruce D. Jobse, BOOKSTEIN & KUDIRKA, P.C., One Beacon Street, Boston, Massachusetts, 02108.

FULL NAME OF INVENTOR: Glenn W. Hutton

INVENTOR'S SIGNATURE: _____ DATE: 4-2-97

RESIDENCE: 9725 Hammocks Boulevard, #206, Miami, FL 33196
CITIZENSHIP: Canada
POST OFFICE ADDRESS: 9725 Hammocks Boulevard, #206, Miami, FL 33196

FULL NAME OF INVENTOR: Shane D. Mattaway

INVENTOR'S SIGNATURE: _____ DATE: _____

RESIDENCE: 826 Periwinkle, Boca Raton, FL 33486
CITIZENSHIP: U.S.A.
POST OFFICE ADDRESS: 826 Periwinkle, Boca Raton, FL 33486

FULL NAME OF INVENTOR: Craig B. Strickland

INVENTOR'S SIGNATURE: _____ DATE: _____

RESIDENCE: 5713 NW 65th Terrace, Tamarac, FL 33321
CITIZENSHIP: Canada
POST OFFICE ADDRESS: 5713 NW 65th Terrace, Tamarac, FL 33321

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LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 425

OIPE
DEC 04 1997
PATENT AND TRADEMARK OFFICE

DOCKET NUMBER: N0003/7000

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are stated below next to my name:

I believe I am an original, first and joint inventor the subject matter which is claimed and for which a patent is sought on the invention entitled **POINT-TO-POINT INTERNET PROTOCOL**, the specification of which was filed on September 25, 1995 under Attorney's Docket Number N0003/7000, now U.S. Patent Application Serial No. 08/533,115.

I hereby state that I have reviewed and understand the contents of the above identified patent application, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. 1.56.

I hereby claim the benefit of foreign priority under 35 U.S.C. 119 of any foreign application(s) for patent or inventor's certificate having a filing date before that of the application the priority of which is claimed:

Prior Foreign Application(s):			Priority Claimed
_____	_____	_____	_____Yes _____No
(Number)	(Country)	(Filing Date)	

I hereby claim the benefit of United States priority under 35 U.S.C. 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in a listed prior United States application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information material to the patentability of this application as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

_____	_____	_____
(Application Serial #)	(Filing Date)	(Status)
_____	_____	_____
(Application Serial #)	(Filing Date)	(Status)
_____	_____	_____
(Application Serial #)	(Filing Date)	(Status)

I hereby declare that all statements made herein of my 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 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 426

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Bruce D. Jobse	Reg. No. 33,518	Paul E. Kudirka	Reg. No. 26,931
Arthur Z. Bookstein	Reg. No. 22,958	John F. Perullo	Reg. No. 36,265
Philip L. Conrad	Reg. No. 34,567	Steven G. Saunders	Reg. No. 36,265
Paul J. Cook	Reg. No. 20,280		

Send correspondence to Bruce D. Jobse, BOOKSTEIN & KUDIRKA, P.C., One Beacon Street, Boston, Massachusetts, 02108.

FULL NAME OF INVENTOR: Glenn W. Hutton

INVENTOR'S SIGNATURE: _____ DATE: _____

RESIDENCE: 9725 Hammocks Boulevard, #206, Miami, FL 33196
CITIZENSHIP: Canada
POST OFFICE ADDRESS: 9725 Hammocks Boulevard, #206, Miami, FL 33196

FULL NAME OF INVENTOR: Shane D. Mattaway

INVENTOR'S SIGNATURE: _____ DATE: 1/3/97

RESIDENCE: 826 Periwinkle, Boca Raton, FL 33486
CITIZENSHIP: U.S.A.
POST OFFICE ADDRESS: 826 Periwinkle, Boca Raton, FL 33486

FULL NAME OF INVENTOR: Craig B. Strickland

INVENTOR'S SIGNATURE: _____ DATE: 1/3/97

RESIDENCE: 5713 NW 65th Terrace, Tamarac, FL 33321
CITIZENSHIP: Canada
POST OFFICE ADDRESS: 5713 NW 65th Terrace, Tamarac, FL 33321

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LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 427

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ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: --
Art Unit: 2302

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on April 17, 1997.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

STATEMENT OF FACTS IN SUPPORT OF PETITION
TO ADD INVENTORS UNDER 37 CFR §1.48(C)

Statement of Facts

1. On September 25, 1995, patent application serial number 08/533,155, entitled "Point-to-Point Internet Protocol" was filed on my behalf, as sole inventor, by Anthony J. Natoli, Esq., Reg. No. 36,223, of the law firm of Dilworth & Barrese, Uniondale, New York, NY.

2. On November 27, 1995 I assigned all right, title and interest in and to the patent application to the Internet Telephone Company, a Florida corporation having a place of business at One South Ocean Boulevard, Suite 305, Boca Raton, Florida 33432.

3. In March of 1996, NetSpeak Corporation, parent corporation of the Internet Telephone Company, retained the services of Bruce D. Jobse, Esq., Reg. No. 33,518, of the law firm of Bookstein & Kudirka, Boston, Massachusetts, to prosecute

the above-identified application.

4. On April 5, 1996 a preliminary amendment to the patent application was filed adding claims 21-53, some of which were directed to subject matter previously disclosed but not yet claimed.

5. I became aware of the preliminary amendment and the additional claims during a telephone conversation with attorney Bruce D. Jobse sometime in late November 1996.

6. On December 11, 1996 I received a copy of the above-mentioned preliminary amendment filed April 5, 1996. I acknowledge that both Shane D. Mattaway and Craig B. Strickland contributed to the subject matter of at least one currently pending claim of the above-identified application. The necessity of naming Shane D. Mattaway and Craig B. Strickland as inventors was discovered sometime between my subsequent review of the copy of the preliminary amendment and the date of this Statement of Facts. A diligent effort has been made to correct this error.

I hereby declare that all statements made herein of my own knowledge are true and that statements made on information and belief are believed to be true and further that the 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 United States Code, and that such willful, false statements may jeopardize the validity of the application or any patents issued therefrom.

Glenn W. Hutton

4-2-97
Date

4-2-97 ~~5713 NW 65th Terrace, Tamarac, FL 33321~~
SA 9725 Hannocks Blvd #206
Miami, FL. 33196
Citizen: Canada

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COMPUTER NETWORK. Applicant asserts that the title as amended is indicative of the invention to which the claims are directed.

Regarding the multiple information disclosures submitted prior to examination, many of the submitted references were located during patentability searches not performed by applicant's current counsel. Applicant's current counsel submitted such references under the continuing duty of candor under 37 C.F.R. §§56, 1.97, 1.98. The Applicant is relying on the Examiner's expertise to determine the relevance of the references to the claimed subject matter.

As requested by the Examiner, the applicant has checked the specification for minor errors and has, in response, amended the specification as set forth herein. No new matter is believed to be added by these changes to the specification.

Claim 22 has been amended to conform the claim language with the specification. Such amendments are not required to distinguish the claimed subject matter over any of the cited references, whether considered singularly or in combination.

Claim 42 has been amended to correct a grammatical error and any potential problems under 37 C.F.R. §112, second paragraph. Such amendment is not required to distinguish the claimed subject matter over any of the cited references, whether considered singularly or in combination.

Applicant submits herewith a declaration of prior invention under 37 CFR 1.131 to overcome the rejection of all claims under 35 U.S.C. §103 as being unpatentable over Civanlar et al. in view of Morgan et al. and/or further in view of December et al. The declaration is submitted with a facsimile signature of the declarant inventor. The original signed declaration will be submitted as soon as it becomes available. In light of the declaration and acconpanying exhibits, all rejections based on the Civanlar et al. reference are deemed moot.

In addition, Applicant has the following remarks. One of the major factors

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 430

inhibiting dynamic communications over the Internet, and other computer networks, is the inability to obtain the current dynamically assigned network protocal address of a user process connected to the network. This problem is analogous to trying to call someone whose telephone number changes after each call. Applicant's invention provides techniques for determining the current dynamically assigned network protocal address of a user process connected to the network. The first technique utilizes a dedicated server which acts as a network address/information directory from which calling processes can obtain information. When a first process connects to the network, the process logs-on to the server and provides the server with the network protocal address under which the first process is currently operating. A second process wishing to establish communications with the first process, connects to the server and request the network protocal address under which the first process is currently operating. Upon receipt of the network protocal address of the first process, the second process establishes communications with the first process directly, without any intervenion from the address/ information server.

The Examiner has repeatedly indicated that Civanlar et al. in view of Morgan et al. teach an address server and database utilized to initiate communications between two nodes. Conversly, in the present invention, communications between two nodes, e.g. processes, are initiated by soley by one of the processes. The address server may have optionally supplied address information to one of the processes, but the address server does not establish the point-to-point communication connection between the nodes. Applicant has reviewed Civanlar et al. in view of Morgan et al. and has found no disclosure or suggestion of this first claimed technique whether the references are considered singularly or in combination.

Applicant's invention provides a second techniques for determining the current dynamically assigned network protocal address of a user process connected to the network. In the second technique, a first process wishing to establish communications with a second process, sends, via E-mail, the network protocal address under which

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 431

the first process is currently operating to the second process. Upon receipt of the E-mail message, the second process sends to the first process, via E-mail, the network protocal address under which the second process is currently operating. Upon receipt of the network protocal address of the second process, the first process establishes communications with the second process directly, without any intervenion from the address/ information server. This second technique may be used in addition to or in place of the first technique. As with the first technique, communications between two nodes, e.g. processes, are initiated by soley by one of the processes. The address server does not establish the point-to-point communication connection between the nodes. Applicant has reviewed Civanlar et al. in view of Morgan et al. and further in view of December et al. and has found no disclosure or suggestion of this second claimed technique whether the references are considered singularly or in combination.

Applicant respectfully traverses the rejection of claims 32-42 and 43-53 under 35 U.S.C. §103 as being unpatentable over Civanlar et al. in view of Morgan et al. and further in view of December et al. Claims 32-42 are directed to a method for establishing a point-to-point communication link from a caller processor to a callee processor over a computer network by associating graphic elements representing communication line and a first callee processor. Claims 43-53 essentially comprise a computer program product claim counterparts to claims 32-42. Applicant has reviewed the cited references in detail and can find no suggestion or disclosure of generating graphic elements representing a communication line or a callee processor or establishment of a point-to-point communication link by associating the graphic element.

Applicant submits herewith new claims 54-68 to more particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. All claims are believed allowable over any of the references cited by the Applicant, whether considered singularly or in combination. Accordingly, Applicant believes this application is in condition for allowance and a notice to that effect is respectfully requested. If the

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Straight Path - Ex. 2023 - Page 432

Examiner has any questions regarding this amendment or the application in general he is invited to call the Applicant's attorney at the number listed below.

The Commissioner is hereby authorized to charge any other fees under 37 C.F.R. §1.16 and 1.17 that may be required, or credit any overpayment, to our Deposit Account No. 20-0065.

Respectfully submitted,

Bruce D. Jobse
Reg. No. 33,518
KUDIRKA & JOBSE, P.C.
One Beacon Street
Boston, MA 02108
(617) 367-4600

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 433

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PATENT & TRADEMARK OFFICE

GAU-2302

PATENT: N0003/7000

#15
GA 3
1/8/98

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, MA 02108

GROUP 2300
DEC 11 97
RECEIVED

CERTIFICATE OF MAILING

I hereby certify that the following Petition is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on December 2, 1997.

Bruce D. Jobse

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir/Madam:

PETITION FOR EXTENSION OF TIME

Please extend the time for response to the Office Action dated June 2, 1997 for Three months to December 2, 1997. Enclosed is a check in the amount of $950.00 to cover the cost of the extension.

12/09/1997 DTHOMAS 00000067 08533115
01 FC:117 950.00 OP

The Commissioner is hereby authorized to charge any other fees under 37 C.F.R. §1.16 and 1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse, Esq.
Reg. No. 33,518
KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, MA 02108
(617) 367-4600

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08/533115

16

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/533,115	09/25/95	HOTTON G	649-2

LM21/0414

BOOSTEIN & KUDIRKA, PC
ONE BEACON STREET
BOSTON MA 02108

EXAMINER	
RINEHART, M	

ART UNIT	PAPER NUMBER
2756	18

DATE MAILED: 04/14/98

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

Commissioner of Patents and Trademarks

See Attachment.

MARK H. RINEHART
PRIMARY EXAMINER

Office Action Summary	Application No. 08/533,115	Applicant(s) Hutton et al.
	Examiner Mark H. Rinehart	Group Art Unit 2756

☒ Responsive to communication(s) filed on *12/4/97* .

☐ This action is **FINAL**.

☐ 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.

A shortened statutory period for response to this action is set to expire *30 days* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-68* is/are pending in the application.

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

☐ Claim(s) _____ is/are allowed.

☐ Claim(s) _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims *1-68* are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

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

Priority under 35 U.S.C. § 119

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

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *2,4,5,13*

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

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--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-4, 6-11, 21, 26-64, and 66-67, drawn to a system, apparatus, and method for querying a database server from a first computer to determine the status and identifier associated with a second computer within the operating network for establishing a connection, classified in class 395, subclass 200.58.

II. Claims 12-16, 19-20, 22-25, and 68, drawn to a system, apparatus, and method for directing an electronic mail message from a first computer through a network to a second computer for initiating the second computer to directly message the first computer with its address, classified in class 395, subclass 200.37.

III. Claims 17-18, drawn to an apparatus for initiating an electronic mail transmission, classified in class 395, subclass 300.36.

IV. Claim 65, drawn to a method for updating and querying a status database server, classified in class 395, subclass 200.54.

2. The inventions are distinct, each from the other because of the following reasons: Inventions I, II, III, and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as allowing a communicating computer to establish the identifier and online status of a second computer with identifying itself to the second computer to accomodate priviacy concerns; invention II has

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separate utility such as allowing a called computer to determine the sender of a connection request and directly respond or refuse a connection with the calling computer; invention III has separate utility such as preparing a mail message for electronic transmission to a distribution mail server; and invention IV has separate utility such as monitoring status of computers on a network system to enable management of a network system. See MPEP § 806.05(d).

3. Claim 5 link(s) inventions I and II. The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim(s), claim 5. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for each of Groups I-IV is not required for each of the other Groups, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

7. A telephone call was made to Bruce D. Jobse, Reg. # 33,518, on 4/10/98 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

9. The Examiner notes that the disclosed inventions are rather complex in some of the details of the embodiments disclosed and claimed. While an election is required at this time, the Examiner would be willing to consider restriction of the invention based upon different groupings

should the Applicant wish to propose a different grouping of the claims for examination. An interview to such effect would be entertained by the Examiner if it would aid in establishing a more acceptable grouping of the claims for examination in order to advance prosecution of the application.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Rinehart whose telephone number is (703) 305-4815. The examiner can normally be reached on Monday through Thursday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Supervisory Primary Examiner Frank J. Asta, can be reached on (703) 305-3817. The fax phone number for the Electrical Examining Technology Center is (703) 308-9051.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Mark H. Rinehart
Primary Examiner
Art Unit 2756

DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

MARK H. RINEHART
PRIMARY EXAMINER

Attachment #18

The drawings submitted with this application were declared informal by the applicant. Accordingly they have not been reviewed by a draftsperson at this time. When formal drawings are submitted, the draftsperson will perform a review.

Direct any inquires concerning drawing review to the Drawing Review Branch (703) 305-8404.

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LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 441

#2

Sheet 1 of

Form PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	649-2	08/533,115
	APPLICANT: Glenn W. Hutton	
	FILING DATE: September 25, 1995	GROUP: Art Unit 27

MAIL ROOM OCT 30 1995 PAT. & TRADEMARK OFF.

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING IF APPRO
MR	5,150,360	9/22/92	Perlman et al.			
	5,204,966	4/20/93	Dorfe et al.			
	5,224,095	6/29/93	Woest et al.			
	5,291,554	3/1/94	Morales			
	5,309,437	5/3/94	Cidon et al.			
	5,321,812	6/14/94	McMillen et al.			
	5,355,371	10/18/94	Banwart			
MR	5,400,326	3/21/95	Yamada			

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLAT YES

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	DATE CONSIDERED
MARK H. RINEHART PRIMARY EXAMINER	4/8/98

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(Form PTO-1449 (6-4)

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 442

#13

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JUL 14 1997
PATENT & TRADEMARK OFFICE

Form PTO-1449 INFORMATION DISCLOSURE STATEMENT	Docket No.: N0003/7000	Serial No. 08/533,115
	Applicant: Glenn W. Hutton	
	Filed: September 25, 1995	Group: ~~2302~~ 2756

U.S. Patent Documents

Ex.		Doc. No.	Date	Name	Class	Subcl.	Filed
MR		5 4 2 5 0 2 8	06/13/95	K.H. Britton et al.	—	—	07/16/92

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GROUP 2600

Foreign Patent Documents

Ex.		Doc. No.	Date	Name	Class	Subcl.	Filed
MR EP	A2	0 4 5 5 4 0 2	06/11/91	J.C. Wu	—	—	23/04/91
MR EP	A2	0 5 5 6 0 1 2	18/08/93	H. Wada et al.	—	—	09/02/93
MR WO		9 2 1 9 0 5 4	29/10/92	E. Ferdinand et al.	—	—	10/04/92

OTHER DOCUMENTS (including, Author, Title, Date, Pages, Etc.)

MR		*Internetworking with TCP/IP*, Volume I, Second Edition, Principles, Protocols, and Architecture, by Douglas E. Comer.; 1991; table of contents, pgs 1-3, 17-19, 311-333

Examiner: **MARK H. RINEHART PRIMARY EXAMINER** Date considered 4/8/98

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. An * indicates references that do not require a copy to be provided under 37 C.F.R. §1.98(d) because a copy was previously cited or submitted in a prior application, which is relied upon under 35 U.S.C. §120.

H:\BDJ\N0003\7000\1449FRM3.WPD

#5

Form PTO-1449 INFORMATION DISCLOSURE STATEMENT	Docket No.: N0003/7000	Serial No. 08/533,115
	Applicant: Glenn W. Hutton	
	Filed: September 25, 1995	Group: ~~2305~~ 2756

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U.S. Patent Documents

Ex.		Doc. No.	Date	Name	Class	Subcl.	Filed
MR		5 4 5 5 8 5 4	10/3/95	Dilts et al.	—	—	

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Foreign Patent Documents

Ex.		Doc. No.	Date	Name	Class	Subcl.	

OTHER DOCUMENTS (including, Author, Title, Date, Pages, Etc.)

Examiner: MARK H. RINEHART PRIMARY EXAMINER | Date considered 4/8/98

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. An * indicates references that do not require a copy to be provided under 37 C.F.R. §1.98(d) because a copy was previously cited or submitted in a prior application, which is relied upon under 35 U.S.C. §120.

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#4

Form PTO-1449 INFORMATION DISCLOSURE STATEMENT	Docket No.: N0003/7000	Serial No. 08/533,115
	Applicant: Glenn W. Hutton	
	Filed: September 25, 1995	Group: ~~2305~~ 2756

U.S. Patent Documents

Ex.		Doc. No.	Date	Name	Class	Subcl.	Filed
MR		5 4 3 4 7 9 7	07/1995	Barris		—	

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GROUP 2300

Foreign Patent Documents

Ex.		Doc. No.	Date	Name	Class	Subcl.	

OTHER DOCUMENTS (including, Author, Title, Date, Pages, Etc.)

Examiner:	MARK H. RINEHART PRIMARY EXAMINER	Date considered	4/8/98

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. An * indicates references that do not require a copy to be provided under 37 C.F.R. §1.98(d) because a copy was previously cited or submitted in a prior application, which is relied upon under 35 U.S.C. §120.

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/533,115	09/25/95	HOTTON G	649-2

LM21/0415

BOOSTEIN & KUDIRKA, PC
ONE BEACON STREET
BOSTON MA 02108

EXAMINER	
RINEHART, M	

ART UNIT	PAPER NUMBER
2756	19

DATE MAILED: 04/15/98

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

Commissioner of Patents and Trademarks

PTO-90C (Rev. 2/95)

☆U.S.GOVERNMENT PRINTING OFFICE 1998-411-516/40275

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Paper # 19

In re Application of Glenn W. Hutton	:	
Serial No. 08/533,115	:	DECISION ON PETITION
Filed: September 25, 1995	:	UNDER 37 C.F.R. § 1.48
For: POINT-TO-POINT INTERNET PROTOCOL	:	

This is a decision on the petition filed December 04, 1997 to correct inventorship under 37 C.F.R. § 1.48.

The petition is granted.

The inventorship in this application has been corrected to add Shane D. Mattaway and Craig B. Strickland as joint inventors.

Mark H. Rinehart
Primary Examiner
Patent Examining Group 2700

MARK H. RINEHART
PRIMARY EXAMINER

Bookstein & Kudirka, PC
One Beacon Street
Boston, Massachusetts 02108

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ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

CERTIFICATE OF MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on May 14, 1998.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing in the above-identified patent application is the following paper:

[X] Response to Restriction Requirement

RECEIVED
98 MAY 21 AM 11:12
GROUP 2700

No fee is being submitted. The Commissioner is hereby authorized to charge any fees under 37 C.F.R.§§1.16 and 1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse

Bruce D. Jobse, Reg. No. 33,518
KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, MA 02108
(617) 367-4600

OIPE JC29
MAY 19 1998
PATENT & TRADEMARK OFFICE

#20 MDJ 5-22-98

ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton, et al.
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

CERTIFICATE OF MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on May 14, 1998.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

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98 MAY 21 AM 11:12
GROUP 2780

Sir:

RESPONSE TO RESTRICTION REQUIREMENT

In response to the Restriction Requirement set forth in Paper No. 18, Applicant hereby elects Group I, directed to claims 1-4, 6-11, 21, 26-64 and 66-67, as set forth in paragraph No. 1 in the Restriction Requirement. The Examiner has invited the Applicant to comment on the different groupings. Applicant has reviewed the groupings and suggests that claims 23 and 24 likewise be categorized with Group I, instead of Group II.

If the Examiner has any questions regarding Applicant's election or suggestion, he is invited to call Applicant's attorney at the number listed below. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §1.16 and 1.17 that may be required to our Deposit Account No. 20-0065.

Respectfully submitted,

Bruce D. Jobse

Bruce D. Jobse, Reg. No. 33,518
KUDIRKA & JOBSE, LLP
One Beacon Street
Boston, MA 02108
(617) 367-4600

08/533115

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/533,115	09/25/95	HUTTON G	649-2

LM21/0803

BOOSTEIN & KUDIRKA, PC
ONE BEACON STREET
BOSTON MA 02108

EXAMINER	
RINEHART, M	

ART UNIT	PAPER NUMBER
2756	21

DATE MAILED: 08/03/98

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

Commissioner of Patents and Trademarks

See Attachment

MARK H. RINEHART
PRIMARY EXAMINER

Office Action Summary	Application No. 08/533,115	Applicant(s) Hutton et al.
	Examiner Mark H. Rinehart	Group Art Unit 2756

☒ Responsive to communication(s) filed on *5/19/98* .

☐ This action is **FINAL**.

☐ 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.

A shortened statutory period for response to this action is set to expire *30 days* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-68* is/are pending in the application.

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

☐ Claim(s) _____ is/are allowed.

☐ Claim(s) _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims *1-68* are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

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

Priority under 35 U.S.C. § 119

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

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

FILE COPY

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023, Page 451

DETAILED ACTION

1. The previous requirement for restriction is vacated in response to Applican't suggestion that the claims be grouped diiferently. A new requirement for restriction is established in the instant Office Action.

Election/Restriction

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-4, 6-11, 21, 23-24, 26-64, and 66-67, drawn to a system, apparatus, and method for querying a database server from a first computer to determine the status and identifier associated with a second computer within the operating network for establishing a connection, classified in class 395, subclass 200.58.

II. Claims 12-16, 19-20, 22, 25, and 68, drawn to a system, apparatus, and method for directing an electronic mail message from a first computer through a network to a second computer for initiating the second computer to directly message the first computer with its address, classified in class 395, subclass 200.37.

III. Claims 17-18, drawn to an apparatus for initiating an electronic mail transmission, classified in class 395, subclass 300.36.

IV. Claim 65, drawn to a method for updating and querying a status database server, classified in class 395, subclass 200.54.

3. The inventions are distinct, each from the other because of the following reasons: Inventions I, II, III, and IV are related as subcombinations disclosed as usable together in a single

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combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as allowing a communicating computer to establish the identifier and online status of a second computer with identifying itself to the second computer to accomodate priviacy concerns; invention II has separate utility such as allowing a called computer to determine the sender of a connection request and directly respond or refuse a connection with the calling computer; invention III has separate utility such as preparing a mail message for electronic transmission to a distribution mail server; and invention IV has separate utility such as monitoring status of computers on a network system to enable management of a network system. See MPEP § 806.05(d).

MR 7/27/98

4. Claim 5 and 25 link(s) inventions I and II. The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim(s), claim 5. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and the search required for each of Groups I-IV is not required for each of the other Groups, restriction for examination purposes as indicated is proper.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

9. The Examiner notes that although an election was made in the previous requirement for retriction, that the previous requirment has been vacated in order to regroup the invention as suggested by Applicant. Thus, a new election must be made in order to maintain clarity in the record.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Rinehart whose telephone number is (703) 305-4815. The examiner can normally be reached on Monday through Thursday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Supervisory Primary Examiner Frank J. Asta, can be reached on (703) 305-3817. The fax phone number for the Electrical Examining Technology Center is (703) 308-9051.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Mark H. Rinehart
Primary Examiner
Art Unit 2756

MARK H. RINEHART
PRIMARY EXAMINER

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PATENT & TRADEMARK OFFICE

ATTORNEY DOCKET NO. N0003/7000

#22
JRM
8-19-98

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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98 AUG 18 AM 9:36
GROUP 2700

Applicant: Glenn W. Hutton, et al.
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Mark H. Rinehart
Art Unit: 2302

CERTIFICATE OF MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on August 11, 1998.

Frances M. Cunningham

Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

RESPONSE TO RESTRICTION REQUIREMENT

In response to the new Restriction Requirement set forth in Paper No. 21, Applicants hereby elect Group I, directed to claims 1-4, 6-11, 21, 23-24, 26-64 and 66-67, as set forth in paragraph No. 2 of the new Restriction Requirement.

If the Examiner has any questions regarding Applicants' election or suggestion, he is invited to call Applicants' attorney at the number listed below. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §1.16 and 1.17 that may be required to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse

Bruce D. Jobse, Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Two Center Plaza
Boston, MA 02108
(617) 367-4600

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AUG 14 1998
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ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Mark H. Rinehart
Art Unit: 2302

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GROUP 2700

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Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing in the above-identified patent application is the following paper:

[X] Response to Restriction Requirement

No fee is being submitted. The Commissioner is hereby authorized to charge any fees under 37 C.F.R.§§1.16 and 1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse

Bruce D. Jobse, Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Two Center Plaza
Boston, MA 02108
(617) 367-4600

OIPE JC25
AUG 24 1998
PATENT & TRADEMARK OFFICE

#24
8. 3rd
11/19/98

ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

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Assistant Commissioner for Patents
Washington, D.C. 20231

SUPPLEMENTAL RESPONSE

Sir/Madam,

Remarks

Applicant encloses herewith a hard copy signature for the Declaration of Prior Invention under 37 C.F.R. §1.131 originally submitted on December 2, 1997 with a facsimile signature. The original hard copy signature of the declarant was lost. Accordingly, the declarant re-executed the signature page which is enclosed herewith. If the Examiner has any questions regarding this supplemental response or the application in general he is invited to call the Applicant's attorney at the number listed below.

The Commissioner is hereby authorized to charge any other fees under 37 C.F.R. §1.16 and 1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse, Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Two Center Plaza
Boston, MA 02108
(617) 367-4600

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LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 458

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.

Glenn W. Hutton

12-2-97.
Date

Residence: 9725 Hammocks Boulevard, #206
Miami, Florida 33196

Citizenship: CANADA
Post Office Address: 9725 Hammocks Boulevard, #206
Miami, Florida 33196

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ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

CERTIFICATE OF MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on August 19, 1998.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

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Sir/Madam:

Transmitted herewith for filing is/are the following document(s):

[X] Supplemental Response

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned collect at (617) 367-4600, Boston, Massachusetts.

No fee is being submitted. If the fee is insufficient, the balance may be charged to the account of the undersigned, Deposit Account No. 02-3038. A duplicate of this sheet is enclosed.

Respectfully submitted,

Bruce D. Jobse
Bruce D. Jobse, Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Two Center Plaza
Boston, MA 02108
(617) 367-4600

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ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: Richard J. Gregson, Esq.
Art Unit: 2302

CERTIFICATE OF MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on August 19, 1998.

Frances M. Cunningham
Frances M. Cunningham

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Assistant Commissioner for Patents
Washington, D.C. 20231

Sir/Madam:

Transmitted herewith for filing is/are the following document(s):

[X] Supplemental Response

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned collect at (617) 367-4600, Boston, Massachusetts.

No fee is being submitted. If the fee is insufficient, the balance may be charged to the account of the undersigned, Deposit Account No. 02-3038. A duplicate of this sheet is enclosed.

Respectfully submitted,

Bruce D. Jobse, Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Two Center Plaza
Boston, MA 02108
(617) 367-4600

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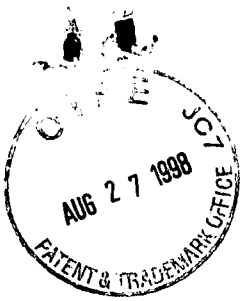

Attorney Docket No. N0003/7003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton
Serial No.: 08/533,115
Examiner: M. Rinehart
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Art Unit: 2756

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GROUP 2700

Assistant Commissioner for Patents
Washington, DC 20231

Sir/Madam:

Transmitted herewith for filing is the following paper:

[X] Change of Correspondence Address

No fee is being submitted. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§1.16 and 1.17 that may be required to Deposit Account No. 02-3038

Respectfully submitted,

Bruce D. Jobse, Esq.
Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Two Center Plaza
Boston, MA 02108
(617) 367-4600

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PATENT & TRADEMARK OFFICE
JC7

#25
B. 3rd
11/19/98

Attorney Docket No. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Glenn W. Hutton
Serial No.:	08/533,115
Examiner:	M. Rinehart
Filed:	September 25, 1995
For:	POINT-TO-POINT INTERNET PROTOCOL
Art Unit:	2756

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on the 24th day of August, 1998

Frances M. Cunningham

Frances M. Cunningham

Assistant Commissioner for Patents
Washington, DC 20231

Sir/Madam:

CHANGE OF CORRESPONDENCE ADDRESS

Pursuant to 37 C.F.R. §1.33(d), we request that the correspondence address for the above-identified patent application be changed to KUDIRKA & JOBSE, LLP, Two Center Plaza, Boston, MA 02108. Please address all future correspondence to the undersigned.

RECEIVED
98 NOV -2 AM 8:04
GROUP 2700

Respectfully submitted,

Bruce D. Jobse

Bruce D. Jobse, Esq.
Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Two Center Plaza
Boston, MA 02108
(617) 367-4600

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GROUP 2700

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     (FILE 'USPAT' ENTERED AT 08:01:23 ON 26 OCT 1998)
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                 E NETSPEAK/AS
                 E NETSPEAK/ASN
                 E INTERNET/ASN
L2             3 S E3
                 E NETSCAPE/ASN
L3             6 S E3
L4            78 S MICROSOFT/ASN AND INTERNET
L5            87 S L1-L4
                 E HUTTON, GLENN/IN
L6             1 S E4
                 E MATLAWAY/IN
                 E STRICKLAND, CRAIG/IN
L7           193 S (INTERNET OR TCPIP) (5A) TELEPHON?
L8         54976 S 395/200.3-200.83/CCLST OR 370/CLAS OR 379/CLAS
L9            66 S L7 AND L8
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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/533,115	09/25/95	HUTTON G	649-2

LM02/1028

BOOSTEIN & KUDIRKA, PC
ONE BEACON STREET
BOSTON MA 02108

EXAMINER	
RINEHART, M	

ART UNIT	PAPER NUMBER
2756	23

DATE MAILED: 10/28/98

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

Commissioner of Patents and Trademarks

See Attachment

Mark H. Rinehart
Primary Examiner

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 465
Office Copy

Office Action Summary	Application No. 08/533,115	Applicant(s) Hutton et al.
	Examiner Mark H. Rinehart	Group Art Unit 2756

☒ Responsive to communication(s) filed on *12/4/97 and 8/14/98*.

☐ This action is **FINAL**.

☐ 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.

A shortened statutory period for response to this action is set to expire *three (3)* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-68* is/are pending in the application.

Of the above, claim(s) *5, 12-20, 22, 25, 65, and 68* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-4, 6-11, 21, 23, 24, 26-64, 66, and 67* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims *5, 12-20, 22, 25, 65, and 68* are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

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

Priority under 35 U.S.C. § 119

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

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023, Page 466

Part III DETAILED ACTION

1. This application has been examined. Claims 1-68 are pending.

2. The amendment received on 12/04/97 has been entered. New claims 54-68 have been added.

3. The declaration filed on 12/04/97 under 37 CFR 1.131 is sufficient to overcome the Civanlar et al. (US 5,581,552) reference.

Election/Restriction

4. Applicant's election without traverse of Invention Group I consisting of claims 1-4, 6-11, 21, 23-24, 26-64, and 66-67 in Paper No. 22 received 08/14/98 is acknowledged.

5. Claims 5, 12-20, 22, 25, 65, and 68 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to non-elected Inventions Groups II, III, and IV. Election was made **without** traverse in Paper No. 22.

Information Disclosure Statement

6. In view of the extremely large number of references submitted by the Applicant(s) for consideration of this application, the Applicant(s) are requested to identify any references which have particular significance in the prosecution of this application for further consideration by the Examiner. Applicant(s) should also indicate the specific features, corresponding passages, and figures of such references which are believed to be germane to the invention claimed in the application. Applicant is reminded that mere presentation of a reference does not preclude presentation of an analysis of the reference to insure proper consideration during examination.

FILE COPY

Specification

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

8. 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.**

9. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being clearly anticpated by Gordon (US 5,608,786).

Gordon teaches a system operating to establish a point-to-point connection through an internet system utilizing IP addressing and telephone connection setup based on active status response to queries of a connection database. See Abstract; Figures 1 and 5; and col. 1-3, 4-6, and 8-10. Thus, Gordon reads on the claimed method.

Claim Rejections - 35 USC § 103

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

> 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.

> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

11. Claims 1-4 are rejected under 35 U.S.C. § 103 as being unpatentable over Cohn, et al, (US 5,740,231) in view of Morgan, et al., (US 5,524,254).

The claimed invention found within Claim 1 consists of a method for establishing point-to-point Internet communications comprising (a) storing in a database a set of IP addresses for on-line nodes, (b) transmitting a query from a node to a server to determine the status of a second node, and © retrieving the IP address of the second node from the database in to establish communication between the two nodes. Cohn, et al., at Figures 6 and 13 and col. 15, lns. 20-63 and col. 23, ln. 29 - col. 24, ln. 42, teaches a multimedia server which uses a communication protocol in which the requesting node sends a request for communication with another node through a address server, which contains an address database, to obtain the address and routing information necessary to complete the communication. Cohn, et al., doesn't specifiy searching the database to match the address with the destination node. Morgan, et al, in columns in columns 3-4, teaches the look-up procedure into the database which is performed to retrieve the matching address from the database for use in initiating communications over an network. It would have been obvious to one of ordinary in the art at the time the claimed invention was made to include an database and search/retrieval mechanism to locate the needed network address because such a mechanism permits the database to me modified over time to allow dynamic address assignment thus reducing the need to larger address identifiers and thus the amount of data that needs to be transmitted with each packet of data.

Regarding Claim 2, the claimed invention adds the further limitation to the invention found within Claim 1 that steps of obtaining the on-line status and IP address of the second node

include the steps of: (b1) sending a query to a server, (c1) searching the server's database, (c2) determining the on-line status of the second node, (c3) retrieving the IP address of the second node, (c4) and transmitting the IP address of the second node from the server to the requesting node. As was discussed above regarding Claim 1, Morgan, el al., in columns 3-4, teaches the look-up procedure into the database which is performed to retrieve the matching address from the database for use in initiating communications over an network. It would have been obvious to one of ordinary in the art at the time the claimed invention was made to include an database and search/retrieval mechanism to locate the needed network address because such a mechanism permits the database to me modified over time to allow dynamic address assignment thus reducing the need to larger address identifiers and thus the amount of data that needs to be transmitted with each packet of data.

Regarding Claim 3 and 4, the claimed invention in Claim 3 adds the further limitation to the invention found within Claim 2 that the claimed process generate and transmit an error message which is sent to the requesting node when the second node's status is off-line. The claimed invention Claim 4 adds the further limitation to the invention found within Claim 1 that secondary communications protocol is used when a off-line status is found. Morgan, et al., in columns 13-14 teaches the process of handling error condition where the requested second node is not available, that the processing terminates gracefully. Implicit within this operation is the transmittal of appropriate messages to the requesting node of this condition with the initiation of error recovery procedures..

12. Claim 6, which teaches an apparatus claim, fail to teach or define above or beyond Claims 1-4 above and are rejected for the same reasons set forth above in the rejections of Claims 1-4, supra.

13. Claims 7-11, which also teaches a set of apparatus claims, fail to teach or define above

or beyond Claims 1-4 above and are rejected for the same reasons set forth above in the rejections of Claims 1-4, supra.

14. Claim 21, which teaches a computer program product claim, fail to teach or define above or beyond Claims 1-4 above and are rejected for the same reasons set forth above in the rejections of Claims 1-4, supra.

15. Claims 23-24, which also teaches a set of apparatus claims, fail to teach or define above or beyond Claims 1-4 above and are rejected for the same reasons set forth above in the rejections of Claims 1-4, supra.

16. Claims 26-42, 54-59, and 67, which teaches a set of method claims, fail to teach or define above or beyond the apparatus found within Claims 1-4 above and are rejected for the same reasons set forth above in the rejections of Claims 1-4, supra.

17. Claims 43-53, 60-64, and 66, which teach a set of computer program product claims, fail to teach or define above or beyond the apparatus found within Claims 1-4 above and are rejected for the same reasons set forth above in the rejections of Claims 1-4, supra.

18. Claims 5 and 25 are rejected under 35 U.S.C. 103 as being unpatentable over Cohn, et al, (US 5,740,231) in view of Morgan, et al., (US 5,524,254) as applied to claims 1-4 above, and further in view of December, et al. (The World Wide Web Unleashed) . The claimed invention in Claims 5 and 25 adds the further limitation to the invention found within Claim 4 that performing the secondary communication protocol includes (d1) transmitting an e-mail signal over Internet from the first node with its IP address, (d2) transmitting the message thru the Internet for delivery at the second node, and (d3) transmitting a second IP address to the first node for establishing the point-to-point communications. The combination of Cohn, et al., and Morgan, et al. teaches the communications mechanism claimed here in utilizing the address server and its database to initiate communications between the two nodes. Neither of these two references teaches the

message transport mechanism which is utilized to transmit the various messages between the various processors on the network. December, et al., on pages 6-9 teaches the various message and data types which are readily transported between two nodes attached to the Internet and that each type of message is a format for which blocks of data are sent between different processors. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to utilize Internet e-mail messages as the means to transport various requests between two processors attached to the Internet because it is a well defined and well supported data transport means for moving data between processors across the Internet and that the substitution of e-mail as the transport mechanism for any other message transport means would be within the ordinary skill of the art as these transport means are equivalent means for moving blocks of data between nodes of the network.

Response to Arguments

19. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

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

Heylighen teaches the basics of Internet communication and the addressing means used therein.

21. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-5358, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Rinehart whose telephone number is (703) 305-4815. The examiner can normally be reached on Monday through Thursday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Supervisory Primary Examiner Frank J. Asta, can be reached on (703) 305-3817. The fax phone number for the Electrical Examining Technology Center is (703) 308-9051.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Mark H. Rinehart
Primary Examiner

Mark H. Rinehart
Primary Examiner
Art Unit 2756

Notice of References Cited

Application No.	Applicant(s)		
08/533,115	Hutton et al.		
Examiner	Group Art Unit	Page 1 of 1	
Mark H. Rinehart	2756		

U.S. PATENT DOCUMENTS

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
	A	5,608,786	3/4/97	Gordon	----	----
	B	5,740,231	4/14/98	Cohn et al.	----	----
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
	N						
	O						
	P						
	Q						
	R						
	S						
	T						

NON-PATENT DOCUMENTS

		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	U		
	V		
	W		
	X		

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LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023, Page 47

LinkExchange Member

Register your IP address "telephone number" for Netscape Conference and/or CoolTalk

This will add your *current* IP address and other information to the contact list.
Since your IP address will change each time you log on, you must register each time you log on.

The following information is optional, but including it will improve the chances that someone will talk to you.
Including your email address will put you on our mailing lists for updates to this site.

Register me for:

☑ CoolTalk
☐ Netscape Conference

Name or Nick:	tgif
E-Mail:	george.wallace@uspto.gov
City:	arlington
State:	va
Country:	USA
Comment:	checking out the site

☑ Remember this information so I do not have to enter it again!

Submit IP * Reset

Your IP address is: 151.200.96.2.

Home View Submitted IPs

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 475

Home
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Unregister
Talk Meeting Rm
Chat Rooms
Get Software
Errors / FAQ

Talk Meeting Room

The list

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Member of the Internet Link Exchange

Meet your friends

Visitors:

The following people have indicated they are looking for someone to talk to using Netscape Conference or Cooltalk.

You have to press the "reload" button to see the latest list of names.

If you are waiting for a call...make sure Conference and/or Cooltalk is turned on!

To call someone, press the *CoolTalk* ( ) or *Conference* ( ) icon next to their name.

When people disconnect, they are not removed from this list, and if you disconnect and log in again you will probably have a different IP address.

While waiting for a call try our new Chat Room

Time/Date	Dial	Name/Email	City	St	Country
03/20 13:55 EST		Guenter Z.	Tacoma	WA	USA
		Kai, ruf nochmal durch!!!!!!!!!!!			
03/20 13:43 EST		LastNiceGuy	houston	tx	USA
		I'd like to try this anyone call me.			
03/20 13:35 EST		katherina		bc	canada
		waiting for last nice guy			
03/20 13:31 EST		Erin	York	PA	USA

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 476

03/20 13:20 EST		ROBNIEDSME	Tamarac	FL	USA
		USA			
03/20 13:11 EST		M. ANN		md	usa
		financial services,loans, maryland only.			
03/20 12:37 EST		Eglin M	Port Elizabeth		South Africa
		Let's talk			
03/20 12:27 EST		Rik	vitoria	ES	Brasil
		USA			
03/20 12:26 EST		Maximo	Roma		Italia
		italian			
03/20 12:04 EST		peter	montreal	que	Canada
03/20 12:01 EST		Kai Schütrumpf	Friedewald	Hessen	Germany
		Please only for Guenter!!!			
03/20 12:01 EST		ROCAL	Rochester	IN	USA
		KA9YQM			
03/20 11:03 EST		tinkoo	MUMBAI	MH	INDIA
		i can receive calls but can't call up...			
03/20 11:01 EST		Armando Gonzalez	Caracas	DF	Venezuela
		USA			
03/20 10:58 EST		ARCH-Snd Questions	will snd answer	Fl	U.S.A.
		NetConf & CT works send e-mail for info			
03/20 10:50 EST		perfect_			
		hi			
03/20 10:45 EST		Zaxxon	statesville	NC	USA
03/20 10:35 EST		bob	ellenton	fl	usa
		USA			
03/20 10:09 EST		Don	Morristown	NJ	
		My E-Mail is: Don0453@AOL.COM			
03/20 09:22 EST		hema	mumbai		india
		just testing			

03/20 09:14 EST		Daniel	vic		aust
		USA			
03/20 09:12 EST		Corinne			Singapore
		Looking for DANIEL dear....			
03/20 07:05 EST		TAZZ	Newnan	GA	USA
		USA			
03/20 06:52 EST		LK	Russellville	AR	USA
		USA			
03/20 06:38 EST		cjay	melbourne	vic	australia
		waiting for mates			
03/20 06:26 EST		Tbone	okinawa	ap	japan
03/20 04:44 EST		Aleksander	San Fran	CA	ICQ#8336177
		Hey any nasty ladies out there?...M25			
03/20 03:29 EST		KRISHY			Malaysia
		USA			
03/20 02:22 EST		Lacie	Jacksonville	FL	USA
		Waiting for Dave			
03/20 02:22 EST		Davester	Phoenix	AZ	US
		Lacie.....			

Home | Add your IP

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http://www.detel.com/
This site was created by:
Edward J. Weinberg coolmaster@detel.com

Detel, Inc.

We can create one for you!

No programmers were harmed in the testing of this product.

Netscape Conference and *CoolTalk* Meeting Room

Sponsored by:

Is your domain available?

Home
Register
Unregister
Talk Meeting Rm
Chat Rooms
Get Software
Errors / FAQ

- **Home School chat**
- **It's a BOY!**
- **Holocaust Remembrance Day Chat**

Search Engines...

Member of the Internet Link Exchange

Welcome to the q5 Netscape Conference and CoolTalk® Meeting Room!
now with CHAT!
(We have **NO** connection to Netscape Communications Corporation.)

Bookmark this page. Other pages will change as this site improves!

A random user

See the people you talk to! Email us your GIF, JPEG, or BMP with a bio. No graphic? Snail mail us your picture and a bio and we will scan it in.

We have *Chat* and *Talk* meeting rooms.

Chat allows you to communicate either publicly or privately by typing to each other.

For *talk* you can use either CoolTalk or Netscape Conference.
First you register (it's free), then go to the Talk Meeting Room to see the list of people waiting for a call.
To call someone, press the *CoolTalk* ( ) or *Conference* ( ) icon next to their name.

For most of us, every time we log on to your Internet Service Provider you have a different IP address, so you must register here each time you log on to your Internet Service Provider.

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Netscape Conference is a program in the suite *Netscape CommunicatorPreview Release*. You must choose to download:
"Netscape Communicator Preview Release - All Components plus Plug-ins"
in order to get *Netscape Conference*.

There is a section of the Release notes which deals with Netscape Conference.

CoolTalk® is a plugin program for Netscape. It comes bundled with Netscape 3.0 and is available for many platforms including Windows 95, Windows NT, Windows 3.1, MacOS, SunOS, Solaris, HP-UX, Digital Unix, and IRIX.

If you are downloading Netscape, you must get the "plugin" version with a "P" in its name. When you select the "Desired Product:" make sure you select one which is called "standard plus components"
CoolTalk can also be downloaded from the Netscape FTP site.

MAC users *must* use a 28.8 or faster modem.

Check out the CoolTalk FAQ. It specifically addresses issues of compatable sound cards, upgrading to *Full Dupex*, and *MAC*.

We have NO connection with Netscape. While we may be able to answer simple questions, Netscape Technical Support is more knowledgable than us. **Send comments about this site to coolmaster@detel.com**

This site may be uncomprehendable without Netscape Navigator 3.0. Download Netscape Now

---

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Edward J. Weinberg webmaster@detel.com

detel, inc.
Suite 332
2490 Black Rock Tnpk
Fairfield, CT 06432

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No programmers were harmed in the testing of this product.

Is your domain available?
Check out:
www.serverking.com

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Readme

VocalTec Internet Phone (TM)
Version 2.5 (Build 5) - February, 1995

Copyright(c) 1995 by VocalTec Ltd.

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Group 2700

In order to use Internet Phone, you need...

1. Windows 3.1 or higher (not NT).
2. 8MB of RAM recommended.
3. 486SX 25Mhz or faster recommended.
4. Windows compatible audio board, with speaker and microphone.
5. TCP/IP software with WINSOCK 1.1 support.
6. A SLIP/PPP, or direct Internet connection (14,400 baud minimum).

Installing the Internet Phone

1. Make sure that your microphone and speaker work properly,
   by recording yourself using the Microsoft's Sound Recorder.
   See "Preparing Your Audio Device" section, below.
2. Create a directory on your hard-disk
   e.g.: MD C:\IPHONE
3. From that directory, execute the self-extracting archive
   C:\IPHONE> IPHONE25.EXE
4. Choose File/Run and execute C:\IPHONE\ADDICONS
   A new program-manager group file will be created, with icons for The
   Internet Phone and Help file
5. Double-click the Internet Phone icon.
6. The first time you run the Internet Phone Software, a Quick Tour will
   be suggested to you.

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7. Start talking with the rest of the world!

About The Internet Phone and IRC

The Internet Phone uses the IRC to show the currently on-line users.
The actual talk is done directly between the PC's running the Internet
Phone, and NOT via the IRC.

Selecting an IRC server

In order to use the Internet Phone, you must be connected to an IRC
server. It is best to select the one nearest to you, in order to get
the best connection.

Once you're connected to the IRC, you can call any other Internet Phone
user that is connected to the IRC network. There is no need for both
of you to use the same IRC server.

Please note that by "nearest" we mean over the net, but usually
geographically close places have a better network connection.

The first time you connect, you can select a server from the Publicly
Accessible Servers. It might not be the closest to you, but it will
enable you to start talking.

Later you can try and find a server better suited for you. Note that
many servers accept connections from specific areas. Some are limited
to a country, some to a specific campus.

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Technical Support

Before calling VocalTec for technical support, please do the following
:

1. Check the TroubleShooting from the Help menu in the Internet Phone.
   It contains a list of problems and solutions.

2. Select "Technical Support" from the Help menu for information on ho
w
   to contact VocalTec.

END of README.TXT

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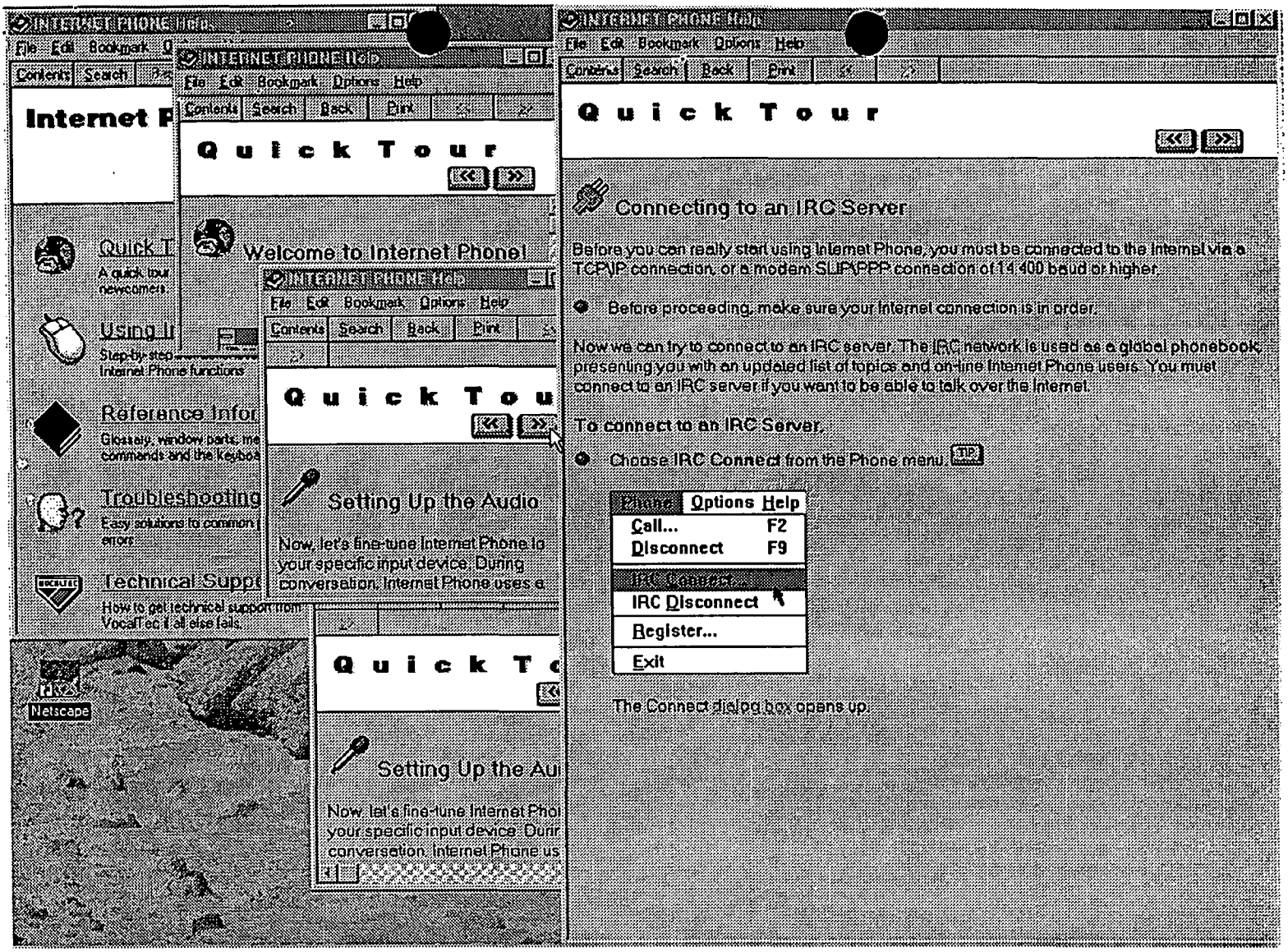
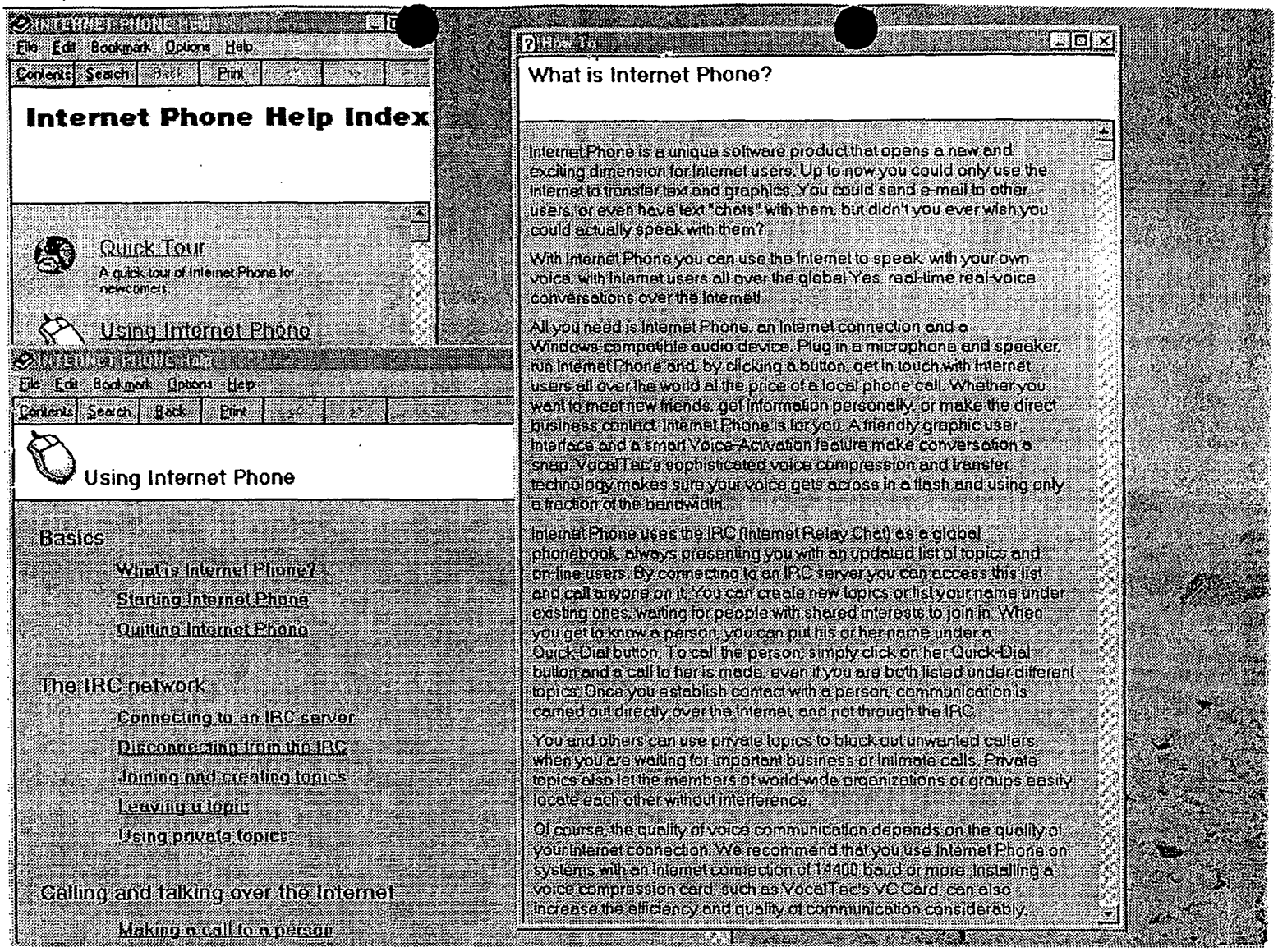

File Edit Bookmark Options Help
Contents Search Back Print
Quick Tour
Welcome to Internet Phone!
Setting Up the Audio
Now, let's fine-tune Internet Phone to your specific input device. During conversation, Internet Phone uses a
Connecting to an IRC Server
Before you can really start using Internet Phone, you must be connected to the Internet via a TCP/IP connection, or a modem SLIP/PPP connection of 14,400 baud or higher.
Before proceeding, make sure your Internet connection is in order.
Now we can try to connect to an IRC server. The IRC network is used as a global phonebook, presenting you with an updated list of topics and on-line Internet Phone users. You must connect to an IRC server if you want to be able to talk over the Internet.
To connect to an IRC Server,
Choose IRC Connect from the Phone menu.
Phone Options Help
Call... F2
Disconnect F9
IRC Connect...
IRC Disconnect
Register...
Exit
The Connect dialog box opens up.


File Edit Bookmark Options Help
Contents Search Back Print
Internet Phone Help Index
Quick Tour
A quick tour of Internet Phone for newcomers
Using Internet Phone
File Edit Bookmark Options Help
Contents Search Back Print
Using Internet Phone
Basics
What is Internet Phone?
Starting Internet Phone
Quitting Internet Phone
The IRC network
Connecting to an IRC server
Disconnecting from the IRC
Joining and creating topics
Leaving a topic
Using private topics
Calling and talking over the Internet
Making a call to a person
What is Internet Phone?
Internet Phone is a unique software product that opens a new and exciting dimension for Internet users. Up to now you could only use the Internet to transfer text and graphics. You could send e-mail to other users, or even have text "chats" with them, but didn't you ever wish you could actually speak with them?
With Internet Phone you can use the Internet to speak, with your own voice, with Internet users all over the globe! Yes, real-time real-voice conversations over the Internet!
All you need is Internet Phone, an Internet connection and a Windows-compatible audio device. Plug in a microphone and speaker, run Internet Phone and, by clicking a button, get in touch with Internet users all over the world at the price of a local phone call. Whether you want to meet new friends, get information personally, or make the direct business contact, Internet Phone is for you. A friendly graphic user interface and a smart Voice-Activation feature make conversation a snap. VocalTec's sophisticated voice compression and transfer technology makes sure your voice gets across in a flash and using only a fraction of the bandwidth.
Internet Phone uses the IRC (Internet Relay Chat) as a global phonebook, always presenting you with an updated list of topics and on-line users. By connecting to an IRC server you can access this list and call anyone on it. You can create new topics or list your name under existing ones, waiting for people with shared interests to join in. When you get to know a person, you can put his or her name under a Quick-Dial button. To call the person, simply click on her Quick-Dial button and a call to her is made, even if you are both listed under different topics. Once you establish contact with a person, communication is carried out directly over the Internet, and not through the IRC.
You and others can use private topics to block out unwanted callers, when you are waiting for important business or intimate calls. Private topics also let the members of world-wide organizations or groups easily locate each other without interference.
Of course, the quality of voice communication depends on the quality of your Internet connection. We recommend that you use Internet Phone on systems with an Internet connection of 14400 baud or more. Installing a voice compression card, such as VocalTec's VC Card, can also increase the efficiency and quality of communication considerably.

The Leader in Internet Discussion

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Article 5 of exactly 5

Subject: Re: Getting IP address of PPP-connected Mac
From: jgull@umich.edu (Jason Gull)
Date: 1995/04/03
Message-ID: <jgull-0304951005350001@pm012-11.dialip.mich.net>
Newsgroups: comp.sys.mac.comm

[Subscribe to comp.sys.mac.comm] New!

[More Headers]

Thanks for the advice. However, I'm already using MacTCPWatcher to find out *my own* IP address. It's trying to discover the IP addresses of other PPP users that is troubling me. So far the best "solution" seems to be a central location where I and my friends with whom I may wish to use Talk, NetPhone, etc. in the future can post our dynamic IPs each time we connect via PPP. Then other users can check that location and contact me.

I'm working on an AppleScript to do this. Any info, comments, advice would be appreciated. I'll post details here (and to my web page) if I ever get it going.

Jason Gull
jgull@umich.edu
http://www.umich.edu/~jgull/

In article <3lmrnv$igu@sct1.sct.fr>, Luc Saint-Elie
<lstelie@world-net.sct.fr> wrote:

> jgull@umich.edu (Jason Gull) wrote:
> >Is there *any* other way I can find out the IP address of a Mac connected
> >via MacPPP without asking the person using the machine on the other end?
> >I've tried making Talk requests to my friend's various email addresses, to
> >no avail. It just seems like the server has to have some way of figuring
> >out the address of a MacPPP-connected machine. Right? So is there any
> >way I can tap into that knowledge on the server?
>
> There are two ways (may be much more) to know that:
>
> 1- Simple way, use the "stats.." item in your ConfigPPP panel. On the
bottom right
> side of the display you will find your IP adress.

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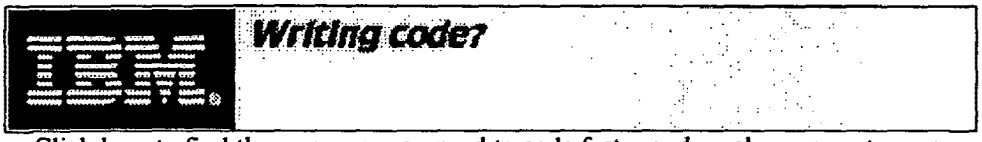
> 2- Best way : Use MacTCP Watcher (freeware from Peter Lewis), a really nice
> software allowing you to know EVREYTHING about your IP connection.
>
> Hope this helps

--
Jason Gull
jgull@umich.edu

Liberty is always dangerous. But it is
the safest thing we have. - H.E.Fosdick



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Article 8 of exactly 11

Subject: Re: Internet Phone for Mac?
From: jgull@umich.edu (Jason Gull)
Date: 1995/04/17
Message-ID: <jgull-1704950116450001@pm049-28.dialip.mich.net>
Newsgroups: comp.sys.mac.comm

[Subscribe to comp.sys.mac.comm] New!
[More Headers]

It's called **NetPhone**, and from all accounts, it's a lot better than Internet Phone (which uses an IRC **server**). **NetPhone** supports GSM (the compression scheme used by a lot of European and other cellular phones), which means it works fine over a 14.4 line, though GSM really requires a 25mhz 040 minimum.

The only problem for dial-up SLIP/PPP users is that to call, a caller needs to know the **IP address** of the receiver's machine, which changes all the time with most SLIP/PPP accounts. I've heard Internet Phone is trying to solve this using a dedicated IRC **server**. I've been trying to solve it with a script to write my current dial-up **address** to my web page, but it doesn't really work yet.

NetPhone is from emagic, and their web site is at
http://www.emagic.com
There you can download a demo version (outgoing calls limited to 90 seconds).

Jason Gull
jgull@umich.edu

In article <jazzbo-1604951234280001@onramp2-11.onr.com>, jazzbo@onr.com wrote:

> The latest issue of Wired had a blurb that said there was something akin
> to the Internet Phone available for Mac users. What is it and where can I
> get it??
>
> -Dave
>
> P.S. Have a nice day.
> --

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> Have you ever gotten sick of hearing AT&T take credit for things that they didn't invent? You will.
>
>

-Dave Hamilton (jazzbo@onr.com)

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3/16/99

PETITION FOR EXTENSION OF TIME	Docket No. N0003/7000

Applicant: Glenn W. Hutton, et al.
Serial No. 08/533,115
Filed: September 25, 1995
For: METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner: M. Rinehart
Art Unit: 2756

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Group 2700

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on March 1, 1999.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

This is a request under the provisions of 37 C.F.R. §1.136(a) to extend the period for filing a response in the above-identified application up to, and including, March 1, 1999.

Small Entity

☐ A small entity statement under 37 C.F.R. §1.27 has already been filed.
☐ A small entity statement under 37 C.F.R. §1.27 is attached

Extension

The requested extension and the appropriate fee are as follows:

☒	One month (37 C.F.R. §1.17(a)(1))	$110.00
☐	Two months (37 C.F.R. §1.17(a)(2))	
☐	Three months (37 C.F.R. §1.17(a)(3))	
☐	Four months (37 C.F.R. §1.17(a)(4))	
☐	Five months (37 C.F.R. §1.17(a)(5))	
	Reduction by one-half for request by small entity	
	Total Fee:	$110.00

Payment

☐ A check in the amount of the extension fee is enclosed.
☒ The extension fee is included in a fee payment made in connection with papers accompanying this petition.

03/08/1999 SLUANG 00000101 08533115
01 FC:115 110.00 OP

03/08/1999 SLUANG 00124957061
Regln. Ref.:08533115 $10.00 CR
DMS:023038
Name/Number:
FC 704

LG v. Straight Path, IPR2015-00209
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☐ Charge the extension fee to deposit account no. 02-3038. A duplicate of this sheet is attached.
☒ The Commissioner is hereby authorized to charge any other fees under 37 C.F.R. §1.16 and §1.17 that may be required, or credit any overpayment, to deposit account no. 02-3038.

Bruce D. Jobse Date: March 1, 1999

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax: (617) 367-4656

#26
S. Sand
3/16/99

OIPE JC18 MAR - 4 1999 PATENT & TRADEMARK OFFICE

INFORMATION DISCLOSURE TRANSMITTAL	Docket No.: N0003/7000

Applicant: Glenn W. Hutton, et al.
Serial No 08/533,115
Filed: September 25, 1995
For: METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner: M. Rinehart
Art Unit: 2756

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Group 2700

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on March 1, 1999.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, DC 20231

In keeping with the duty of candor and good faith owed to the Patent and Trademark Office, Applicant wishes to bring information to the attention of the Examiner. The filing of this statement shall not be construed as a representation that a search has been made or as an admission that this information is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

Enclosures

- ☐ A form PTO-1449 listing this information is attached.
- ☒ A copy of each document cited is enclosed.
- ☐ Copies of documents cited are not enclosed because .
- ☐ A petition requesting consideration of the information disclosure statement is attached (see below.)

Fees

- ☐ This statement is filed before the later of (1) three months of (i) the filing of a national application or (ii) the entry date for the national stage of an international application and (2) the mailing date of a first office action on the merits. No fee is due.
- ☒ This statement is filed before the mailing date of either a final office action or a notice of allowance, *and*
  - ☒ The submission fee of $240.00 under 37 CFR §1.17(p) is enclosed, *or*
  - ☐ A petition requesting consideration of the information disclosure statement is attached, the petition fee of under 37 CFR §1.17(i) is enclosed, *and*
    - ☐ each item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart

Void date: 03/08/1999 SLUANG
03/08/1999 SLUANG 00000101 08533115
03 FC:998 240.00 OP
10.00 OP

03/08/1999 SLUANG 00000101 08533115
03 FC:126 240.00 OP
03 FC:998 10.00 OP

foreign application not more than three months prior to the filing of this statement, or

☐ no item of information contained in this 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 statement after making reasonable inquiry, no item of information contained in this statement was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

Payment

☒ A check in the amount of the submission or petition fee is enclosed.

☐ Charge Account No. 02-3038 in the amount of the submission or petition fee. A duplicate of this transmittal sheet is attached.

Authorization to Charge Additional Fees

☒ The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §1.16 and §1.17 required by the attached paper and during the entire pendency of this application to Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse Date: 3/1/99

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax: (617) 367-4656

individual rejections set forth in the Office Action (Paper No. 23), Applicants request that the Examiner consider the following remarks.

In the office action, the Examiner has repeatedly stated that "[I]t would have been obvious to one of ordinary skill in the art at the time the invention was made to include a database and search retrieval mechanism to locate the needed network address because such mechanism permits the database to be modified over time to allow dynamic address assignment thus reducing the need to large address identifiers and thus the amount of data that needs to be transmitted with each packet of data."(Paper No. 23, paragraph 11). Applicants respectfully note that this mischaracterization of the motivation for the invention was first introduced by the prior Examiner (Paper 18, paragraph 7). Applicants' invention solves a fundamental problem associated with the Internet. The problem is not reducing the need for larger address identifiers. The problem is not the amount of data which needs to be transmitted with each packet over the network. The problem is: How can a global network user be located if he/she has no permanent network address?

Applicants have disclosed a solution to the above-described problem. The solution utilizes a client/ server system. In the disclosed system, a client process contacts a dedicated address directory server and forwards to the server the network protocol address to which it has been assigned upon connection to the computer network, along with other identification information. The dedicated address directory server maintains a compilation or list of entries, each of which contain a process identifier and the corresponding network protocol address forwarded to the server by the process itself. Other processes wishing to contact a desired target process simply query the address directory server to determine whether the target process is on-line and the current network protocol address at which the target process is located. The server forwards the network protocol address of the target process to the querying process. The querying process utilizes the information to establish a point-to-point communication with the target process.

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The Examiner is relying primarily on Morgan to disclose a database containing one or more network addresses. The Examiner will note that although a database may be programmable or contain writable memory, such a database does not teach or suggest Applicants' inventive client/service system in which the client processes themselves update the database with their current information. This aspect distinguishes Applicants' system from the art of record.

Applicants have cancelled claims 1-4, and 6-11 without prejudice. Accordingly, any rejections of those claims are hereby deemed moot.

Applicants have made global amendments to the claims to ensure consistent use terminology throughout the claims and to conform the claims to 35 U.S.C. Section 112, 2nd paragraph. Specifically, the term "means" has been eliminated from the remaining pending claims. Also, all occurrences of "processors" have been changed to "process". Various other claims have been made for clarity sake. Such amendments are not necessitated by any reference cited by the Examiner but are offered to clarify the claim language and to more particularly point out and distinctly claim the subject matter which Applicants regard as their invention.

The Examiner has rejected the remaining pending claims under 35 USC §103 as being unpatentable over U.S. Patent 5,740,231 (Cohn et al.) in view of U.S. Patent 5,524,254 (Morgan et al.). Applicants respectfully assert that the claims, as amended, patentably distinguishes over the combined teachings of Cohn and Morgan for the following reasons. As stated by the Examiner, Cohn does not specify searching a database to match an address with a destination node. Although the sections of Morgan cited by the Examiner disclose an address recognition engine which reads each request and uses the address contained in the request as an index into an information database for look-up of a corresponding entry (Morgan, column 4, lines 44-56), the Examiner has failed to show where Morgan discloses a database in which the client process supply the database with their respective network addresses.

Claim 21 is directed to a computer program product for use with a computer system functioning as a client process in the inventive client/server

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system of the subject application. Claim 21 has been amended to recite "program code for transmitting to the server a network protocol address received by the first process following connection to the computer network " (claim 21, lines 9-10). None of the references cited by the Examiner, whether considered singularly or in combination, disclose, teach or suggest a process or client process which forwards its network protocol address received upon connection to the computer network to a server. As discussed previously, the reporting or "logging-in" of a client process with an address directory server to provide the server with the current network protocol address at which the process can be located is not shown in the prior art.

Claim 23 is an apparatus claim directed to the server portion of Applicants' inventive system. Claim 23 has been amended to now recite an apparatus comprising a processor, a network interface and "a memory ... for storing a network protocol address for selected of a plurality of processes, each network protocol address stored in the memory following connection of the respective process to the computer network" (claim 23, lines 7-10). Claim 23 is believed patentable over the art of record, particularly the Morgan reference, as none of the references disclose or suggest, whether considered singularly or in combination the subject matter now claimed. Claim 24 includes all the limitations of claim 23 and is likewise believed patentable over the cited references for the same reasons as claim 23.

Claim 26 recites a method and has been amended similarly to claim 23. Specifically, claim 26 now recites a method for enabling point-to-point communication between a first process and a second process over a computer network including the step of "receiving and storing in a computer memory a respective network protocol address for selected of a plurality of processes that have an on-line status with respect to the computer network, each of the network protocol addresses received following connection of the respective process to the computer network" (claim 26, lines 6-11). As stated previously, none of the references of record, particularly Morgan et al., are believed to disclose a process for storing network protocol address in which the network protocol

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address are received following connection of the process to the computer network. Claims 27-31 include all the limitations of claim 26 and are likewise believed patentable over the art of record for the same reasons as claim 26.

Applicants are puzzled by Examiner's assertion in Paragraphs 16 and 17 of the Office Action that claims 32-42 and 43-53 fail to teach or define beyond the subject matter of claims 1-4. Claims 32-42 are directed to a method for establishing a point-to-point communication link with the user interface of a client process by associating elements representing a communication line and various processes. None of the references cited by the Examiner, including Gordon, Morgan, Cohn and December disclose or suggest a user interface or a technique for establishing communications by manipulation of user interface elements. Claims 43-53 are computer program product claims and are directed to a computer program product containing program code for performing a process similar to the method defined in claims 32-42. Applicants respectfully assert that claims 32-53 with, or without the current amendments patentably distinguish over the cited references, whether considered singularly or in combination. Applicants respectfully assert that the Examiner has failed to disclose where any of the cited references teach or suggest a user interface for establishing point-to-point communications by associating user interface elements representing various processes and communication lines.

Claim 54 recites a method of locating a process over a computer network comprising the step of "maintaining an Internet accessible list having a plurality of selected entries, each entry comprising an identifier and a corresponding Internet protocol address of a process currently connected to the Internet, the Internet protocol address added to the list following connection of the process to the computer network" (claim 54, lines 3-7). For reasons similar to those stated with reference to claims 23 and 26, claim 54 is believed patentable over the art of record.

Claim 55 also recites a method of locating processes over a computer network. Claim 55 has been amended to include the step of "maintaining, in a computer memory, a network accessible compilation of entries, selected of the

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entries comprising a network protocol address and a corresponding identifier of a process connected to the computer network, the network protocol address of the corresponding process assigned to the process upon connection to the computer network (claim 55, lines 4-9). Claim 60 is a computer program product claim having similar limitations to claim 55. Specifically, claim 60 recites a computer program product comprising "program code configured to maintain the computer memory, a network accessible compilation of entries, selected of the entries comprising a network protocol address and a corresponding identifier of a process connected to the computer network, the network protocol address of the corresponding process assigned to the process upon connection to the computer network" (claim 60, lines 6-11). Claims 55 and 60 and their subsequent dependent claims are believed patentable over the art of record. The Examiner has not shown where any of the cited references disclose or suggest a database for storing network protocol addresses where the network protocol addresses have been assigned to a process upon the processes connection to the computer network, as now claimed.

Claim 66 is directed to a computer program product for use with a client process in accordance with the inventive client/server system of the present invention. Specifically, claim 66 recites a computer program product comprising program code configured to access a directory database, the database having a network protocol address for a selected plurality of processes having online status with respect to the computer network, the network protocol address of each respective process forwarded to the database following connection to the computer network" (claim 66, lines 7-11). Claim 66 is believed patentable over the art of record substantially for the same reasons as claim 21.

Claim 67 is directed to a method of a client process in the inventive client/server system of the present invention, specifically, claim 67 recites a method of establishing a point-to-point communication between first and second processes comprising the step of "following connection of the first process to the computer network, forwarding to the address server a network protocol address at which the first process is connected to the computer network" (claim 67, lines

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5-7). Applicants respectfully assert that claim 67 is patentably distinct over the art of record, whether considered singularly or in combination since none of the cited references disclose, teach or suggest a client process which forwards its network protocol address to an address server following connection of the process to the computer network.

Applicants' submit herewith a supplemental Information Disclosure Statement with this response containing references which have been made of record in co-pending application Serial No. 08/721,316.

In light of the foregoing amendments to the claims, Applicants respectfully assert that all claims currently under consideration now patentably distinguish over the art of record, including the cited references, whether considered singularly or in combination. The Examiner is respectfully requested to advance this case to issuance and send a notice to that effect. In the event that outstanding issues remain following the Examiner's review of this response, Applicants' attorney requests that the Examiner contact Applicants' attorney at the number listed below to set up a telephone interview to attempt to resolve any outstanding issues with the claims and before any further Office Actions are issued.

The Commissioner is hereby authorized to charge any fees or credits under 37 C.F.R. §1.16 and 1.17 to our deposit account No. 02-3038.

Respectfully submitted

Bruce D. Jobse Date: 3/1/99

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second process [having first and second processors] and a server [operatively coupled] over a computer network, the computer program product comprising:

a computer usable medium having program code [means] embodied in the medium [for establishing a point-to-point communications link between the first processor and the second processor over the computer network], the [medium further] program code comprising:

program code for transmitting to the server a network protocol address received by the first process following connection to the computer network;

program code [means] for transmitting, [from the first processor] to the server, a query as to whether the second [processor] process is connected to the computer network;

program code [means] for receiving a network protocol address of the second [processor] process from the server, when the second [processor] process is connected to the computer network; and

program code [means], responsive to the network protocol address of the second [processor] process, for establishing a point-to-point communication link between the first [processor] process and the second [processor] process over the computer network.

2.

~~23~~. (Amended) [A computer server] An apparatus for enabling point-to-point communications between a first and a second [processor] process over a computer network, the [server] apparatus comprising:

a [server] processor;

a network interface [means], operatively coupled to the [server] processor, for connecting the [server] apparatus to the computer network;

a memory, operatively coupled to the processor, for storing a network protocol address for selected of a plurality of [processors connected] processes, each network protocol address stored in the memory following connection of a respective process to the computer network;

means, responsive to a query from the first [processor] process, for determining the on-line status of the second [processor] process and for

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transmitting [the] a network protocol address of the second [processor] process to the first [processor] process in response to a positive determination of the on-line status of the second [processor] process.

24. (Amended) The computer server apparatus of claim 23 further comprising a timer [means], operatively coupled to the [server] processor, for time stamping the network protocol addresses stored in the memory.

26. (Amended) [In a connection server having a database and a computer network operatively coupled thereto, a] A method for enabling point-to-point communication between a first [processing unit] process and a second [processing unit] process over a computer network, the method comprising the steps of:

A. receiving and storing into a computer memory [storing in the database,] a respective network protocol address for [each] selected of a plurality of [processing units] processes that have an on-line status with respect to the computer network, each of the network protocol addresses received following connection of the respective process to the computer network;

B. receiving a query from the first [processing unit] process to determine the on-line status of the second [processing unit] process;

C. determining the on-line status of the second [processing unit] process; and

D. transmitting an indication of the on-line status of the second [processing unit] process to the first [processing unit] process over the computer network.

27. (Amended) The method of claim 26 wherein step C further comprises the steps of:

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c.1 searching the [database] computer memory for an entry relating the second [processing unit] process; and

c.2 retrieving [the] a network protocol address of the second [processing unit] process in response to a positive determination of the on-line status of the second [processing unit] process.

C3 4 4

28. (Amended) The method of claim 26 wherein step D further comprises the steps of:

d.1 transmitting the network protocol address of the second [processing unit] process to the first [processing unit] process when the second [processing unit] process is determined in step C to have a positive on-line status with respect to the computer network.

7 4

29. (Amended) The method of claim 26 wherein step D further comprises the steps of:

d.1 generating an off-line message when the second [processing unit] process is determined in step C to have a negative on-line status with respect to the computer network; and

d.2 transmitting the off-line message to the first [processing unit] process.

8 4

30. (Amended) The method of claim 26 further comprising the steps of:

E. receiving an E-mail signal comprising a first network protocol address from the first [processing unit] process; and

F. transmitting the E-mail signal over the computer network to the second [processing unit] process.

9 8

31. (Amended) The method of claim 30 wherein the E-mail signal further comprises a session number and wherein step F further comprises the step of:

f.1 transmitting the session number and network protocol address over the computer network to the second [processor] process.

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10

~~32.~~ (Amended) In a computer system, a [A] method for establishing a point-to-point communication link from a caller [processor] process to a callee [processor] process over a computer network, the caller [processor having] process having a user interface and being operatively [coupled] connectable to the callee [processor] process and a server over the computer network, the method comprising the steps of:

C3

A. [generating an] providing a user interface element representing a first communication line;

B. [generating an] providing a user interface element representing a first callee [processor] process; and

C. establishing a point-to-point communication link from the caller [processor] process to the first callee [processor] process, in response to a user associating the element representing the first callee [processor] process with the element representing the first communication line.

11 10

~~33.~~ (Amended) The method of claim ~~32~~ wherein step C further comprises the steps of:

c.1 querying the server as to the on-line status of the first callee [processor] process and

E

c.2 receiving a network protocol address of the first callee [processor] process over the computer network from the server.

12 10

~~34.~~ (Amended) The method of claim ~~32~~ further comprising the step of:

D. [generating] providing an element representing a second communication line.

13 12

E ~~35.~~ (Amended) The method of claim ~~34~~ further comprising the step 5 of:

E. terminating the point-to-point communication link from the caller [processor] process to the first callee [processor] process, in response to the

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user disassociating the element representing the first callee [processor] process from the element representing the first communication line; and

F. establishing a different point-to-point communication link from the caller [processor] process to the first callee [processor] process, in response to the user associating the element representing the first callee [processor] process with the element representing the second communication line.

14 10
36. (Amended) The method of claim 32 further comprising the steps of:

C3 D. [generating an] providing a user interface element representing a second callee [processor] process; and

E. establishing a conference point-to-point communication link between the caller [processor] process and the first and second callee [processors] process, in response to the user associating the element representing the second callee [processor] process with the element representing the first communication line.

15 10
37. (Amended) The method of claim 32 further comprising the step of:

F. removing the second callee [processor] process from the conference point-to-point communication link in response to the user disassociating the element representing the second callee [processor] process from the element representing the first communication line.

16 10
38. (Amended) The method of claim 32 further comprising the steps of:

D. [generating an] providing a user interface element representing a communication line having a temporarily disabled status; and

E. temporarily disabling a point-to-point communication link between the caller [processor] process and the first callee [processor] process, in response to the user associating the element representing the first callee [processor] process with the element representing the communication line having a temporarily disabled status.

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17 16
~~39~~. (Amended) The method of claim ~~38~~ wherein the element [generated] provided in step D represents a communication line on hold status.

18 17
~~40~~. (Amended) The method of claim ~~39~~ wherein the element [generated] provided in step D represents a communication line on mute status.

C3

19 10
~~41~~. (Amended) The method of claim ~~32~~ wherein the caller [processor] process further comprises a visual display and the user interface comprises a graphic user interface.

C4

20 19
~~42~~. (Amended) The method of claim ~~41~~ wherein the steps of establishing a point-to-point link as described in step C is performed in response to [a user manipulating] manipulation of the graphic elements on the graphic user interface.

C5

21
~~43~~. (Amended) A computer program product for use with a computer system comprising:

a computer usable medium having program code [means] embodied in the medium for establishing a point-to-point communication link from a caller [processor] process to a callee [processor] process over a computer network, the caller [processor] process having a user interface and being operatively [coupled] connectable to the callee [processor] process and a server over the computer network, the medium further comprising:

program code [means] for generating an element representing a first communication line;

program code [means] for generating an element representing a first callee [processor] process;

program code [means], responsive to a user associating the element representing the first callee [processor] process with the element representing the first communication line, for establishing a point-to-point communication link from the caller [processor] process to the first callee [processor] process.

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22 21

~~44.~~ (Amended) The computer program product of claim ~~43~~ wherein the program code [means] for establishing a point-to-point communication link further comprises:

program code [means] for querying the server as to the on-line status of the first callee [processor] process; and

program code [means] for receiving a network protocol address of the first callee [processor] process over the computer network from the server.

23 21

~~45.~~ (Amended) A computer program product of claim ~~43~~ further comprising:

program code [means] for generating an element representing a second communication line.

24 23

~~46.~~ (Amended) The computer program product of claim ~~45~~ further comprising:

program code [means], responsive to the user disassociating the element representing the first callee [processor] process from the element representing the first communication line, for terminating the point-to-point communication link from the caller [processor] process to the first callee [processor] process; and

program code [means], responsive to the user associating the element representing the first callee [processor] process with the element presenting the second communication line, for establishing a different point-to-point communication link from the caller [processor] process to the first callee [processor] process.

25 21

~~47.~~ (Amended) The computer program product of claim ~~43~~ further comprising:

program code [means] for generating an element representing a second callee [processor] process; and

program code means, responsive to the user associating the element representing the second callee [processor] process with the element representing the first communication line, for establishing a conference communication link between the caller [processor] process and the first and second callee [processors] process.

~~-8-~~ 39

26 25

~~48~~. (Amended) The computer program product of claim ~~47~~ further comprising:

program code [means], responsive to the user disassociating the element representing the second callee [processor] process from the element representing the first communication line, for removing the second callee [processor] process from the conference communication link.

27 21

~~49~~. (Amended) The computer program product of claim ~~43~~ further comprising:

program code [means] for generating an element representing a communication line having a temporarily disabled status; and

program code [means], responsive [to user associating] association of the element representing the first callee [processor] process with the element representing the communication line having a temporarily disabled status, for temporarily disabling the point-to-point communication link between the caller [processor] process and the first callee [processor] process.

28 27

~~50~~. The computer program product of claim ~~49~~ wherein the communication line having a temporarily disabled status comprises a communication line on hold status.

29 27

~~51~~. The computer program product of claim ~~49~~ wherein the communication line having a temporarily disabled status comprises a communication line on mute status.

30 21

~~52~~. (Amended) A computer program product of claim ~~43~~ wherein the computer system [caller processor] further comprises a visual display and the user interface comprises a graphic user interface.

31 30

~~53~~. (Amended) The computer program product of claim ~~52~~ wherein the element representing the first communication line and the element representing the first callee [processor] process are graphic elements and wherein the

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program code [means] for establishing a point-to-point communication link from the caller [processor] process to the first callee [processor] process further comprises:

program code [means], responsive to [a user manipulating] manipulation of the graphic elements on the graphic user interface, for establishing the point-to-point communication link from the caller [processor] process to the first callee [processor] process.

~~54~~. (Amended) A method of locating a [user] process over a computer network comprising the steps of :

a. maintaining an Internet accessible list having a plurality of selected entries, each entry comprising an [electronic mail address] identifier and a corresponding Internet protocol address [for] of a process currently connected to the Internet, the Internet Protocol address added to the list following connection of the process to the computer network; and

b. in response to identification of one of the list entries by a requesting process, providing one of the [electronic mail address] identifier and the corresponding Internet protocol address of the identified entry to the requesting process.

~~55~~. (Amended) A method for locating [users] processes having dynamically assigned network protocol addresses over a computer network, the method comprising the steps of:

a. maintaining, in a computer memory, a network accessible compilation of entries, [each entry] selected of the entries comprising a network protocol address and a corresponding identifier [for a user] of a process connected to the computer network[;], the network protocol address of the corresponding process assigned to the process upon connection to the computer network; and

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b. in response to identification of one of the entries by a requesting process providing one of the identifier and the network protocol address to the requesting process.

34 33
56. (Amended) The method of claim 55 further comprising the step of:

c. modifying the compilation of entries.

35 34
57. (Amended) The method of claim 56 wherein step c further comprises:

c.1 adding an entry to the compilation upon the occurrence of a predetermined event.

36 35
58. (Amended) The method of claim 57 wherein the predetermined event comprises notification by a user process of an assigned network protocol address.

37 34
59. (Amended) The method of claim 56 wherein step c further comprises:

c.1 deleting an entry from the compilation upon the occurrence of a predetermined event.

38
60. (Amended) A computer program product for use with a [server apparatus] computer system having a memory and being operatively [coupled] connectable over a computer network to one or more computer processes, the computer program product comprising a computer usable medium having program code embodied in the medium the program code comprising:

a. program code configured to maintain, in [a] the computer memory, a network accessible compilation of entries, [each entry] selected of the entries comprising a network protocol address and a corresponding identifier [for] of a process connected to the computer network, the network protocol address of the corresponding process assigned to the process upon connection to the computer network; and

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b. program code responsive to identification of one of the entries by a requesting process and configured to provide one of the identifier and the network protocol address to the requesting process.

39 38

61. (Amended) The computer program product of claim 60 further comprising:

c. program code configured to modify the compilation of entries.

40 39

62. (Amended) The computer program product of claim 61 wherein program code configured to modify comprises:

c.1 program code configured to add an entry to the compilation upon the occurrence of a predetermined event.

41 40

63. (Amended) The computer program product of claim 62 wherein the predetermined event comprises notification by a process of an assigned network protocol address.

42 38

64. (Amended) The computer program product of claim 60 wherein step c further comprises:

c.1 program code configured to delete an entry from the compilation upon the occurrence of a predetermined event.

43

66. (Amended) A computer program product for use with a computer system, the computer system [including] executing a first process operatively coupled over a computer network to a second process and a server process , the computer program product comprising a computer usable medium having computer readable program code embodied therein, the program code [means] comprising:

a. program code configured to access a directory database, the database having a network protocol address for a selected plurality of processes having on-line status with respect to the computer network, the network protocol

address of each respective process forwarded to the database following connection to the computer network; and

b. program code responsive to one of the network protocol addresses and configured to establish a point-to-point communication link from the first process to the second process over the computer network.

44

~~67~~. (Amended) In a first computer process operatively coupled over a computer network to a second process and an address server, a method of establishing a point-to-point communication between the first and second processes comprising the steps of:

A. following connection of the first process to the computer network forwarding to the address server a network protocol address at which the first process is connected to the computer network;

[A.] B. querying the address server as to whether the second process is connected to the computer network;

[B.] C. receiving a network protocol address of the second process from the address server, when the second process is connected to the computer network; and

[C.] D. in [responsive] response to the network protocol address of the second process, establishing a point-to-point communication link with the second process over the computer network.

Remarks

Applicants have considered carefully the Office Action dated October 28, 1998 and the references cited therein. In response, the claims have been amended. Applicants respectfully request reexamination and reconsideration of the application.

Claims 1-4, 6-11, 21, 23-24, 26-64, 66 and 67 have been examined and are rejected over various combinations of U.S. Patent 5,608,786(Gordon); U.S. Patent 5,740,231 (Cohn); U.S. Patent 5,524,254 (Morgan); and excerpts from The World Wide Web Unleashed (December). Before responding to the

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PATENT & TRADEMARK OFFICE

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AMENDMENT	Docket No. N0003/7000

Applicant: Glenn W. Hutton, et al.
Serial No. 08/533,115
Filed: September 25, 1995
For: METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner: M. Rinehart
Art Unit: 2756

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)
The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Box Non-Fee Amendment, Washington, DC 20231 on March 1, 1999.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

In response to the office communication dated October 28, 1998, please amend the above-identified application as follows:

In the Specification:

Page 2, line 13, change "XXX.XXX.XXX.XXX" to --XXX.XXX.XXX--;

line 14, change "XXX.XXX.XXX.XXX.10" to --XXX.XXX.XXX.10--;

line 15, change "XXX.XXX.XXX.XXX.11" to --XXX.XXX.XXX.11--;

line 15, change "XXX.XXX.XXX.XXX.12" to --XXX.XXX.XXX.12--;

Page 11, line 10, change "2^{32} " to --32-bit--.

In the claims:

Please amend the claims as follows:

Please cancel claims 1-4 and 6-11, without prejudice.

21. (Amended) A computer program product for use with a computer system, the computer system executing a first process and operatively connectable to a

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Straight Path - Ex. 2023 - Page 512

2756

OIPE JC18 MAR - 4 1999 PATENT & TRADEMARK OFFICE

AMENDMENT TRANSMITTAL

Docket No. N0003/7000

Applicant:	Glenn W. Hutton, et al.
Serial No.	08/533,115
Filed:	September 25, 1995
For:	METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner:	M. Rinehart
Art Unit:	2756

Assistant Commissioner for Patents
Washington, DC 20231
Box Non-Fee Amendment

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Transmitted herewith for filing is the following:

Enclosures

- ☒ Amendment
- ☒ Petition for a 1 month Extension of Time
- ☒ Information Disclosure Statement
- ☒ Return Receipt Postcard

Small Entity

- ☐ A small entity statement under 37 C.F.R. §1.27 has already been filed.
- ☐ A small entity statement under 37 C.F.R. §1.27 is attached

Fees

Claims as Filed					
	Claims Filed	Highest Number Paid for	Number of Extra Claims	Rate	Additional Fees Due
Total Claims (37 CFR §1.16(c))	48	- 68 =	0 X	$18.00 =	$ 0.00
Independent Claims (37 CFR §1.16(b))	13	- 19 =	0 X	$78.00 =	$ 0.00
Extension Fee					$ 110.00
Reduction by 50% for filing by small entity					$ 0.00
Total Filing Fee					**$ 110.00**

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 513

Payment

☒ Check in the amount of the total filing fee.

☐ Charge Account No. 02-3038 in the amount of the total filing fee. A duplicate of this transmittal sheet is attached.

Authorization to Charge Additional Fees

☒ The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §1.16 and §1.17 required by the attached paper and during the entire pendency of this application to Account No. 02-3038.

Bruce D. Jobse Date: 3/1/99

Bruce D. Jobse, Esq. Reg. No. 33,518
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Straight Path - Ex. 2023 - Page 514

PATENT & TRADEMARK OFFICE JC18 MAR - 4 1999

AMENDMENT TRANSMITTAL	Docket No. N0003/7000

Applicant:	Glenn W. Hutton, et al.
Serial No.	08/533,115
Filed:	September 25, 1995
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Examiner:	M. Rinehart
Art Unit:	2756

Assistant Commissioner for Patents
Washington, DC 20231
Box Non-Fee Amendment

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Fees

Claims as Filed					
	Claims Filed	Highest Number Paid for	Number of Extra Claims	Rate	Additional Fees Due
Total Claims (37 CFR §1.16(c))	48	- 68 =	0 X	$18.00 =	$ 0.00
Independent Claims (37 CFR §1.16(b))	13	- 19 =	0 X	$78.00 =	$ 0.00
Extension Fee					$ 110.00
Reduction by 50% for filing by small entity					$ 0.00
Total Filing Fee					**$ 110.00**

Payment

☒ Check in the amount of the total filing fee.

☐ Charge Account No. 02-3038 in the amount of the total filing fee. A duplicate of this transmittal sheet is attached.

Authorization to Charge Additional Fees

☒ The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §1.16 and §1.17 required by the attached paper and during the entire pendency of this application to Account No. 02-3038.

Bruce D. Jobse Date: 3/1/99

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

021127 LM51/0525
KUDIRKA & JOBSE
TWO CENTER PLAZA
BOSTON MA 02108

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/533,115	09/25/95	044	RINEHART, M 2756	05/25/99
First Named Applicant HUTTON,			35 USC 154(b) term ext. = 0 Days.	

TITLE OF INVENTION: POINT-TO-POINT INTERNET PROTOCOL

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 649-2	709-227.000	T56	UTILITY	YES	$605.00	08/25/99

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY

08/533115

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/533,115	09/25/95	HUTTON	

EXAMINER

021127
KUDIRKA & JOBSE
TWO CENTER PLAZA
BOSTON MA 02108

LMS1/0525

ART UNIT	PAPER NUMBER
	29

DATE MAILED: 05/25/99

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☐ This communication is responsive to amendment 3/4/99 (Paper # 28).

☒ The allowed claim(s) is/are 21, 23-24, 26-64, 66, 67 renumbered 1-44.

☐ The drawings filed on _____ are acceptable.

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

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS FROM THE "DATE MAILED"** of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS

☒ because the originally filed drawings were declared by applicant to be informal.

☒ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 18.

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 26

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☐ Interview Summary, PTO-413

☒ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☐ Examiner's Statement of Reasons for Allowance

Mark H. Rinehart
Primary Examiner

PTOL-37 (Rev. 10/95)

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 518

#29 D
8.3 and
5/24/99

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. The application has been amended as follows:

IN THE CLAIMS:

Cancel claims 5, 12-20, 22, 25, 65, and 68 without prejudice or disclaimer.

3. This application is in condition for allowance except for the presence of claims 5, 12-20, 22, 25, 65, and 68 to Inventions II, II, and IV non-elected without traverse in Paper No. 22. Accordingly, claims 5, 12-20, 22, 25, 65, and 68 have been cancelled.

D

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Rinehart whose telephone number is (703) 305-4815. The examiner can normally be reached on Monday through Thursday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Supervisory Primary Examiner Frank J. Asta, can be reached on (703) 305-3817. The fax phone number for Examining Group 2300 is (703) 305-9731.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Mark H. Rinehart
Primary Examiner
Art Unit 2302

Mark H. Rinehart
Primary Examiner

PATENT & TRADEMARK OFFICE
MAR - 4 1999
OIPE JC18

INFORMATION DISCLOSURE STATEMENT BY APPLICANT Sheet 1 of 1	Docket No. N0003/7000

Applicant: Glenn W. Hutton, et al.
Serial No. 08/533,115
Filed: September 25, 1995
For: METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner: M. Rinehart
Art Unit: 2756

RECEIVED
MAR 1 0 1999
Group 2700

OTHER PRIOR ART – NON PATENT LITERATURE AND DOCUMENTS

Exam Inits	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the articles (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
[illegible]		VocalTec Internet Phone (TM) Version 2.5, www.cox.smu.edu/class/mis6386/people/stort/phone25.exe	☐
[illegible]		Weinberg, Netscape Conference and Cooltalk Meeting Room, www.q5.com	
[illegible]		Gull, Re: Getting IP address of PPP-connected Mac, <jgull-0304951005350001@pm012-11.dialip.mich.net>	☐
[illegible]		Gull, Re: Internet Phone for Mac?,>jgull-1704950116450001@pm049-28.dialip.mich.net>	☐
			☐
			☐
			☐
			☐
			☐
			☐

Examiner Signature	Mark H. Rinehart Primary Examiner	Date Considered	5/13/99

OIPE JC1
JUL 14 1999
PATENT & TRADEMARK OFFICE

AMENDMENT TRANSMITTAL

Docket No. N0003/7000

OIPE JC1
JUL 14 1999
PATENT & TRADEMARK OFFICE

Applicant:	Glenn W. Hutton, et al.
Serial No.	08/533,115
Filed:	September 25, 1995
For:	METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner:	R.H. Rinehart
Art Unit:	2756

CERTIFICATE OF EXPRESS MAILING

"Express Mail" mailing label number: EL445948630US
Date of Deposit: **July 14, 1999**

I hereby certify that the following Correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
BOX ISSUE FEE
Washington, DC 20231

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AUG 6 1999
Publishing Division
Corres/Allowed Files (04)

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AUG -3 1999
PRODUCTION CONTROL
PUBLISHING DIVISION

RECEIVED
JUL 29 1999
OIPE/JCWS

Transmitted herewith for filing is the following:

Enclosures

- ☒ Amendment After Allowance
- ☐ Petition for a month Extension of Time
- ☒ Return Receipt Postcard
- ☒ Declaration of Prior Invention (Mattaway and Strickland)
- ☒ Supplemental Declaration (Hutton, Mattaway and Strickland)
- ☒ Formal Drawings of Figures 1-9
- ☒ Letter to Official Draftsman

Small Entity

- ☐ A small entity statement under 37 C.F.R. §1.27 has already been filed.
- ☐ A small entity statement under 37 C.F.R. §1.27 is attached

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Straight Path - Ex. 2023 - Page 522

Fees

Claims as Filed					
	Claims Filed	Highest Number Paid for	Number of Extra Claims	Rate	Additional Fees Due
Total Claims (37 CFR §1.16(c))	68	- 68 =	0 X	$18.00 =	$ 0.00
Independent Claims (37 CFR §1.16(b))	19	- 19 =	0 X	$78.00 =	$ 0.00
Extension Fee					$ 0.00
Reduction by 50% for filing by small entity					$ 0.00
Total Filing Fee					**$ 0.00**

Payment

☐ Check in the amount of the total filing fee.

☐ Charge Account No. 02-3038 in the amount of the total filing fee. A duplicate of this transmittal sheet is attached.

Authorization to Charge Additional Fees

☒ The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §1.16 and §1.17 required by the attached paper and during the entire pendency of this application to Account No. 02-3038.

Bruce D. Jobse Date: 7/14/99

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax: (617) 367-4656

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JUL 1 4 1999
PATENT & TRADEMARK OFFICE
TC 1

#34
8.3rd
2/8/00

LETTER TO OFFICIAL DRAFTSPERSON	Docket No. N0003/7000

Applicant: Glenn W. Hutton, et al.
Serial No 08/533,115
Filed: September 25, 1995
For: METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner: R.H. Rinehart
Art Unit: 2756

CERTIFICATE OF EXPRESS MAILING

"Express Mail" mailing label number: EL445948630US
Date of Deposit: **July 14, 1999**

I hereby certify that the following Correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Commissioner of Patents and Trademarks, BOX ISSUE FEE, Washington, D.C. 20231.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Box Issue Fee
Washington, DC 20231

1. Upon approval of the Examiner in charge of the above-identified application, please substitute the enclosed drawing sheets containing formal versions of Figures 1-9 for the corresponding drawing sheets currently in the application.

2. The Commissioner is hereby authorized to charge any other fees under 37 CFR §1.16 and §1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038.

Respectfully submitted,

Bruce D. Jobse
Date: 7/14/99

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax: (617) 367-4656

Applicants have amended claims 33, 35 and 60 to correct minor grammatical errors within the claims, as allowed.

Also, submitted herewith are Supplemental Declarations Under 37 CFR Section 1.63 for each of the named inventors in the application.

With the Amendment mailed December 2, 1997, a Declaration of Prior Invention Under 37 CFR Section 1.131 of inventor Glenn W. Hutton was submitted. At that time, the petition to add inventors Mattaway and Strickland had not yet been granted. Upon recommendation of the USPTO Solicitor's Office, Applicants now submit herewith Supplemental Declarations of Prior Invention Under 37 CFR Section 1.131 of subsequently named inventors Mattaway and Strickland. These Declarations of Prior Invention of inventors Mattaway and Strickland corroborate and confirm the Declaration of Prior Invention of inventor Hutton.

Applicants also submit herewith formal drawings for Figs. 1-9 and a Letter to the Official Draftsman.

No new matter or substantive issues are believed raised by this amendment. In light of the foregoing amendments and remarks, this application is now believed in condition for issuance and the Examiner is respectfully requested to advance this application to issuance. If the Examiner has any further questions regarding this Amendment, he is invited to call Applicants' attorney at the number listed below.

The Commissioner is hereby authorized to charge any fees or credits under 37 C.F.R. §1.16 and 1.17 to our deposit account No. 02-3038.

Respectfully submitted

Bruce D. Jobse Date: 7/14/99

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax: (617) 367-4656

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 525

ENTER 312

MR 3/00

OIPE
JUL 14 1999
PATENT & TRADEMARK OFFICE
JC1

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3.30
2/8/90

AMENDMENT AFTER ALLOWANCE UNDER 37 CFR §1.312(a)	Docket No. N0003/7000

Applicant: Glenn W. Hutton, et al.
Serial No. 08/533,115
Filed: September 25, 1995
For: METHOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner: R.H. Rinehart
Art Unit: 2756

CERTIFICATE OF EXPRESS MAILING

"Express Mail" mailing label number: EL445948630US
Date of Deposit: **July 14, 1999**

I hereby certify that the following Correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Commissioner of Patents and Trademarks, BOX ISSUE FEE, Washington, D.C. 20231.

Frances M. Cunningham

Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to issuance, Applicants request the above-identified application be amended as follows:

Internal Rec. papers #34. dsf 6-21-00

In the Claims

Claim 33, line 3, change "callee; process" to -- callee process; --.

Claim 35, line 1, change "step" to -- steps --.

Claim 60, line 8, after "computer network" insert -- , --.

Remarks

This application is currently under Allowance. A Notice of Allowance dated May 25, 1999 was mailed indicating that claims 21, 23-24, 26-64, and 66-67 are allowed. Applicants submit this Amendment to resolve minor formalities in the application.

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 526

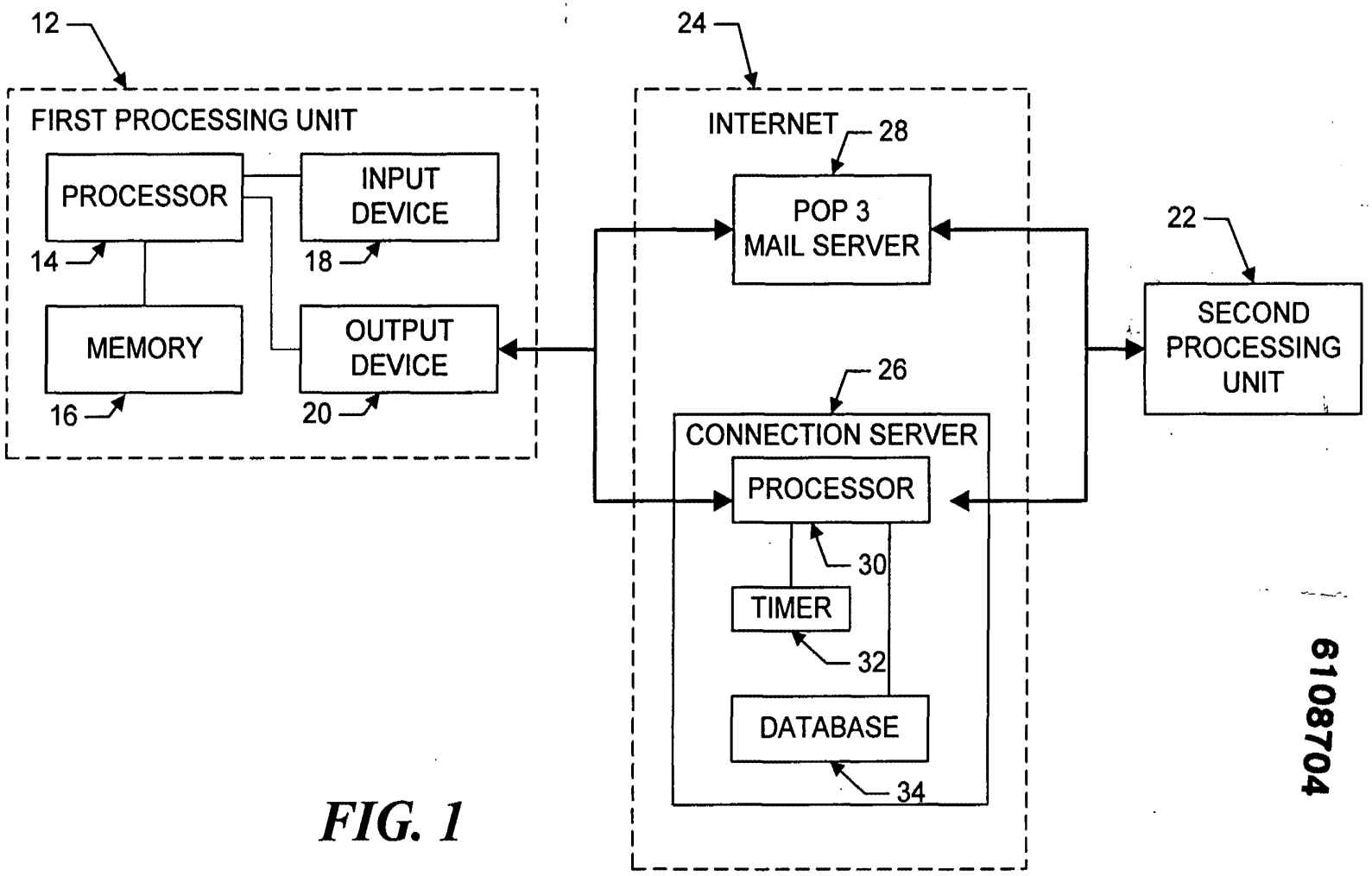
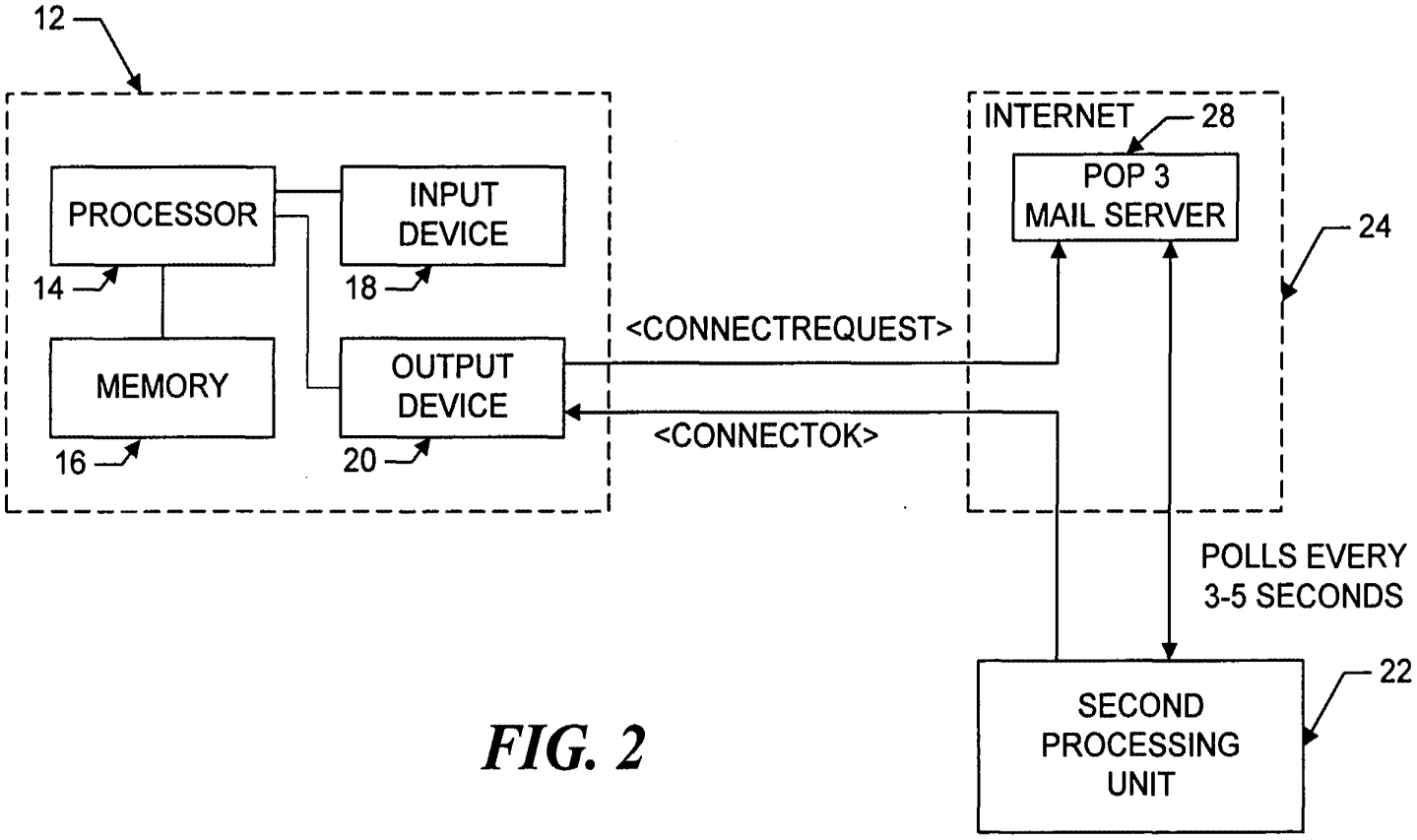


FIG. 1

6108704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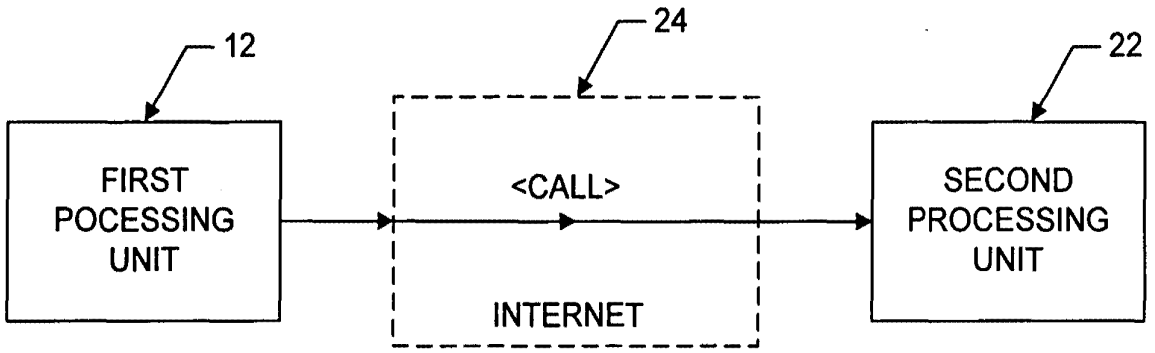
PROCESSOR
14
INPUT DEVICE
18
MEMORY
16
OUTPUT DEVICE
20
<CONNECTREQUEST>
<CONNECTOK>
INTERNET
28
POP 3 MAIL SERVER
24
POLLS EVERY 3-5 SECONDS
SECOND PROCESSING UNIT
22

FIG. 2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24
22
FIRST
POCESSING
UNIT
<CALL>
INTERNET
SECOND
PROCESSING
UNIT

FIG. 3

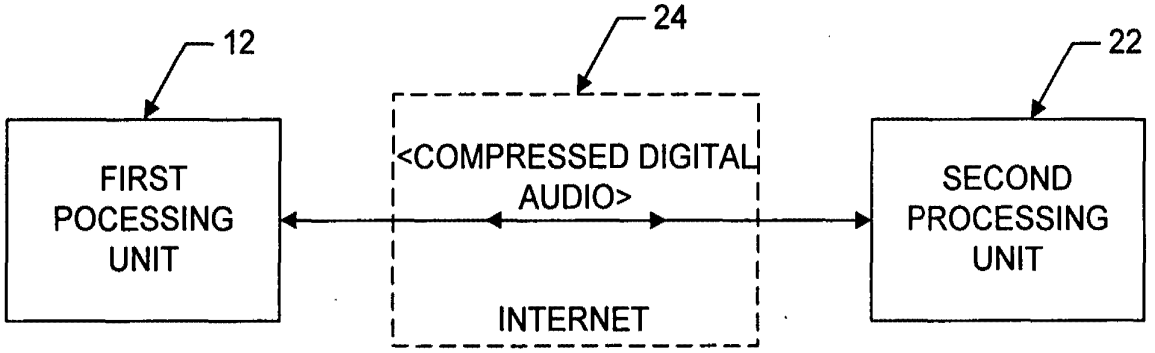
12
24
22
FIRST
POCESSING
UNIT
<COMPRESSED DIGITAL
AUDIO>
INTERNET
SECOND
PROCESSING
UNIT

FIG. 4

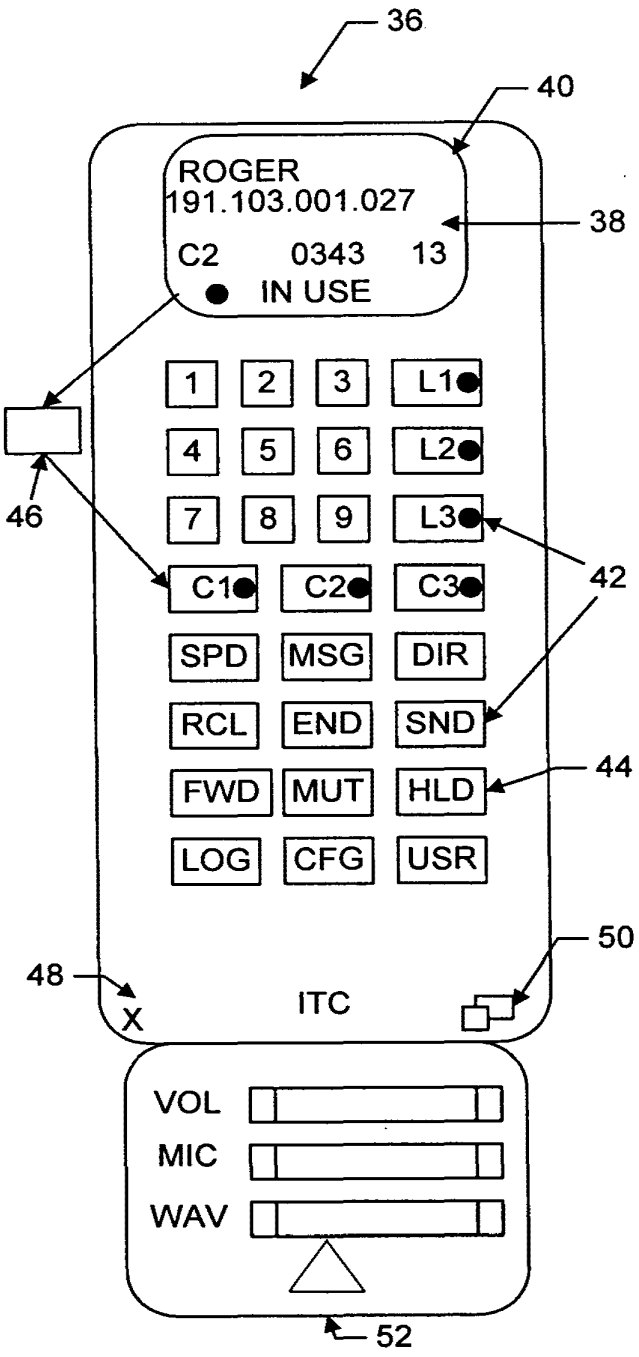

FIG. 5

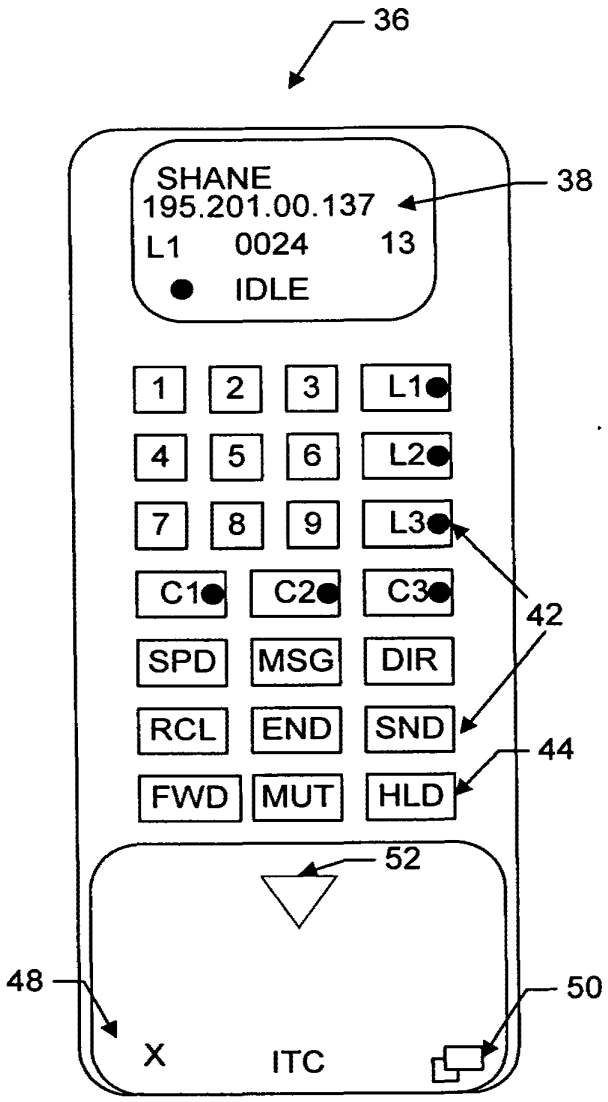

FIG. 6

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Straight Path - Ex. 2023 - Page 530

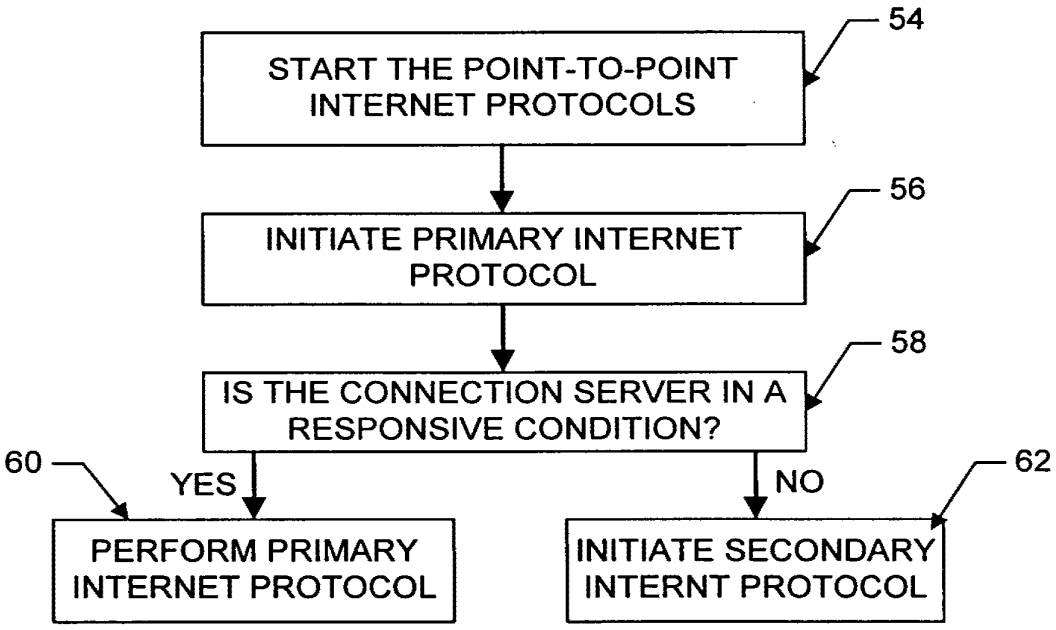


FIG. 7

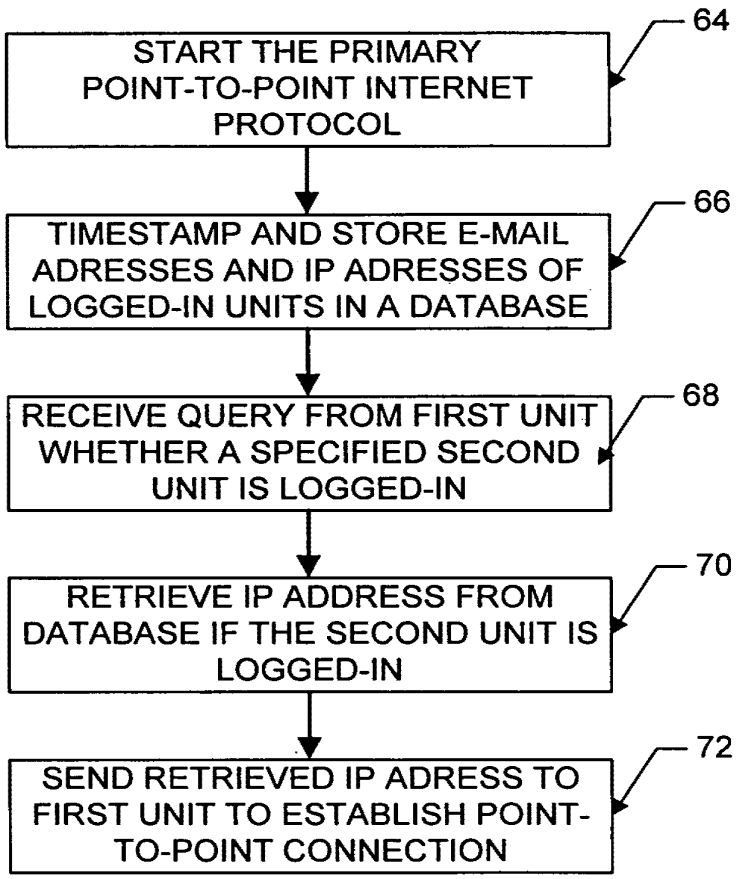


FIG. 8

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 531

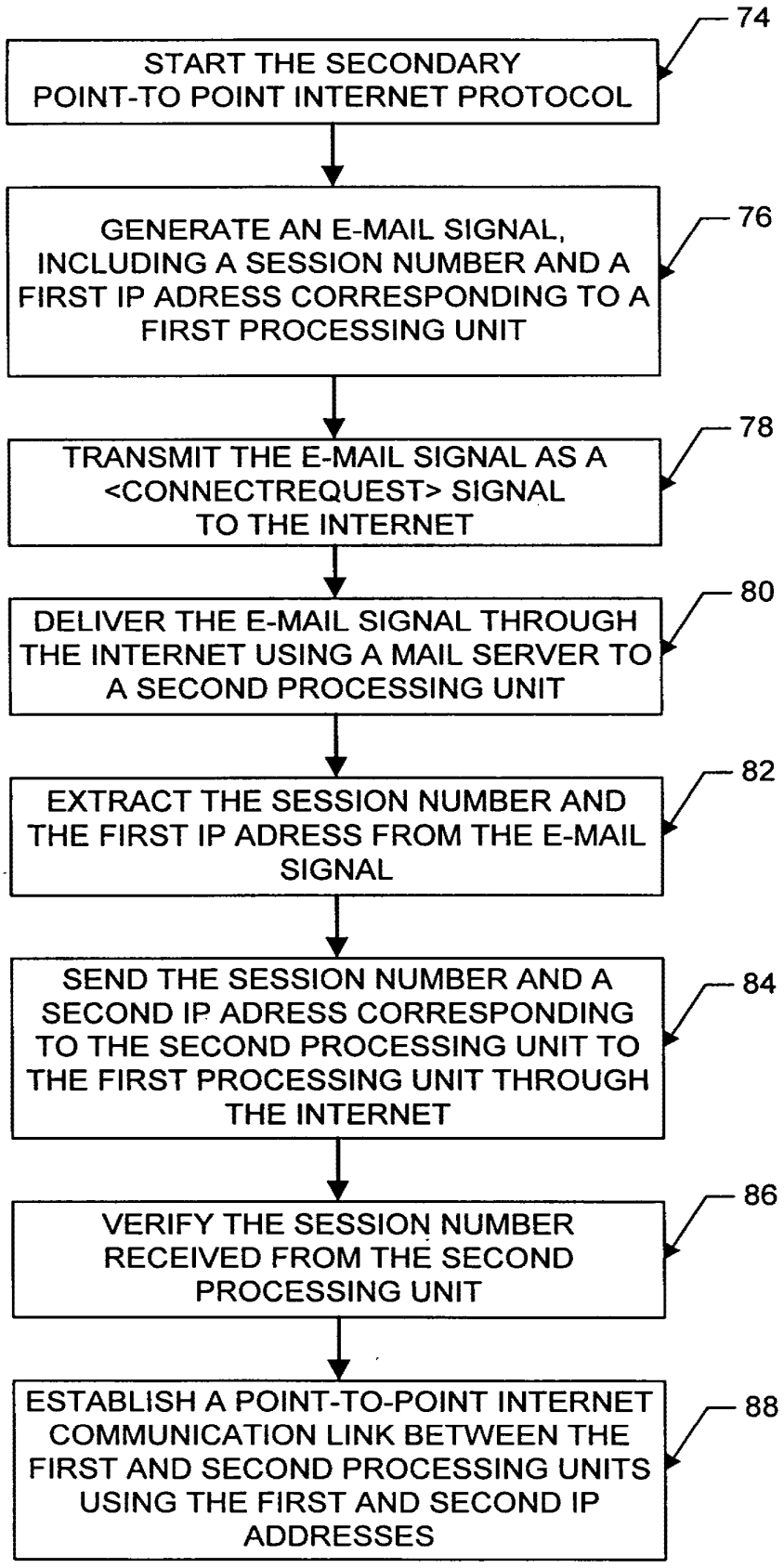


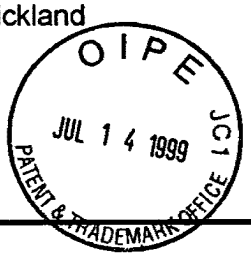
FIG. 9

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 532

#32
8.3rd

SUPPLEMENTAL DECLARATION (37 C.F.R. §1.63)	Docket No.: N0003/7000

Applicant: Glenn W. Hutton, Shane D. Mattaway and Craig B. Strickland
Serial No 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: M.H. Rinehart
Art Unit: 2756



As a below-named inventor, I hereby declare that:

1. My residence, post-office address and citizenship are as stated below next to my name.

2. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is disclosed and claimed in the above-identified application for patent as amended on April 5, 1996, December 2, 1997 and March 1, 1999.

3. I have reviewed and understand the contents of the above-identified application specification, as amended, including the claims.

4. I acknowledge the duty to disclose all information known to me that is material to patentability as defined in 37 C.F.R. §1.56.

---

5. I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate or 365(a) of any PCT application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the appropriate box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed:

Application No.	Country	Filing Date	Priority NOT Claimed	Certified Copy Attached.
			☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet attached hereto

---

6. I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional applications listed below:

Application No.	Filing Date

☐ Additional provisional application numbers are listed on a supplemental data sheet attached hereto

---

7. I hereby claim the benefit under 35 U.S.C. §120, of the United States Application(s) or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose all

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 533

information which is material to patentability as defined in 37 C.F.R. §1.56, and which became available to me between the filing date of the prior application and the national or PCT international filing date of this application:

Application No. Filing Date Parent Patent No.

☐ Additional U.S. or PCT application numbers are listed on a supplemental data sheet attached hereto

---

I hereby declare that all statements made herein of my 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 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

First Inventor Name: Glenn W. Hutton
Inventor's Signature: _____ Date: 7-6-99

Citizenship: Canada
Residence Address: 6450 SW 100th Street Pinecrest Florida 33156
Post Office Address: 6450 SW 100th Street Pinecrest Florida 33156

Second Inventor Name: Shane D. Mattaway

Inventor's Signature: _____ Date: _____

Citizenship: U.S.A.
Residence Address: 826 Periwinkle Street, Boca Raton, FL 33486
Post Office Address: 826 Periwinkle Street, Boca Raton, FL 33486

☒ Additional inventors are being named on the additional inventor sheet attached hereto.

DECLARATION - SUPPLEMENTAL INVENTOR SHEET

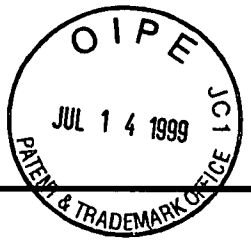
Third Inventor Name: Craig B. Strickland

Inventor's Signature: _____ Date:_____

Citizenship: Canada
Residence Address: 5713 NW 65th Terrace, Tamarac, Florida
Post Office Address: 5713 NW 65th Terrace, Tamarac, Florida

SUPPLEMENTAL DECLARATION (37 C.F.R. §1.63)	Docket No.: N0003/7000

Applicant: Glenn W. Hutton, Shane D. Mattaway and Craig B. Strickland
Serial No 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: M.H. Rinehart
Art Unit: 2756



As a below-named inventor, I hereby declare that:

1. My residence, post-office address and citizenship are as stated below next to my name.

2. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is disclosed and claimed in the above-identified application for patent as amended on April 5, 1996, December 2, 1997 and March 1, 1999.

3. I have reviewed and understand the contents of the above-identified application specification, as amended, including the claims.

4. I acknowledge the duty to disclose all information known to me that is material to patentability as defined in 37 C.F.R. §1.56.

---

5. I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate or 365(a) of any PCT application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the appropriate box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed:

Application No.	Country	Filing Date	Priority NOT Claimed	Certified Copy Attached.
			☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet attached hereto

---

6. I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional applications listed below:

Application No.	Filing Date

☐ Additional provisional application numbers are listed on a supplemental data sheet attached hereto

---

7. I hereby claim the benefit under 35 U.S.C. §120, of the United States Application(s) or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose all

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information which is material to patentability as defined in 37 C.F.R. §1.56, and which became available to me between the filing date of the prior application and the national or PCT international filing date of this application:

Application No. Filing Date Parent Patent No.

☐ Additional U.S. or PCT application numbers are listed on a supplemental data sheet attached hereto

---

I hereby declare that all statements made herein of my 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 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

First Inventor Name: Glenn W. Hutton
Inventor's Signature: _____ Date: _____

Citizenship: Canada
Residence Address: 9725 Hammocks Boulevard, #206, Miami, Florida 33196
Post Office Address: 9725 Hammocks Boulevard, #206, Miami, Florida 33196

Second Inventor Name: Shane D. Mattaway
Inventor's Signature: _____ Date: 6/30/94

Citizenship: U.S.A.
Residence Address: 826 Periwinkle Street, Boca Raton, FL 33486
Post Office Address: 826 Periwinkle Street, Boca Raton, FL 33486

☒ Additional inventors are being named on the additional inventor sheet attached hereto.

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Straight Path - Ex. 2023 - Page 537

DECLARATION - SUPPLEMENTAL INVENTOR SHEET

Third Inventor Name: Craig B. Strickland

Inventor's Signature: _____Date:_____

Citizenship: Canada
Residence Address: 5713 NW 65th Terrace, Tamarac, Florida
Post Office Address: 5713 NW 65th Terrace, Tamarac, Florida

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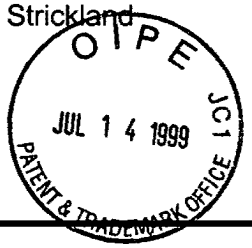
SUPPLEMENTAL DECLARATION (37 C.F.R. §1.63)	Docket No.: N0003/7000

Applicant: Glenn W. Hutton, Shane D. Mattaway and Craig B. Strickland
Serial No 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: M.H. Rinehart
Art Unit: 2756



As a below-named inventor, I hereby declare that:

1. My residence, post-office address and citizenship are as stated below next to my name.

2. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is disclosed and claimed in the above-identified application for patent as amended on April 5, 1996, December 2, 1997 and March 1, 1999.

3. I have reviewed and understand the contents of the above-identified application specification, as amended, including the claims.

4. I acknowledge the duty to disclose all information known to me that is material to patentability as defined in 37 C.F.R. §1.56.

---

5. I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate or 365(a) of any PCT application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the appropriate box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed:

Application No.	Country	Filing Date	Priority NOT Claimed	Certified Copy Attached.
			☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet attached hereto

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6. I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional applications listed below:

Application No.	Filing Date

☐ Additional provisional application numbers are listed on a supplemental data sheet attached hereto

---

7. I hereby claim the benefit under 35 U.S.C. §120, of the United States Application(s) or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose all

information which is material to patentability as defined in 37 C.F.R. §1.56, and which became available to me between the filing date of the prior application and the national or PCT international filing date of this application:

Application No. Filing Date Parent Patent No.

☐ Additional U.S. or PCT application numbers are listed on a supplemental data sheet attached hereto

---

I hereby declare that all statements made herein of my 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 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

First Inventor Name: Glenn W. Hutton
Inventor's Signature: _____ Date: _____

Citizenship: Canada
Residence Address: 9725 Hammocks Boulevard, #206, Miami, Florida 33196
Post Office Address: 9725 Hammocks Boulevard, #206, Miami, Florida 33196

Second Inventor Name: Shane D. Mattaway

Inventor's Signature: _____ Date: _____

Citizenship: U.S.A.
Residence Address: 826 Periwinkle Street, Boca Raton, FL 33486
Post Office Address: 826 Periwinkle Street, Boca Raton, FL 33486

☒ Additional inventors are being named on the additional inventor sheet attached hereto.

DECLARATION - SUPPLEMENTAL INVENTOR SHEET

Third Inventor Name: Craig B. Strickland

Inventor's Signature: _____ Date: 06/14/99

Citizenship: Canada
Residence Address: 5713 NW 65th Terrace, Tamarac, Florida
Post Office Address: 5713 NW 65th Terrace, Tamarac, Florida

#30 B3rds 2/8/00

ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton et al.
Serial No.: 08/533,115
Filed: September 25, 1995
For: POINT-TO-POINT INTERNET PROTOCOL
Examiner: M. H. Rinehart
Art Unit: 2756

CERTIFICATE OF EXPRESS MAILING

"Express Mail" mailing label number: EL445948630US
Date of Deposit: **July 14, 1999**

I hereby certify that the following Correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Commissioner of Patents and Trademarks, BOX ISSUE FEE, Washington, D.C. 20231.

Frances M. Cunningham
Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF PRIOR INVENTION IN THE UNITED STATES TO OVERCOME CITED PATENT UNDER 37 CFR 1.131

Sir/Madam:

This declaration is to establish completion of the invention in this application in the United States at a date prior to May 23, 1995, the effective date of prior art patent 5,581,552, cited by the Examiner. The undersigned Declarant was added as a named Inventor in the above-identified patent application. The Declarant's statements set forth below establishes conception of the invention prior to the effective date of the reference coupled with due diligence from prior to the effective date of reference to filing of the application . Exhibit B is submitted herewith to support the Declarant's statements. This Declaration is submitted prior to final rejection or payment of the issue fee in the application.

1. I am the named inventor in the United States Patent Application 08/533,115, filed September 25, 1995, entitled "POINT-TO-POINT INTERNET

PROTOCOL".

2. Prior to May of 1995, I, with other named inventor(s), jointly conceived of the subject matter disclosed in the above-identified patent application.

3. A number of weeks after the conception of the inventive subject matter and various refinements to the inventive concepts, I helped form, and became a principal of, the Internet Telephone Company, a Florida Corporation having a place of business at One South Ocean Boulevard, Suite 305, Boca Raton, Florida 33432.

4. Following formation of the Internet Telephone Company, a detailed design specification entitled "Internet Telephone Company WebPhone Design", a copy of which is attached hereto as Exhibit B, was generated to memorialize a product implementation of the inventive concepts and to provide the basis from which coding and testing of a working embodiment of the inventive concepts continued diligently until the filing date of this patent application, September 25, 1995.

I hereby declare that all statements made herein of my 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.

Shane D. Mattaway

6/30/95
Date

Residence: 826 Periwinkle Street, Boca Raton, FL 33486

Citizenship: United States
Post Office Address: 826 Periwinkle Street, Boca Raton, FL 33486

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ATTORNEY DOCKET NO. N0003/7000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Glenn W. Hutton et al.
Serial No.: 08/533,115
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For: POINT-TO-POINT INTERNET PROTOCOL
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Frances M. Cunningham
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Assistant Commissioner for Patents
Washington, D.C. 20231

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1. I am the named inventor in the United States Patent Application 08/533,115, filed September 25, 1995, entitled "POINT-TO-POINT INTERNET PROTOCOL".

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I hereby declare that all statements made herein of my 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.

Craig B. Strickland

06/14/99
Date

Citizenship: Canada
Residence Address: 5713 NW 65th Terrace, Tamarac, Florida
Post Office Address: 5713 NW 65th Terrace, Tamarac, Florida

Internet Telephone Company

webPhone™ *Design*

[redacted]

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Fax. 407-347-2445

THE INFORMATION CONTAINED HEREIN IS OF A HIGHLY CONFIDENTIAL AND PROPRIETARY NATURE AND IS NOT TO BE DISCLOSED TO ANYONE WITHOUT THE PRIOR WRITTEN CONSENT OF THE INTERNET TELEPHONE COMPANY.

EXHIBIT B

webPhone Structure and Function

The *webPhone* consists of a main window which looks and feels like a modern cellular flip phone and set of dialog boxes launched from the main window. See figure 1. The *webPhone* is controlled by clicking on objects (i.e. buttons, text and images) and dragging objects (i.e. lines, parties, messages, etc.).

The *webPhone* main window is 200x450 pixels closed and 200x590 pixels when the flip is opened. On a standard 640x480 display, when the user opens the flip door, the door detaches from the *webPhone* and is displayed on the side of the *webPhone*. This detached flip door is movable around the screen. When it is closed, it goes back onto the *webPhone* as before it was opened.

Buttons behave in one of two ways to the user. A button may be a *momentary* button which when pressed (left clicked on) gets pushed in then pops back out again or a button may be a toggle button which when pressed gets pushed in and stays in until pressed again (toggle buttons are either in a raised or depressed state). I will not make a joke here.

The objects comprising the *webPhone* main window are:

- display
- number pad
- line pad
- call function buttons
- phone function buttons
- audio control buttons and sliders

<u>display</u>

The display is 150x80 pixels and displays the following information:

party name

A text entry field using the READOUT truetype font. Text is 14 pixels high. The party name field can accomodate 20 to 25 characters on the display. If the user enters a name then presses [SND] to place the call and the user is not in the phone DIR, the *Directory Assistance* (Information) dialog will appear. If the user right clicks on the party name field, the *Update* phone DIR entry dialog will appear for that party if it exists thereby enabling the user to quickly modify the party's information.

When a call arrives, the caller's name will appear in the party name field as a caller ID feature.

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party IP address

A text entry field using the READOUT truetype font. Text is 14 pixels high. To place a call to another user who has a known (fixed) IP address, the user enters the IP address in the party IP address field then presses [SND]. If the callee exists in the phone DIR and/or the call goes through, the callee's name will appear in the party name field (caller ID). If the IP address given is bad, the line status annunciator will say so.

WebPhone status annunciators

The 3rd line of the *webPhone* display is used to display iconic annunciators providing feedback to the user about the status of events taking place in the *webPhone*. The status annunciators are:

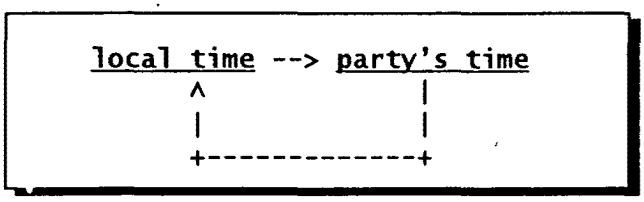
1. user is camped on one or more parties
2. default call forwarding is enabled (effects all parties with no specified call forwarding party)
3. call blocking is enabled (effects parties with call blocking enabled)
4. do not disturb is enabled
5. priority ringing is enabled (effects parties with priority ring enabled)
6. file transfer is occuring
7. voice mail transfer is occuring

Line number annunciator

Cycle through all lines by single clicking on the *Line number annunciator* (Li), the main LED or the line status annunciation text. The main LED color and line state annunciation text will change to reflect the state of the selected line. If the user is on a line with an active call, the *Line number annunciator* will return to reflect that line's status after a time out of 5 seconds. If no lines exist with active calls or no line is selected, the *Line number annunciator* will remain on the line which was last seleted (i.e. no time out occurs to change the Line number annunciator back).

local time/party's time

When there are no lines with active calls, the *webPhone* displays the current local time. When the user is on a line with an active call, the *webPhone* displays the remote party's time. By single clicking on the time, the user can cycle through the two different times as follows:



As the user changes lines, the time displayed will reflect the time format which was last selected for the selected line.

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new vmail msgs/total vmail msgs

The *webPhone* displays the current number of new voice mail messages and the total number of voice mail messages as follows:

new / total

If the user single clicks on the *vmail msgs annunciator*, he/she can display the total number of voice mail messages. If the user single clicks on the *vmail msgs annunciator* again, it will revert back to display the current number of new voice mail messages. The *vmail msgs annunciator* will automatically revert back to display the number of new voice mail messages after 5 seconds.

call duration

The duration of the current call is displayed in mm:ss format. As the user cycles through the lines by clicking on the Line number annunciator, the call duration annunciator changes to reflect that line's call duration if any.

main led

This LED mirrors the LED of the currently selected line. The LED colors are specified in figure 48. The colors represent the state of the call on the selected line.

line status text

Informs the user as to the state of the currently selected line. See figure 48.

list arrow

Enables the user to pop down the list of parties on the selected conference call.

Conference party list

When a user selects a active line with a conference call, the name of the first party on the conference call is displayed in the *party name* field in the display along with the *list arrow* described above. Once the user presses the list arrow to obtain the conference party list, the user can view all the parties present on the conference call (even those parties added to the conference by another party on the conference call).

If the user right clicks on an unselected line with a conference call (i.e. while engaged on another active line), the conference party list is displayed (no need to press the list arrow) for viewing and manipulation of the parties as described below. In the event the user does nothing with the list for 5 seconds or another object is selected (e.g. another button is pressed), the display will revert back to displaying the information about the currently selected line.

The user may remove one or more parties from the conference call by selecting them in the conference party list and pressing [END]. The

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user may also transfer one or more parties from the conference call by selecting them and dragging them to a free (IDLE) line. If the user is placed on hold by a party on the conference call, the only way the user may know this is to view the conference party list and check the face icon of the parties in the list.

Priority ring party list

When the user enables priority ringing (depresses [PRI]) or right clicks anytime on [PRI], a list of parties who have priority ringing enabled will appear in the display. The user may disable priority ringing for one or more parties by selecting them in the list and pressing the |Delete| key. This removes the parties from the priority ring list and updates the effected parties' records in the phone directory by disabling priority ringing. The user may also disable priority ringing for one or more parties by updating their records directly in the phone directory. In the event the user does nothing with the list for 5 seconds or another object is selected (e.g. another button is pressed), the display will revert back to displaying the information about the currently selected line. If there are no parties with priority ringing enabled, pressing [PRI] does nothing.

Call blocking party list

When the user enables call blocking (depresses [BLK]) or right clicks anytime on [BLK], a list of parties who have call blocking enabled will appear in the display. The user may disable call blocking for one or more parties by selecting them in the list and pressing the |Delete| key. This removes the parties from the call blocking list and updates the effected parties' records in the phone directory by disabling call blocking. The user may also disable call blocking for one or more parties by updating their records directly in the phone directory. In the event the user does nothing with the list for 5 seconds or another object is selected (e.g. another button is pressed), the display will revert back to displaying the information about the currently selected line. If there are no parties with call blocking enabled, pressing [BLK] does nothing.

In order to change the action to be performed when an inbound call arrives from a party with call blocking enabled (i.e. reject the call or give them to the answering machine), the user must update that party's record directly in the phone directory.

Camped on party list

When the user right clicks on [CMP], the camped on party list appears in the display. The user may remove a camp on a party by selecting the party and pressing the |Delete| key. In the event the user does nothing with the list for 5 seconds or another object is selected (e.g. another button is pressed), the display will revert back to displaying the information about the currently selected line.

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speed dial info

When a user right clicks on [0] or [1] or ... or [9], the name, alias, e-mail address and IP address (if known) of the party assigned to that speed dial position will appear in the display for 5 seconds or until another object is selected (e.g. another button is pressed), whichever comes first, then the display will revert back to displaying the information about the currently selected line.

line info

When a user right clicks on [L1], [L2], [L3] or [L4], the name, alias, e-mail address and IP address (if known) of the party on that line will appear in the display for 5 seconds or until another object is selected (e.g. another button is pressed), whichever comes first, then the display will revert back to displaying the information about the currently selected line.

FWD party list

When the user enables call forwarding (depresses [FWD]) or right clicks anytime on [FWD], a list of parties who have call forwarding enabled will appear in the display. The user may disable call forwarding for one or more parties by selecting them in the list and pressing the |Delete| key. This removes the parties from the call forwarding list and updates the effected parties' records in the phone directory by disabling call forwarding. The user may also disable call forwarding for one or more parties by updating their records directly in the phone directory. In the event the user does nothing with the list for 5 seconds or another object is selected (e.g. another button is pressed), the display will revert back to displaying the information about the currently selected line. If there are no parties with call forwarding enabled, pressing [FWD] does nothing.

In order to change a party's forwarding party (i.e. the party to be called) when an inbound call arrives from a party with call forwarding enabled, the user must update that party's record directly in the phone directory.

<u>number pad</u>

[0],[1],..[9] & [.]

The number buttons are 34x26 pixels. The number buttons may be used to enter a party's IP address. To erase an incorrect entry, the user must use the |Backspace| key on the keyboard. The number buttons also house the ten speed dial positions. The user may assign a party to one of the ten number buttons then initiate a speed dial by simply pressing [n] then [SND]. If the user right clicks on [n], the information about the party who is assigned to that speed dial position will be displayed.

<u>line pad</u>

[L1 o], [L2 o], [L3 o] & [L4 o]

The line buttons are 46x26 pixels. Line buttons are toggle buttons. Each line button has a letter and number indicating which line it is and a led which indicates the state of the call on that line (see figure

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48). When a line has a call with more than one party (conference call), the line button will replace the letter L with the letter C indicating that it contains a conference call. When a line containing a conference call reverts back to having only one party on the call, the line button will replace the letter C with the letter L indicating that it now contains a regular call. The line buttons work like the buttons on your car radio, only one can be depressed at a time. When a line button is depressed it is pre-selected or the active line. Pressing a line button when no inbound calls exist pre-selects that line for the next inbound or outbound call (depresses the line button). Pressing a line button when an inbound call arrives on that line answers the call (depresses the line button). Pressing a line button when the line is IN USE places the call on hold (raises the line button). Pressing a line button when the line is on hold takes the line off hold (depresses the line button).

call function buttons

The call function buttons are 46x26 pixels.

[RCL]

Recall last number. [RCL] is a momentary button. Pressing [RCL] recalls the last party called by displaying the party's name, alias, e-mail address and IP address (if known), selecting a free line (if a line has not already been pre-selected) then automatically pressing [SND] to initiate the call. The user may also right click on [RCL] to view the party's name, alias, e-mail address and IP address (if known) in the display. If the user does not press [SND] to intiate the call within 5 seconds from right clicking on [RCL], the display will revert back to displaying the information about the currently selected line. If the user presses [RCL] while engaged on an active line, that line will be placed on hold just as if the user had pressed [HLD] or deselected that line. If no free lines are available, pressing [RCL] will do nothing, however right clicking on [RCL] will still display the information about the last party called.

[END]

Terminates a call. [END] is a momentary button. If the user presses [END] when no lines are active no action is performed.

[SND]

Places and answers a call. [SND] is a momentary button. If the user presses [SND] when there are no free lines available or no party name is present in the *party name* field in the display or no inbound calls exist then no action is performed. When a call is placed or answered, the status of the call is indicated in the display and in the led color on the line with the active call.

[DND]

Do not disturb. [DND] is a toggle button. When [DND] is depressed it instructs the *webPhone* not to disturb the user with inbound calls but to send all inbound calls to the answering machine. When do not disturb

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is enabled, the display will annunciate the *do not disturb* icon. To turn off do not disturb, the user presses the depressed [DND] button.

[MUT]

Mute the conversation. [MUT] is a toggle button. When the user presses [MUT] the party on the call or all parties on a conference call can not hear the user (the microphone is effectively disabled). When mute is enabled, the *main led* and *line status text* in the display and the led color on the line button change to indicate that the call is muted. If the user presses [MUT] when no lines are selected or the selected line is in a state that cannot accept muting no action is performed. If a party mutes the call, the user has no indication of it. To unmute a call, the user presses the depressed [MUT] button.

[HLD]

Places the call on hold. [HLD] is a momentary button. When the user presses [HLD] the party on the call or all parties on a conference call are placed on hold (the microphone and speaker are effectively disabled). When hold is enabled, the *main led* and *line status text* in the display and the led color on the line button change to indicate that the call is on hold. If the user presses [HLD] when no lines are selected or the selected line is in a state that cannot accept muting no action is performed. If a party place the call on hold, the *main led* and *line status text* in the display and the led color on the line button change to indicate that the call has been placed on hold by the party. To take a call off hold, the user must press the line button of the holding call.

[CMP]

Camps on a party. [CMP] is a momentary button. Camping on a party serves to ensure that your call to that party will go through when the party is available (no longer busy or is back online). Think if it as a perpetual redial. When the user calls a party and the party is either BUSY or OFFLINE, the user may press [CMP] to camp on that party. To remove a camp on a party, the user must first display the camp list by right clicking on [CMP] then select the desired party and press the |delete| key.

[BLK]

Enables or disables call blocking. [BLK] is a toggle button. When call blocking is enabled (button is depressed) all inbound calls from parties who have call blocking enabled will be either rejected or given to the answering machine thereby not disturbing the user. Whether the call is rejected or given to the answering machine is specified in each party's record in the phone directory. If the call is rejected, the party will see REJECTED in their display.

[PRI]

Enables or disables priority ringing. [PRI] is a toggle button. When priority ringing is enabled (button is depressed) all inbound calls from parties who have priority ringing enabled will generate the priority

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ring sound effect when the call arrives. Priority ringing is specified in each party's record in the phone directory.

[FWD]

Enables or disables call forwarding. [FWD] is a toggle button. When call forwarding is enabled (button is depressed) all inbound calls from parties who have call forwarding enabled will cause the *webPhone* to route the call to the designated call forwarding party as specified in the party's record in the phone directory. If the calling party has not been assigned a call forwarding party and call forwarding is enabled, the call will be routed to the default call forwarding party (assigned to [FWD] itself) if it exists. To assign a default call forwarding party the user drags the desired party from either the phone directory, line, camp list, speed dial position, etc. and drops it on [FWD].

phone function buttons

The phone function buttons are 46x26 pixels.

[?]

Help. [HLP] is a momentary button. Pressing [?] launches the *webPhone* manual - wpman.exe, an interactive, multimedia tutorial and help system. Puts the user right at the start of the manual.

[CFG]

Configure the *webPhone*. [CFG] is a momentary button. Pressing [CFG] lauches the *configuration* dialog which enables the user to change the operating parameters of the *webPhone*. See figures 16 - 22.

[DIR]

Phone directory. [DIR] is a momentary button. Pressing [DIR] lauches the *phone directory* dialog which enables the user to add, update, sort, view and delete parties and obtain directory assistance. See figures 7 - 10.

[MSG]

Voice mail messages. [MSG] is a momentary button. Pressing [MSG] lauches the *voice mail messages* dialog which enables the user to view, sort, playback, delete, save and restore voice mail messages as well as create, playback, delete, save, restore custom outgoing messages and assign them to parties in the phone directory. See figures 4 - 6.

[DAT]

Data file transfer. [DAT] is a momentary button. Pressing [DAT] lauches the *data file transfer* dialog which enables the user to monitor and control the progress of data file transfered to and from parties. This is also the dialog which enables users to retrieve their e-mail and create and send e-mail. See figures 13 - 15.

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[LOG]

Call activity log. [LOG] is a momentary button. Pressing [LOG] lauches the *call activity log* dialog which enables the user to view, sort, search for, print and delete call related events. The user may initiate a call to a party by double clicking on an event. See figures 11 - 12.

X

Exits the *webPhone*. If the user has one or more active calls, an information dialog (see figure 2.) will appear asking the user if he/she wishes to really exit and terminate the active calls.

[]

Minimizes or iconifies the *webPhone*. The *webPhone* icon will display the main LED color for the currently selected line.

webPhone

This is the *webPhone* about text button. When pressed the user obtains the *About* dialog. See figure 3.

<u>audio control buttons and sliders</u>

Control the recording and playback of voice mail and outgoing messages. Operate exactly like conventional audio tape deck controls.

flip open/close

Opens and closes the flip door

progress bar

Displays the extent of progress during playback and recording of audio. Recorded voice mail is limited to 2 minutes and recorded outgoing messages is limited to 30 seconds. These parameters are currently not configurable by the user (via [CFG]) - should we allow the user to change these parameters?

[|<]

Rewinds the tape to the beginning. *[|<]* is a momentary button.

[>|]

Fast forwards the tape to the end of the recording. *[>|]* is a momentary button.

[x]

Aborts recording or playback operation. *[x]* is a momentary button. If the user is recording a voice mail message and decides not to deliver it, s/he would press *[x]* to abort the recording then press [END] to terminate the call without sending voice mail.

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[</]

Sound card speaker. *[</]* is a toggle button. Plays back audio on the sound card's speaker. *[</]* is only active (not dimmed) when the user has both a sound card and the IPC.

[>]

Plays back audio. *[>]* is a special type of momentary button. When pressed it starts playing audio and pops out to become the Pause button *[||]*. When *[||]* is pressed it pauses playback of the audio and pops out to become *[>]* again.

[.]

Stops playback of audio. *[.]* is a momentary button.

[o]

Records audio. *[o]* is a toggle button. When *[o]* is depressed the user is in record audio and can record voice mail or an outgoing message. To stop recording, the user may press *[o]* again or press *[.]*.

SPK slider

Speaker volume control. Enables the user to adjust the output volume of the audio received during conversation and playback of voice mail and outgoing messages. If the user does not have the IPC, the SPK control attenuates the sound card's speaker volume, If the user has the IPC, the SPK control attenuates the IPC's speaker volume and the sound card's speaker volume must be attenuated via the sound card's audio control panel.

MIC slider

Microphone volume control. Enables the user to adjust the input volume of the audio recorded during conversation and recording of voice mail and outgoing messages. If the user does not have the IPC, the MIC control attenuates the sound card's microphone volume, If the user has the IPC, the SPK control attenuates the IPC's microphone volume and the sound card's microphone volume must be attenuated via the sound card's audio control panel.

The ITEL operator's have a [USR] button on their *webPhone* to acquire a user's *webphone.cfg* file during registration.

Implementation

The *webPhone* will be developed under MS Windows using Borland C++ v.4.51. This compiler was chosen because of its extensive class library, the existence of C++ templates, OLE 2.0 support and familiarity by the programming staff.

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Platform

The webPhone will initially exist as a 16 bit version. A 32 bit version will be released later due to porting of socket and MCI code from 16 bit to 32 bit. Both versions will be capable of running on MS Windows 3.x and above. The 32 bit version will require the win32s subsystem to run on MS Windows 3.x (we will provide the user with the ability to obtain the win32s subsystem from the Itel Home Page).

The webPhone will use the w_char character set to allow for future portability to foreign languages based upon 16 bit characters such as kanji, arabic, hebrew, etc.

The 32 bit version will employ threads where necessary to improve performance in the PhoneManager (PM) and its AudioEngines (AE).

Architecture

The webPhone consists of a Graphic User Interface (GUI), a User Interface control (UI), a PhoneManager (PM) and an AudioEngine (AE). The GUI may be replaced by other GUI's such as X-Windows (UNIX), Presentation Manager (OS/2 Warp) and Macintosh without changing the UI,PM and AE to provide for fast porting to these other platforms. In addition, the webPhone can interface with multiple AEs to support a variety of audio compression and decompression algorithms (codecs) in software and hardware. For example, the webPhone interfaces with the software based GSM and TrueSpeech audio codecs via one AE (aesac.dll) and will interface with the ITEL phone card (IPC) via another AE (aeipc.dll). The webPhone will use the appropriate AE as required.

Refer to the System Architecture diagrams in figure 28 and the Software Architecture diagram in figure 29 for more details.

Objects

The GUI, UI, PM and AE use a number of objects to house and manipulate the data associated with the operation of the webPhone.

The GUI objects control the look and feel of the graphic user interface controls seen by the user which constitute the webPhone's user interface. Some of the UI objects maintain and manage the many states of the webPhone and control the behavior of the graphic user interface controls. Refer to figures 40 - 46 for more details on GUI and UI objects.

The following objects are used primarily by UI and PM to manage the state of calls and tasks that are to be performed:

- line
- job
- party
- task

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The AE only sees tasks. Refer to figure 47 for more details.

User Interface (UI)

The Seperation of GUI and UI Logic

Each Phone Control has two objects associated with it. The GUI Part is windowing system specific and the UI part is generic. When the GUI Control's state is change by the user it first checks with the UI to make sure it's OK to make the change.

UIControls and and their parents

A UIControl is always a child of UICollection. When the UIControl's sibling, the GUIControl, asks the UICrontrol if its OK to make a change, and this change request is accepted, the GUIControl still must ask its parent if the change is valid. The parent UICollection may have its own parent, another UICollection, that it must ask if the new value is OK.

The Grandparent of them all, the UIPhone

The UIPone is a UICollection. It has final say in all changes. It also must tell its children when the Phone Manager changes the phone state. It also creates jobs for the phone manager based on user actions. The UIPhone contains the following, the UILine Collection, all UIPopup collections, the MSG, DIR, LOG, CFG, DAT, PRI, BLK, and FWD buttons.

UILine

The UILine Collection contains all the collections and phone buttons that relate to the changes in the state of the line. Specifically, these are the four line buttons (e.g. L1, L2, L3, and L4), the RCL button, the HLD button, the MUT button, and the UICall Collection. The UIPhone is the parent of UILine.

UICall

The UICall Collection contains all the buttons related to calls. Specificly these are the number buttons, 0 - 9, ., the SND button, and the CMP button. The UICall's parent is the UILIne.

Windows Drag Drop

The DragObject function implements the server component of the drag and drop. A drag and drop server calls this function in response to a user initiated drag. Below is the function proto-type.

```
DWORD FAR PASCAL DragObject (
        HWND        Scope,          // Scope of drag
        HWND        Source          // Window handle initiating Drag
        WORD        Type,           // Dragged object type
        WORD        OfStruct,       // Handle to OFSTRUCT (not required)
        NPSTR       Data,           // Near point to drop data
        HCURSOR     Cursor,         // Handle to cursor
);
```


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The Scope parameter limits the windows that can receive the drop. Only that window and its children will get the drop request. By setting it to GetDeskTopWindow(), any window can get the drop. The Source parameter is the server's window handle. The Type is the type of drag. Windows has four standard drag types (See table below). A drag is limited to a single application unless the Type parameter is or'ed with DRAGOBJ_EXTERNAL (0x0001).

If the object being dragged is a single file a OFSTRUCT global memory handle may be specified. But is not required, and may be set to NULL. Data points to a string containing the object data. Cursor is a cursor handle that shows when the mouse is over a window that will accept this type of drop.

As the user drags the object the function sends WM_QUERYDROPOBJECT to the window under the mouse. As long as the underlying window returns 0, the no entry cursor is displayed. If 1 is returned the cursor specified in the cursor parameter is displayed.

If the mouse left button is released over a window that will not accept the drop, the function returns 0, otherwise it returns non-zero. At this point the server builds a DROPINFO struct in global memory and sends it as the LPARAM in a WM_DROPFILES message.

```
typedef struct {
        WORD  DataOffset;     // Offset of the character data
        WORD  x;              // mouse x position of drop
        WORD  y;              // mouse y position of drop
        BOOL  InClient;       // True if in client area of window
        char  Data[n]         // Drop string data
} DROPINFO, FAR *LPDROPINFO;
```

WebPhone Drag Drop

The WebPhone drag and drop will use the standard windows drag and drop by adding some of its own object types (See table below). Each UIControl and GUIControl will have two member functions added to them (e.g. SetDragType(uint Type = 0) and AcceptDropTypes(uint Count = 0, uint* Types = NULL)). The SetDragType call will set the type of drag that the control will do if the mouse is moved out of the controls window with the left mouse button down. If the type is 0 no drags will happen. The AcceptDropTypes function will set the types of drags the control will accept. If either Count or Types is zero no drops will be accepted. (NOTE: since messages an ogms can be dragged to the file manager this drag will be of type DRAGOBJ_DATA)

Windows Standard Drag Types	Value	Data
DRAGOBJ_PROGRAM	0x0001	File Name
DRAGOBJ_DATA	0x0002	File Name
DRAGOBJ_DIRECTORY	0x0003	Directory Names

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DRAGOBJ_MULTIPLE	0x0004	File and Directory Names Separated by spaces

WebPhone Drag Types

DRAGOBJ_CALL	0x0005	String with Job Pointer
DRAGOBJ_CONFERENCECALL	0x0006	String with Job Pointer
DRAGOBJ_DIRENTRY	0x0007	String with key for entry into phonedir.db

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PhoneManager (PM)

The PM is a state machine. It consists of an array of pointers to functions and states which makes up an state-event table. When an event occurs (caused by the mouse, keyboard, mic, speaker or socket), it is up to the UI to determine if the event requires the attention of the PM. The PM is not notified of those events which only effect the GUI (e.g. user presses [DIR] to open the Phone Directory dialog). When the PM is to be notified of a call related event, the UI makes the following calls to PM where l = current lineID of call:

```
// trigger PM to perform action based upon event and current state
(*PhoneManager[line[l]]->job.state][event].fxn)(arg1,arg2,arg3);

// obtain new job state from PM
line[l]->job.state = PhoneManager[line[l]->job.state][event].newstate;
```

When the PM is to be notified of a non-call related event, the UI makes the following calls to PM:

```
// trigger PM to perform action based upon event and current job state
(*PhoneManager[job.state][event].fxn)(arg1,arg2,arg3);

// obtain new job state from PM
job.state = PhoneManager[line[l]->job.state][event].newstate;
```

Refer to the UI Triggered PM Events diagram in figure 53 for more details.

AudioEngine (AE)

Crippled WebPhone

Users may obtain a crippled version of the *webPhone* for trial use, at no cost, from the ITEL Home Page. The *webPhone* will become uncrippled once the user registers the *webPhone* (i.e. pays the $49.95 or $149.95). The *webPhone* will be crippled as follows:

Limited Functionality

The following buttons on the *webPhone* are active, the remainder are dimmed and inactive:

L1, L2, LOG, MSG, DIR, MUT, HLD, RCL, END, SND & CFG

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Limited Talk Time

Allow only 60 seconds of conversation per call. The 60 seconds begins once the call is in the INUSE state. After the 60 seconds has elapsed, the call is disconnected and the calling user's *webPhone* will play the sound file *cnvtime.wav* which says in a female operator's voice something like this: "You must register your webphone for unlimited talk time".

Limited Phone Directory

Allow only 2 phone directory entries plus the ITEL phone directory entry. When the user attempts to add a forth phone directory entry the *webPhone* will play the sound file *cdiradd.wav* which says in a female operator's voice something like this: "You must register your webphone to have unlimited phone directory entries".

Limited Voice Mail

Allow only 1 functional voice mail message at any given time and restrict the message duration to 15 seconds for both incomming and outgoing messages. All other voice mail messages received will be displayed as dimmed audio cassette icons in the Voice Mail Messages dialog. This will enable users to still see the voice mail they have received in leu of the limitation. In the event the user attempts to play back a dimmed voice mail message, the *webPhone* will play the sound file *cvmlmsg.wav* which says in a female operator's voice something like this: "You must register your webphone for unlimited voice mail". The user may only delete dimmed voice mail messages and not copy or move them to a directory in the MS Window's file Manager.

Limited Conference Calling

The user is permitted only 1 conference call with a maximum of 2 remote parties on the conference. In the event the user attempts to add a third party to the conference, the *webPhone* will play the sound file *ccnfadd.wav* which says in a female operator's voice something like this: "You must register your webphone for unrestricted conferencing". If a remote party with a registered *webPhone* adds a third party to the conference (relative to the local user with the crippled *webPhone*), the user will not be allowed to converse with that party yet will be able to see that party in the conference list (a teaser).

Limited Speed Dail Position

Allows the user the first 2 speed dial positions: [1] and [2]. When the user attempts to add a party to any of the other 8 speed dial positions the *webPhone* will play the sound file *cspdadd.wav* which says in a female operator's voice something like this: "You must register your webphone for unrestricted speed dialing".

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Limited Activity Logging

Allows the user to view a maximum of 3 events in the Call Activity dialog. The call activity log activity.log will still retain the logged call activity. The user will still be able to see the total number of events that were logged (a teaser).

Limited Outgoing Messages

Allows the user only one custom OGM. When the user attempts to add a second OGM the *webPhone* will play the sound file *cogmadd.wav* which says in a female operator's voice something like this: "You must register your webphone to define unlimited outgoing messages".

WebPhone Acquisition and Setup

When the *webPhone* is obtained from ITEL's Home Page:

The ITEL Home Page will enable the user to acquire the crippled version of the *webPhone* via ftp. All the installation files will be placed in a self extracting ZIP file named *itelwp10.exe*. The user will obtain the *itelwp10.exe* file and a *readme.txt* file which explains how to extract the installation files from the zip file into a temporary installation directory. Once extracted into a temporary directory, the *wpsetup.exe* file can be executed from MS Windows to install the *webPhone*.

When the *webPhone* is obtained from the purchase of the ITEL phone card:

The *webPhone* software will probably reside on two 3.5" 1.44MB floppy disks. The user will insert the floppy disk labeled "installation disk" and execute *wpsetup.exe* from MS Windows to install the *webPhone*.

Installation

InstallShield by Stirling will be used to develop the installation file *setup.exe* and create the installation image (to be zipped up into *itelwp10.exe* or placed on floppy diskettes). *Wpsetup.exe* will perform the following actions:

1. present the user with an attractive installation screen in a window
2. check for adequate disk space. If not enough disk space, inform user and exit setup.
3. present the user with a dialog box allowing the user to select:

   - ( ) complete installation
   - ( ) custom installation
   - ( ) uninstall
   - ( ) exit

   Note: ( ) are radio buttons.

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The following pertains to both complete and custom installation (if "install the webPhone" was selected):

4. search for previous version. If not found, say nothing to the user and continue. If found, ask the user if he/she would like to update or re-install. If update is selected, skip steps 6 thru 10 below (unless new or updated db files are required). If re-install is selected, continue with step 5 below.
5. prompt the user for a desired installation directory
6. prompt the user to complete the user information form thereby supplying his/her name, addr, phone, etc. and his/her e-mail address and IP address if known.
7. create the webPhone directory structure and install the files.
8. prompt the user to specify which existing program manager group or the name of a new group to place the webphone.exe, wpvmplay.exe, wpman.exe and the readme.wri icons into.
9. initialize database files
10. initialize counters in *webphone.cfg*
11. auto-recognize the ITEL phone card, if any, and test for operability; inform the user of the results and update *webphone.cfg* indicating the ITEL phone card is present and its version information. This is also performed every time *webphone.exe* is executed except the user is not notified of the results.
12. auto-recognize the user's sound card, if any, and test for compatibility; inform the user of the results and update *webphone.cfg* indicating a sound card is present and its name. This is also performed every time *webphone.exe* is executed except the user is not notified of the results.
13. associate audio files **.wpm* with *wpvmplay.exe* in win.ini (may not be necessary in Win95)
14. display "How to order" information
15. ask user if he/she would like to run the tutorial (wpman.exe).
16. inform the user installation was complete.

If custom installation was selected, the user would get the following dialog:

- [ ] install the webPhone
- [ ] define user information
- [ ] install database files >>

Note: [ ] are check boxes and >> is a "more" button

If the user selects "install the webPhone", he/she will follow steps 4 thru 16 above.

If the user selects "define user information", he/she will be prompted to complete the user information dialog (step 6. above) which will update *webphone.cfg*.

If the user selects "install database files", he/she will get another dialog prompting the user to select which database files to install:

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- () configuration database - webphone.cfg
- () phone directory - phonedir.db
- () voice mail messages directory - messages.dir
- () file transfer directory - files.dir
- () outgoing messages directory - ogm.dir
- () call activity log - activity.log

If any of the database tables are selected, those database tables will be re-created and initialized. In the event the "configuration database - webphone.cfg" is selected, the user will be prompted to enter his/her user information as if he/she had selected "define user information" in the custom installation dialog and steps 10-12 above will be performed.

E-mail Communication Protocol

Incomming messages

The following e-mail messages are transmitted to a remote user's Post Office Protocol (POP) server via the Simple Mail Transport Protocol (SMTP) using MIME by the PhoneManager (PM):

- Connect Request
- Camp Request
- Voice Mail
- File Transfer
- E-mail

Outgoing messages

The following e-mail messages are received from the local user's POP server vi the POP protocol using MIME by the PM:

- Connect Request
- Camp Request
- Voice Mail
- File Transfer
- E-mail
- Registration

Message structure

The e-mail messages are identified by unique subject information as described below:

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where

SID is the unique session identifier as an ulong in hex: 00000000-FFFFFFFF
EMAILADDR is the e-mail address of the sender: username@host.domain.org
IPADDR is the IP address of the sender as a char string: 198.98.127.9
Partnum is the file number of TotalParts

Message	L	TYPE
Connect Request	C	CALL
Camp Request	P	CAMPCALL
Voice Mail	V	VMAIL
File Transfer	F	FILEXFR
E-mail	M	EMAIL
Webphone Registration	R	REGISTRATION

TotalParts is number of emails for this Type (1 of 10)

Those messages which contain attached data (VMAIL, FILEXFR, EMAIL* and REGISTRATION) use the MIME protocol. VMAIL is in compressed wpm format (either GSM or Truespeech compressed file detectable by a magic cookie present in the file header).

* EMAIL may or may not contain attached data files

Note: the subject does not contain any non-printable ascii characters.

All messsages except EMAIL contain a text message in the message body in case the user's e-mail program (e.g. Eudora) captures the ITEL messages.

The text for a CALL or CAMPCALL message may say something like this:

> "You have a *webPhone* call from **name** at **emailAddr**. If you do not have a *webPhone* and wish to talk to **name**, contact the Internet Telephone Company at http://www.itel.com or call 800-NNN-ITEL."

where **name** and **emailAddr** are the full name and email address of the caller.

The text for a VMAIL message may say something like this:

> "You have *webPhone* voice mail from **name** at **emailAddr**. If you do not have a *webPhone* and wish to listen to your voice mail from **name**, contact the Internet Telephone Company at http://www.itel.com or call 800-NNN-ITEL."

The text for a REGISTRATION message may say something like this:

> "Attached is your *webPhone* registration file. Please save it as "webphone.reg" in your webphone directory to enable your *webPhone*. If you should encounter a problem with your *webPhone*, e-mail us at info@itel.com or call 800-NNN-ITEL. Thank you for purchasing the ITEL *webPhone*."

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The text for a FILEXFR message may say something like this:

> "Attached is one or more files sent to you by **name** at **emailAddr** via their *webPhone*. If you do not have a *webPhone* and wish to easily perform file transfer over the net not to mention converse in real time, send and receive voice mail, etc., contact the Internet Telephone Company at http://www.itel.com or call 800-NNN-ITEL."

File System

Figure 32 represents the *webPhone* file system as it would exist on a user's hard disk. The following files are present:

in webphone\
readme.wri (MS Windows Write file describing how to install, list of files...)
webphone.exe (the *webPhone*)
wpvmlplay.exe (webphone vmail player associated with *.wpm files)
wpman.exe (authorware based tutorial, manual and help system)
webphone.reg (exists for sound card version after user registers)
wpsetup.exe (webphone installation and setup program)
activity.log (call activity log)
phonedir.db (phone directory database)
wpnet.dll (internet communications library)
wpaesac.dll (audio engine for audio card based webphone)
wpaeipc.dll (audio engine for ITEL phone card)
wpsac.dll (software based audio codec library - GSM and Truespeech)
wpipc.dll (ITEL phone card interface library - API)
ctpwin.dll (c-tree plus windows database interface library)
*.vbx (if any - we will try not to use any)

in webphone\vmail
messages.dir (directory of resident messages)

in webphone\vmail\in
XXXXXXXX.wpm (received compressed voice mail message files, X = 0-9)

in webphone\vmail\out
XXXXXXXX.wpm (sent compressed voice mail message files, X = 0-9)

in webphone\ogm
ogm.dir (directory of resident outgoing messages)
wpogm.wav (default outgoing message)
XXXXXXXX.wav (outgoing voice message files, X = 0-9)

in webphone\files
files.dir (directory of resident messages)

in webphone\files\in
. (received e-mail, executable, text, data and winapp files)

in webphone\files\out
. (transmitted e-mail, executable, text, data and winapp files)

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in webphone\sounds
noanswer.wav ("the party does not answer")
offline.wav ("the party is not online")
busy.wav ("I'm sorry, the party is busy, please try again later")
ringout.wav (standard ring when calling)
ringin.wav (standard ring when receiving a call)
badaddr.wav ("this is a bad address")
error.wav (sound of machinery breaking)
numpad.wav (button press sound for 0,1,2,...,9 and .)
hold.wav ("holding, please stand by")
priority.wav (standard priority ring sound)
campack.wav (special ring when party is available to call)

Voice Mail

The user may record and send voice mail to remote users when the remote user's answering machine answers or calls are not completed because of the remote user being offline or busy.

Remote user is offline

When a user gets an OFFLINE from a remote *webPhone*, the user may record a voice mail message which will be e-mailed {VMAIL} to the remote *webPhone*. The voice mail file name, in order to be unique, is defined by the remote *webPhone* upon receipt of the {VMAIL}. Refer to the E-mail Communications Protocol above for details.

Upon receipt of {VMAIL}, the *webPhone* will extract the compressed audio portion of the voice mail message and save it to the webphone\vmail\in directory with the following name:

XXXXXXXX.wpm where X = {0,1,2,...9 }

The filename will be created from the *vmailName* field in *webphone.cfg*.

This nomenclature allows for 100 million unique file names before the sequence repeats itself.

Once received, the *webPhone* will update the *messages.dir* file in the ..\webphone\vmail directory. Refer to the messages.dir database schema in figures 33 - 36 for more details.

Remote user is busy

When a user gets a BUSY from a remote *webPhone*, the user may record and transmit a voice mail message to the remote *webPhone*. This transmission takes the form of multiple <Vmail> packets and a terminating <VmailEnd> packet. During the receipt of the voice mail, the remote *webPhone* is saving the voice mail message to a voice mail file named *XXXXXXXX.wpm* in the remote user's webphone\vmail\in directory.

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Remote user's answering machine answers

When a user gets an ANSWERINGMACHINE from a remote *webPhone*, the remote *webPhone*'s answering machine answered the call and is playing an outgoing message to the user. Once the remote user's OGM is complete, the user may record and transmit a voice mail message to the remote *webPhone* as described above for the remote user busy condition.

Recording voice mail

When it is OK to record a voice mail message, the user's *webPhone* will activate the audio playback and record controls in the flip door of the phone. If the flip door is closed, it will be automatically opened. Once activated, the user operates the controls like a normal audio tape deck to record and playback the voice mail message. When the user is ready to transmit the voice mail message, he/she presses [END] to end the call. If the user wishes not to send a voice mail message, he/she presses [END] without having recorded a voice mail message. If the user has begun to record a voice mail message and decides he/she does not wish to send it, the user would press the cancel button [x] in the audio controls to abort the voice mail recording then press [END] to end the call.

What the user sees when voice mail arrives

The *webPhone* will increment the number of new messages in the display. If the Voice Mail Messages dialog is up, the new message will be place at the top of the list.

Copy Protection

If a user has the ITEL phone card

the *webPhone* will detect and use the card without using the webphone.reg file as a copy protection mechanism.

If the user does not have the ITEL phone card

when the user registers (i.e. pays $49.95), we will e-mail the *webphone.reg* file to the user as the special e-mail message REGISTRATION. The *webphone.reg* file contains that user's DES encrypted e-mail address. The *webPhone* will receive the REGISTRATION message and place the attached *webphone.reg* file in the webphone directory. When the registered user starts their *webPhone*, it will read the *webphone.reg* file and decrypt the user's e-mail address (This means the key is hardcoded into the *webPhone*). It will then compare the decrypted e-mail address with that in the user's *webphone.cfg* file. If the two e-mail addresses match, the *webPhone* will operate uncrippled, otherwise, it will notify the user of the problem, suggest the solution and exit.

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In the event the user changes his/her e-mail address or IP address, via User Info ala [CFG] they will be required to a change of address to us (by calling ITEL on their *webPhone*, going to the ITEL Home Page or by e-mail to info@itel.com) in order to obtain a new *webphone.reg* file. A registered user with more than 2 change of address applications is suspect of copying the software.

Note: it makes no sense for a registered user to copy the software and give the it to another user since the recipient will not be able to receive phone calls or voice mail at their actual e-mail address. If the recipient changes the registered user's e-mail address and optional IP address, the *webPhone* will operate in the crippled state since the e-mail address encrypted in *webphone.reg* will not match that in *webphone.cfg*.

Configuration [CFG]

The Configuration dialog, obtained when the user pressed the [CFG] button, has the following 7 tabbed sections covering areas in which parameters are defined by the user to control the operation of the *webPhone*. Refer to figures i - i.

1. User Information
2. Phone
3. Answering Machine
4. Phone Directory
5. Sound Effects
6. Audio Card
7. Activity Log

All the configuration information is stored in the *webphone.cfg* file located in the webphone directory.

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ITEL Home Page

The ITEL Home Page consists of

- a brief description of the Internet Telephone Company
- a succinct description of our product's features and how it is vastly superior to Vocaltec's iphone and is less expensive.
- a graphical (e.g. image of *webphone*) and textual link to a detailed description of the *webPhone's* features
- a graphical link and textual link to FTP the crippled *webPhone* to the user
- a graphical and textual link to the ***order*** form
- a graphical and textual link to the ***change of address*** form
- a graphical and textual link to ***directory assistance*** form
- a link to WEBPALS description, registration and inquiry form

Information (Directory Assistance)

Enables users to query the master phone directory for other user's e-mail and IP addresses (if known). This will initially be a free service.

Change of Address

Enables the user to enter their old e-mail address and IP address (if known) then prompts the user to enter their new e-mail address and IP address (if known). If the user has already had less than two prior change of address requests, ITEL will email the user his/her new *webphone.reg* file. If the user has already had two change of address requests, ITEL will email the user an explanation request form which must be completed and emailed back to ITEL. If the explanation is valid, ITEL will email the user his/her new *webphone.reg* file. If the explanation is suspect, ITEL will inform the user it is against the law to copy licensed software and he/she will need to purchase another *webPhone*.

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WebPhone Protocol (WPP) Packet Definitions

Packet #	Packet	Packet Type	Direction	Data
100	Invalid	WPP_INVALID	← →	WPP_INVALID
101	Online Req	WPP_ONLINEREQ	→	WPP_ONLINEREQ, sid, version, emailAddr, IPAddr, onlineState
102	OnlineACK	WPP_ONLINEACK	←	WPP_ONLINEACK, sid, onlineStatus
103	Offline	WPP_OFFLINE	← →	WPP_OFFLINE, sid
104	Hello	WPP_HELLO	← →	WPP_HELLO, sid, version
105	Connect Req	WPP_CONNECTREQ	→	WPP_CONNECTREQ, sid, version, callType, partyEmailAddr, emailAddr, IPAddr, connectState
106	Connect ACK	WPP_CONNECTACK	← →	WPP_CONNECTACK, sid,connectStatus, partyIPaddr
107	Call	WPP_CALL	← →	WPP_CALL, sid, version, emailAddr, IPAddr, userInfo
108	CallACK	WPP_CALLACK	← →	WPP_CALLACK, sid, version, emailAddr, IPAddr, userInfo
109	CnfCall	WPP_CNFCALL	← →	WPP_CNFCALL, sid, version, emailAddr, IPAddr, userInfo
110	CnfCallACK	WPP_CNFCALLACK	← →	WPP_CNFCALLACK, sid, version
111	Answer	WPP_ANSWER	← →	WPP_ANSWER, sid
112	Busy	WPP_BUSY	← →	WPP_BUSY, sid
113	AnsMachine	WPP_ANSMACH	← →	WPP_ANSMACH, sid, state
114	End	WPP_END	← →	WPP_END, sid
115	Hold	WPP_HOLD	← →	WPP_HOLD, sid, (ON | OFF)
116	Reject	WPP_REJECT	← →	WPP_REJECT, sid
117	Camp	WPP_CAMP	← →	WPP_CAMP, sid
118	CampACK	WPP_CAMPACK	← →	WPP_CAMPACK, sid
119	Audio	WPP_AUDIO	← →	WPP_AUDIO, sid, audioType, silence, length, audioData
120	Vmail	WPP_VMAIL	← →	WPP_AUDIO, sid, audioType, silence, length, audioData
121	VmailEnd	WPP_VMAILEND	← →	WPP_VMAILEND, sid
122	OgmEnd	WPP_OGMEND	← →	WPP_OGMEND, sid
123	CnfAdd	WPP_CNFADD	← →	WPP_CNFADD, sid, partyEmailAddr, partyIPaddr, partInfo
124	CnfDrop	WPP_CNFDROP	← →	WPP_CNFDROP, sid
125	FileXmtReq	WPP_FILEXMTREQ	← →	WPP_FILEXMTREQ, sid, fileType, fileName, fileSize

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WebPhone Protocol (WPP) Packet Definitions (con't)

Packet #	Packet	Packet Type	Direction	Data
126	FileXmtAck	WPP_FILEXMTACK	← →	WPP_FILEXMTACK, sid
127	File	WPP_FILE	← →	WPP_FILE, sid, length, fileData
128	FileXmtEnd	WPP_FILEXMTEND	← →	WPP_FILEXMTEND, sid
129	FileXmtAbort	WPP_FILEXMTABORT	← →	WPP_FILEXMTABORT, sid
130	InfoReq	WPP_INFOREQ	→	WPP_INFOREQ, sid, query
131	InfoACK	WPP_INFOACK	←	WPP_INFOACK, sid, nparties
132	Info	WPP_INFO	←	WPP_INFO, sid, partyInfo
133	InfoAbort	WPP_INFOABORT	→	WPP_INFOABORT, sid
134	UserInfoReq	WPP_USRINFOREQ	←	WPP_USRINFOREQ, sid
135	UserInfo	WPP_USRINFO	→	WPP_USRINFO, sid, version, userInfo
136	WBImageStart	WPP_WBIMAGESTART	←	WPP_WBIMAGESTART, sid, fileSize, imageType
137	WBImage	WPP_WBIMAGE	←	WPP_WBIMAGE, sid, length, imageData
138	WBImageEnd	WPP_WBIMAGEEND	←	WPP_WBIMAGEEND, sid
139	WBAudioStart	WPP_WBAUDIOSTART	←	WPP_WBAUDIOSTART, sid, fileSize, audioType
140	WBAudio	WPP_WBAUDIO	←	WPP_WBAUDIO, sid, length, audioData
141	WBAudioEnd	WPP_WBAUDIOEND	←	WPP_WBAUDIOEND, sid
142	Registration	WPP_REG	←	WPP_REG, sid, EEmailAddr
143	Caller OK	WPP_CALLEROK	←	WPP_CALLEROK, sid, version, emailAddr
144	Caller ACK	WPP_CALLERACK	←	WPP_CALLERACK,sid, callerStatus
145	Key Pad	WPP_KEYPAD	←	WPP_KEYPAD,sid,(ON | OFF)
146	Key	WPP_KEY	→	WPP_KEY,sid,ascii character

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WebPhone Protocol (WPP) Packet Data Definitions

Element	Data Type	Comment
WPP_*	unsigned char	WPP_ message identifer
sid	unsigned long	session id unique per call
version	unsigned short (3)	version of the webphone (capability, protocol, vendor)
emailAddr	varchar(90)	email address of caller
IPAddr	varchar(80)	IP Address
onlineState	unsigned char	bit 0 (ACTIVE | INACTIVE) bit 1 (Merchant Phone) bit 2 (Connection Server) bit 3 (webboard disabled) bit 4 Not Used bit 5 Not Used bit 6 Not Used bit 7 Not Used
callType	unsigned char	call type 0: EMAIL | 1: IPCALL
partyEmailAddr	varchar(90)	email address of person to call
connectStatus	unsigned char	0: NOWEBPHONE 1: ONLINE 2: OFFLINE 3: RECONNECT 4: PERM_RECONNECT
partyIPAddr	varchar(80)	IP Address of person to call
userInfo	varchar(120)	firstName, LastName, alias, emailAddr, street, apt, city, state, country, postalCode, phone, fax, company
audioType	usigned char	audio compress type 0:GSM 1: TRUESPEECH

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WebPhone Protocol (WPP) Packet Data Definitions (con't)

Element	Data Type	Comment
length	unsigned short	length of audio or data in bytes
audioData	512 Bytes	compressed audio data
fileType	unsigned char	file type
		0:DATA
		1:EMAIL
		2:TEXT
		3:BINARY
fileName	varchar(13)	name of file to be transmitted. 8.3 nomenclature
fileSize	unsigned long	size of file to be transmitted in bytes
fileData	variable	file data
query	varchar(120)	firstName, lastName, company, city, state, country
nparties	unsigned long	number of parties or query records being sent
size	unsigned long	size of file (IMAGE or AUDIO) to be sent
imageType	unsigned char	image type
		0: GIF
		1: JPG
imageData	512 Bytes	image data
eemailAddr	varchar(90)	encrypted email Address
onlineStatus	unsigned char	0 OK
		-1 Error
callerStatus	unsigned char	0 is unpaid
		1 if paid
onlineState	unsigned char	bit 0 webboard disabled
		bit 1 Not Used
		bit 2 Not Used
		bit 3 Not Used
		bit 4 Not Used
		bit 5 Not Used
		bit 6 Not Used
		bit 7 Not Used

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Customer Table

Field	Data Type	Ctree Type	Index	Offset	Comments
delflag	int	COUNT		0	Used by Database
id	ulong	LONG	Y	2	Unique ID Sequence
activated	char	char	Y	6	0 = NO, 1 = YES
activationDate	ulong	LONG		7	Secs since 00:00 GMT Jan 1, 1970
version capability	ushort	COUNT		11	Version of the Webphone
version protocol	ushort	COUNT		13	
version vendor	ushort	COUNT		15	
paid	char	char		17	0 = NO, 1 = YES
prePaidCode	varchar(16)	TEXT[16]	Y	18	
firstName	varchar(10)	TEXT[10]	Y	34	
lastName	varchar(25)	TEXT[25]	Y	44	
alias	varchar(20)	TEXT[20]		69	
emailAddr	varchar(90)	TEXT[90]	Y	89	
IPAddr	varchar(80)	TEXT[80]		179	0.0.0.0 if not known
street	varchar(50)	TEXT[50]		259	
apt	varchar(5)	TEXT[5]		309	
city	varchar(20)	TEXT[20]	Y	314	
state	varchar(20)	TEXT[20]	Y	334	
country	varchar(20)	TEXT[20]	Y	354	
postalCode	varchar(20)	TEXT[20]		374	
phone	varchar(25)	TEXT[25]		394	
fax	varchar(25)	TEXT[25]		419	
company	varchar(25)	TEXT[25]	Y	444	Company Name
addrChanges	char	char		469	Number of address changes
addrChangeDate	ulong	LONG		470	Secs since 00:00 GMT Jan 1, 1970
publish	char	char		474	0 = NO, 1 = YES
accessDate	ulong	LONG		475	Secs since 00:00 GMT Jan 1, 1970
accessCount	ulong	LONG		479	# of times user has started Webphone
callCount	ulong	LONG		483	Total number of outbound calls customer has made

Total Record Size = 487

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Online Table

Field	Data Type	Ctree Type	Index	Offset	Comments
delflag	int	COUNT		0	Used by Database
emailAddr	varchar(90)	TEXT[90]	Y	2	
IPAddr	varchar(80)	TEXT[80]	Y	92	
flags	char	char		172	
onlineDate	ulong	LONG		174	

Total Record Size = 178

WebBoard Table

Field	Data Type	Ctree Type	Index	Offset	Comments
delflag	int	COUNT		0	Used by Database
id	ulong	LONG	Y	2	Unique ID Sequence
image	varchar(8)	TEXT[8]		6	Filename of image file
imageType	char	char		14	.GIF =0, JPG = 1
audio	varchar(8)	TEXT[8]		15	Filename of TSP encoded .WAV file
audioType	char	char		23	GSM = 0, TRUESPEECH = 1
hits	ulong	LONG		24	Number of accrued hits

Total Record Size = 28

Weboard Config Table

Field	Data Type	Ctree Type	Index	Offset	Comments
delflag	int	COUNT		0	Used by Database
count	ulong	LONG	Y	2	Number of WebBoards

Total Record Size = 6

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Advertiser Table

Field	Data Type	Ctree Type	Index	Offset	Comments
delflag	int	COUNT		0	Used by ctree
id	ulong	LONG	Y	2	Unique ID
weboardID	ulong	LONG		6	Link to WebBoard record
name	varchar(50)	TEXT[50]		10	Company's name
url	varchar(80)	TEXT[80]		60	URL to Home Page
street	varchar(50)	TEXT[50]		140	
apt	varchar(5)	TEXT[5]		190	
city	varchar(20)	TEXT[20]		195	
state	varchar(20)	TEXT[20]		215	
country	varchar(20)	TEXT[20]		235	
postalCode	varchar(20)	TEXT[20]		255	
phone	varchar(25)	TEXT[25]		275	
fax	varchar(25)	TEXT[25]		300	
contact	varchar(35)	TEXT[35]		325	Name of contact

Total Record Size = 360

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Point to Point calling Mechanism

The diagram in figure 38 illustrates the mechanism by which the *webPhone* places calls and connects to other *webPhone* users who are connected to the internet via dialup SLIP/PPP lines via their 14.4/28.8 modems.

If the remote *webPhone* has a fixed IP address, the user transmits *<Call>* thereby bypassing the *ConnectRequest/ConnectOK* steps to establish a connection. *WebPhones* always maintain 1 open socket listening for a *Call*. Therefore, if all 4 lines are in use, the *webPhone* will send back a *<Busy>* to the caller.

Calling Scenarios

1. Recipient is offline
   initiator times out, kills socket, plays offline.wav
   initiator can e-mail {*VMAIL*}

2. Recipient has all 4 lines in use
   recipient sends back *Busy*, initiator plays busy.wav
   initiator can transmit *<Vmail>*

3. Recipient is on-line but does not answer
   initiator times out on *<ConnectOK>*, recipient's answering machine plays ogm.wav
   initiator can transmit *<Vmail>*

4. Recipient goes offline after transmitting *<ConnectOK>*
   initiator fails on transmitting *<Call>*, plays offline.wav
   initiator can e-mail {*VMAIL*}

5. Initiator goes offline after sending {*CALL*} and another *webPhone* gets the same IP address assigned and receives the *<ConnectOK>* from the recipient (extremely low probability of occurrence)
   only if the new initiator has an open socket listening for a *<ConnectOK>* from another party will he/she receive the *<ConnectOK>* from the wrong party, the initiator checks the session number in the *<ConnectOK>* and discovers the mismatch and disregards the transmission.
   in any event, the recipient will time out on *<Call>*

6. Recipient or initiator goes offline during the conversation
   failure on read/write to socket occurs both parties announce offline and can e-mail {*VMAIL*}.

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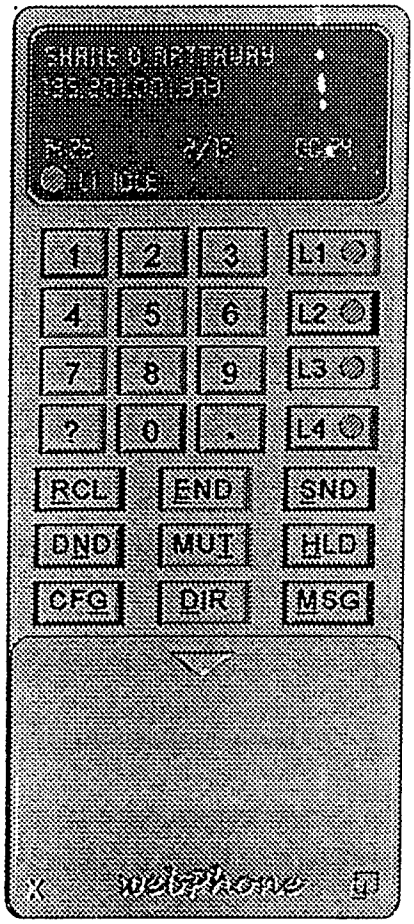

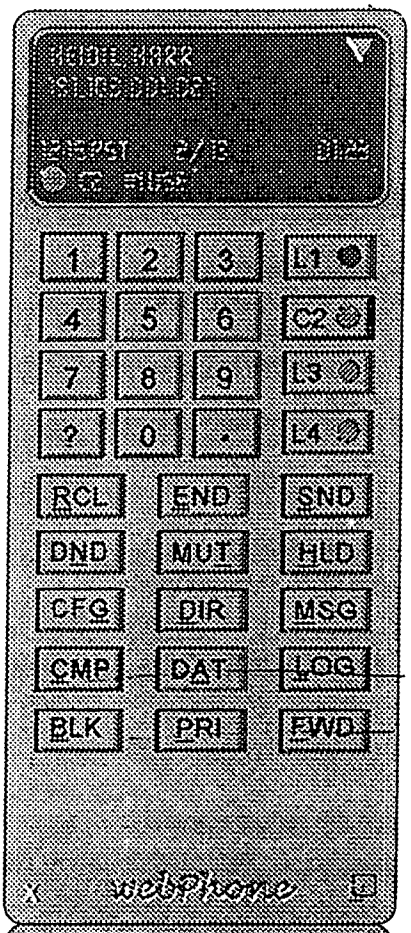

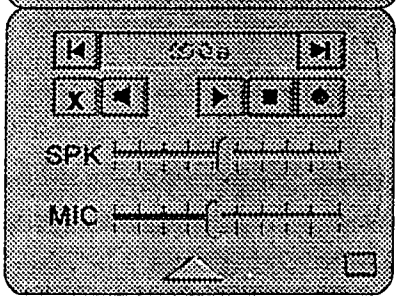

USR

present on ITEL operator's *webPhone* to obtain a user's webphone.cfg file

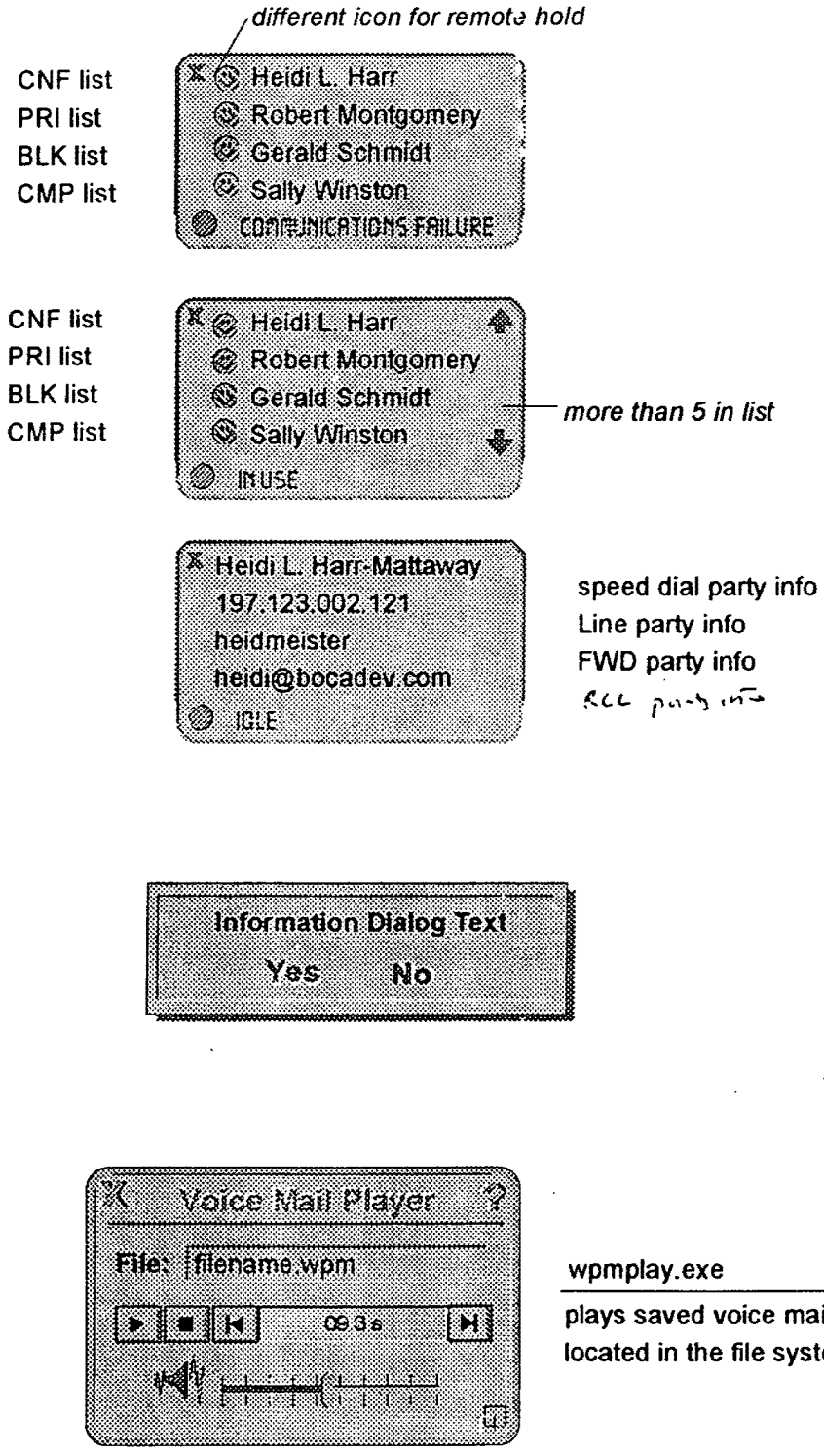

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Figure 3

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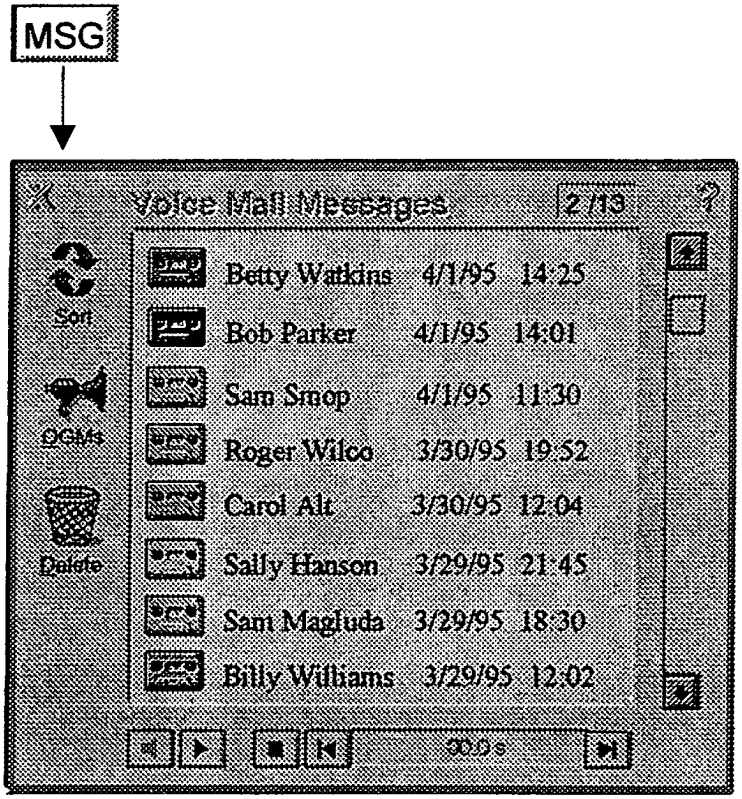

***dbl click** - playback all selected*
***left click (ctrl left click)** - select/deselect*
***Alt-left click** - select/deselect All*
***right click** - message details*
***drag** to move to File Manager dir*
or append to another vmail msg
***Ctrl-drag** to copy to File Manager dir*

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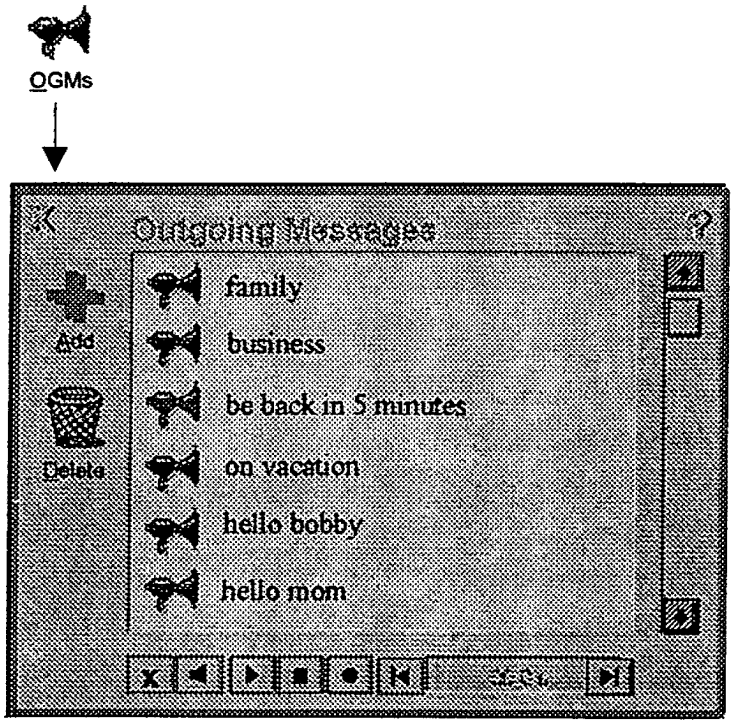

***dbl click** - playback all selected*
***left click** - select/deselect*
***Alt-left click** - select/deselect All*
***right click** - OGM details*
***drag** to DIR entry to assign OGM*

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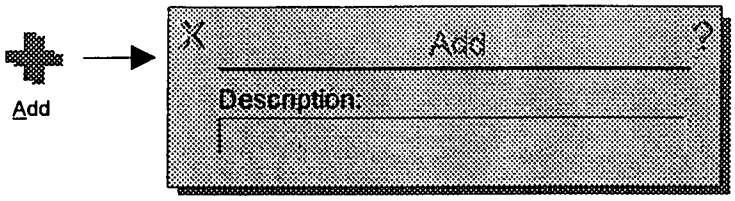

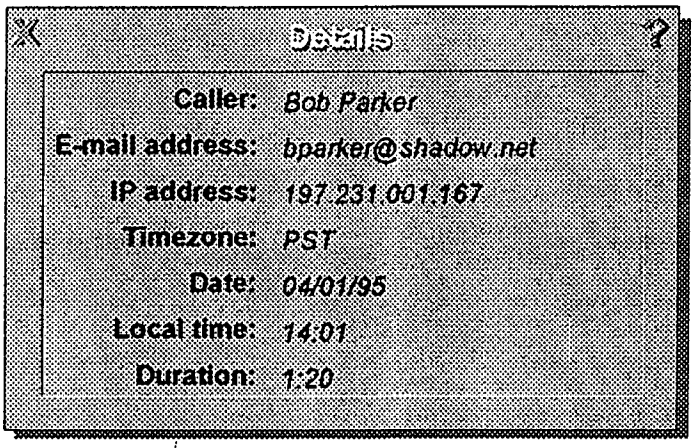

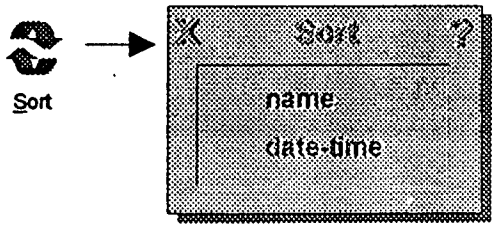

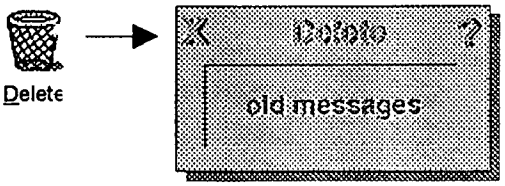

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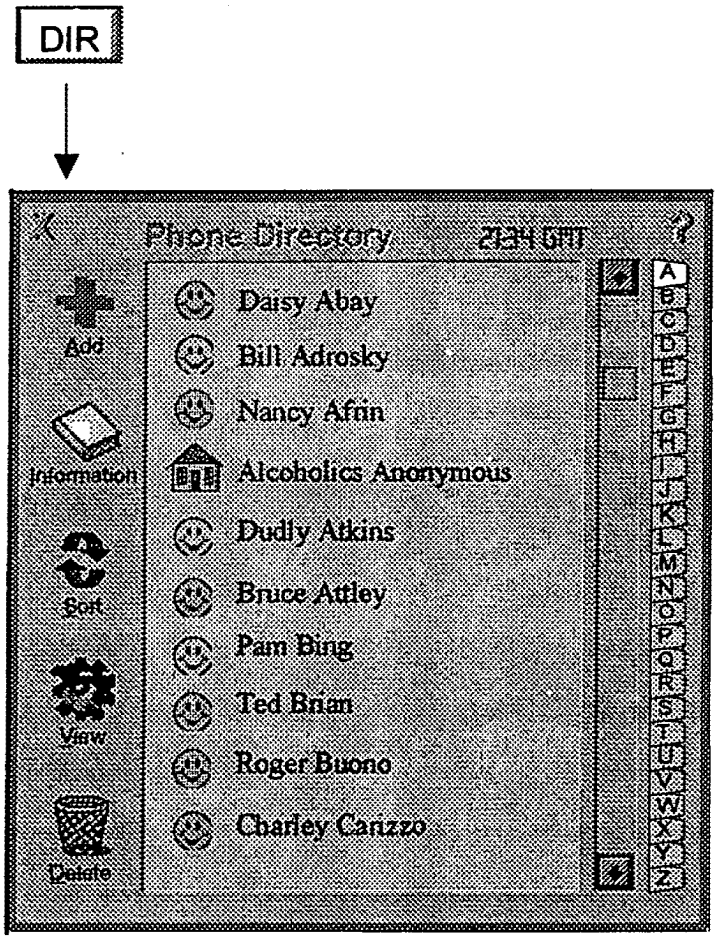

left click - select/deselect entry
Alt-click - select/seselect All entries
dbl click - call entry
right click -update entry
drag to number pad position for speed dial
or to [FWD] to assign to call forwarding
or to idle [Ln] to call on that line

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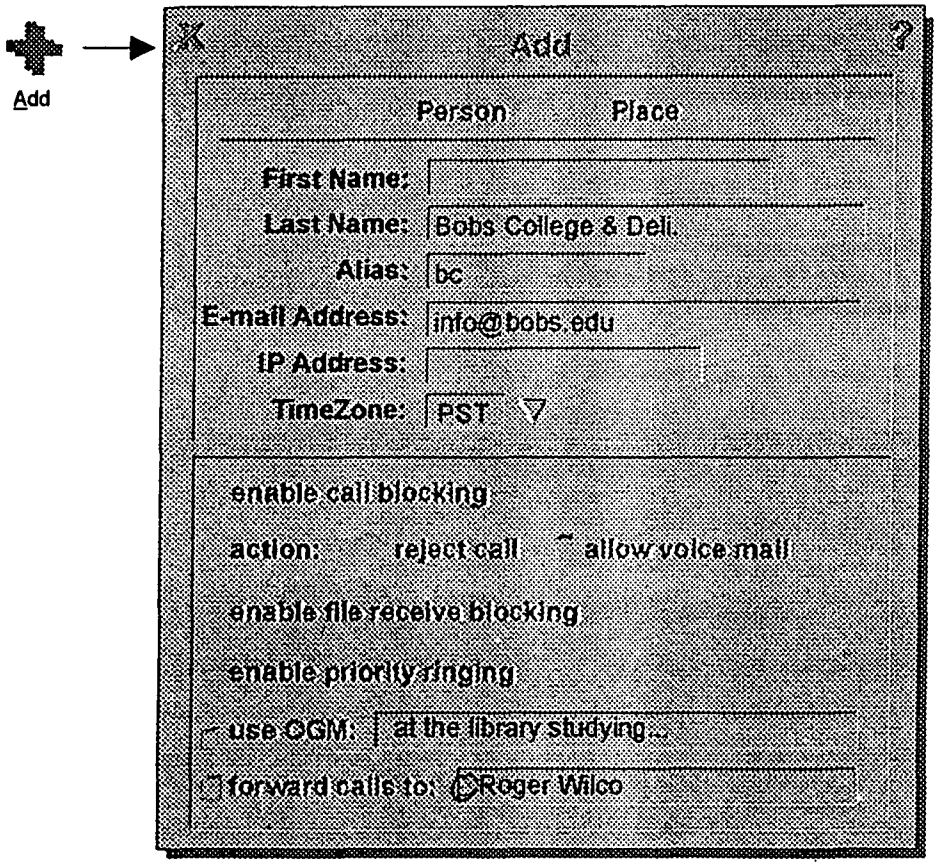

Figure 8

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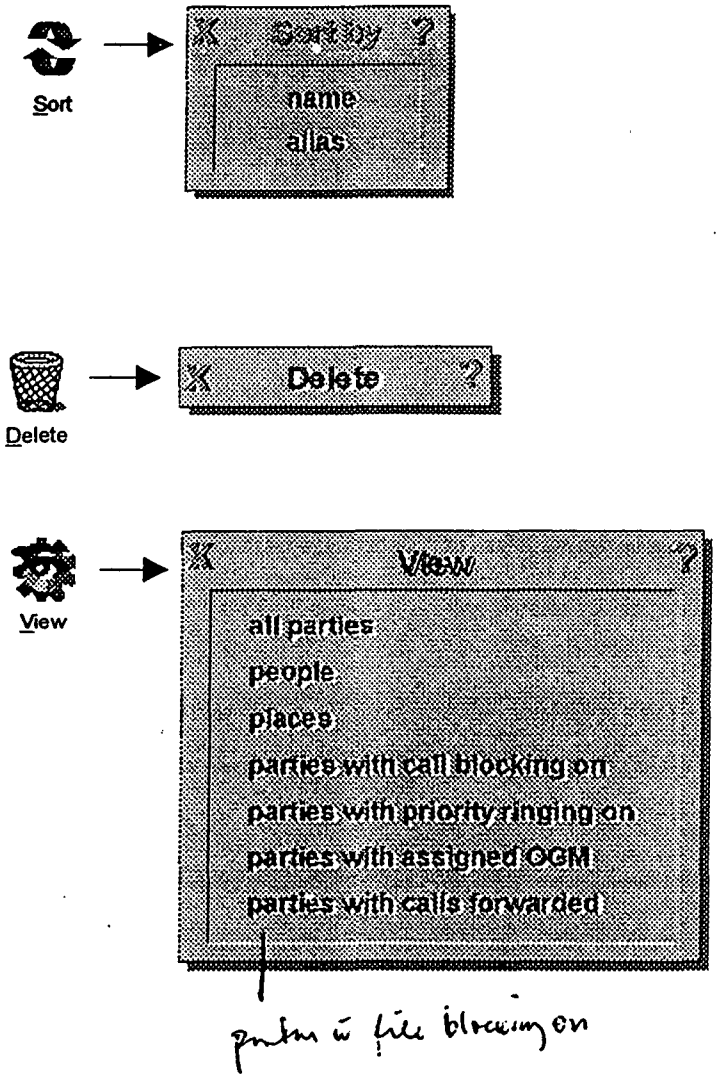
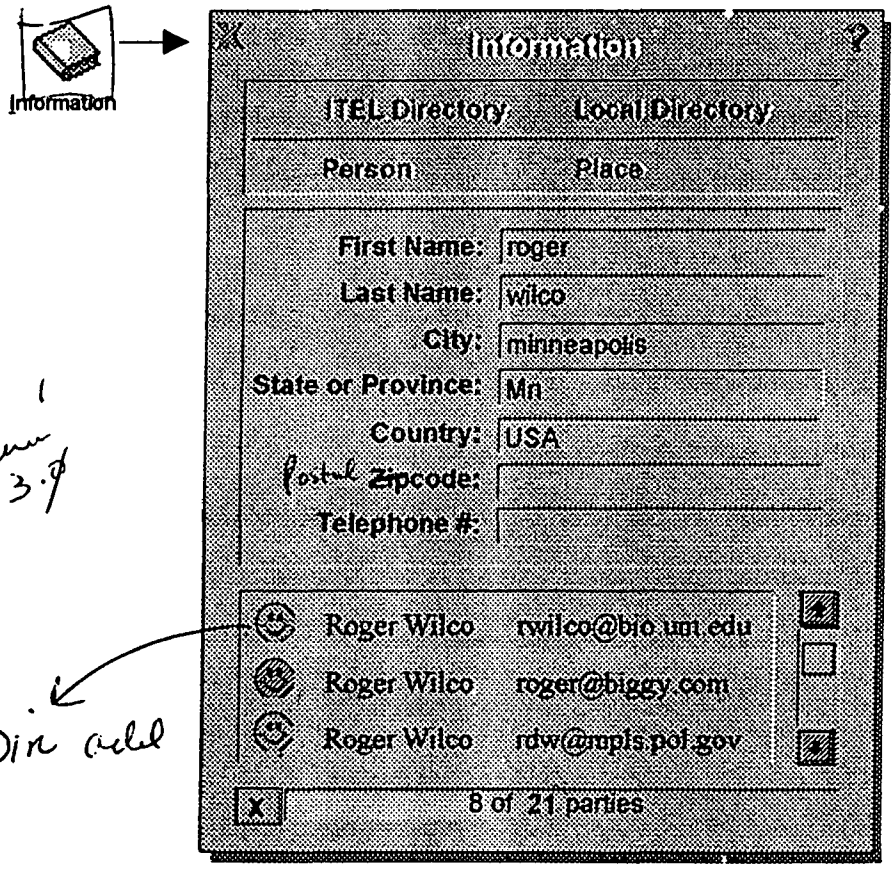

Sort
Sort by ?
name
alias
Delete
Delete ?
View
View ?
all parties
people
places
parties with call blocking on
parties with priority ringing on
parties with assigned OGM
parties with calls forwarded
parties w/ call blocking on

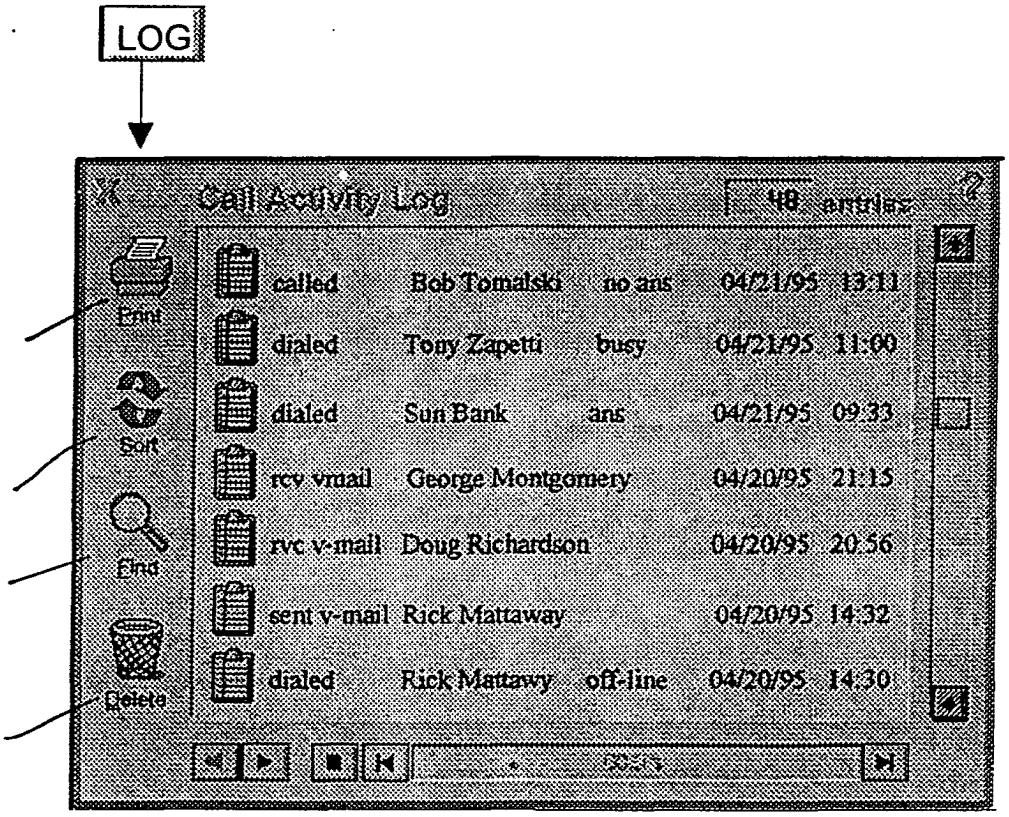
Figure 2-9

% any num chars follow
? any single char



Release 3.0

Dir add



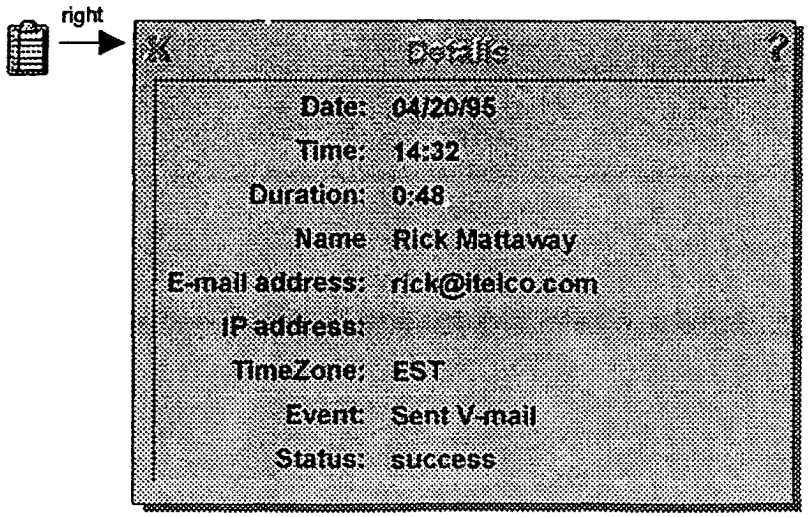


Figure 11

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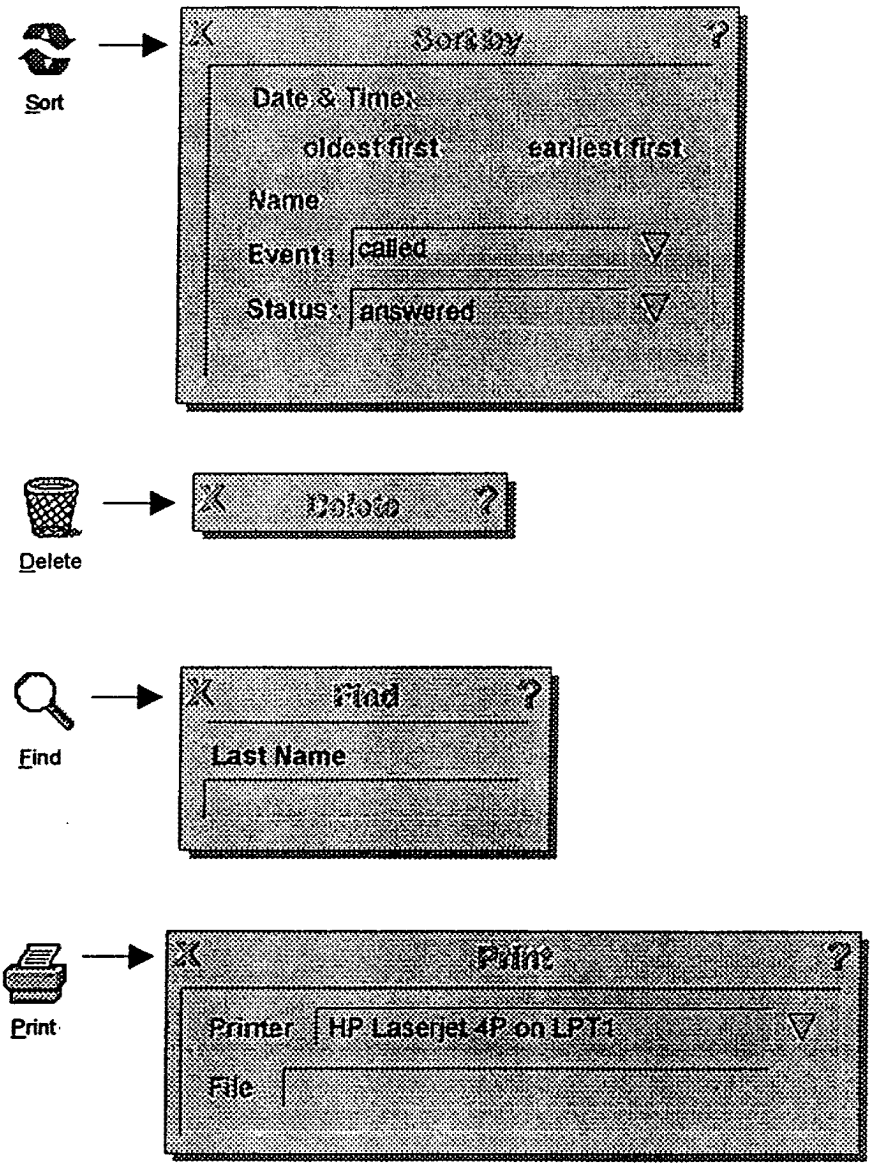

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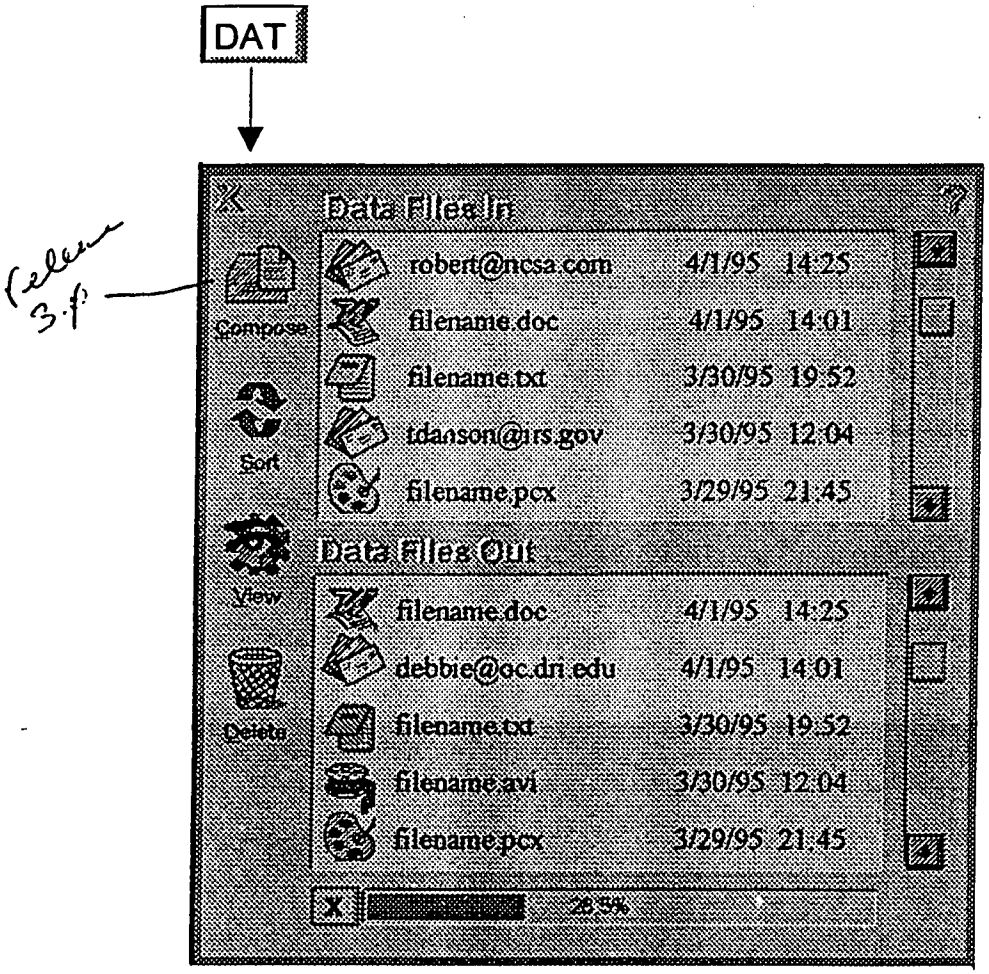

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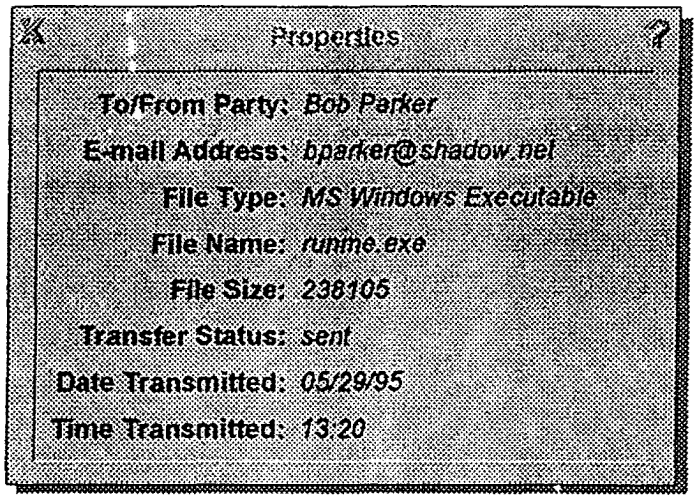
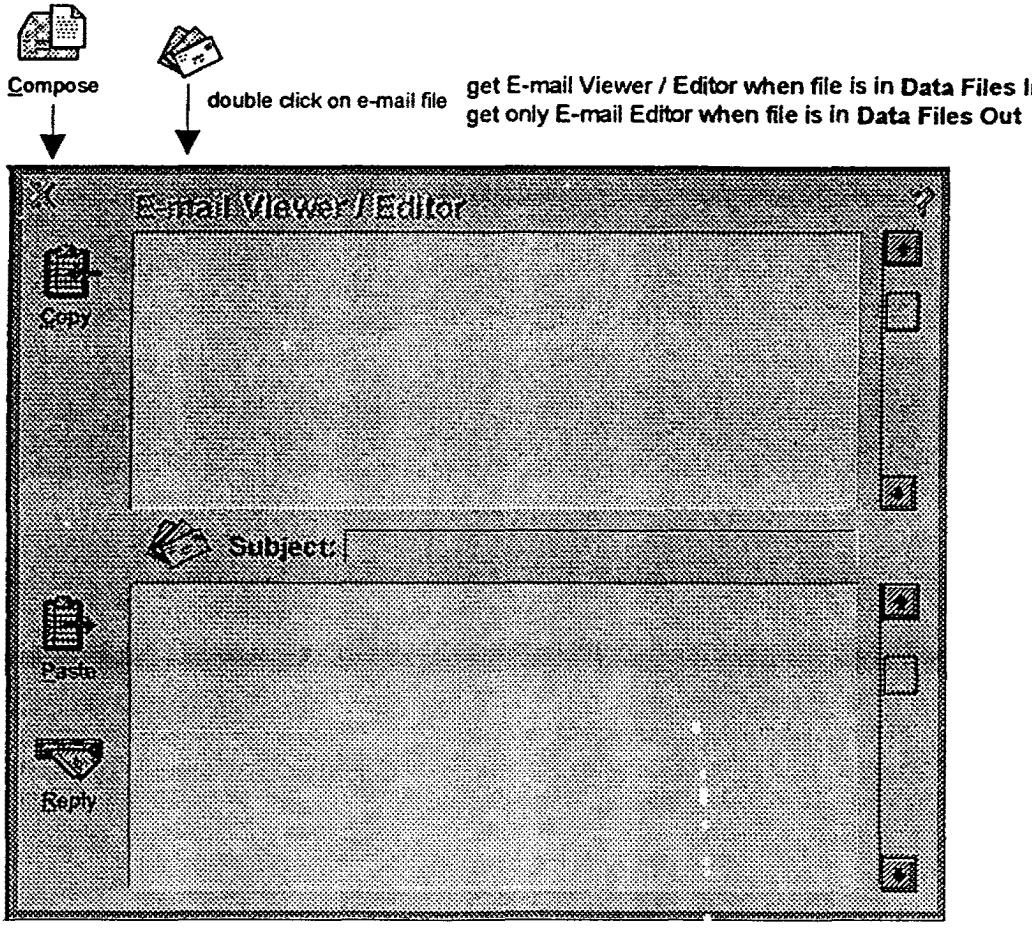
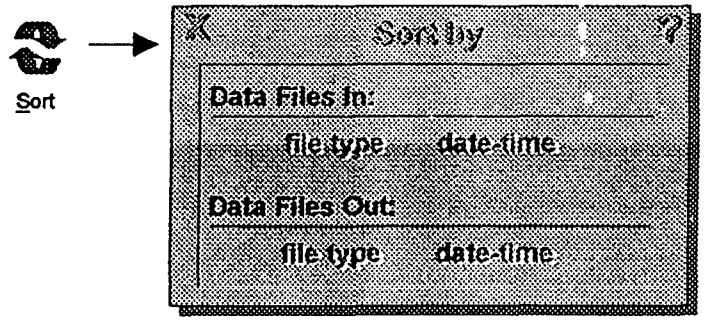
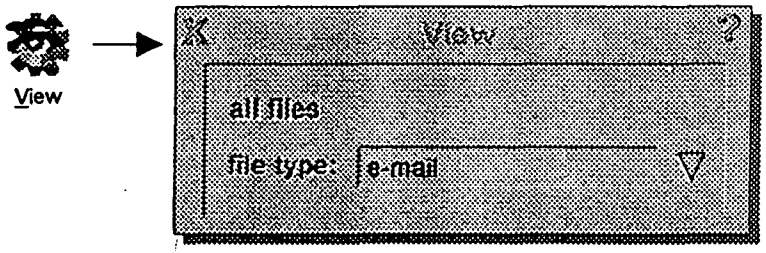
right click on file to obtain properties:









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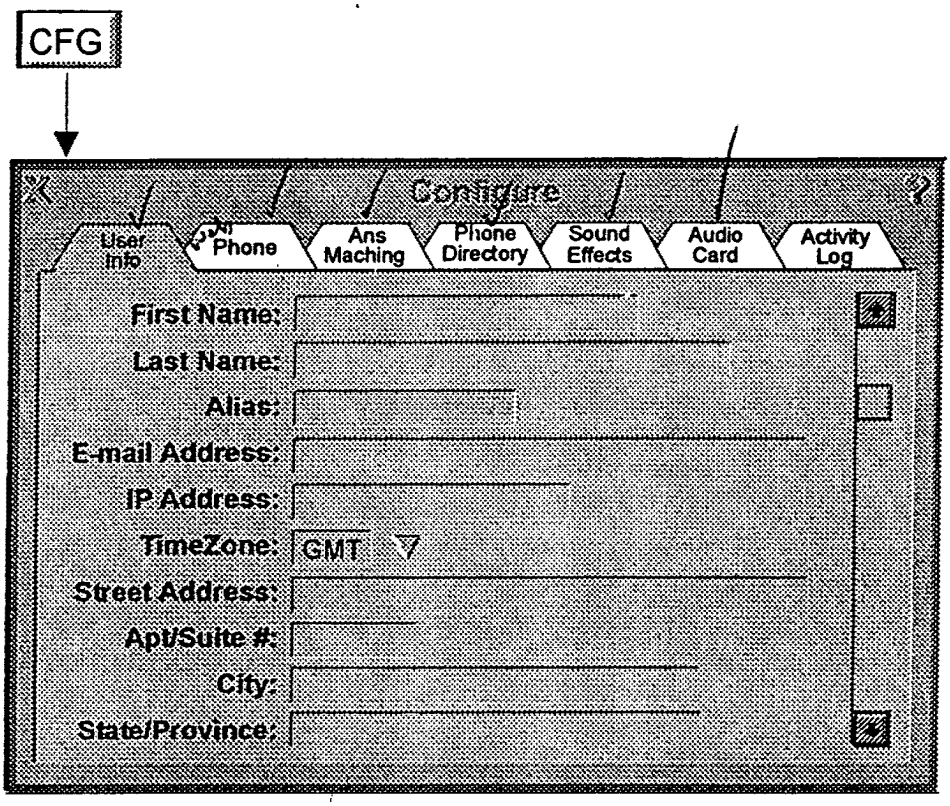

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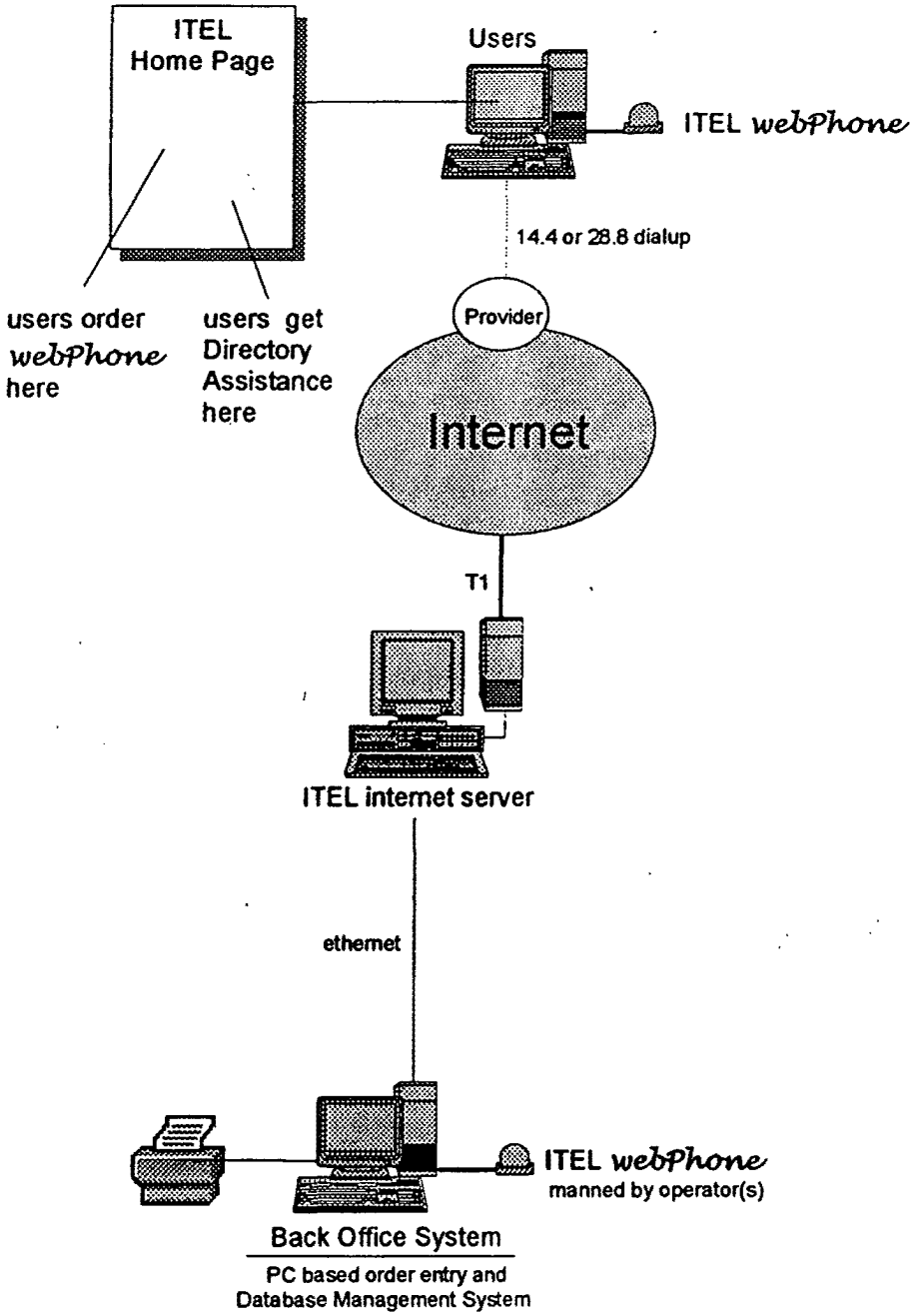

Figure 26

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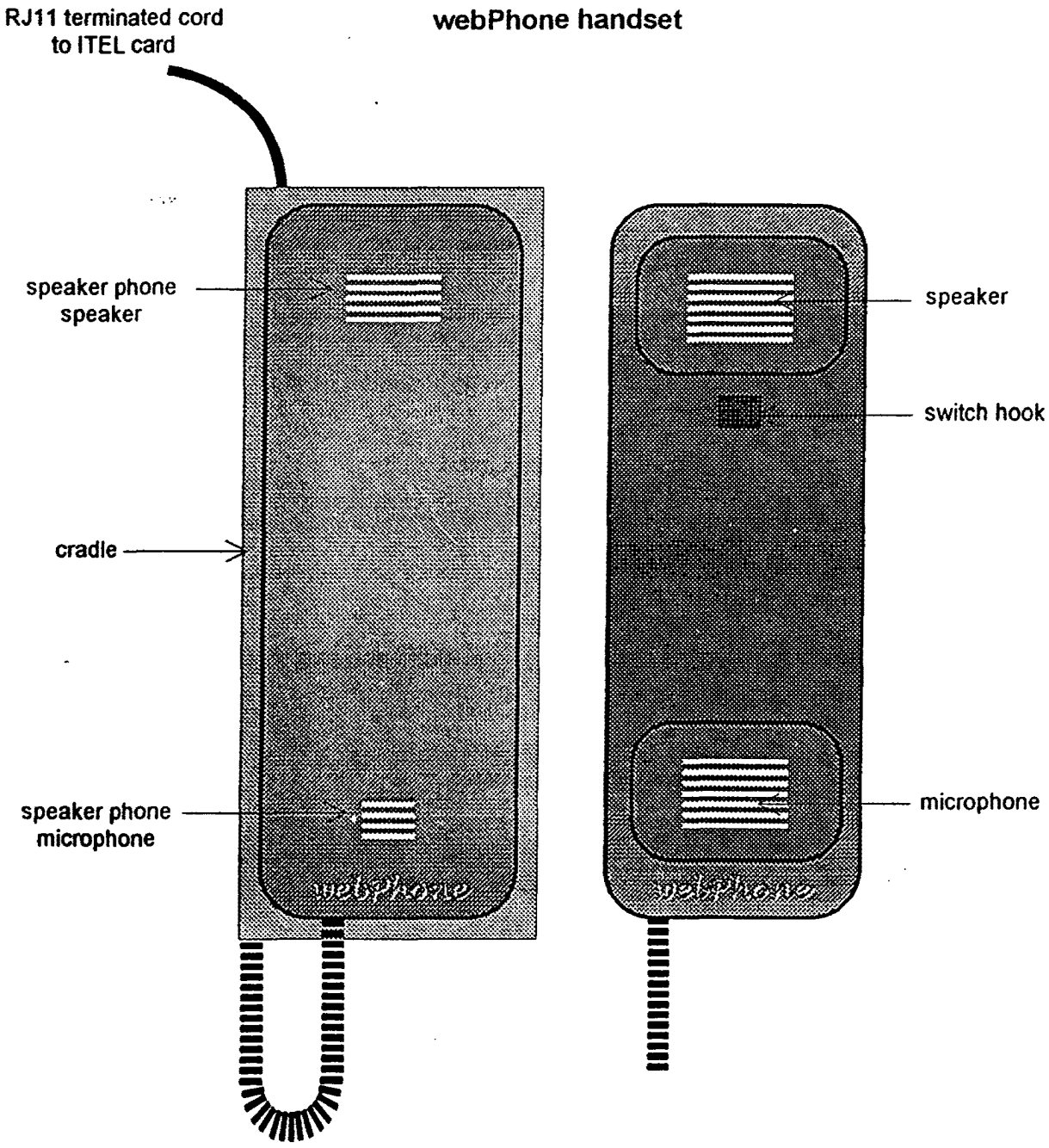

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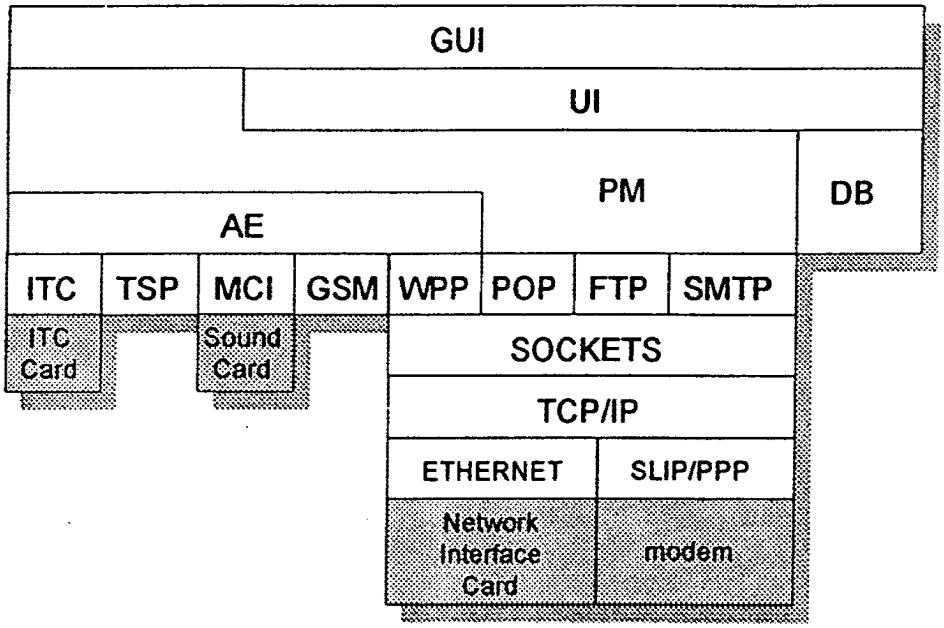
System Architecture



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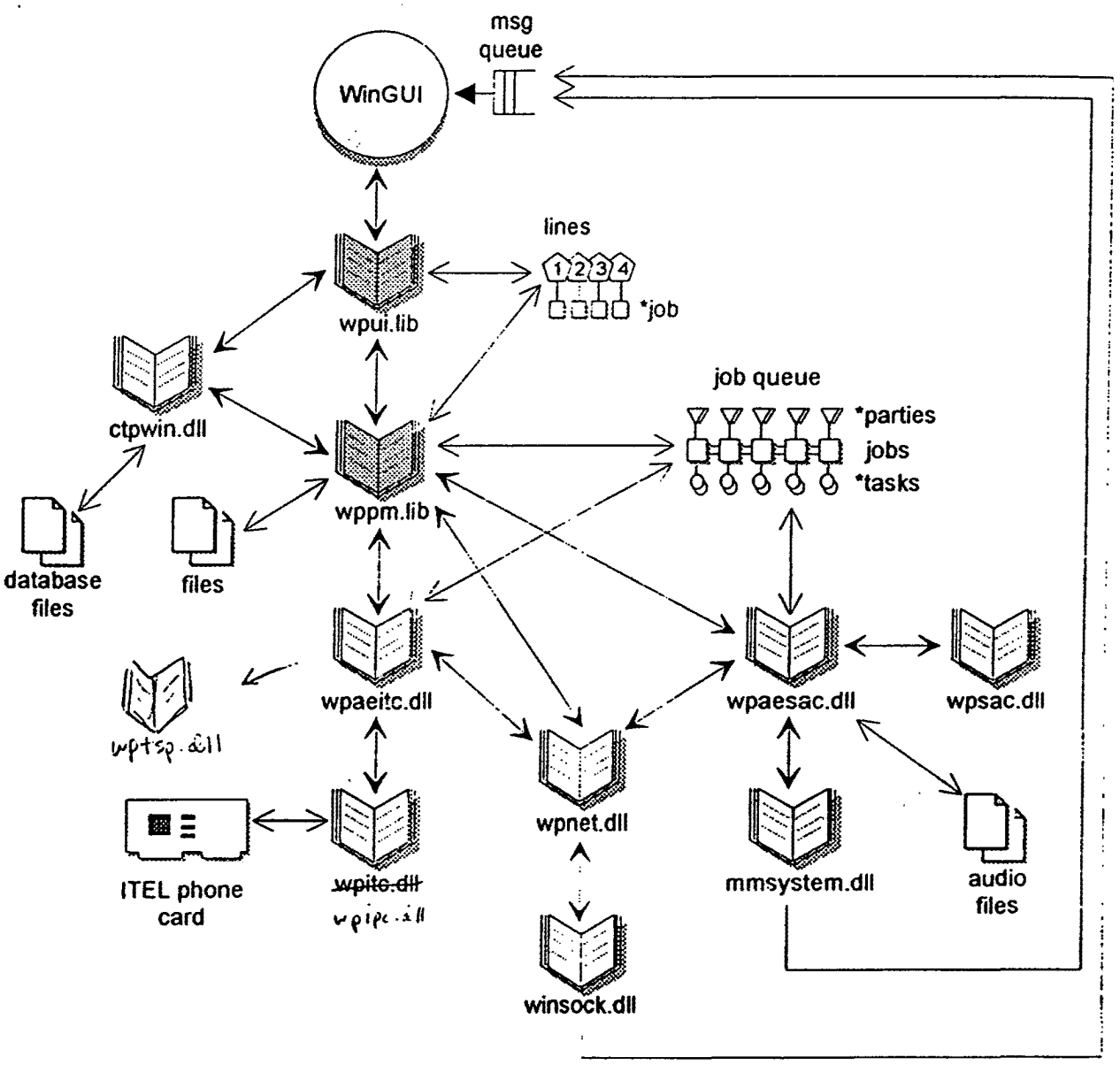
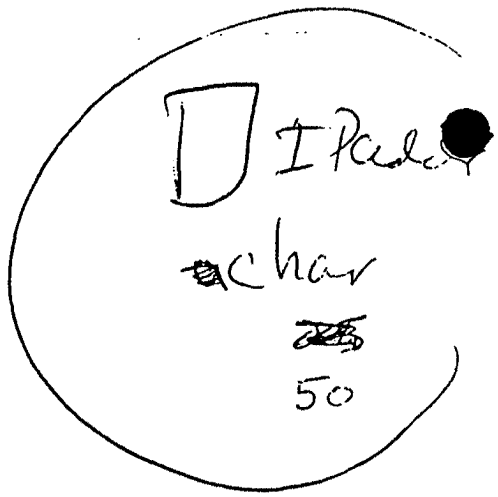
Software Architecture



database	column name	type	index	comment
webphone.cfg				webphone\webphone.cfg, only 1 record
	state	uchar		0:crippled | 1:registered
	version	char 4		webphone.exe version - n.nn, n=0-9
	dateTime	ulong		installation datetime in secs from 00:00 Jan 1, 1970 GMT
	sndDevice	char 25		name of sound card device driver, null if not found
	ipc	uchar		ITEL Phone Card (IPC) - 0:not found | 1:found
	ipcVersion	char 4		n.nn, n=0-9
	ipcDateTime	ulong		secs from 00:00 Jan 1, 1970 GMT
	voxLevel	ulong		snd card mic voice activiation level setting, units = ?
	firstName	char 10		user's first name
	lastName	char 25		user's last name
	alias	char 10		user's alias or call handle
	emailAddr	char 50		user's e-mail address
	IPaddr	ulong		user's current IP address (assigned if slip/ppp)
	streetAddr	char 50		
	apt	char 5		
	city	char 20		
	state	char 20		
	country	char 20		
	zipcode	char 10		
	phone	char 15		
	fax	char 15		
	company	char 25		
	timezone	uchar		index in TZ array
	infoIPAddr	ulong		IP addr of dir assistance server
	infoHostname	char 20		hostname of dir assistance server
	iconState	uchar		on top when -> 0:never | 1:always | 2:active
	popFrequency	uchar		seconds
	sndCardSpkr	uchar		use snd card as spkr phone -> 0:disabled | 1:enabled
	callBlockAction	uchar		when call blocking enabled -> 0:reject | 1:ansMachine
	fileTransfer	uchar		0:disabled | 1:enabled
	encrypt	uchar		0:disabled | 1:enabled
	ansMachine	uchar		0:disabled | 1:enabled
	timeToAns	uchar		seconds until ans machine picks up
	sndCardVmail	uchar		play vmail on snd card spkr -> 0:disabled | 1:enabled



Spk mic Value range 0, 1, 2, .. 9

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database	column name	type	index	comment
	ogmNoVmail	uchar		play ogm do not accept vmail -> 0:disabled | 1:enabled
	hearOgm	uchar		hear ogm when played -> 0:disabled | 1:enabled
	noansWav	char 8		filename of wave file to play when no ans
	noansRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	offlineWav	char 8		filename of wave file to play when offline
	offlineRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	busyWav	char 8		filename of wave file to play when busy
	busyRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	dialingWav	char 8		filename of wave file to play when dialing
	dialingRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	callWav	char 8		filename of wave file to play when call arrives
	callRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	badAddrWav	char 8		filename of wave file to play when bad email or IP address given
	badAddrRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	errorWav	char 8		filename of wave file to play when error occurs
	errorRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	holdWav	char 8		filename of wave file to play when placed on hold
	holdRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	vmailWav	char 8		filename of wave file to play when vmail arrives
	vmailRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	priorityWav	char 8		filename of wave file to play when priority ring enabled party calls
	priorityRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	callackWav	char 8		filename of wave file to play when call acknowledge arrives
	callackRepeat	uchar		seconds to pause between plays -> 0:no repeat | >0 pause secs
	log	uchar		activity log -> 0:disable | 1:enable
	logEvents	uchar		bitmap of events to log -> high nibble = type, low nibble = status
	wpHPos	ulong		saved screen coord for webphone upper left horz pos in pixels
	wpVPos	ulong		saved screen coord for webphone upper left vert pos in pixels
	dirHPos	ulong		saved screen coord for phone dir upper left horz pos in pixels
	dirVPos	ulong		saved screen coord for phone dir upper left vert pos in pixels
	msgHPos	ulong		saved screen coord for vmail msgs upper left horz pos in pixels
	msgVPos	ulong		saved screen coord for vmail msgs upper left vert pos in pixels
	logHPos	ulong		saved screen coord for activity log upper left horz pos in pixels
	logVPos	ulong		saved screen coord for activity log upper left vert pos in pixels
	cfgHPos	ulong		saved screen coord for config upper left horz pos in pixels
	cfgVPos	ulong		saved screen coord for config files upper left vert pos in pixels

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database	column name	type	index	comment
	datHPos	ulong		saved screen coord for data files upper left horz pos in pixels
	datVPos	ulong		saved screen coord for data files upper left vert pos in pixels
	iconHPos	ulong		saved screen coord for icon upper left horz pos in pixels
	iconVPos	ulong		saved screen coord for icon upper left vert pos in pixels
	session	ulong		next available session number in sequence
	vmailName	ulong		next available vmail name in sequence -> xxxxxxxx, x=0-9
	ogmName	ulong		next available ogm name in sequence -> xxxxxxxx, x=0-9

positions of all dialogs

phonedir.db				webphone\phonedir.db
	number	ulong	key	unique identifier, assigned sequentially
	firstName	char 10		
	lastName	char 25	index	place name if place
	alias	char 10	index	
	emailAddr	char 50		
	IPaddr	ulong	index	
	timezone	uchar		index into TZ array
	type	uchar	index	0:person | 1:place
	priority	uchar	index	0:disable | 1:enable
	blocked	uchar	index	0:disable | 1:enable
	blockAction	uchar		0:REJECT | 1:ACCEPTVMAIL
	ogm Number	ulong	index	link to ogm in ogm.dir
	speedDial	uchar	index	position: 1 - 10, 0:unassigned
	callFoward	uchar	index	0:disable | 1:enable
	forwardParty	ulong		link to party in phonedir.db

ogm / 1

uchar index 0: disabled | 1: enable

fileBlock uchar index ∅ : 1

messages.dir				webphone\vmail\messages.dir
	number	ulong	key	unique identifier, assigned sequentially
	direction	uchar	index	0:in | 1:out
	state	uchar	index	0:old | 1:new
	type	uchar		0:gsm | 1:tsp | 2:cripple (play cvmlmsg.wav)

database	column name	type	index	comment
	filename	char 8		xxxxxxxx.wpm, x=0-9, assigned sequentially
	firstName	char 10		null if place
	lastName	char 25	index	place name if place
	emailAddr	char 50		
	IPaddr	ulong		
	dateTime	ulong	index	secs from 00:00 Jan 1, 1970 GMT
	duration	ulong		secs
files.dir				webphone\files\files.dir
	number	ulong	key	unique identifier, assigned sequentially
	direction	uchar	index	0:in | 1:out
	type	uchar	index	0:executable | 1:email | 2:text | 3:winapp
	filename	char 13		*.ext, ext=exe,bat,sys,txt,doc,wri,xls,pm5,...
	firstName	char 10		null if place
	lastName	char 25	index	place name if place
	emailAddr	char 50		
	IPaddr	ulong		
	dateTime	ulong	index	in or out datetime in secs from 00:00 Jan 1, 1970 GMT
	fileDate	char 8		mm-dd-yy
	fileTime	char 6		hh:mmq, q=a | p
	fileSize	ulong		in bytes
activity.log				webphone\activity.log
	number	ulong	key	unique identifier, assigned sequentially
	firstName	char 10		null if a place
	lastName	char 25	index	
	dateTime	ulong	index	secs from 00:00 Jan 1, 1970 GMT
	emailAddr	char 50		
	IPaddr	ulong		
	type	uchar	index	0:called|1:dialed|2:camped|3:rcv vmail|4:snt vmail|5:rcv file|6:snt file
	status	uchar	index	0:ans|1:noans|2:busy|3:offline|4:success|5:failure|6:disconnect

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database	column name	type	index	comment
	vmail	ulong		link to vmail msg in messages.dir
ogm.dir				webphone\ogm\ogm.dir
	number	ulong	key	unique identifier, assigned sequentially
	filename	char 8		xxxxxxxx.wpm, x=0-9, assigned sequentially
	dateTime	ulong		secs from 00:00 Jan 1, 1970 GMT
	description	char 25		
camp.lst				webphone\camp.lst
	number	ulong	key	unique identifier, assigned sequentially
	session	ulong	index	
	direction	uchar	index	0:campee | 1:camper
	dateTime	ulong		
	firstName	char 10		null if a place
	lastName	char 25		
	emailAddr	char 50		
	IPaddr	ulong		

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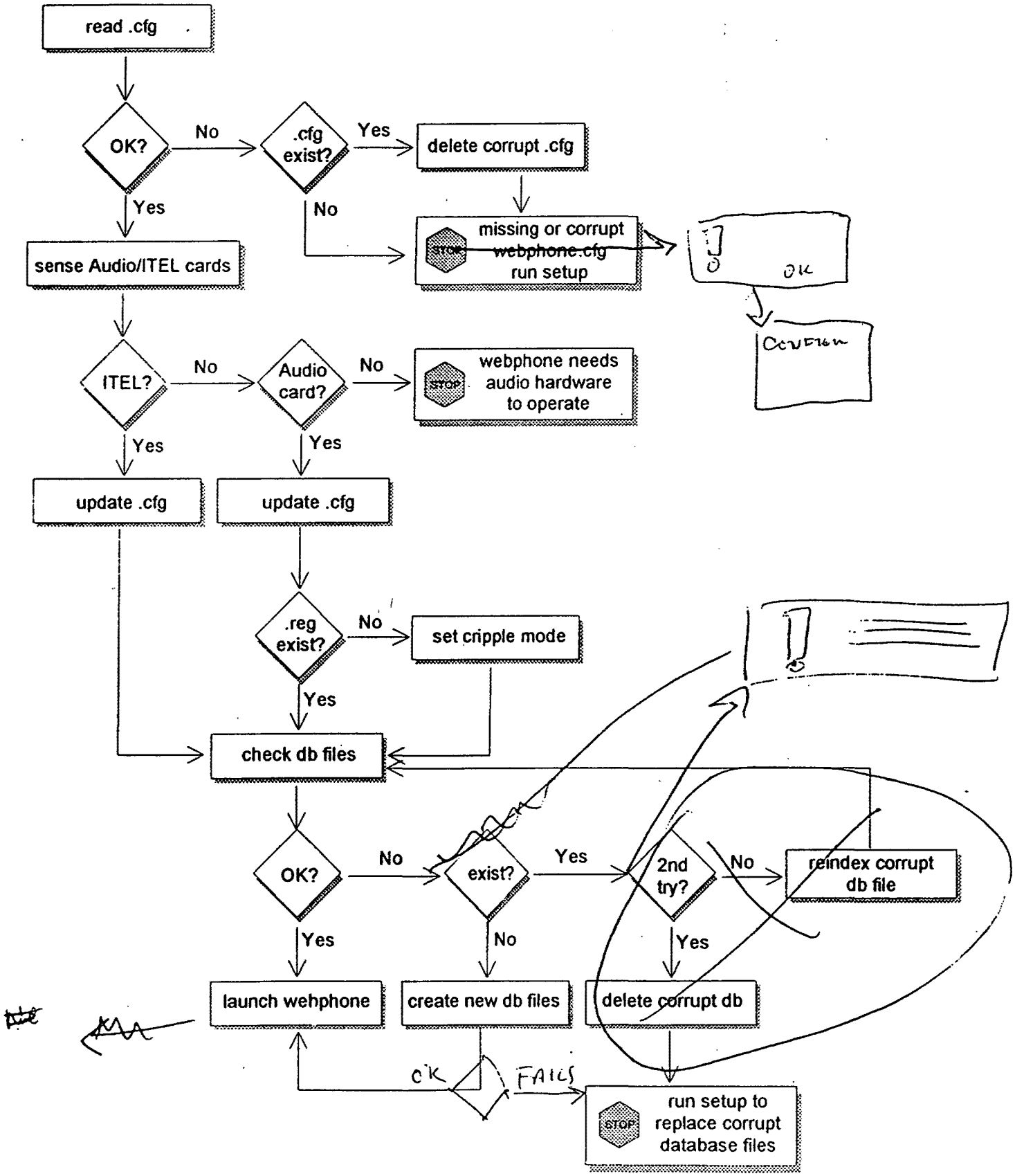
Startup



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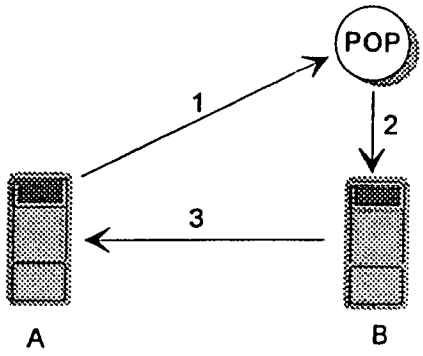
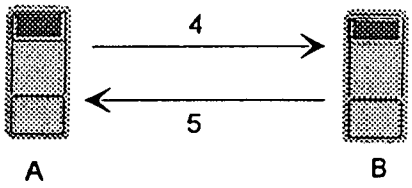
Point to Point Calling Scenario

1. A initiates call to B by sending {CALL}, A says CONNECTING
2. B polls POP and receives {CALL}
3. B xmts <ConnectOK> with B's IP address to A

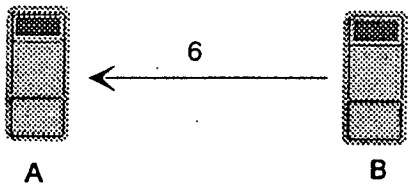


Note: If B's IP address was already known to A then the calling scenario would begin here at step 4:

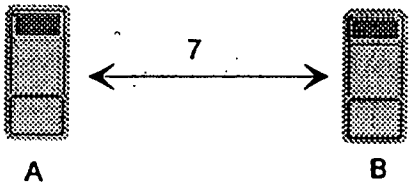
4. A xmts <Call> to B with A's user info
5. B xmts <CallAck> to A with B's user info, A says RINGING, A plays "ringout.wav", B says CALL



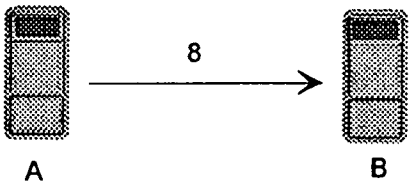
6. when B answers, B xmts <Answer> to A. A stops "ringout.wav" and B stops ringin.wav



7. A and B converse

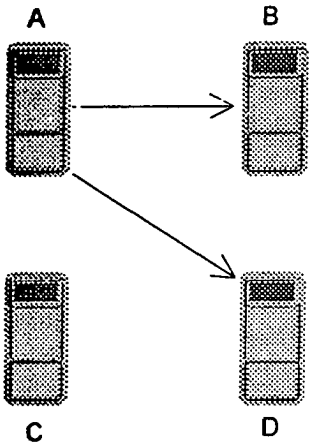


8. A or B presses [END] and xmts <End> to B or A.

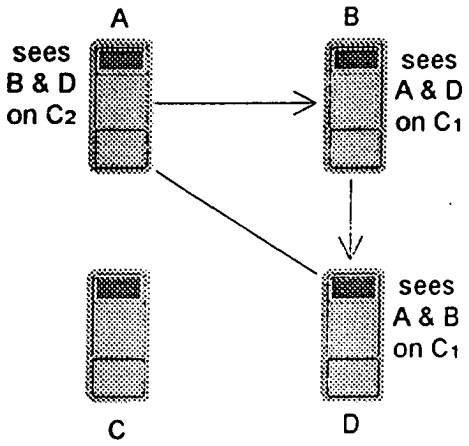


{ } is an e-mail message
< > is a socket message

Conference Calling

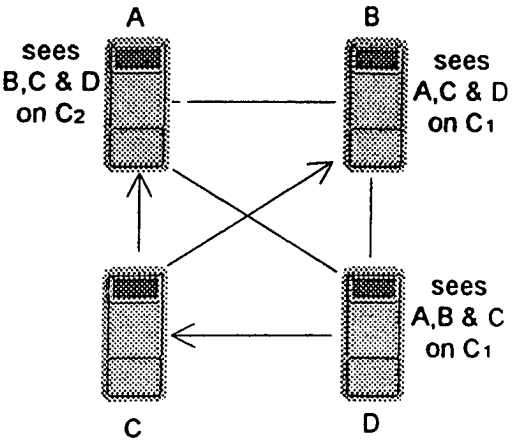


A calls B on L_1 then calls D on L_2



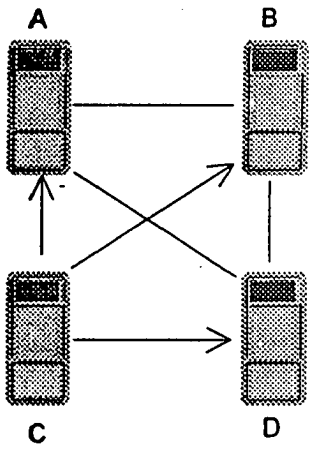
A places B onto L_2 thereby conferencing with B & D.
L_2 then becomes C_2.
A instructs B to call D with <cnfadd>.
B calls D with <cnfcall>.

A xmts to B & D
B xmts to A & D
D xmts to A & B

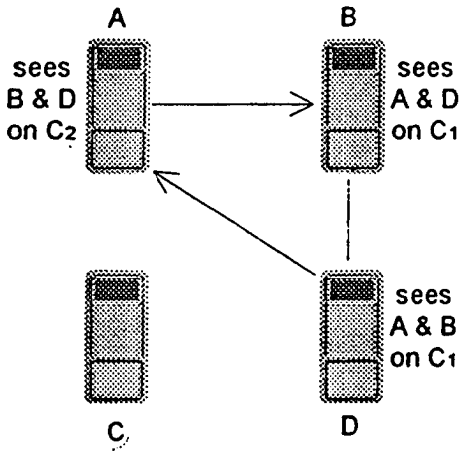


D now calls C and places C on conference. D instructs C to call A & B with <cnfadd>.
C call A & B with <cnfcall>.

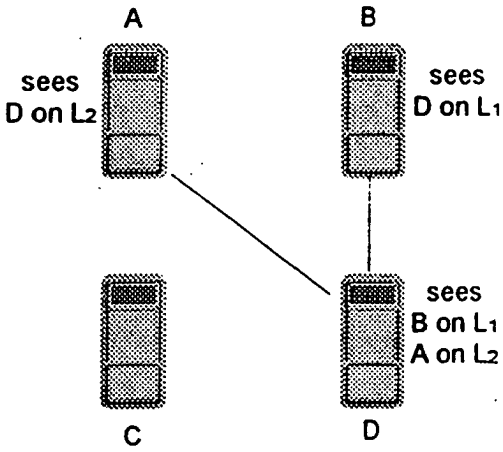
A xmts to B,C & D
B xmts to A,C & D
D xmts to A,B & C



C ends call and sends <end> to A,B & D.



D transfers A onto L_2 thereby dropping A from the conference on C_1. C_1 then becomes L_1.
D sends <cnfdrop> to A.
A then sends <end> to B.



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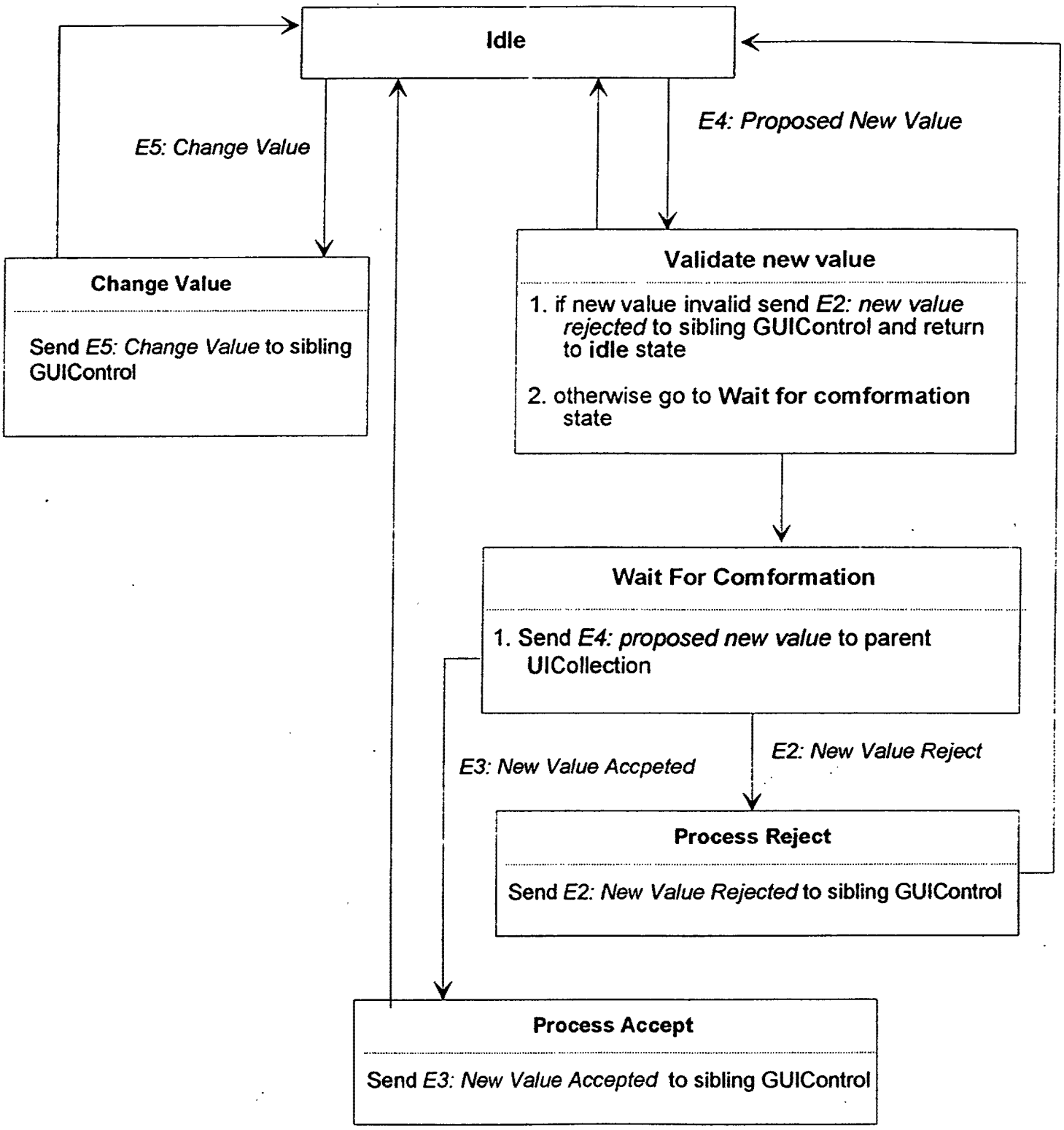
UIControl STD



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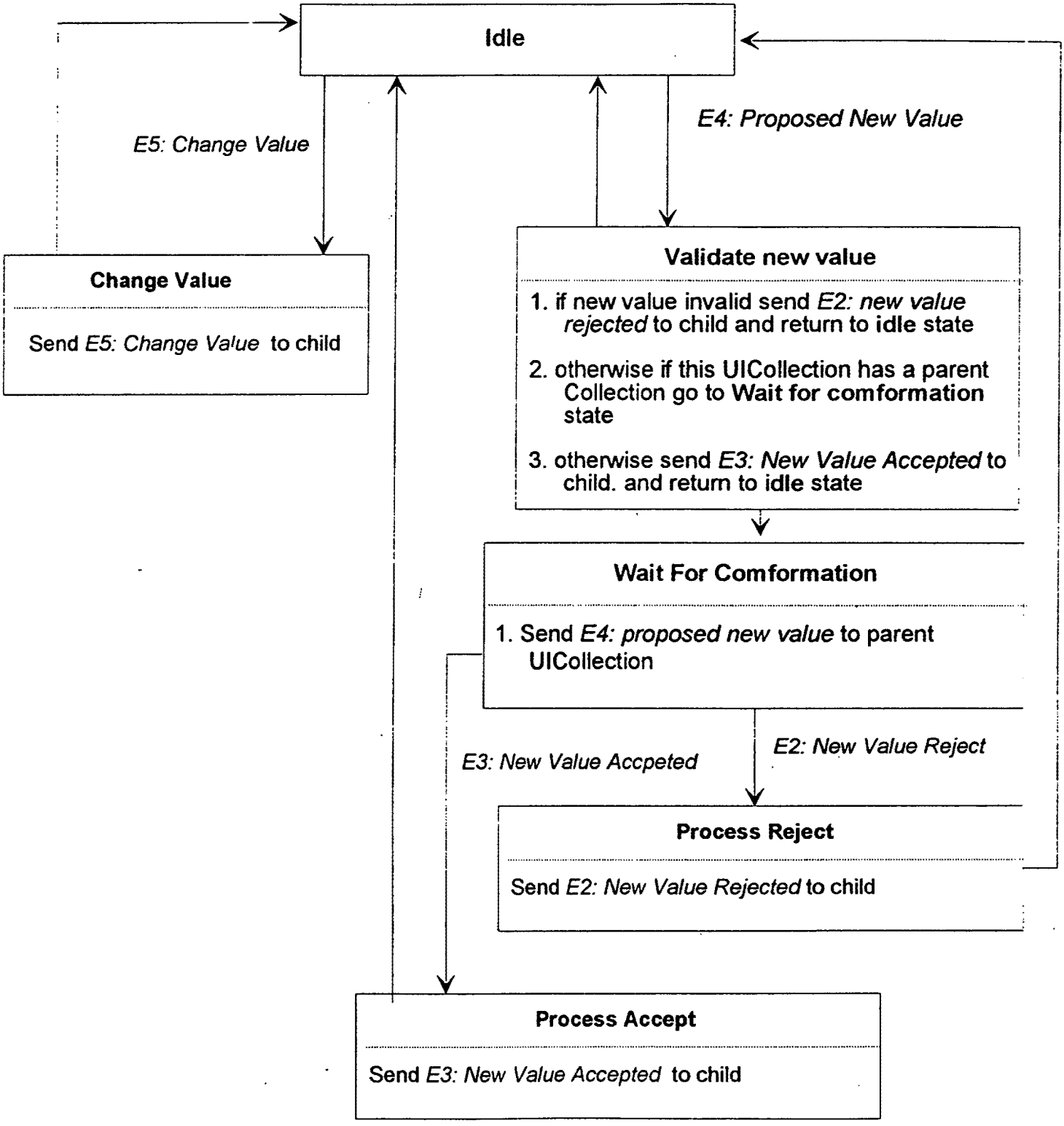
UICollection STD



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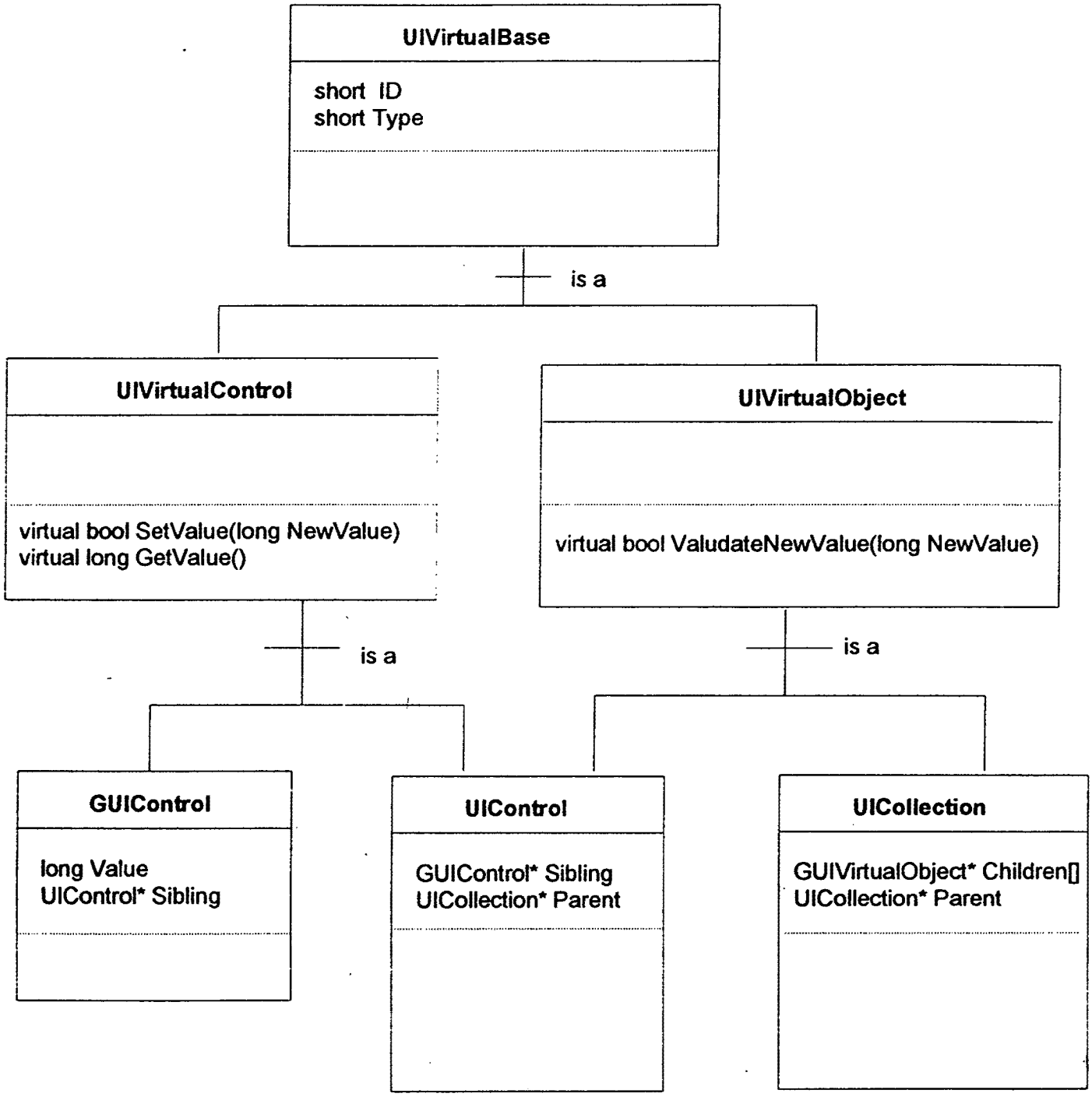

Figure 43

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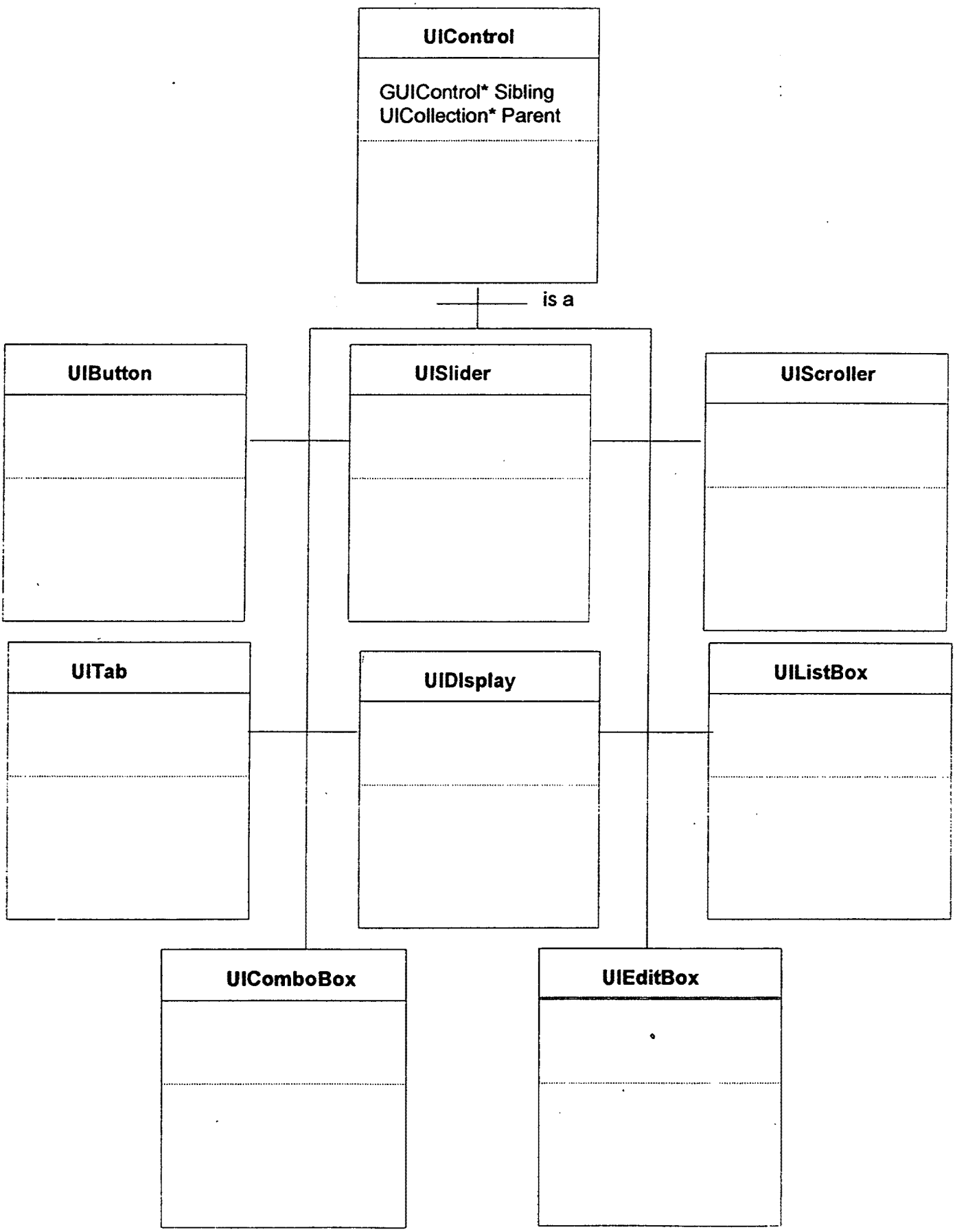

Figure 44

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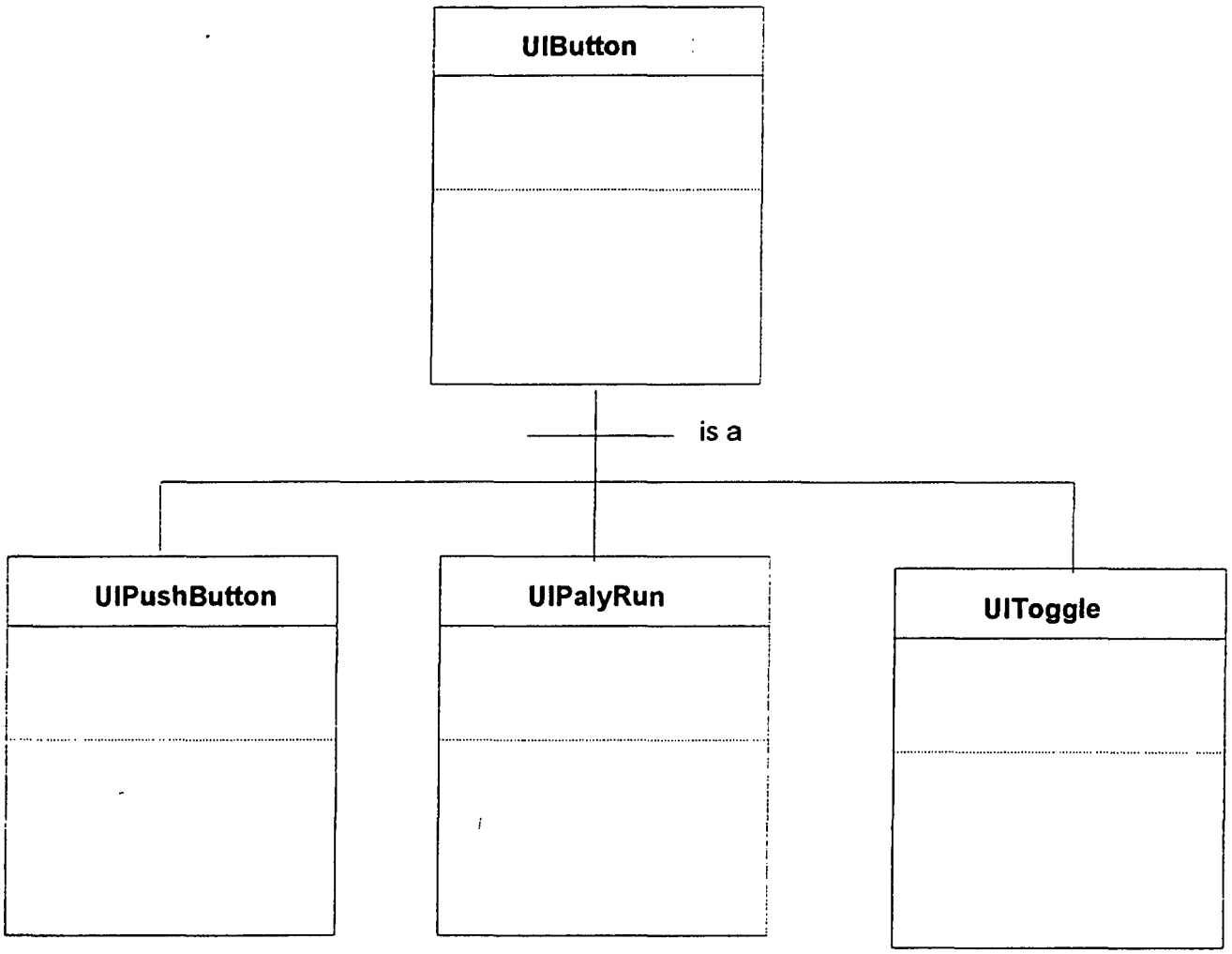

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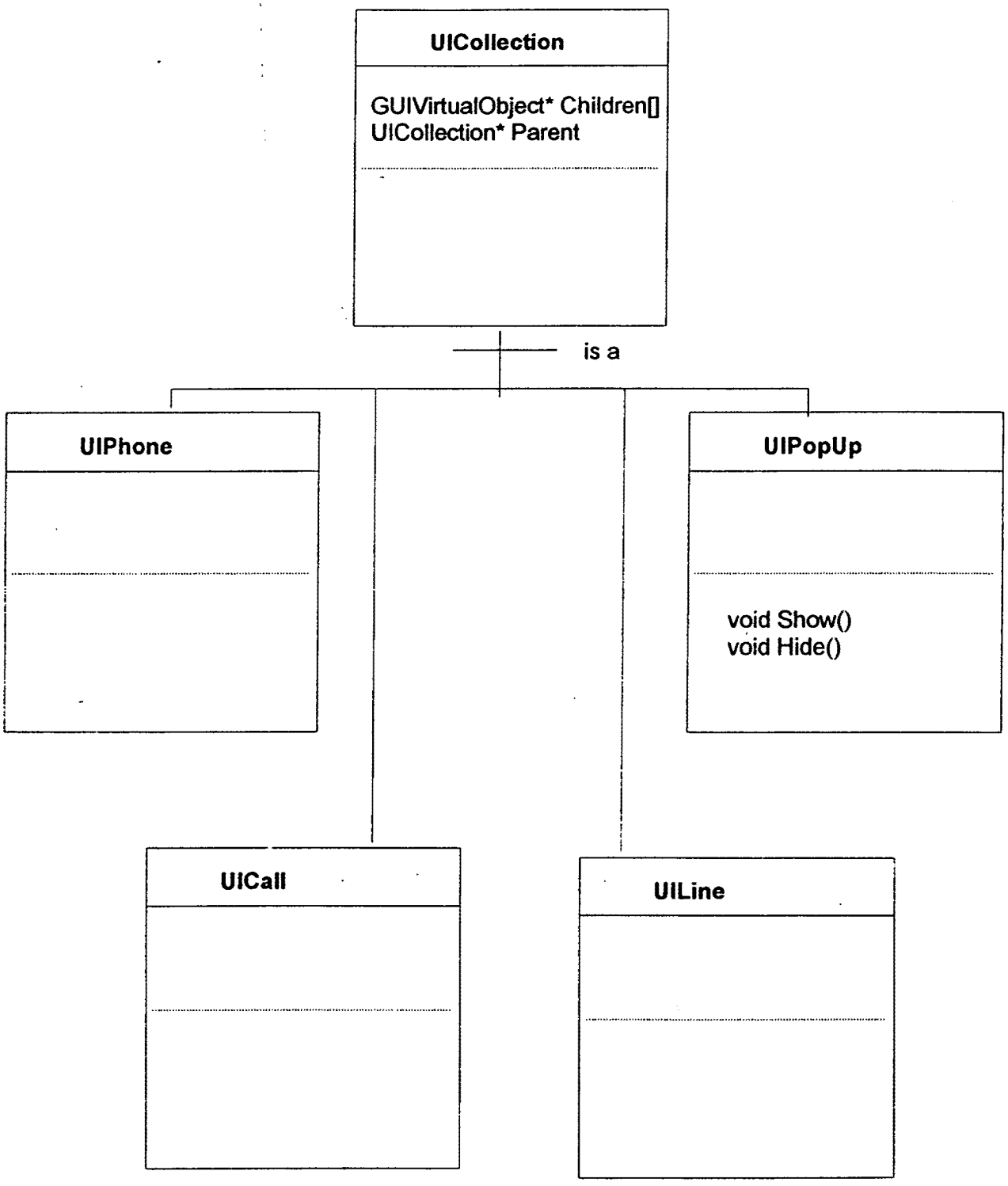

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PhoneManager & AudioEngine Objects

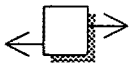
line

state
duration
*job

CreateCall()
RemoveCall()

flags

job



id
type
state
nparties
*party[ ]
*inTask
*outTask
*nextJob
*prevJob

job()
~job()
AddParty()
RemoveParty()
CreateTask()
RemoveTask()

party

state
session
socket
partyRec

party()
~party()
LoadParty()

task

cmd
src
dst
state
*job
*buf
extent
fileHandle
fileType
fileLen
fileSize
mic
spkr
flags

task()
~task()

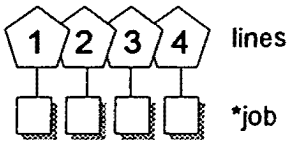
cmd

AE_INIT
AE_CLOSE
AE_START
AE_STOP
AE_FILLME
AE_USEME

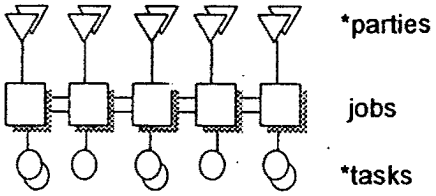
src/dst

AE_MIC
AE_ITCMIC
AE_SPKR
AE_ITCSPKR
AE_SOCKET
AE_FILE

line array



job queue



Job *timers [WP_MAXTIMERS]

index into timer array is TM_?

TM_?

TM_POLL
TM_OHELLO
TM_IHELLO
TM_CALLACK

socket free list

pre-allocate 16 sockets

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Line States

state	value	led color	annunciate
LS_IDLE	0::00000000	gray	IDLE
LS_INUSE	0x00000001	green	INUSE
LS_OFFLINE	0x00000002	blue	OFFLINE
LS_CONNECTING	0x00000004	blue-green	CONNECTING
LS_CALL	0x00000008	blink green	CALL
LS_RINGOUT	0x00000010	blue-green	RINGING
LS_HOLD	0x00000020	blink red	HOLDING
LS_BUSY	0x00000040	blink blue	BUSY
LS_ANSMACHINE	0x00000080	green	ANSERING MACHINE
LS_REJECTED	0x00000100	blue	REJECTED
LS_DISCONNECTED	0x00000200	black	DISCONNECTED
LS_NETFAILURE	0x00000400	black	NETWORK FAILURE
LS_COMMFAILURE	0x00000800	black	COMMUNICATIONS FAILURE
LS_CAMPACK	0x00001000	blink blue-green	PARTY AVAILABLE
LS_OGMPLAY	0x00002000	blink green	PLAYING MESSAGE
LS_VMAILRCV	0x00004000	blink green	RECEIVING VOICE MAIL
LS_RECORD	0x00008000	red	RECORDING
LS_PLAY	0x00010000	orange-yellow	PLAYING
LS_SELECT	0x01000000	gray	IDLE
LS_MUTE	0x02000000	yellow	MUTE
LS_ONHOLD	0x04000000	red	ONHOLD

LS_TALK	0x04000000	green	TALK
LS_LISTEN	0x10000000	green	LISTEN

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Figure 48

Job States

state
JS_IDLE
JS_DONE
JS_SELECT
JS_OCALL
JS_ORING
JS_IRING
JS_ICONNECT
JS_OCONNECT
JS_ERROR
JS_OFFLINE
JS_BUSY
JS_RBUSY
JS_INUSE
JS_DISCONNECTED
JS_HOLD
JS_ONHOLD
JS_HOLDNONHOLD
JS_ORINGHOLD
JS_OCALLHOLD
JS_RBUSYHOLD
JS_OCONNECTHOLD
JS_OGMRCV
JS_OVMAILRECWAIT
JS_OVMAILREC
JS_OVMAILXMT
JS_OVMAILPLAY
JS_OVMAILPAUSE
JS_OGMPLAY
JS_IVMAILRECWAIT
JS_IVMAILREC
JS_CAMPACK
JS_FILEXMT
JS_FILEXMTACK
JS_FILERCV
JS_FILESND
JS_EMAILRCV
JS_INFOACK
JS_INFORCV
JS_OGMPAUSE
JS_OGMPLAY
JS_OGMREC
JS_VMAILPLAY
JS_VMAILPAUSE
JS_VMAILRCV
JS_EMAILFILERCV
JS_USERINFO

User Interface Events

Action	GUI event	PM event
open phone directory	press [DIR]	
open voice mail messages dialog	press [MSG]	
open activity log	press [LOG]	
open configuration control dialog	press [CFG]	
open data files dialog	press [DAT]	
open help system	press [?] | press ? in dialogs	
display bubble help	point to any [ ]|[ ]v for 1.5 seconds	
display party information	rt clk on [n]|[Li]|[Lh]	
display camp list	rt clk on [CMP]	
display call block list	rt clk on [BLK]|[BLK]v	
display priority ring list	rt clk on [PRI]|[PRI]v	
display conference list	rt clk on [Ci]|[Ch]; press dn arrow in display	
save voice mail to file system	drag selected voice mail to dir in WFM	
save ogm to file system	drag selected ogms to dir in WFM	
restore voice mail from file system	drag selected .wpm files to Voice Mail dialg	
restore or add ogm from file system	drag selected ogms from dir in WFM to OGM dialog	
add party on line to phone directory	press [DIR]; drag [Li]|[Lh] to DIR	
add party on conf line to phone directory	rt clk [Ci]|[Ch]; press dn arrow, drag party to DIR	
assign party to speed dial	press [DIR];drag party to [n] where n != .	
"	drag [Li]|[Lh] to [n] where n != .	
place an IP based call	press [n];[n];...[n];[SND]	PM_IPCALL
place an e-mail or IP based call	name;[SND]	PM_CALL | PM_IPCALL
"	drag Party from DIR to [Lf]	"
"	press [DIR];dbl clk on party in DIR	"
recall the last party called	press [RCL]	"
"	drag [RCL] to [Lf]	"
speed dial	drag [n] to [Lf]	"
"	press [n];[SND]	"
call party from activity log	press [LOG]; dbl clk on log entry	"
"	drag log entry to [Lf]	"

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User Interface Events

Action	GUI event	PM event
answer a call	press [SND]	PM_ANSWER
"	press [Lc]	"
pre-select a line	press [Lf]	PM_SELECT, ON
deselect a line	press [Ls]	PM_SELECT, OFF
place a call on hold	press [Li]|[Ci]	PM_HOLD, ON
"	press [HLD]	"
"	press [Lx]|[Cx] where Lx != Li | Cx != Ci	"
"	press [RCL]	"
take a call off hold	press [Lh]|[Ch]	PM_HOLD, OFF
end a call	press [END]	PM_END
mute a line	press [MUT]	PM_MUTE, ON
take mute off a line	press [MUT]v	PM_MUTE, OFF
enable call blocking	press [BLK]	PM_BLK, ON
disable call blocking	press [BLK]v	PM_BLK, OFF
add party to call block list	update party in DIR | drag party to [BLK]	PM_UPDBLK,,, ADD
delete party from call block list	remove party from block list in display	PM_UPDBLK,,,DELETE
enable do not disturb	press [DND]	PM_DND, ON
disable do not disturb	press [DND]v	PM_DND, OFF
enable priority ringing	press [PRI]	PM_PRI, ON
disable priority ringing	press [PRI]v	PM_PRI, OFF
add party to priority ring list	update party in DIR	PM_UPDPRI,,, ADD
delete party from priority ring list	remove party from priority ring list in display	PM_UPDPRI,,,DELETE
camp on a busy or offline call	press [CMP]	PM_CAMP, line
remove camp on party	rt clk on [CMP]; delete party from camp list	
enable call forwarding	press [FWD]	PM_FWD, ON
disable call forwarding	press [FWD]v	PM_FWD, OFF
assign party to call forward	drag party in DIR|[Li]|[Lh]|[n] to [FWD]	PM_FWD, *party
transfer a party to another line	drag [Li]|[Lh] to a [Lf]	PM_LINEXFR
add on or more parties to conference	drag [Li]|[Lh]|[Ci]|[Ch] to another [Li]|[Lh]|[Ci]|[Ch]	PM_CNFADD (for each party)
transfer a party from a conf to a line	drag party from conf list to [Lf]	PM_CNFDROP
transfer a party from one conf to another	drag party from conf list to another [Ci]|[Ch]	PM_CNFDROP ; PM_CNFADD
remove a party from a conference	select party in conf list and press [END]	PM_CNFDROP
start recording audio	press [*]	PM_ACREC
start playing audio	press [|>]	PM_ACPLAY

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User Interface Events

Action	GUI event	PM event
stop rec or playing audio	press [stop]	PM_ACSTOP
pause rec or playing audio	press [||]	PM_ACPAUSE
rewind audio to beginning	press [|<]	PM_ACRWD
fast forward audio to end	press [>|]	PM_ACFWD
cancel audio record session	press [x]	PM_ACABORT
finished recording voice mail	press [END]	PM_ACEND
finished recording ogm	select another ogm	"
play audio file to party on line	drag vmail from MSG to [Li][Lh][Ci][Ch]	PM_ACPLAY
"	drag ogm from OGM to [Li][Lh][Ci][Ch]	"
"	drag audio file from WFM to [Li][Lh][Ci][Ch]	"
transfer file(s) to one or more parties	drag file(s) from WFM to [Li][Lh][Ci][Ch]	PM_FILEXFR
"	drag file(s) from WFM to selected parties in DIR	"
abort file transfers	press [DAT]; select file in *Data Files Out*; press [x]	PM_FILEXFRABORT
request directory assistance	bad name;[SND] | press [DIR];press [Info]	PM_INFOREQ
abort directory assistance request	press [x] in Information dialog	PM_INFOABORT

Key to symbols
[ ] = button is up
[ ]v = button is down
n = 0,1,2,3,4,5,6,7,8,9, .
L = single line (1 party)
C = conference line (> 1 party)
Lf = free line
Lc = call on line
Lh = hold on line
Li = in use line
Ls = selected line
; = then
| = or
WFM = MS Windows File Manager

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UI Triggered PM Events

event	arg1	arg2	arg3	comment
PM_INIT				
PM_CLOSE				
PM_CALL	*job	lineID		initiate email call
PM_IPCALL	*job	lineID		initiate IP call
PM_ANSWER		lineID		answer received
PM_HOLD		lineID	ON | OFF	toggle hold
PM_SELECT		lineID	ON | OFF	toggle line selection
PM_END		lineID		end call
PM_MUTE		lineID	ON | OFF	toggle muting
PM_BLK			ON | OFF	toggle call block
PM_UPDBLK	*party		ADD | DELETE	add or del party from blk list
PM_DND			ON | OFF	toggle do not disturb
PM_FWD	*party		ON | OFF	arg1 or arg3
PM_CAMP	sid	lineID		sid - OFF | lineID - ON
PM_PRI			ON | OFF	toggle priority ringing
PM_UPDPRI	*party		ADD | DELETE	add or del party to priority ring list
PM_LINEXFR		lineID	lineID	lineIDs not the same
PM_CNFADD	partyID	lineID		add party to cnf
PM_CNFDROP	partyID	lineID		drop party from cnf
PM_PARTYXFR	partyID	lineID	lineID	lineIDs not the same
PM_INFOREQ	*job	char *		directory assistance request
PM_INFOABORT	*job			abort directory assistance
PM_FILEXFR	*job	char *		initiate file transfer
PM_FILEXFRABORT	*job			abort file transfer
PM_ACSTOP	*job			audio control stop
PM_ACPLAY	*job			audio control play
PM_ACPAUSE	*job			audio control pause
PM_ACREC	*job			audio control record
PM_ACABORT	*job			audio control cancel
PM_ACRWD	*job			audio control rewind
PM_ACFWD	*job			audio control forward
PM_ACEND	*job			psuedo-control: lose focus
PM_MIC	*job	*buf		microphone I/O
PM_SPKR	*job	*buf		speaker I/O
PM_SOCKET	*job	*buf	READ | WRITE	socket I/O
PM_TIMEOUT	*job		TM_?	timer elapsed

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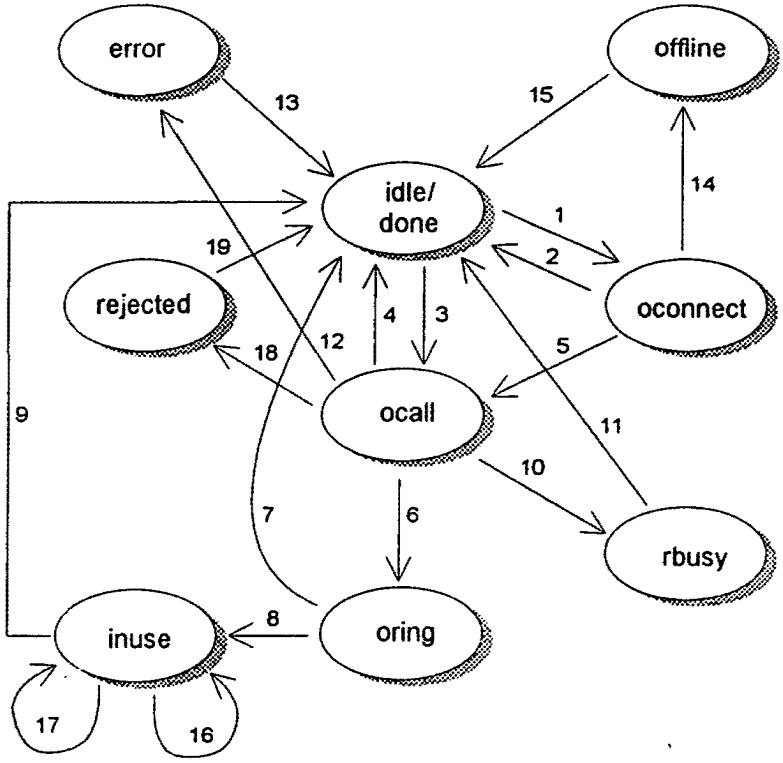
PhoneManager State-Event Diagrams

Placing a call events

1. PM_CALL ; {CALL} –>
2. PM_END
3. PM_IPCALL | <– {CAMPCALL} ; <Call> –>
4. PM_END
5. <– <ConnectOK> ; <Call> –>
6. <– <CallAck>;LS_RINGOUT;UI_CALLACK
7. PM_END
8. <– <Answer>;LS_INUSE;UI_CALLANSWER
9. PM_END | <– <End>;LS_DONE;UI_CALLEND
10. <– <Busy>;LS_BUSY;UI_CALLBUSY
11. PM_END
12. PM_TIMEOUT;LS_COMMFAIL;UI_COMMFAIL
13. PM_END
14. PM_TIMEOUT;LS_OFFLINE;UI_OFFLINE
15. PM_END
16. PM_SOCKET
17. PM_MIC | PM_SPKR
18. <– <Reject>;LS_REJECTED;UI_CALLREJECTED
19. PM_END



Recording and sending vmail Events

0. <– <AnsMachine>;LS_ANSMACH;UI_ANSMACH
1. PM_SOCKET
2. <– <OgmEnd>;UI_VMAILREC
3. PM_ACREC
4. PM_END
5. end of file;UI_VMAILSENT
6. PM_END
7. <– <Answer>;LS_INUSE;UI_CALLANSWER
8. PM_ACPAUSE | PM_ACSTOP
9. PM_ACREC
10. PM_MIC;AE_USEME;UI_AUDIOSTS
11. PM_END
12. <– <Answer>;LS_INUSE;UI_CALLANSWER
13. PM_ACRWD | PM_ACFWD
14. PM_ACPLAY
15. PM_ACPAUSE | PM_ACSTOP | end of file;LS_ANSMACH;UI_PLAYDONE
16. PM_END
17. <– <Answer>;LS_INUSE;UI_CALLANSWER
18. PM_ACABORT
19. PM_SPKR;AE_FILLME;UI_AUDIOSTS

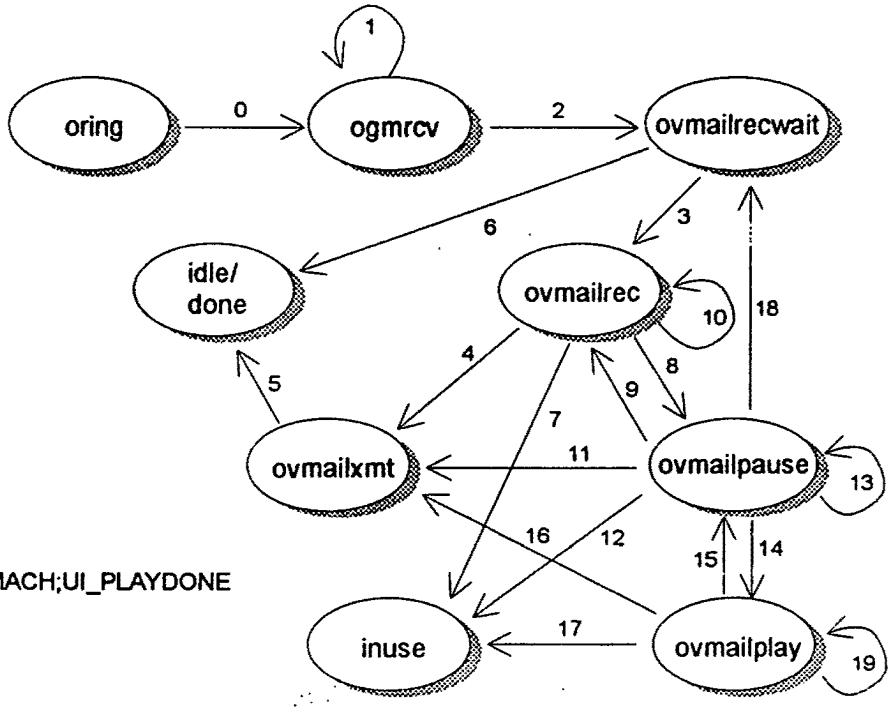


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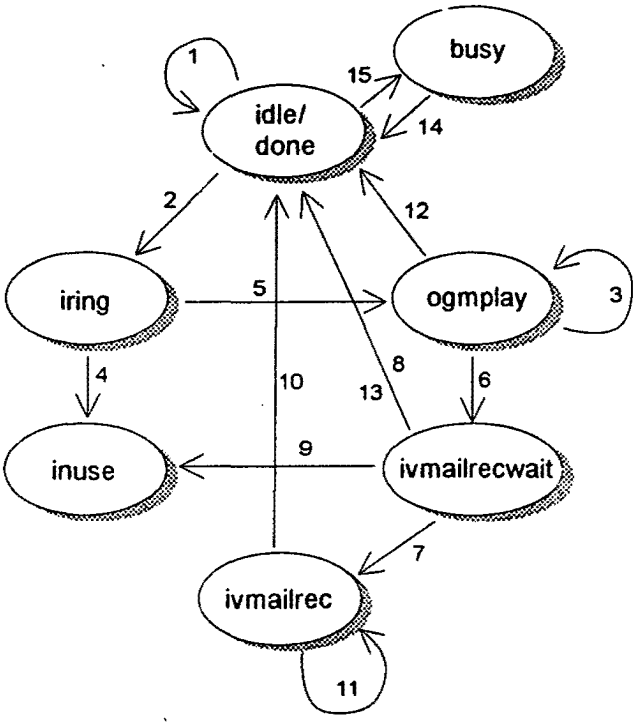
Figure 54

PhoneManager State-Event Diagrams

Inbound call and answering machine events

1. <-- {CALL} ; <ConnectOK> -->
2. <-- <Call> ; <CallAck> -->;LS_CALL;UI_CALL
3. <Audio> -->
4. PM_ANSWER ; <Answer> -->
5. PM_TIMEOUT ; <AnsMachine> -->;LS_OGMPLAY;UI_OGMPLAY
6. end of file ; <OgmEnd> -->;LS_VMAILRCV;UI_VMAILRCV
7. <-- <Audio> ; AE_START;LS_DONE;UI_CALLEND
8. <-- <End>;LS_DONE;UI_CALLEND
9. PM_ANSWER ; <Answer> -->
10. <-- <End> ; AE_STOP;LS_DONE;UI_VMAILRCVD
11. PM_SOCKET;AE_USEME
12. <-- <End>;LS_DONE;UI_CALLEND
13. <-- <Camp>;UI_CAMPRCV
14. <-- <End>|PM_TIMEOUT|<-- <Camp>;UI_CAMPRCV
15. <-- <Call> w/ NO AVAIL LINES & ANSMACH disabled



Hold events

1. PM_HOLD, ON
2. PM_HOLD, OFF
3. PM_END ; <-- <End>;LS_DONE;UI_CALLEND
4. <-- <Hold, ON>;LS_ONHOLD;UI_ONHOLD
5. <-- <Hold, OFF>;LS_OFFHOLD;UI_OFFHOLD
6. PM_END, <-- <End>LS_DONE;UI_CALLEND
7. <-- <Hold, ON>;LS_ONHOLD;UI_ONHOLD
8. <-- <Hold, OFF>;LS_OFFHOLD;UI_OFFHOLD
9. PM_END, <-- <End>;LS_DONE;UI_CALLEND
10. PM_HOLD, ON
11. PM_HOLD, OFF

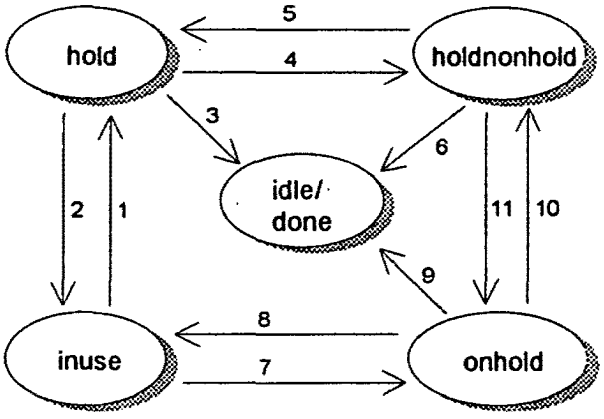


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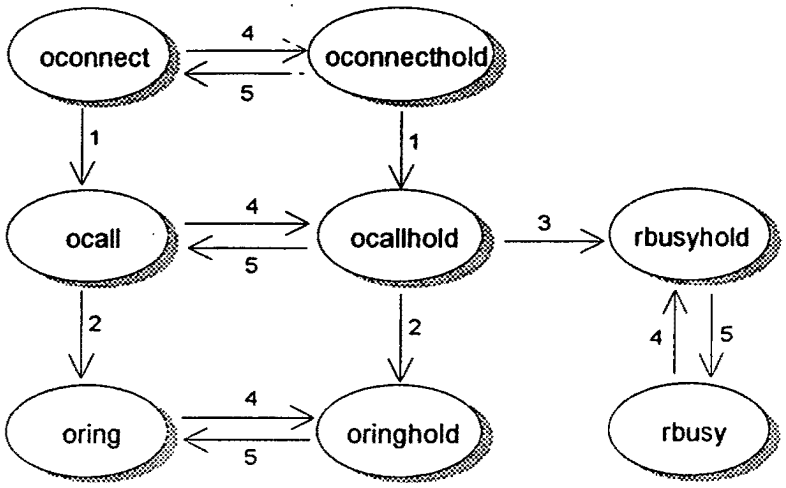
Figure 55

PhoneManager State-Event Diagrams

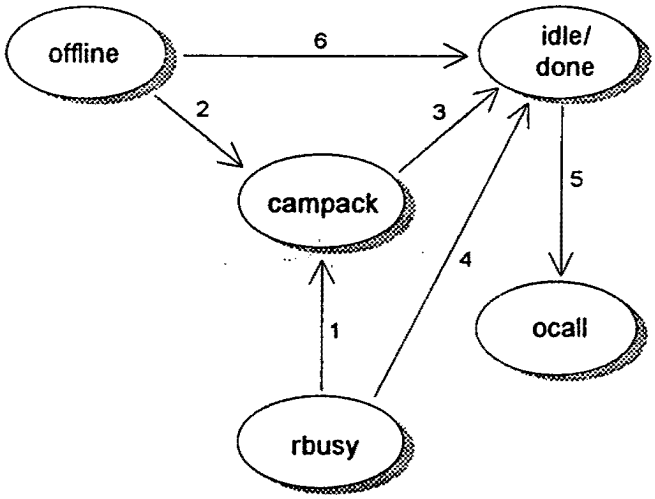
More hold events

1. <-- <ConnectOK> ; <Call> -->
2. <-- <CallAck>;UI_CALLACK
3. <-- <Busy>;LS_RBUSY;UI_CALLBUSY
4. PM_HOLD, ON
5. PM_HOLD, OFF



Camping events

1. PM_CAMP,line ; <Camp> -->
2. PM_CAMP, line ; {CAMPCALL} -->
3. <-- <CampAck> ; LS_CAMPACK;UI_CAMPACK
4. PM_END; <End> -->
5. PM_IPCALL ; <Call> -->
6. PM_END



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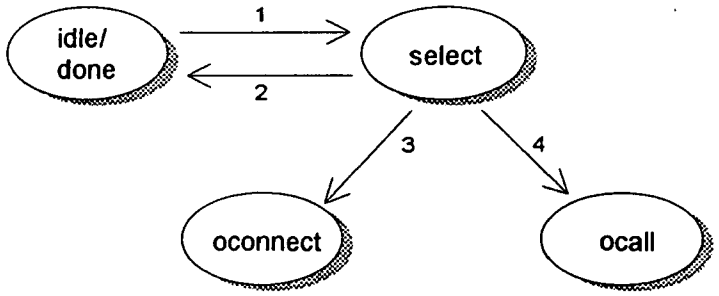
PhoneManager State-Event Diagrams

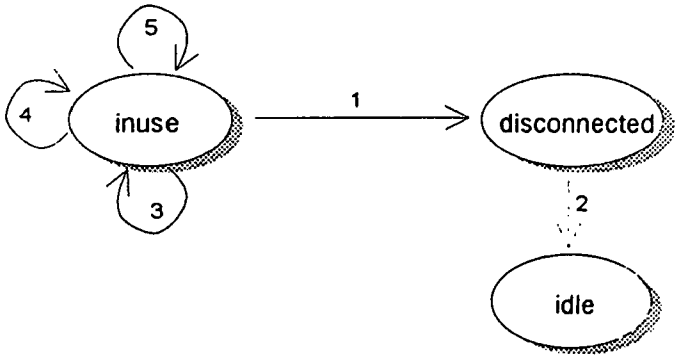
Select events

1. PM_SELECT, ON
2. PM_SELECT, OFF
3. PM_CALL
4. PM_IPCALL



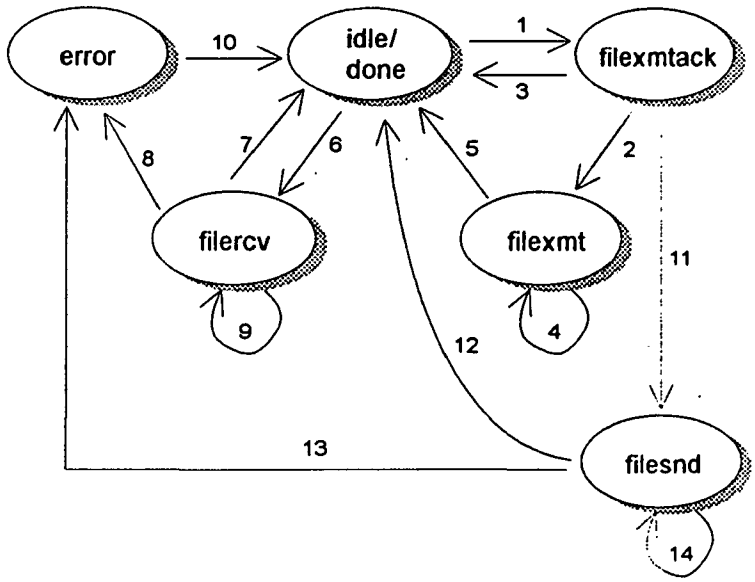
Hello events

1. PM_TIMEOUT, ihello
2. PM_END
3. <-- <Hello> | PM_SOCKET, READ ; TM_IHELLO
4. PM_TIMEOUT, ohello ; <Hello> -->
5. PM_MIC | PM_SOCKET, WRITE ; TM_OHELLO



File transfer events

1. PM_FILEXFR ; <FileXmtReq> -->
2. <-- <FileXmtAck>
3. PM_FILEXFRABORT;<Filexfrabort> -->
4. <File> -->;UI_FILEXFRSTS
5. end of file ; <FileXmtEnd> -->UI_FILEXFRSTS
6. <-- <FileXmtReq> ; <FileXmtAck> -->
7. <-- <FileXmtAbort> | <-- <FileXmtEnd>;UI_FILEXFREND
8. PM_TIMEOUT, file
9. <-- <File>
10. job.state = LS_ERROR;UI_FILEXFRFAILURE
11. PM_TIMEOUT, filexmtack
12. end of file;UI_FILEXFREND
13. failure to email
14. {FILEXFR} -->;UI_FILEXFRSTS



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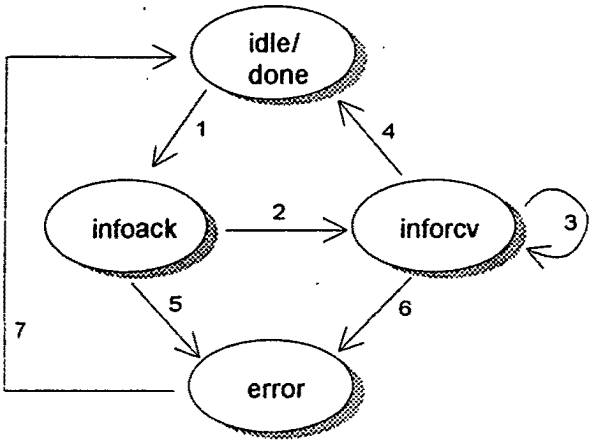
PhoneManager State-Event Diagrams

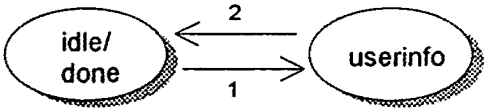
Directory assistance events

1. PM_INFOREQ; <InfoReq> –>
2. <– <InfoAck>;UI_INFOACK
3. <– <Info>;UI_INFO
4. <– <InfoEnd>;UI_INFOEND
5. PM_TIMEOUT, infoack;UI_INFOFAILURE
6. PM_TIMEOUT, info;UI_INFOFAILURE
7. job.state = LS_ERROR



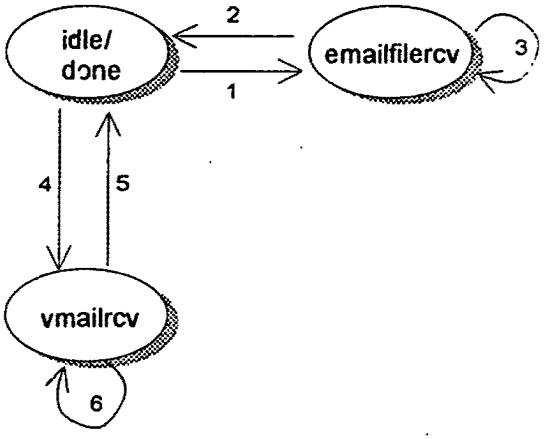
Operator initiated user info acquisition

1. <– <Userinforeq>
2. <Userinfo> –>



Receive Vmail, Email & Files via POP

1. <– {EMAIL} | <– {FILEXFR}
2. end of file;UI_FILEXFREND
3. read chunk-o-file;UI_FILEXFRSTS
4. <– {VMAIL}
5. end of file;UI_VMAILRCVD
6. read chunk-o-vmail

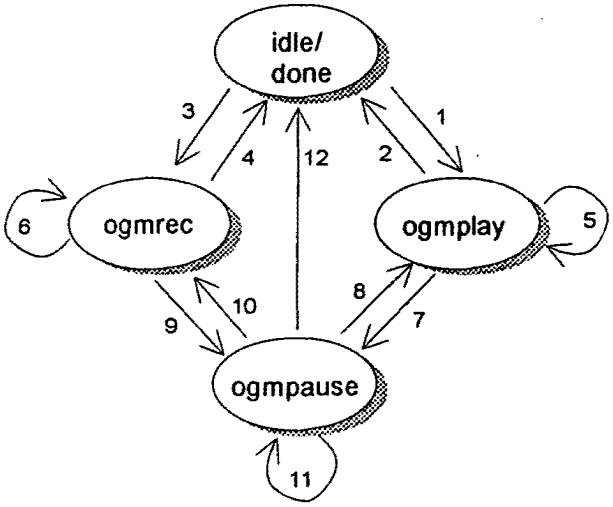


LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 625

PhoneManager State-Event Diagrams

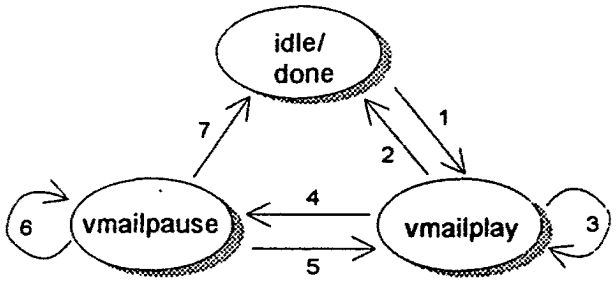
Recording and playing OGMs

1. PM_ACPLAY
2. PM_ACABORT
3. PM_ACREC
4. PM_ACABORT
5. PM_SPKR;AE_FILLME;UI_AUDIOSTS
6. PM_MIC;AE_USEME;UI_AUDIOSTS
7. PM_ACPAUSE|PM_ACSTOP|end of file
8. PM_ACPLAY
9. PM_ACPAUSE|PM_ACSTOP|rec file full
10. PM_ACREC
11. PM_ACRWD | PM_ACFWD
12. PM_ACABORT



Playing Vmail

1. PM_ACPLAY
2. PM_ACEND | lost focus
3. PM_SPKR;AE_FILLME;UI_AUDIOSTS
4. PM_ACPAUSE | PM_ACSTOP
5. PM_PLAY
6. PM_ACRWD | PM_ACFWD
7. PM_ACEND | lost focus



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Straight Path - Ex. 2023 - Page 626

PM triggered UI Events

event	arg1	arg2	UI actions
UI_CAMPACK	lineID		LED:blink blue-green;play *campack.wav*
UI_CAMPRCV		*job	upd camp.lst;upd camp list memory image
UI_CALL	lineID		annunc:"CALL";play *ringin.wav;* chg LED
UI_CALLACK	lineID		annunc:"RINGING";play *ringout.wav;* chg LED
UI_CALLANSWER	lineID		stop play: annunc:"INUSE"; chg LED
UI_CALLEND	lineID		annunc:"IDLE";chg LED
UI_CALLBUSY	lineID		annunc:"BUSY";play *busy.wav;* chg LED
UI_CALLOFFLINE	lineID		stop play;annunc:"OFFLINE";chg LED
UI_CALLOHHOLD	lineID		annunc:"ON HOLD";chg LED
UI_CALLOFFHOLD	lineID		annunc:"IN USE";chg LED
UI_COMMFAIL	lineID		annunc:"COMMUNICATIONS FAILURE";chg LED
UI_CALLREJECT	lineID		annunc:"CALL REJECTED";chg LED
UI_ANSMACHINE	lineID		annunc:"ANSWERING MACHINE"
UI_VMAILREC	lineID		activate audio controls
UI_VMAILSENT		*job	remove vmail xmt annunciator icon
UI_VMAILRCV	lineID		annunc:"RECEIVING VOICE MAIL"
UI_VMAILRCVD		*job	annunc:upd vmail msg count; upd MSG dialog
UI_FILEXFRSTS		*job	DAT:upd file xfr progress bar
UI_FILEXFREND		*job	DAT:upd file xfr progress bar;upd files.dir; remove file xmt annunc icon
UI_FILEXFRABORT		*job	DAT:say"TRANSFER ABORTED" in prog bar;remove file xmt annunc icon
UI_FILEXFRFAIL		*job	DAT:say"COMMUNICATIONS FAILURE" in prog bar; remove file xmt annunc icon
UI_AUDIOSTS		*job	update audio control progress bar
UI_PLAYDONE	lineID		annunc:"ANSWERING MACHINE"
UI_OGMPLAY	lineID		annunc:"PLAYING OUTGOING MESSAGE"
UI_INFOACK		*job	upd directory assistance dialog
UI_INFO		*job	upd directory assistance dialog: update progress bar
UI_INFOEND		*job	upd directory assistance dialog
UI_INFOFAIL		*job	upd directory assistance dialog: say"~~COMMUNICATIONS FAILURE~~" in prog bar

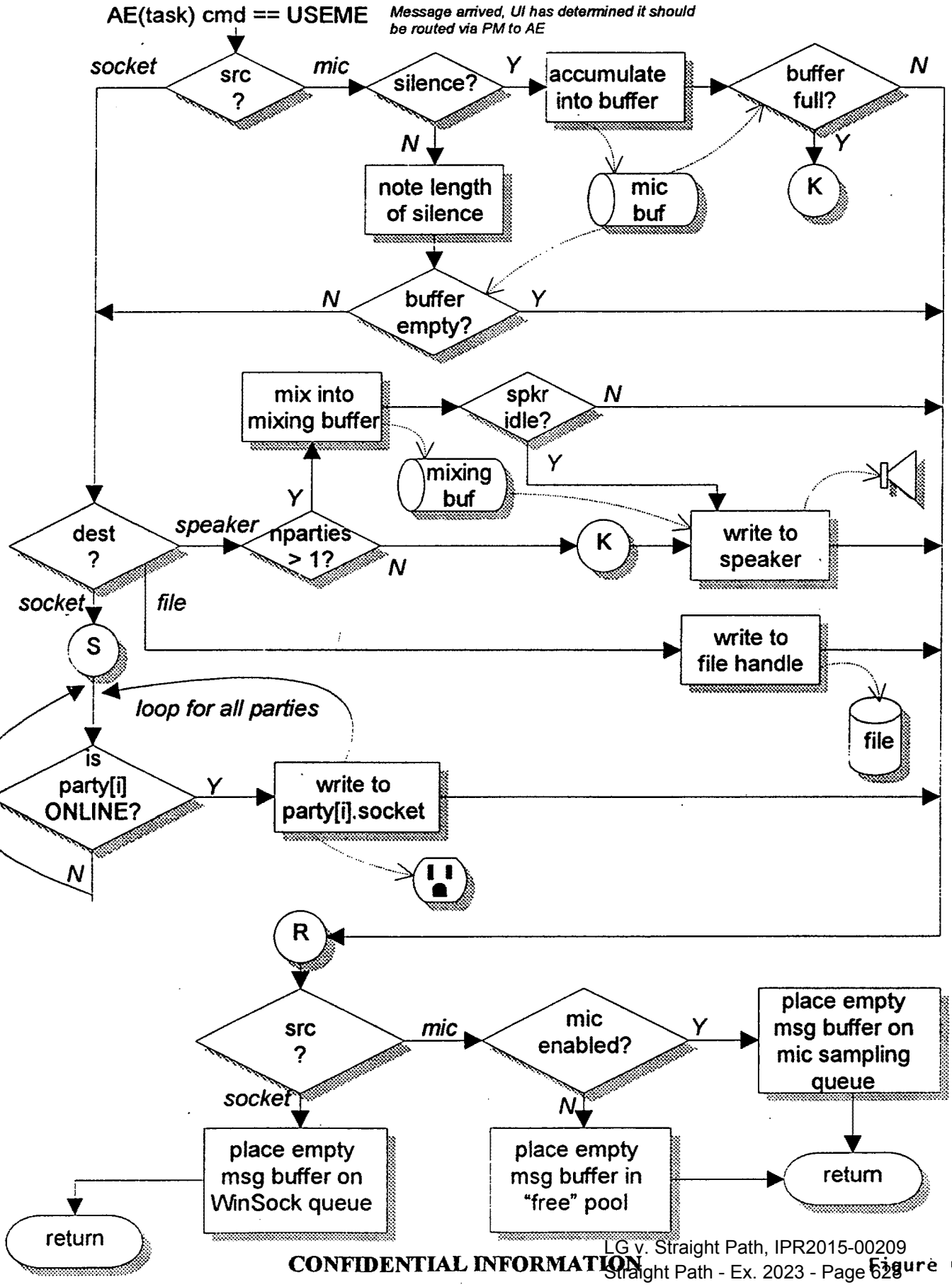
INFO
UI_START #records
UI_INFOREC direct
UI_INFOFAIL
Directory Assistance not Available

NOTE: if job.state = JS_DONE, the UI must remove the job after the action is performed!

Figure 60

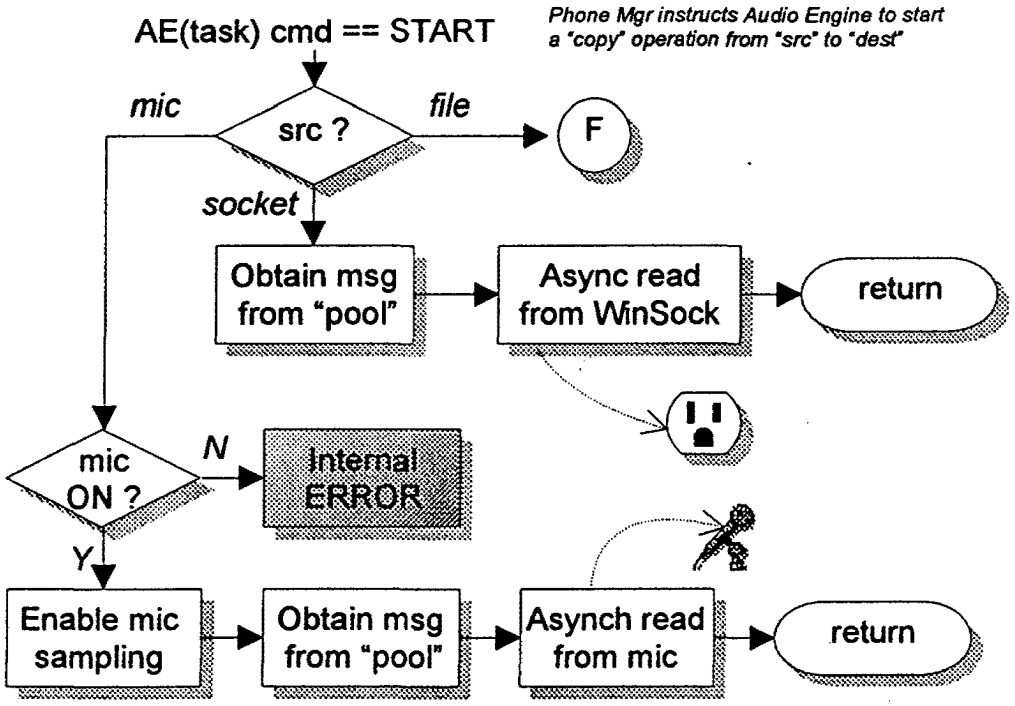
LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 627

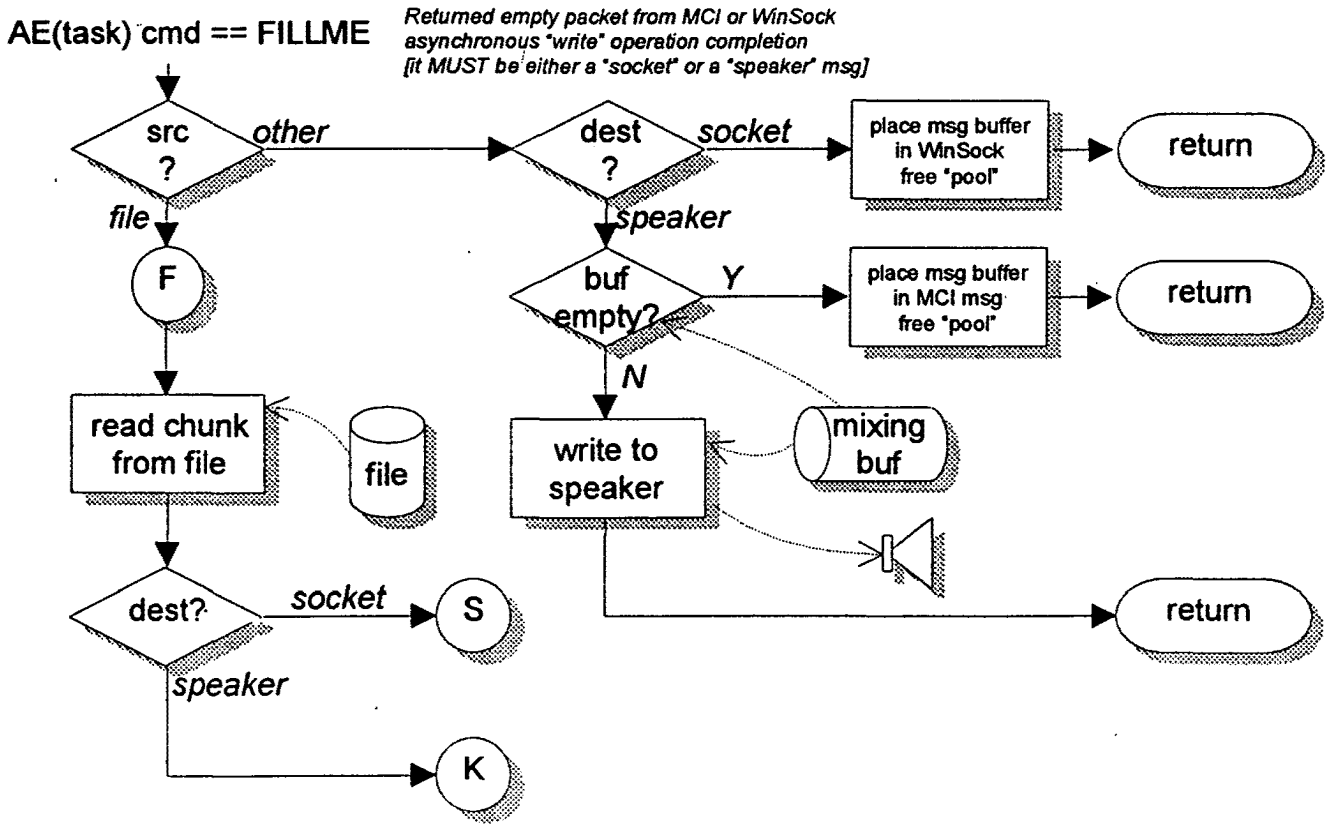
Audio Engine Logic Flow



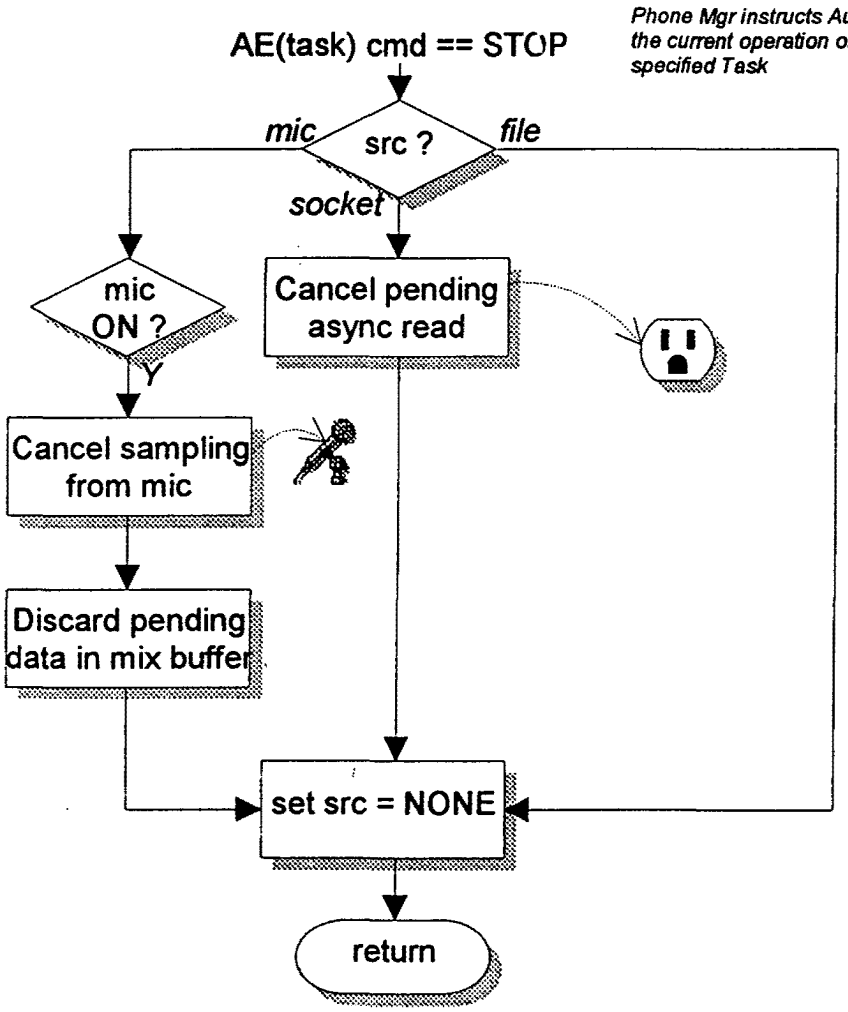
LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 628

Audio Engine Logic Flow

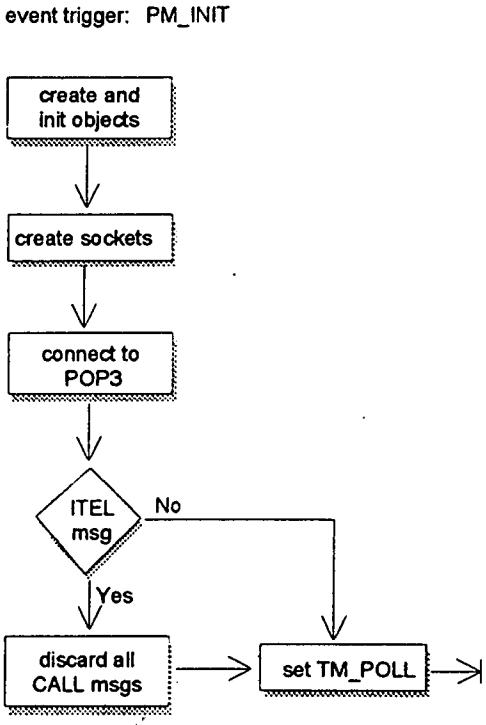




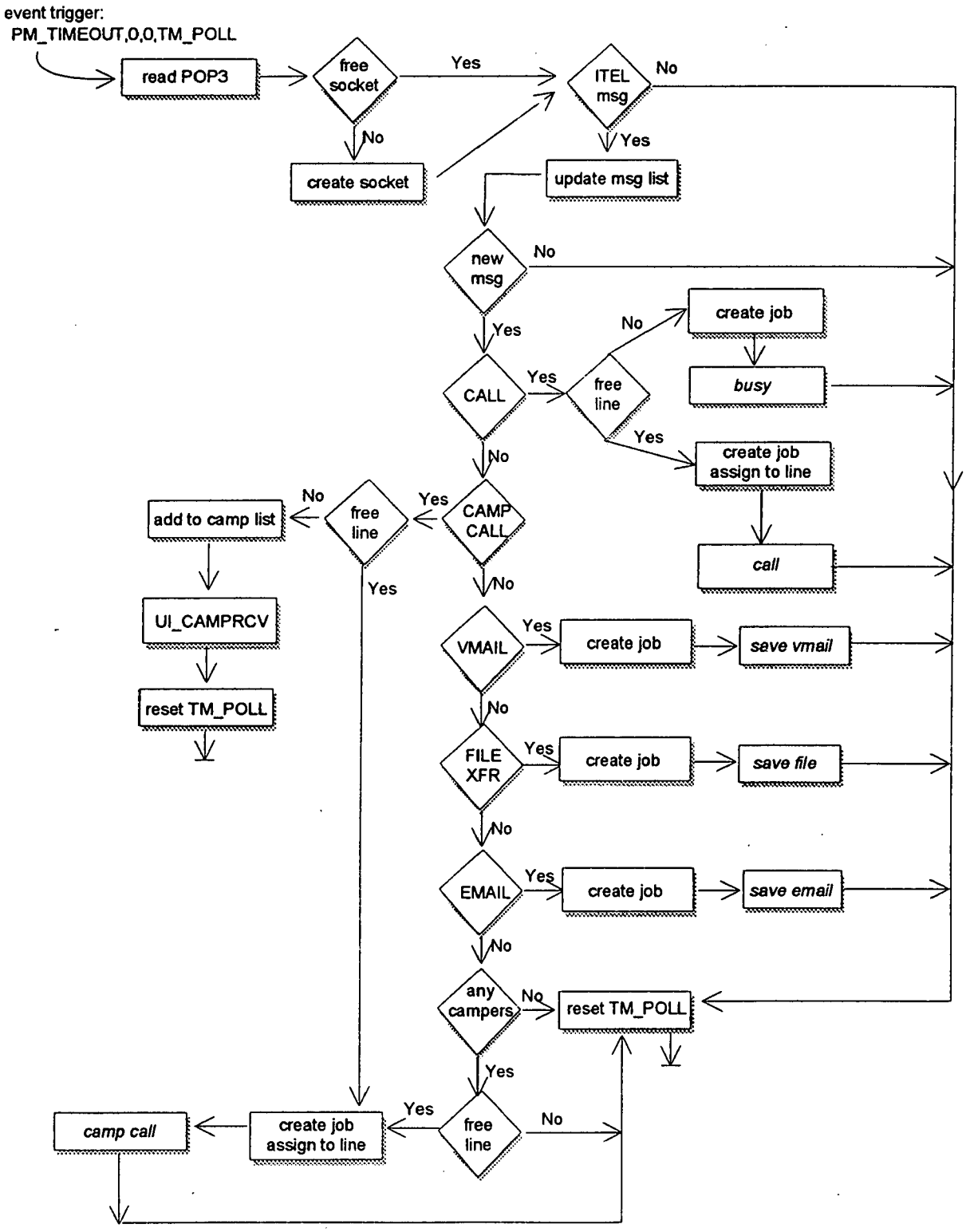
Audio Engine Logic Flow



PhoneManager Init Function



PhoneManager Polling Function



PART B—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with appl[illegible]ees, to:

Box ISSUE FEE
Assistant Commissioner for Patents
Washington, D.C. 20231

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PATENT & TRADEMARK OFFICE
JC11

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

021127 LM51/0525
KUDIRKA & JOBSE
TWO CENTER PLAZA
BOSTON MA 02108

Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

Certificate of Mailing

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

Frances M. Cunningham (Depositor's name)

Frances M. Cunningham (Signature)

August 3, 1999 (Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT		DATE MAILED
08/533,115	09/25/95	044	RINEHART, M	2756	05/25/99

First Named Applicant HUTTON, 35 USC 154(b) term ext. = 0 Days.

TITLE OF INVENTION: POINT-TO-POINT INTERNET PROTOCOL

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 649-2	709-227.000	T56	UTILITY	YES	$605.00	08/25/99

1. Change of correspondence address or indication of " Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Kudirka & Jobse, LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropiate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a subsititue for filing an assignment.

(A) NAME OF ASSIGNEE
NetSpeak Corporation
(B) RESIDENCE: (CITY & STATE OR COUNTRY)
Boca Raton, Florida

Please check the appropriate assignee category indicated below (will not be printed on the patent)
☐ Individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):
☒ Issue Fee
☒ Advance Order - # of Copies 10

4b. The following fees or deficiency in these fees should be charged to:
DEPOSIT ACCOUNT NUMBER
(ENCLOSE AN EXTRA COPY OF THIS FORM)
☐ Issue Fee
☐ Advance Order - # of Copies

The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) Bruce D. Jobse (Date) 8/3/99

NOTE; The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND THIS FORM TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

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02 FC:142 1210.00 OP

TRANSMIT THIS FORM WITH FEE

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AUG 03 1999
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B4

ISSUE FEE TRANSMITTAL

Docket No. N0003/7000

Applicant:	Glenn W. Hutton, et al.
Serial No.	08/533,115
Filed:	September 25, 1995
For:	MEHTOD AND APPARATUS FOR ESTABLISHING POINT-TO-POINT COMMUNICATIONS OVER A COMPUTER NETWORK
Examiner:	M. Rinehart
Art Unit:	2756

CERTIFICATE OF EXPRESS MAILING

"Express Mail" mailing label number: EL445948657US
Date of Deposit: **August 3, 1999**

I hereby certify that the following Correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to Commissioner of Patents and Trademarks, BOX ISSUE FEE, Washington, D.C. 20231.

Frances M. Cunningham

Frances M. Cunningham

Assistant Commissioner for Patents
Box Issue Fee
Washington, D.C. 20231

In response to the Notice of Allowance and Base Issue Fee Due dated May 25, 1999 for the above-identified application, enclosed are the following documents (indicated by a checked box):

Documents

☒ Issue Fee Transmittal
☒ Advance order of 10 soft copies of letters patent

Small Entity

☐ A small entity statement under 37 C.F.R. §1.27 has already been filed.
☐ A small entity statement under 37 C.F.R. §1.27 is attached.
☒ Small entity status is no longer claimed.

Payment

☒ A check in the amount of **$1,240.00** is enclosed to cover the issue fee due and advance order of patent copies.
☒ The Commissioner is hereby authorized to charge any fees under 37 C.F.R. 1.16-1.19 to Deposit Account No. 02-3038. A duplicate of this sheet is attached.

Bruce D. Jobse

Date: 8/3/99

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax: (617) 367-4656

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/533,115	09/25/95	MUTTON	

021127
KUDIRKA & JOBSE
TWO CENTER PLAZA
BOSTON MA 02108

LM02/0308

EXAMINER	
PINEHART, M	

ART UNIT	PAPER NUMBER
2752	35

DATE MAILED: 03/08/00

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

Commissioner of Patents and Trademarks

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 635

Response to Rule 312 Communication	Application No. 08/533,115	Applicant(s) Hutton et al.
	Examiner Mark Rinehart	Group Art Unit 2756

☐ The petition filed on _____ under 37 CFR 1.312(b) is granted. The paper has been forwarded to the examiner for consideration on the merits.

☒ The amendment filed on *7/14/99* under 37 CFR 1.312 has been considered, and has been:

- ☐ entered.
- ☒ entered as directed to matters of form not affecting the scope of the invention (Order 3311).
- ☐ disapproved. See explanation below.
- ☐ entered in part. See explanation below.

Mark H. Rinehart
Primary Examiner

MARK RINEHART
PRIMARY EXAMINER
ART UNIT 2756

LG v. Straight Path, IPR2015-00209
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PATENT RESEARCH INQUIRY FORM PRIF-1

DEPARTMENT CI

TEAM 5

PATENT # 4881

WEEK DATE 8/23

RESEARCH REQUEST

patent has 3 Inventors
but in jacket only one inventor?
per paper # 30, 31 and #32, 2 Inventors has been added on the OATH,
but there is only 1 Inventor on BOT, Please update, Thanks

Action Requested by: HPA Vaule Date: 7/12/00

DESCRIPTION OF RESOLUTION
Please complete Disposition section

Action Requested by: _____ Date: _____

DISPOSITION

[ ] **MAKE CORRECTION:** [ ] In Production

[ ] External Department: _____
Please specify department and wand to group

[ ] **USE AS IS**

[ ] **COMMUNICATION:** [ ] Distribute Department wide as example only

[ ] Manual Improvement/Suggestion Form Needed*
*Response is for *this patent only* unless this box is checked

[ ] **NON CONFORMING:** [ ] **Return on Query** [ ] **Return to FMF**

~Do not release non-conforming files~

PRIF-1 (Rev B) 7/13/99

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FEB 01 2002
PATENT AND TRADEMARK OFFICE

REQUEST FOR WITHDRAWAL AS ATTORNEY OR AGENT	Docket No. N0003/7000

Applicant:	Glenn W. Hutton, et al.
Patent No.:	6,108,704
Issued:	August 22, 2000
For:	POINT-TO-POINT INTERNET PROTOCOL

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)
The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Assistant Commissioner for Patents, Washington, DC 20231 on January 11, 2002.

Frances M. Cunningham

Assistant Commissioner for Patents
Washington, D.C. 20231

Request
The undersigned hereby requests to withdraw as attorney or agent for the above-identified patent for himself and the attorneys listed under customer number:

21127
PATENT TRADEMARK OFFICE

As grounds in support of this request, the undersigned attorney asserts that client/Assignee of record for the above-identified patent has been recently acquired by ADIR VOIP Technologies, Inc. of Newark, New Jersey. The new owners are transferring responsibility for the above-identified patent to other counsel.

Please change the correspondence address and direct all future correspondence for the above-identified patent to:

Jeffrey S. Ginsberg, Esq.
KENYON & KENYON
One Broadway
New York, NY 10004

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 638

A copy of this request is being sent to the client on an even date herewith by registered mail, return receipt requested, at client's last known address. All papers and property that relate to the above-identified patent unto which the client is entitled are being sent to the client's new counsel via courier an even date herewith. No fee has been paid by client in advance. Accordingly, there is no unearned fee to be refunded to client.

The Commissioner is hereby authorized to charge any other fees under 37 C.F.R. §1.16 and §1.17 that may be required, or credit any overpayment, to our Deposit Account No. 02-3038. Thereafter, any authorization which may have been given to charge Deposit Account 02-3038 is also hereby withdrawn.

Respectfully submitted,

Bruce D. Jobse, Esq. Reg. No. 33,518 Date: January 11, 2002

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax (617) 367-4656

OIPE
FEB 01 2002
PATENT & TRADEMARK OFFICE
JC63

DSD

TRANSMITTAL LETTER	Docket No. N0003/7000

Applicant: Glenn W. Hutton, et al.
Patent No: 6,108,704
Issued: August 22, 2000
For: POINT-TO-POINT INTERNET PROTOCOL

Assistant Commissioner for Patents
Washington, D.C. 20231

Enclosures

- ☐ Affidavit under 37 C.F.R. 1.131
- ☐ Assignment Papers
- ☐ Change of Correspondence Address
- ☐ Extension of Time Request
- ☐ Declaration/Power of Attorney
- ☐ Fee Transmittal Form
- ☐ Information Disclosure Statement
- ☐ Invention Disclosure Document
- ☐ Notice of Appeal
- ☐ Petition and Petition Routing Slip
- ☐ Power of Attorney Form
- ☐ PTO-1449 Form(s)
- ☐ Request for Certified Copies
- ☐ Request for Corrected Filing Receipt
- ☐ Copy of Original Filing Receipt
- ☐ Request for Reconsideration
- ☐ Request for Refund
- ☐ Response to Missing Parts
- ☒ Return Receipt Postcard
- ☐ Sheets Formal Drawing(s)
- ☐ Small Entity Statement
- ☐ Status Letter
- ☐ Terminal Disclaimer
- ☒ Other: Request for Withdrawal as Attorney or Agent

Bruce D. Jobse

Date: Jan. 11, 2002

Bruce D. Jobse, Esq. Reg. No. 33,518
KUDIRKA & JOBSE, LLP
Customer Number 021127
Tel: (617) 367-4600 Fax: (617) 367-4656

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 DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
08/533,115	09/25/1995	GLENN W. HUTTON	649-2

CONFIRMATION NO. 8714

OC000000007505762

21127
KUDIRKA & JOBSE, LLP
ONE STATE STREET
SUITE 1510
BOSTON, MA 02109

Date Mailed: 02/21/2002

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/01/2002.

- The withdrawal as attorney in this application has been accepted. Future correspondence will be mailed to the new address of record. 37 CFR 1.33.

RODNEY L GLOVER
OPR (703) 308-5906

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UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
08/533,115	09/25/1995	GLENN W. HUTTON	649-2

CONFIRMATION NO. 8714

OC000000007505784

JEFFREY S. GINSBERG, ESQ.
KENYON & KENYON
ONE BROADWAY
NEW YORK, NY 10004

Date Mailed: 02/21/2002

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 02/01/2002.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

RODNEY L GLOVER
OPR (703) 308-5906

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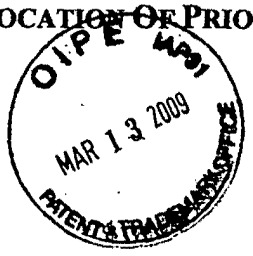
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

POWER OF ATTORNEY, CORRESPONDENCE ADDRESS AND REVOCATION OF PRIOR POWERS



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

Sir:

Revocation: I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

Power of Attorney: I hereby appoint the practitioners associated with customer number **42624**, individually and collectively, as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

I authorize Davidson Berquist Jackson & Gowdey, LLP to delete names/numbers of persons no longer with the Firm and to act and rely on instructions from and communicate directly with the entity who first sent this case to them and by whom I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Davidson Berquist Jackson & Gowdey, LLP in writing to the contrary.

Correspondence Address: Please recognize or change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to the address associated with Customer Number **42624**.

Assignee Name and Address:

Net2Phone, Inc.
520 Broad Street, 8th Floor
Newark, New Jersey 07102

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record The individual whose signature and title is supplied below is authorized to act on behalf of the assignee			
Signature		Date	3/12/09
Name	JAMES RAPIEN	Telephone	973 438 3253
Title	EVP & DIRECTOR		

OIPE MAR 13 2009 PATENT & TRADEMARK OFFICE

08533115

IFW

STATEMENT UNDER 37 CFR 3.73(B)

Applicant / Patent Owner: Net2Phone, Inc.

Docket No. 2655-0021

Patent No. 6,108,704

Filed / Issued Date: 08/22/2000

Entitled: POINT-TO-POINT INTERNET PROTOCOL

Assignee: Net2Phone, Inc.
(Name of assignee)

A corporation
(Type of Assignee: corporation, partnership, university, government agency, etc.)

States that it is:

1. ☒ the assignee of the entire right, title, and interest; or

2. ☐ an assignee of less than the entire right, title and interest.
(The extent (by percentage) of its ownership interest is %)

in the patent application / patent identified above by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application / patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel , Frame , or for which a copy thereof is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application / patent identified above, to the current assignee shown below:

1.	From: HUTTON, Glen W. To: Internet Telephone Company The document was recorded in the United States Patent and Trademark Office at Reel 007981 Frame 0020, or for which a copy thereof is attached.
2.	From: HUTTON, Glenn W. To: Internet Telephone Company The document was recorded in the United States Patent and Trademark Office at Reel 008295 Frame 0167, or for which a copy thereof is attached.
3.	From: Internet Telephone Company To: Netspeak Corporation The document was recorded in the United States Patent and Trademark Office at Reel 007981 Frame 0053, or for which a copy thereof is attached.

☒ Additional documents in the chain of title are listed on a supplemental sheet.

☒ Copies of assignments or other documents in the chain of title are attached.

As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[Note: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Michael R Casey

Signature

3/13/09

Date

Michael R. Casey, Ph. D.

Printed or Typed Name

703-894-6400

Telephone Number

Attorney, Registration No. 40,294

Title:

STATEMENT UNDER 37 CFR 3.73(B)
Continued

4.	From: STRICKLAND, Craig B. To: Netspeak Corporation The document was recorded in the United States Patent and Trademark Office at Reel 009792 Frame 0568, or for which a copy thereof is attached.
5.	From: MATTAWAY, Shane D. To: Netspeak Corporation The document was recorded in the United States Patent and Trademark Office at Reel 010012 Frame 0953, or for which a copy thereof is attached.
6.	From: Netspeak Corporation To: VOIP Technology Holdings, LLC The document was recorded in the United States Patent and Trademark Office at Reel 016522 Frame 0205, or for which a copy thereof is attached.
7.	From: VOIP Technology Holdings, LLC To: Net2Phone, Inc. The document was recorded in the United States Patent and Trademark Office at Reel 016945 Frame 0858, or for which a copy thereof is attached.
8.	From: Netspeak Corporation To: Net2Phone, Inc. The document was recorded in the United States Patent and Trademark Office at Reel 016945 Frame 0890, or for which a copy thereof is attached.
9.	From: VOIP Technology Holdings, LLC To: Net2Phone, Inc. The document was recorded in the United States Patent and Trademark Office at Reel 017105 Frame 0240, or for which a copy thereof is attached.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
08/533,115	09/25/1995	GLENN W. HUTTON	2655-0021

CONFIRMATION NO. 8714

42624
DAVIDSON BERQUIST JACKSON & GOWDEY LLP
4300 WILSON BLVD., 7TH FLOOR
ARLINGTON, VA 22203

POA ACCEPTANCE LETTER

OC000000035151220

Date Mailed: 03/25/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/13/2009.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/sabuna/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

LG v. Straight Path, IPR2015-00209
Straight Path - Ex. 2023 - Page 646

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Virginia on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:12cv9	1/4/12	for the Eastern District of Virginia

PLAINTIFF	DEFENDANT
INNOVATIVE COMMUNICATIONS TECHS., INC.	STALKER SOFTWARE, INC.d/b/a CommuniGate Systems, Inc.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	6,108,704	8/22/2000	INNOVATIVE COMMUNICATIONS TECHNOLOGIES, INC.
2	6,513,066	1/28/2003	INNOVATIVE COMMUNICATIONS TECHNOLOGIES, INC.
3	6,701,365	3/2/2004	INNOVATIVE COMMUNICATIONS TECHNOLOGIES, INC.
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
FERNANDO GALINDO	BARB NEWELL	1/4/2012

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

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2:12cv9	1/4/12	for the Eastern District of Virginia

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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
FERNANDO GALINDO	BAM Newell	1/4/2012

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
12/21/12: Stipulation of Dismissal filed - Case Closed

CLERK	(BY) DEPUTY CLERK	DATE
FERNANDO GALINDO	Elsie Almanza	12/27/12

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