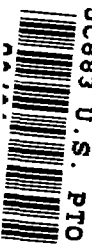


29-01-00

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UTILITY PATENT APPLICATION TRANSMITTAL

Submit an original and a duplicate for fee processing
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ADDRESS TO:

**Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231**

Attorney Docket No. MBHB00-399
First Named Inventor Edward F. Bachner, III
Express Mail No. EL028731226US
Total Pages 51

APPLICATION ELEMENTS

ACCOMPANYING APPLICATION PARTS

- 1. Transmittal Form with Fee
- 2. Specification (including claims and abstract) [Total Pages 40]
- 3. Drawings [Total Sheets 3]
- 4. Oath or Declaration [Total Pages 4]
 - a. Newly executed
 - b. Copy from prior application

[Note Boxes 5 and 17 below]

 - i. Deletion of Inventor(s) Signed statement attached deleting inventor(s) named in the prior application
- 5. Incorporation by Reference: The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
- 6. Microfiche Computer Program
- 7. Nucleotide and/or Amino Acid Sequence Submission
 - a. Computer Readable Copy
 - b. Paper Copy
 - c. Statement verifying above copies

- 8. Assignment Papers
- 9. Power of Attorney
- 10. English Translation Document (if applicable)
- 11. Information Disclosure Statement (IDS)
 - PTO-1449 Form
 - Copies of IDS Citations
- 12. Preliminary Amendment
- 13. Return Receipt Postcard (Should be specifically itemized)
- 14. Small Entity Statement(s)
 - Enclosed
 - Statement filed in prior application; status still proper and desired
- 15. Certified Copy of Priority Document(s)
- 16. Other:

17. This is a CONTINUING APPLICATION. Please note the following:
- a. This is a Continuation Divisional Continuation-in-part of prior application
 - b. Cancel in this application original claims ____ of the prior application before calculating the filing fee.
 - c. Amend the specification by inserting before the first line the sentence: This is a continuation divisional continuation-in-part of application Serial No.
 - d. The prior application is assigned of record to

UTILITY PATENT APPLICATION TRANSMITTAL

Attorney Docket No. MBHB00-399

APPLICATION FEES

| | | | | |
|---|---------------------|---------------------|-------------|---------------|
| BASIC FEE | | | | \$ 690 |
| CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE | |
| Total Claims | 55 -20= | 35 | x \$18.00 | \$ 630 |
| Independent Claims | 5 -3= | 2 | x \$78.00 | \$ 156 |
| <input type="checkbox"/> Multiple Dependent Claims(s) if applicable | | | | +\$270.00 |
| Total of above calculations = | | | | \$ 1476 |
| Reduction by 50% for filing by small entity = | | | | \$(738) |
| <input checked="" type="checkbox"/> Assignment fee if applicable | | | | +\$40.00 |
| TOTAL = | | | | \$ 778 |

18. Please charge my Deposit Account No. 13-2490 in the amount of \$
19. A check in the amount of \$778 is enclosed.
20. The Commissioner is hereby authorized to credit overpayments or charge any additional fees of the following types to Deposit Account No. 13-2490:
- a. Fees required under 37 CFR 1.16.
 - b. Fees required under 37 CFR 1.17.
 - c. Fees required under 37 CFR 1.18.
21. The Commissioner is hereby generally authorized under 37 CFR 1.136(a)(3) to treat any future reply in this or any related application filed pursuant to 37 CFR 1.53 requiring an extension of time as incorporating a request therefor, and the Commissioner is hereby specifically authorized to charge Deposit Account No. 13-2490 for any fee that may be due in connection with such a request for an extension of time.

22. CERTIFICATE OF MAILING

I hereby certify that I directed that the correspondence identified above be deposited with the United States Postal Service as "Express Mail Post Office to Addressee" under 37 CFR § 1.10 on the date indicated below and is addressed to the Asst. Commissioner for Patents, Box Patent Application, Washington, DC 20231.

23. USPTO CUSTOMER NUMBER

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24. CORRESPONDENCE ADDRESS

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|------------------|---|
| Name | McDonnell Boehnen Hulbert & Berghoff |
| Address | 300 South Wacker Drive, Suite 3200 |
| City, State, Zip | Chicago, Illinois 60606 |

25. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

| | |
|-----------|-----------------------------|
| Name | Richard A. Machonkin |
| Reg. No. | 41,962 |
| Signature | <i>Richard A. Machonkin</i> |
| Date | August 31, 2000 |

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Attorney's Docket No. MBHB00-399)

Applicant or
Patentee:

Edward F. Bachner, III, et al.

Serial or
Patent No.

Filed or
Issued:

Title: **WIRELESS INTELLIGENT PERSONAL SERVER**

**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 C.F.R. § 1.9(f) AND § 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

the owner of the small business concern identified below:

an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN **Double-Time Corporation**

ADDRESS OF CONCERN **110 East Schiller Street, Suite 203, Elmhurst, Illinois 60126**

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 C.F.R. § 121, and referenced in 37 C.F.R. § 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time, or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled Wireless Intelligent Personal Server by inventor(s) Edward F. Bachner III, John Major, and Xin Du.

- 1 -

described in

- the specification filed herewith.
- Application Serial No. _____, filed _____.
- Patent No. _____, issued _____.

If the rights held by the above identified small business concern are not exclusive, each individual concern or organization having rights in the invention must file verified statements averring to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR § 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR § 1.9(d), or a nonprofit organization under 37 CFR § 1.9(e).

Each person, concern or organization having any rights to the invention is listed below:

- No such person, concern or organization exists.
- Each such person, concern or organization is listed below.

Separate verified statements are required from each named person, concern or organization having rights in the invention averring to their status as small entities. (37 CFR § 1.27).

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. § 1.28(b))

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, any patent issuing therein, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: Edward F. Bachner, III

TITLE IN ORGANIZATION: Chief Technology Officer and Vice Chairman

ADDRESS OF PERSON SIGNING: 110 East Schiller Street, Suite 203, Elmhurst, Illinois 60126

Signature: Edward F. Bachner

Date: 31 August 2000

APPLICATION FOR UNITED STATES LETTERS PATENT

5 (Case No. MBHB00-399)

Title: **Wireless Intelligent Personal Server**

10

Inventor(s): Edward F. Bachner, III, a citizen of U.S.A., residing at 15522 West Hawk Haven Road, Lockport, Illinois 60441

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John Major, a citizen of U.S.A., residing at 16720 Las Cuestas, Rancho Santa Fe, California 92067

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Xin Du, a citizen of China, residing at 1536 Knoll Crest, Bartlett, Illinois 60103

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Assignee: Double-Time Corporation
110 East Schiller Street
Suite 203
Elmhurst, IL 60126

BACKGROUND OF THE INVENTION

A. Field of the Invention

This invention relates to the field of wireless telecommunications. More particularly, this invention relates to a wireless intelligent personal server that receives data transmitted over a wireless communications channel and automatically processes it so as to maintain a copy of at least one electronic file stored in a source computer.

B. Description of Related Art

A typical modern office uses a number of different databases of information that are frequently updated. Examples of such databases include schedules, contact lists, price lists, real estate lists, and incoming e-mails. Such databases are typically stored as electronic files on either an office-wide server or on individual personal computers located in the office space. Typically, individual workers in the office space are able to use personal computers, usually with network connections, to access the databases. More particularly, the personal computers typically run applications that retrieve the desired information from the databases and display it to the user. With this configuration, the most up-to-date versions of the databases are typically available to the individual workers, even though the electronic database files are frequently updated.

However, many workers often work outside of the office environment at least one day per week, and, typically, it is more difficult to gain access to the most up-to-date versions of important electronic files when outside of the office environment. A currently used solution is to use portable computers to “dial in” to the office network using the PSTN, Internet, or other wireline networks. However, mobile workers do not

always have access to wireline connections at all desired times. Accordingly, wireless communications systems have been developed by which mobile workers can access their office databases even without a wireline connection. As an example, some wireless telephones are able to send and receive limited amounts of data using the wireless application protocol (WAP).

However, most of these wireless communications approaches, including the WAP approach, use a “pull” methodology, whereby the user first requests the information and then waits for a response. This “pull” methodology has the disadvantage of high latency and, typically, high cost. The high latency arises from the delay that typically occurs in each step of the process of retrieving the desired information. In particular, there is the time spent entering the keystrokes needed to make the request, the airtime spent transmitting the request, the delay in having the request reaching the office network through intermediate networks, the delay in having the office network search through its databases to formulate a response, and the delay in transmitting the response through the intermediate networks and then over the air interface. The high latency is not only troublesome to the user; it leads to high costs due to the airtime needed to process the request and the response.

The problem becomes more acute the more interactive the transaction becomes. A user using WAP to retrieve a new e-mail message with an attachment provides a simple illustration of the problem. First, the user requests the new e-mail message and receives it after waiting for the latency period described above, for which the user is typically charged airtime. Second, the user reads the new e-mail message and sees that it has an attachment. Then the user must make another request to receive the attachment.

The user waits for another latency period to receive it, thereby typically incurring additional airtime charges. Moreover, the latency period may be quite long, because files attached to e-mails are often quite large. Accordingly, existing “pull” approaches, such as WAP have substantial disadvantages.

5 Another problem with many technologies for receiving data over wireless channels is that they are highly device-specific, i.e., they are based on providing wireless functionality to existing devices, such as specific models of personal digital assistants (PDAs). However, there are a number of problems with device-specific approaches. First, many people use different computing devices at different times, so that providing
10 only one of the user’s computing devices with wireless functionality is, at best, only a partial solution. Second, different computing devices differ in their abilities to handle different types of data. For example, desktop PCs typically have much more memory than PDAs, and desktop PCs often have access to high quality monitors, speakers, and peripherals to display information and provide functionality to the user in ways that are
15 unavailable to typical PDAs. On the other hand, PDAs also have many advantages over a desktop PC, such as portability. In addition to the availability of different hardware, different computing devices may have different operating systems and applications available to them. Accordingly, approaches that provide wireless functionality only to specific devices have substantial disadvantages.

20 For example, Kaufman, U.S. Patent No. 6,034,621, discloses systems and methods for communicating changes made to a data file on a personal computer (PC) to a personal digital assistant (PDA). In accordance with some of the disclosed embodiments, when the data file on the PC is changed, synchronization information is transmitted over

a paging network to a pager that is connected to the PDA, such as by a serial or parallel connection. A synchronization routine in the PDA then interacts with the synchronization information output from the pager to update the data file in the PDA.

While potentially reducing the latency problem, at least for small amounts of data, the Kaufman approach suffers from a number of disadvantages. First, PDAs are not typically on all of the time. Thus, update information may be missed because of the PDA being off. Second, PDAs typically have a very limited memory, i.e., 8 megabytes or less. Because of this limited memory, mobile workers may not be able to access some of the very large electronic files that they can access at their offices.

10

SUMMARY OF THE INVENTION

In a first principal aspect, the present invention provides a wireless intelligent personal server that comprises a radio frequency (RF) receiver for receiving downstream data transmitted over a wireless communications channel, a memory, a central processing unit (CPU), a set of embedded machine language instructions that are executable by the CPU for processing the downstream data to provide at least one electronic file in the memory, and a first interface for allowing an external display device to access the at least one electronic file.

In a second principal aspect, the present invention provides a wireless data communication system that comprises a wireless intelligent personal server and a wireless telephone in communication with the wireless intelligent personal server. The wireless intelligent personal server includes a memory and a radio frequency (RF) receiver. The RF receiver receives downstream data transmitted over a first wireless communications channel, and the wireless intelligent personal server processes the downstream data to provide at least one electronic file in the memory. The wireless telephone transmits an acknowledgement over a second wireless communications channel when the wireless intelligent personal server receives the downstream data.

In a third principal aspect, the present invention provides a wireless data display system that comprises a wireless intelligent personal server and a display device in communication with the wireless intelligent personal server. The wireless intelligent personal server includes a memory and a radio frequency (RF) receiver. The RF receiver receives downstream data transmitted over a wireless communications channel, and the wireless intelligent personal server processes the downstream data to provide at least one

electronic file. The display device has at least one application that accesses the at least one electronic file to display information to a user.

In a fourth principal aspect, the present invention provides a method for updating a target electronic file to reflect changes made to a source electronic file. In accordance with the method, the target electronic file is stored in a wireless intelligent personal server. The wireless intelligent personal server receives downstream data transmitted over a wireless communications channel. The downstream data reflects changes made to the source electronic file. The wireless intelligent personal server automatically updates the target electronic file with the downstream data to provide an updated electronic file.

A display device is brought into communication with the wireless intelligent personal server, and the display device accesses the updated electronic file.

In a fifth principal aspect, the present invention provides a method for creating, without user intervention, an electronic file on a wireless intelligent personal server. In accordance with the method, the wireless intelligent personal server receives downstream data transmitted over a wireless communications channel. The wireless intelligent personal server automatically creates the electronic file from the downstream data. A display device is brought into communication with the wireless intelligent personal server, and the display device accesses the electronic file.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a functional block diagram of a wireless synchronization system, in accordance with an exemplary embodiment of the present invention.

Figure 2 is a functional block diagram of a wireless intelligent personal server, in accordance with an exemplary embodiment of the present invention.

Figure 3 is a front plan view of the wireless intelligent personal server of Figure 2, in accordance with an exemplary embodiment of the present invention.

Figure 4 is a side plan view of the wireless intelligent personal server of Figure 2, in accordance with an exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Figure 1 is a functional block diagram of a wireless communication system 10 in accordance with an exemplary embodiment of the present invention. System 10 includes an enterprise information technology (IT) system 12, which typically includes a plurality of computers and other devices networked together to provide computing and information technology services for a business or other organization. As shown in Figure 1, one or more personal computers, such as personal computer (PC) 14, are connected to enterprise IT system 12. Enterprise IT system 12 may also have access to a centralized database for the enterprise, such as enterprise database 16, as shown in Figure 1. Enterprise IT system 12 may be located entirely within one office area, or it may be distributed over various remote locations.

System 10 also includes a first wireless network 20 and a second wireless network 22. First wireless network 20 is able to transmit data, at least intermittently, over one or

more downstream wireless channels to wireless receivers operating within its wireless coverage area. Preferably, first wireless network 20 uses subcarriers of frequency modulated (FM) radio transmissions and/or televisions transmissions to provide the downstream wireless channels. Most preferably, the subcarriers used by first wireless network 20 are modulated using orthogonal frequency division multiplexing (OFDM) in order to minimize multipath effects, such as fading and distortion, and to increase data throughput. Alternatively, first wireless network 20 may be a one-way paging network, which may use the FLEX™ protocol of Motorola, Inc., a two-way paging network, which may use the ReFLEX™ protocol of Motorola, Inc., or it may wirelessly transmit data by some other means.

Second wireless network 22 is preferably a cellular or PCS network that provides two-way wireless communications, in a format, such as AMPS, TDMA, CDMA, or GSM, for wireless telephones, such as wireless telephone 24. Thus, with reference to Figure 1, wireless telephone 24 is able to transmit to wireless network 22 over an upstream channel 26 and is able to receive from wireless network 22 using a downstream channel 27.

An intermediate network 28 is connected to first wireless network 20 and to second wireless network 22, and enterprise IT system 12 uses a wireless network management system 29 to communicate with wireless networks 20 and 22, via intermediate network 28. Intermediate network 28 maybe any wide-area network (WAN) or local-area network (LAN) capable of transmitting digital data between enterprise IT system 12 and wireless networks 20 and 22. Preferably, intermediate network 28 is either the Internet or a private corporate network.

A wireless intelligent personal server (WIPS) 30 is able to receive data wirelessly transmitted by first wireless network 20. When WIPS 30 receives data transmitted by wireless network 20, WIPS 30 stores it in its memory, as described in more detail below. WIPS 30 is able to transfer the data stored in its memory to and from different types of display devices 32, on at least an intermittent basis, as indicated by the dotted line in Figure 1. WIPS 30 may also be able to transfer data from its memory to and from wireless telephone 24 on at least an intermittent basis, as indicated by the dotted line in Figure 1.

Display device 32 is a device that has a user interface for displaying the data stored in WIPS 30. More particularly, display device 32 typically runs one or more applications to access the data stored in WIPS 30 and to display it to the user. The applications on display device 32 may also allow the user to modify the data stored in WIPS 30. Display device 32 may be a fixed-mounted device, such as a desktop PC, an advanced video game device, such as a Sony "PlayStation 2" device, or a set-top television controller box, such as the type used to access services such as WebTV© (and which may also provide game-type functionality), or display device 32 may be a portable device, such as a laptop PC or a personal digital assistant (PDA). Moreover, WIPS 30 preferably allows different kinds of display device 32 to access the data stored on it at different times. For example, a user may use a first desktop PC as display device 32 to access the data stored in WIPS 30 at work, may use a PDA as display device 32 to access the data stored in WIPS 30 while traveling, and may use a Sony "PlayStation 2" device as display device 32 while at home.

Data transfer between WIPS 30 and wireless telephone 24 and display device 32 may occur in various ways. For example, WIPS 30 may be electrically connected to wireless telephone 24 and/or display device 32. Such electrical connection may be direct, i.e., so that electrical contacts on WIPS 30 directly contact electrical contacts on wireless telephone 24 and/or display device 32. Alternatively, the electrical connection may be through electrical cables, which may be provided with standard connectors, such as USB connectors. Data transfer between WIPS 30 and wireless telephone 24 and display device 32 may also be wireless. For example, WIPS 30 and either wireless telephone 24 or display device 32 may be provided with infrared ports, such as IrDA ports. Alternatively, WIPS 30 and either wireless telephone 24 or display device 32 may use short-range RF communication, such as the Bluetooth protocol, to transfer data. Other methods for data transfer may also be used. For example, WIPS 30 may be provided with a flash memory card, in which case data transfer to display device 32 may be effected by removing the flash memory card from WIPS 30 and connecting it to display device 32. In any event, the connections between WIPS 30 and wireless telephone 24 and display device 32 may be only intermittent. For example, in some embodiments, wireless telephone 24 may be directly electrically connected to WIPS 30 most of the time. However, the user may disconnect wireless telephone 24 from WIPS 30 in order to make or receive calls.

WIPS 30 receives data transmitted by first wireless network 20 over a downstream channel 34. Because this data transmission may occur at any time, WIPS 30 is preferably always on in order to receive the transmission. When WIPS 30 receives a data transmission, WIPS 30 determines whether the transmission is intended for it, and, if

it is, WIPS 30 processes the data transmission accordingly. Typically, this means that WIPS 30 uses the data from the transmission either to update one or more of the files stored in its memory or to add a new file to its memory. Preferably, WIPS 30 performs these functions automatically, so that the user can receive the data while performing other tasks. As described in more detail below, the user is then able to use display device 32 to access the data stored in WIPS 30.

Once WIPS 30 has successfully received the data transmission, WIPS 30 preferably sends an acknowledgement signal. In preferred embodiments, WIPS 30 uses wireless telephone 24 to send the acknowledgement signal to second wireless network 22 over an upstream channel 36. To accomplish this, WIPS 30 may make use of electrical contacts, provided in most types of wireless telephone 24, that enable wireless telephone 24 to be remotely controlled. Thus, WIPS 30 sends signals to wireless telephone 24 to cause it to dial a predetermined telephone number and then, once the call is established, to transmit the acknowledgement signal. Because the acknowledgement signal will typically be a digital signal, WIPS 30 may use different techniques for transmitting it, depending on the type of wireless telephone 24. For example, if wireless telephone 24 can only transmit analog signals, then WIPS 30 preferably modulates the digital acknowledgement signal before transmitting it to wireless telephone 24. If wireless telephone 24 can transmit digital signals, such as signals in CDMA, TDMA, or GSM format, then WIPS 30 may transmit the acknowledgement signal to wireless telephone 24 in digital packet form.

However, at certain times when WIPS 30 is ready to send the acknowledgement signal, wireless telephone 24 may not be available. For example, wireless telephone 24 may

not be connected to, or in the range of wireless communication with, WIPS 30. Wireless telephone 24 may also be unavailable because it is turned off or because it is engaged in a telephone call. When wireless telephone 24 is unavailable, WIPS 30 preferably postpones the acknowledgement until wireless telephone 24 becomes available for use. First wireless network 20 will typically re-transmit the data intended for WIPS 30 until the acknowledgement from WIPS 30 is received.

As an alternative approach, WIPS 30 may be able to transmit wireless signals on its own, without the need for wireless telephone 24. For example, WIPS 30 may use cellular digital packet data (CDPD) technology to transmit signals to second wireless network 22 over upstream channel 26. As another approach, first wireless network 20 may be a two-way network, in which case, WIPS 30 may use the upstream channels of first wireless network 20.

As noted above, the data stored in WIPS 30 may be accessed by display device 32. Preferably, display device 32 accesses the memory in WIPS 30 as it would an external device, such as an external hard drive or a server on a local area network (LAN). In this way, display device 32 can take advantage of the much larger memory that may be available in WIPS 30.

In addition, a user may use different display devices to access the data stored in WIPS 30 at different times. For example, a user may use a desktop PC to access WIPS 30 while at home, a laptop PC to access WIPS 30 while at work, a customer's device to access WIPS 30 while visiting a customer, and a PDA to access WIPS 30 while traveling. In this way, WIPS 30 may serve as a convenient storage device so that a user's important

files are available wherever the user goes and are automatically and continually updated with new information wherever the user travels within the range of wireless network 20.

In this way, the electronic files stored in WIPS 30 may be automatically updated to reflect changes in the corresponding electronic files of enterprise IT system 12. This capability can be very important to a user who maintains important data files on enterprise IT system 12 at work but who also needs to access the information while the user is traveling. Such important data files may include the user's calendar of appointments, inventory availability and current pricing, contacts, and incoming e-mail messages.

For example, if the user is out of the office, the user's secretary may use computer 14 to enter a new appointment into the user's calendar. The calendar is typically stored as an electronic file on computer 14, enterprise database 16, or elsewhere on enterprise IT system 12. By means of WIPS 30, the user is able to have access to the updated calendar in the following way. Enterprise IT 12 sends the information needed to update the calendar to wireless network management system 29, which, in turn, transmits it to first wireless network 20 via intermediate network 28. First wireless network 20 then transmits the update information to WIPS 30 over downstream channel 34. WIPS 30 receives the transmission and uses the information to update the calendar stored as an electronic file in its memory. To signal that it has successfully received the update information, WIPS 30 uses wireless telephone 24 to transmit an acknowledgement over upstream channel 26 to second wireless network 22. Second wireless network 22, in turn, transmits the acknowledgement to wireless network management system 29, via intermediate network 28. Preferably, wireless network management system 29 resends

the update information, via intermediate network 28, to first wireless network 20 for re-transmission until management system 29 receives the acknowledgement, in order to ensure that WIPS 30 receives the update information. In this way, updates to important files on enterprise IT system 12 are automatically sent to WIPS 30, so that WIPS 30 will maintain up-to-date copies of these important files. The user then brings WIPS 30 into communication with display device 32 in order to access the electronic files stored in WIPS 30.

In many cases, it is desirable to have changes made to the electronic files stored in WIPS 30 reflected in the files stored in enterprise IT system 12. In particular, display device 32 may change the electronic files stored in WIPS 30 that it accesses. For example, the accessed electronic file may be the user's incoming e-mail messages, in which case the user may wish to delete the incoming e-mails after the user has read them. WIPS 30 may make the change, e.g., deleting one or more of the incoming e-mail messages, in the electronic file stored in its memory. WIPS 30 may also generate a stream of upstream data in order to have the change reflected in the corresponding electronic file in enterprise IT system 12. WIPS 30 causes wireless telephone 24 to transmit the upstream data over upstream channel 26 to second wireless network 22, which then passes the upstream data to wireless network management system 29, via intermediate network 28. Management system 29 recognizes that a change is being requested, and, if the requested change is validated, management system 29 passes the upstream data to enterprise IT network 12. Enterprise IT network 12, in turn, uses the upstream data to change its copy of the electronic file.

System 10 may also “push” other files to WIPS 30. For example, system 10 may “push” subscription data transmissions, such as stock closing prices. System 10 may push audio files, such as conference calls or books in an audio format. System 10 may also push the calendars of others in a user’s organization to allow scheduling of meetings.

5 Shown in Figure 2 is a functional block diagram of WIPS 30, in accordance with an exemplary embodiment of the present invention. The operation of WIPS 30 is controlled by a central processing unit (CPU) 100 that executes a set of embedded machine language instructions 102. Embedded machine language instructions 102 are preferably contained a nonvolatile memory, such as a flash memory or a read only
10 memory (ROM).

CPU 100 also has access, via a memory management system 104, to a memory system 106 for storing the electronic files that WIPS 30 automatically updates and that display devices are able to access. Memory system 106 preferably includes a non-volatile memory, such as a flash memory 108. The electronic files are stored primarily in
15 flash memory 108. In preferred embodiments, flash memory 108 also contains embedded machine language instructions 102. Accordingly, flash memory 108 preferably has a capacity of 96 megabytes or larger, in order to be able to accommodate large electronic files. Flash memory 108 may also be removable and substitutable by the user.

Memory system 106 may also include other types of memory, such as a volatile
20 random access memory (RAM) 110. Volatile RAM 110 may be DRAM, SRAM, or other type. Memory system 106 may also include an auxiliary memory 112, which may be a hard disk drive, such as the 340 megabyte Microdrive™ from IBM. Memory management system 104 manages memory system 106 by keeping track where memory

is available in system 106 and routing data from CPU 100 to be stored in memory accordingly.

WIPS 30 includes a radio frequency (RF) receiver 120, which is provided with an antenna 122. Antenna 122 preferably includes crossed dipole segments, with each dipole
5 tuned to resonate on opposite ends of the desired receiving band, so as to minimize multipath and cross-polarization fading.

RF receiver 120 receives signals from first wireless network 20 carried in wireless communication channel 34 and demodulates the signals in wireless communication channel 34 to extract the digital data. As shown in Figure 2, RF receiver 120 is
10 preferably controlled by CPU 100 to scan through the various wireless channels available to locate usable signals, i.e., signals using the correct modulation scheme and a low bit-error rate.

As noted above, wireless network 20 preferably uses OFDM subcarriers to FM and/or television broadcasts as its wireless communication channels. In the case that
15 wireless network 20 is a two-paging network that uses the ReFLEX™ protocol, then the CreataLink™2 XT two-way data transceiver, available from Motorola, Inc., is an example of a system that may be used as RF receiver 120.

In order to make transmissions more reliable, the data carried in wireless communication channel 34 preferably includes forward error correction codes.
20 Accordingly, the digital data from RF receiver 120 is preferably processed by forward error correction circuitry 124 in order to utilize the forward error codes, as needed, to provide corrected digital data. Forward error correction circuitry 124 may be provided by

using the AHA4210 single-chip forward error correction device, which is available from Advanced Hardware Architectures, Pullman, Washington.

CPU 100 also typically controls a display device interface 130 and a wireless telephone interface 132. Display device interface 130 allows display device 32 to access electronic files stored in memory system 106. In some embodiments, interface 130 may provide display 32 only read-only access to memory system 106. Preferably, however, interface 130 also allows display device 32 to change the electronic files stored in memory system 106. In general, access by display device 32 will involve the transfer of digital data between WIPS 30 and display device 32. As noted above, this transfer of digital data may be over an electrical connection, or it may be over a wireless connection, such as IrDA or Bluetooth. Thus, display device interface 130 is preferably connected to at least one electrical connector 134 to electrically connect to display device 32. However, display device interface 130 may also be connected to an IrDa port 136 and/or to a Bluetooth transceiver 138 provided with an antenna 140.

Wireless telephone interface 132 allows WIPS 30 to control wireless telephone 24. As described above, WIPS 30 typically controls wireless telephone 24 to transmit signals to wireless network 22 over upstream wireless channel 26. The signals that WIPS 30 causes wireless telephone 24 to transmit may be simple acknowledgement signals or they may include digital data that reflects changes made to one or more electronic files stored in memory system 106. Accordingly, WIPS 30 may be provided with one or more means for transferring digital data to wireless telephone 24. Wireless telephone interface 132 is preferably connected to at least one electrical connector 142 to allow WIPS 30 to be electrically connected to wireless telephone 24. Interface 132 may also be connected

to an IrDa port 144 and/or a Bluetooth transceiver 146 with an antenna 148 to allow communication with wireless telephone 24.

CPU 100, executing embedded machine language instructions 102, automatically controls the operation of WIPS 30 in the following way. When WIPS 30 receives a transmission, over wireless channel 34, containing downstream data, RF receiver 120 receives the transmission and demodulates it to retrieve the digital data. CPU 100 examines the digital data from RF receiver 120, optionally via forward error correction circuitry 124, to determine whether it is intended for WIPS 30. CPU 100, running instructions 102, may make this determination in various ways. Preferably, the digital data in the transmission will identify the intended recipient(s), such as by providing a destination code in a header of the transmission. CPU 100 then compares the destination code with a list of valid destination codes for WIPS 30, which list may be stored in memory system 106. The valid destination codes may be of various types, such as broadcast, multicast, or individual. A broadcast destination code would indicate that the transmission is intended for all devices in the coverage area of wireless network 20. A multicast destination code would indicate that the transmission is intended for a group of devices. An individual destination code would indicate that the transmission is intended for a specific WIPS. In any event, if the destination code in the transmission matches one of the valid destination codes for WIPS 30, then the transmission is intended for it.

If the digital data is intended for WIPS 30, then CPU 100, executing embedded machine language instructions 102, examines the digital data to determine how it should be processed. This determination may be made in various ways. Preferably, however, the header of the transmission will include a processing code to instruct WIPS 30 on how

to process the downstream data. For example, some processing codes may indicate that the downstream data represents an entirely new file. In response, CPU 100, executing machine language instructions 102, would create a new electronic file, such as in flash memory 108, with the downstream data.

5 Other processing codes may indicate that the downstream data should be used to update a “target,” i.e., already-existing, electronic file stored in WIPS 30. The target electronic file would also typically be identified in the header of the transmission. In response, CPU 100, executing machine language instructions 102, processes the downstream data to modify the target electronic file and thereby provide an update
10 electronic file stored in memory system 106. To make the update process more efficient, the transmission may also contain an update script directing how CPU 100, running machine language instructions 102, should use the downstream data to update the target electronic file.

15 Still other processing codes may direct CPU 100 to perform other functions. For example, processing codes may specify that the downstream data should be used to update embedded machine language instructions 102.

20 Once CPU 100 receives a transmission intended for it, CPU 100 preferably controls WIPS 30 to send an acknowledgement signal. Thus, if wireless telephone 24 is in communication with WIPS 30, then CPU 100 preferably sends a signal to wireless telephone 24, via wireless telephone interface 132, to cause wireless telephone 24 to send an acknowledgement signal over upstream wireless channel 26. If wireless telephone 24 is not in communication with WIPS 30, then CPU 100 waits to send this signal until wireless telephone 24 is in communication with WIPS 30.

When display device 32 is in communication with WIPS 30, display device 32 typically runs one or more applications that need access to one or more of the electronic files stored in memory system 106. In such cases, display device 32 sends a signal to CPU 100, via display device interface 130, requesting access to the particular electronic file. If CPU 100 grants the access, then CPU 100 will typically copy portions of the requested file and transmit the copied portions to display device 32, via interface 130, as needed by the particular application. In this way, the electronic file is maintained in memory system 106 so that it will be available for later use.

Particular applications running on display device 32 may also attempt to change portions of the one or more electronic files. In such cases, display device will typically transmit to CPU 100, via interface 130, a stream of digital data that embodies some or all of the requested changes. If CPU 100 allows the requested changes, then CPU 100 changes the electronic files stored in memory system 106 accordingly. If wireless telephone 24 is in communication with WIPS 30, then CPU 100 also causes wireless telephone 24, via wireless telephone interface 132, to transmit change data, i.e., digital data that embodies the changes to the electronic files, over upstream wireless channel 26. If wireless telephone 24 is not in communication with WIPS 30, then CPU 100 waits until wireless telephone 24 is in communication with WIPS 30.

In some cases, the downstream data received by WIPS 30 may be encrypted. For example, attachments to e-mail messages are commonly encrypted. A common approach for such encryption uses a public key infrastructure (PKI), such as “Pretty Good Privacy” (PGP) software. In the PGP approach, each user is assigned two codes: a public key and a private key. Each user uses his or her own private key to decrypt messages intended for

that user, and uses an intended recipient's public key in order to encrypt messages intended for that recipient.

WIPS 30 preferably stores encrypted data in its encrypted form. Appropriate applications on display device 32 may then access the encrypted files stored in memory system 106 and decrypt them. For example, in the PGP approach, only users having the proper private key, which may be stored in display device 32, can decrypt the files stored in WIPS 30. Thus, having WIPS 30 store files in encrypted form provides better security by preventing users of display devices that do not have the proper private key from accessing the encrypted files.

On the other hand, the PGP approach of requiring that a sender maintain public keys for all intended recipients can consume substantial memory. In particular, each recipient's public key may be over a thousand characters long. Because many types of display devices, such as PDAs, have very limited memory, WIPS 30 may advantageously be used to store the public keys in its memory system 106.

WIPS 30 is powered by a battery 150 that is preferably rechargeable. Accordingly, WIPS 30 is provided with recharger contacts 152 to allow an external recharger to be connected. Charger circuitry 154 selectively couples recharging contacts 152 with battery 150 to control the process of recharging battery 150. Charger circuitry 154 preferably includes overcharge protection circuitry, such as is described in U.S. Patent No. 5,867,008, which is incorporated herein by reference.

Preferably, battery 150 may also be used as a supplemental power source for display device 32 and wireless telephone 24. Accordingly, WIPS 30 is preferably provided with display device power contacts 156, for electrical connection to recharger

contacts on display device 32, and with wireless telephone power contacts 158, for electrical connection to recharger contacts on wireless telephone 24. On-demand power management circuitry 160 selectively connects battery 150 to power contacts 156, and on-demand power management circuitry 162 selectively connects battery 150 to power contacts 158. On-demand power management circuitry 160 and 162 control the delivery of power to display device 32 and wireless telephone 24, respectively. Examples of such on-demand power management circuitry are described in co-pending U.S. Application No. 09/123,775, filed on July 28, 1998, which is incorporated herein by reference.

As shown in Figure 2, WIPS 30 may also include various inputs 170-178 for connecting various functional modules and external devices. CPU 100 communicates with inputs 170-178, typically via one or more auxiliary module controls 180. Inputs 170-178 may be standard peripheral ports, such as serial, parallel, or USB, or slots for standard-sized cards or modules, such as PCMCIA, CompactFlash, or Handspring™ Springboard™, depending on the external device or module to be connected. For example, WIPS 30 may include a bar-code reader input 170 for connecting a bar-code reader. For example, a bar code wand card, with integrated bar code scanner, is available from Socket Communications, Inc. (Newark, California) in a CompactFlash format. WIPS 30 may include a GPS receiver input 172 for connecting a global positioning system (GPS) receiver. For example, the Earthmate® GPS receiver, available from DeLorme (Yarmouth, Maine) can be connected to a serial port. WIPS 30 may include a keyboard input 174 for connecting an external keyboard. WIPS 30 may include a card reader input 176 for connecting a card reader. For example, the CardScan 500 business

card scanner, available from Corex Technologies Corp. (Cambridge, Massachusetts), can be connected to computers via a USB or parallel port.

In general, WIPS 30 may also include other inputs 178 for connecting other devices. Such other devices may include biometrics devices. For example, the
5 Ethenticator MS 3000 is a fingerprint verifier available from Ethentica (Lake Forest, California) in a PCMCIA format. Such other devices may also include other wireless devices. For example, the CUE Radio, available from CUE Corporation (Irvine, California), is a Handspring™ Springboard™ expansion module that is able to receive traffic, weather, and other data broadcast over FM subcarriers.

10 In addition, CPU 100 preferably has access to an internal real-time clock 182. CPU 100 may also control one or more status indicators 184. Status indicators 184 provide user-discernible indications of the status of WIPS 30. For example, one of status indicators 184 may indicate that WIPS 30 is on. Another one of status indicators 184 may indicate that WIPS 30 has received downstream data intended for it. Status
15 indicators 184 may provide a visible and/or audible indication. Thus, for example, one of status indicators 184 may light up or beep when WIPS 30 receives a new e-mail message.

20 Figures 3 and 4 show a preferred mechanical configuration for WIPS 30. In general, WIPS 30 is preferably configured to attach to a paper-based folio, such as a Day-Timer™ folio. Thus, WIPS 30 preferably includes a left section 200, corresponding to the front cover of the paper folio, a right section 202, corresponding to the back cover of the paper folio, and a flexible section 204 joining sections 200 and 202. More particularly, left section 200 has a left folio-facing surface 206, against which the front cover of the paper folio may rest, and right section 202 has a right folio-facing surface

208, against which the back cover of the paper folio may rest. Left section 200 also has a top side 210, a left side 212, and a bottom side 214, as shown in Figure 3. Similarly, right section 202 has a top side 216, a right side 218 and a bottom side 220.

Flexible section 204 allows surface 206 of section 200 and surface 208 of section 202 to move toward and away from each other, as the paper folio is closed and opened, respectively. WIPS 30 is preferably provided with loose-leaf binder rings that can be opened and closed to attach and disattach, respectively, the paper folio to WIPS 30. Alternatively, other means could be used to attach WIPS 30 to the paper folio.

The internal components of WIPS 30, such as CPU 100 and battery 150, may be mounted inside of either left section 200 or right section 202, or they may be distributed between sections 200 and 202. Various slots, connectors, and other external components may be mounted on one or more of surfaces 206 and 208 and sides 210-220. For example, as shown in Figure 4, right side 218 may be provided with a PCMCIA slot 222, a flash memory slot 224, a serial port 226, a parallel port 228, a USB port 230, an IrDA port 232, and a specialized connector 234 for connecting a cable to wireless telephone 24. External components may also be provided in other locations in WIPS 30. For example, as shown in Figure 3, bottom side 220 may also be provided with slots, such as PCMCIA slots 236 and 238. Recharging contacts 152 may be provided in left side 212. External components may also be mounted on surfaces 206 and 208. For example, surface 206 may be provided with connectors 240 and 242 for connecting modules, such as Springboard™ modules, and may also include a connector 244 for connecting an external keyboard. Status indicators 250-256, which may be light emitting diodes (LEDs), may also be mounted on surface 208, as shown in Figure 3. Status indicators 250-256 may

indicate various conditions relating to WIPS 30, such as whether it is on, whether it has received new data, or certain types of files, such as new e-mail messages, whether it has available memory remaining, whether the battery is low, or whether WIPS 30 has encountered a fault condition. WIPS 30 may also have a GPS antenna 260, which may be built into top side 210, as shown in Figure 3, or built into a separate GPS module (not shown).

Although a representative configuration for mounting the external components for WIPS 30, such as slots and connectors, is shown in Figures 3 and 4, many other configurations may be used. In addition, although WIPS 30 may be connected to various external devices, such as an external keyboard, WIPS 30 preferably does not itself have a user interface or means for displaying the data that it stores. This is because display device 32 is intended to be used to perform these functions.

The approach of the present invention of providing a wireless intelligent personal server with a large memory and then using a display device to access files stored in the memory provides a number of advantages over existing wireless approaches. First, in contrast to prior art approaches of providing only specific devices with wireless functionality, preferred approaches of the present invention are substantially device independent, in that different display devices may be used to access the WIPS at different times.

Second, the preferred embodiments of the present invention provide a low apparent latency. In particular, although latency may be associated with transmitting downstream data to the WIPS, because the downstream data is “pushed” to the WIPS, i.e., transmitted without the user having to ask for it, and because the WIPS automatically

receives the downstream data and updates its memory accordingly, the up-to-date information, such as the user's new e-mail messages and the current schedule, will be available on the WIPS on a nearly continual basis. Thus, in contrast to many prior art approaches, such as the WAP "pull" approach, a user need not incur airtime to retrieve
5 the up-to-date information. Instead, the user may simply and easily access the up-to-date information by bringing the WIPS into communication with the display device.

Third, the preferred embodiments of the present invention substantially standardize the process of retrieving data over wireless communications channels. This is because the WIPS stores its data in a very generic format, namely electronic files,
10 which display devices may then access in much the same way that they access files on hard drives or network servers. The preferred embodiments of the present invention do not need either proprietary file formats or proprietary synchronization routines to allow display devices to access the data stored in the WIPS. Accordingly, little or no modification may be required to use existing applications on many display devices.

15 Although various embodiments of this invention have been shown and described, it should be understood that various modifications and substitutions, as well as rearrangements and combinations of the preceding embodiments, can be made by those skilled in the art, without departing from the novel spirit and scope of this invention. Accordingly, the true spirit and scope of the invention is defined by the appended claims,
20 to be interpreted in light of the foregoing specification.

What is claimed is:

1. A wireless intelligent personal server, comprising:

a radio frequency (RF) receiver for receiving downstream data transmitted over a first wireless communications channel;

5 a memory;

a central processing unit (CPU);

a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and

10 a first interface for allowing an external display device to access said at least one electronic file.

2. The wireless intelligent personal server of claim 1, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

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3. The wireless intelligent personal server of claim 1, wherein said at least one electronic file is a new electronic file.

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4. The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device read-only access to said at least one electronic file.

5. The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device to change said at least one electronic file.

6. The wireless intelligent personal server of claim 1, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

7. The wireless intelligent personal server of claim 6, wherein said external display device is a personal digital assistant (PDA).

8. The wireless intelligent personal server of claim 1, wherein said first interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

9. The wireless intelligent personal server of claim 1, further comprising:
a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

10. The wireless intelligent personal server of claim 9, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

11. The wireless intelligent personal server of claim 10, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

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12. The wireless intelligent personal server of claim 1, further comprising:
a second interface for controlling a wireless telephone to transmit at least one signal.

10

13. The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

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14. The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device.

20

15. The wireless intelligent personal server of claim 12, further comprising:
a battery for powering said wireless intelligent personal server.

16. The wireless intelligent personal server of claim 15, further comprising:
first power contacts for electrically connecting to recharger contacts disposed on
said external display device; and

5 a first power management circuit for selectively connecting said battery to said
first power contacts.

17. The wireless intelligent personal server of claim 15, further comprising:
second power contacts for electrically connecting to recharger contacts disposed
on said wireless telephone; and

10 a second power management circuit for selectively connecting said battery to said
second power contacts.

18. The wireless intelligent personal server of claim 1, further comprising:
a bar-code input for connecting a bar-code reader.

15 19. The wireless intelligent personal server of claim 1, further comprising:
a GPS input for connecting a global positioning system (GPS) receiver.

20 20. The wireless intelligent personal server of claim 1, further comprising:
a keyboard input for connecting an external keyboard.

21. The wireless intelligent personal server of claim 1, further comprising:
a card reader input for connecting a card reader.

22. A wireless data communication system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said
5 wireless intelligent personal server processing said downstream data to provide at least one electronic file in said memory; and

a wireless telephone in communication with said wireless intelligent personal server, said wireless telephone transmitting an acknowledgment signal over a second
10 wireless communications channel when said wireless intelligent personal server receives said downstream data.

23. The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes an interface for allowing an external display device to access said at least one electronic file.
15

24. The wireless data communication system of claim 23, wherein said interface allows said external display device read-only access to said at least one electronic file.

20 25. The wireless data communication system of claim 23, wherein said interface allows said external display device to change said at least one electronic file.

26. The wireless data communication system of claim 23, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, personal digital assistant (PDA), and set-top television controller box.

5

27. The wireless data communication system of claim 26, wherein said external display device is a personal digital assistant (PDA).

28. The wireless data communication system of claim 23, wherein said interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

29. The wireless data communication system of claim 23, wherein said wireless telephone transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

30. The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

31. The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

5 a first power management circuit for selectively connecting said battery to said first power contacts.

32. The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

10 second power contacts electrically connected to recharger contacts disposed on said external display device; and

a second power management circuit for selectively connecting said battery to said first power contacts.

15 33. A wireless data display system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said
20 wireless intelligent personal server processing said downstream data to provide at least one electronic file; and

a display device in communication with said wireless intelligent personal server, said display device having at least one application that accesses said at least one electronic file to display information to a user.

5 34. The wireless data display system of claim 33, wherein said at least one application is able to change said at least one electronic file stored in said memory.

10 35. The wireless data display system of claim 33, wherein said display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

15 36. The wireless data display system of claim 35, wherein said display device is a personal digital assistant (PDA).

20 37. The wireless data display system of claim 33, wherein wireless intelligent personal server includes a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

 38. The wireless data display system of claim 37, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

39. The wireless data display system of claim 37, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said display device.

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40. The wireless data display system of claim 33, wherein said wireless intelligent personal server includes an interface for controlling a wireless telephone to transmit at least one signal.

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41. The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

42. The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said display device.

43. The wireless data display system of claim 33, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

44. The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said display device; and

5 a first power management circuit for selectively connecting said battery to said first power contacts.

45. The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

10 second power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

15 46. A method for updating a target electronic file to reflect changes made to a source electronic file, said method comprising the steps of:

storing said target electronic file in a wireless intelligent personal server;

20 said wireless intelligent personal server receiving downstream data transmitted over a first wireless communications channel, said downstream data reflecting said changes made to said source electronic file;

said wireless intelligent personal server automatically updating said target electronic file with said downstream data to provide an updated electronic file;

bringing an external display device into communication with said wireless intelligent personal server; and

accessing said updated electronic file with said display device.

5 47. The method of claim 46, further comprising the step of:

said wireless intelligent personal server transmitting at least one signal over a second wireless communications channel.

10 48. The method of claim 47, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

15 49. The method of claim 46, further comprising the step of:

said wireless intelligent personal server causing a wireless telephone to transmit at least one signal over a second wireless communications channel.

20 50. The method of claim 49, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

51. A method for creating, without user intervention, an electronic file on a wireless intelligent personal server, said method comprising the steps of:

said wireless intelligent personal server receiving downstream data transmitted over a first wireless communications channel;

said wireless intelligent personal server automatically creating said electronic file from said downstream data;

bringing an external display device into communication with said wireless intelligent personal server; and

5 accessing said electronic file with said display device.

52. The method of claim 51, further comprising the step of:

said wireless intelligent personal server transmitting at least one signal over a second wireless communications channel.

10

53. The method of claim 52, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

54. The method of claim 51, further comprising the step of:

15

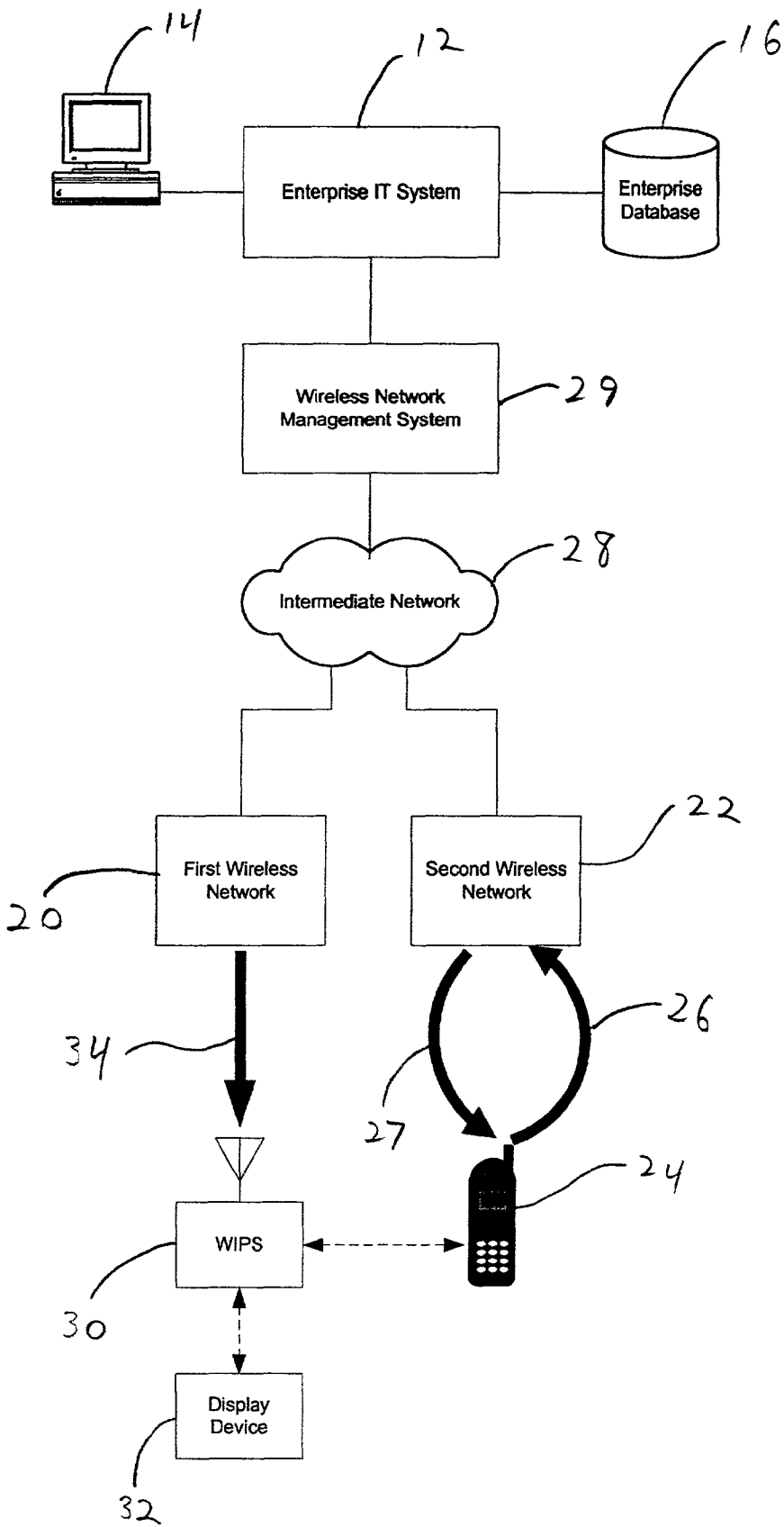
said wireless intelligent personal server causing a wireless telephone to transmit at least one signal over a second wireless communications channel.

55. The method of claim 54, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

20

ABSTRACT

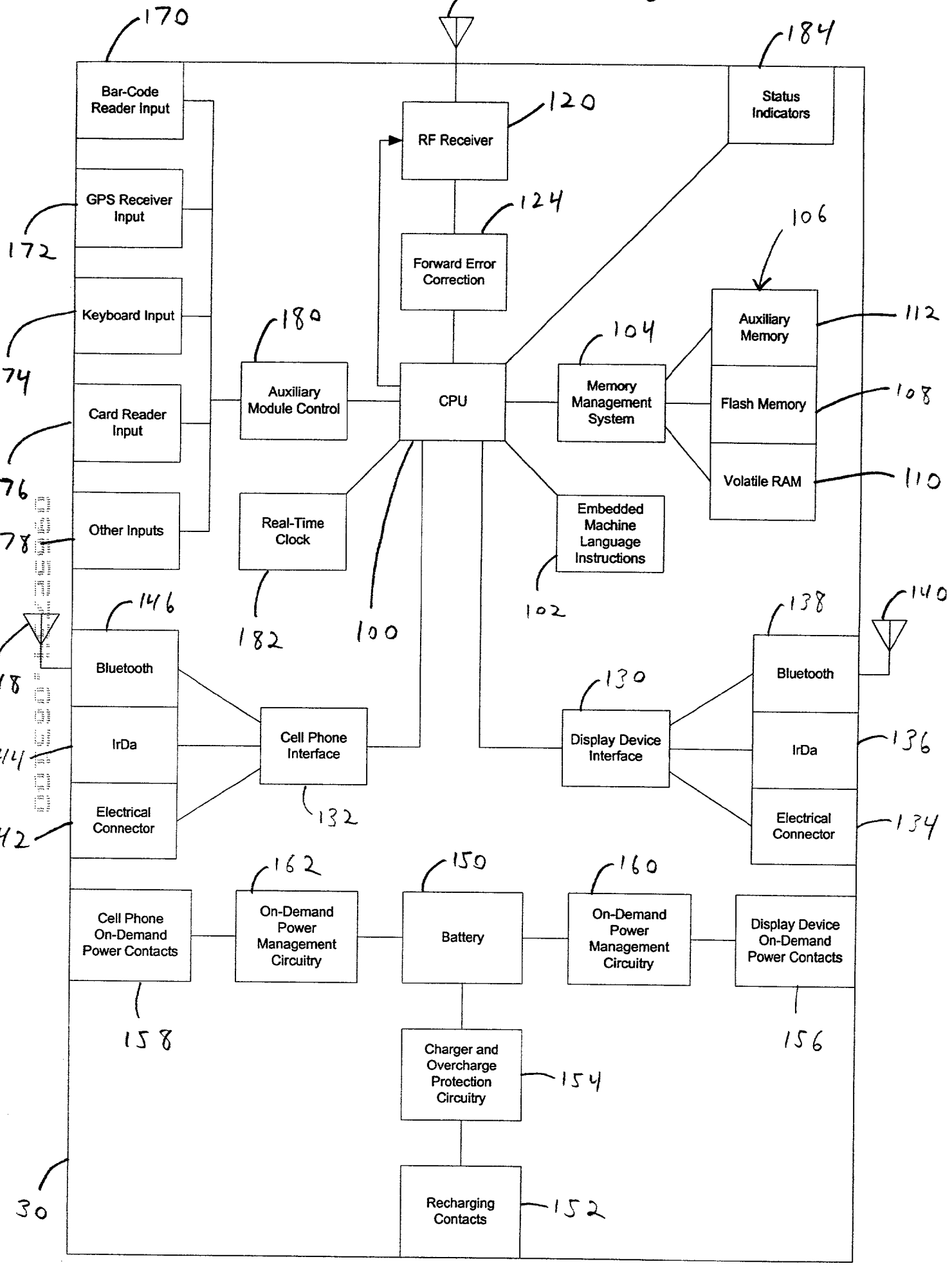
A wireless intelligent personal server includes a radio frequency (RF) receiver, a memory for storing electronic files, a set of embedded machine language instructions, a central processing unit (CPU), a first interface for a display device, such as a personal digital assistant (PDA), and a second interface for a wireless telephone. The RF receiver receives downstream data transmitted over a downstream wireless communications channel. The CPU executes the machine language instructions to process the downstream data and, thereby, either update an existing target electronic file stored in the memory, so that the target electronic file reflects changes made to a source electronic file, or create a new electronic file in the memory. A display device may be brought into communication with the wireless intelligent personal server, via the first interface, to access the electronic files stored in the memory. The wireless intelligent personal server may also transmit an upstream signal over an upstream wireless communication channel, such as by using a wireless telephone, in communication via the second interface. The upstream signal may acknowledge receipt of the downstream data, or it may include upstream data reflecting changes to the electronic files stored in the memory made by the display device.



10 ↗

Fig. 1

Fig. 2



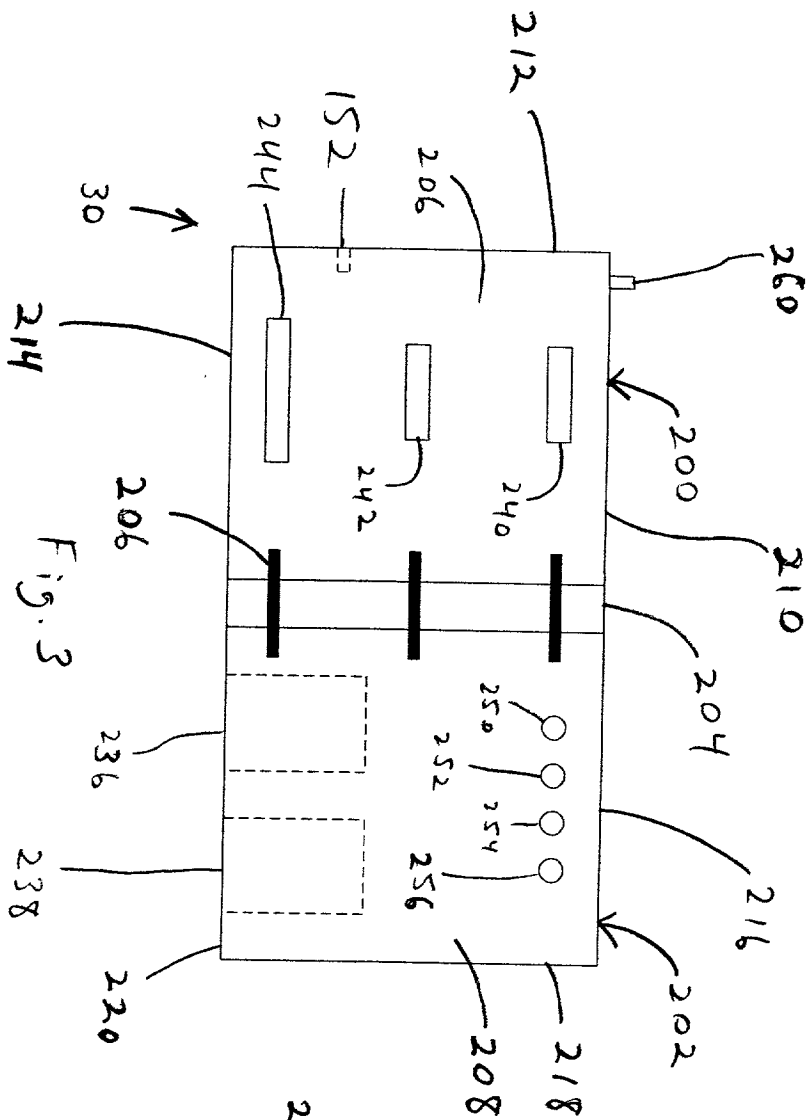


Fig. 3

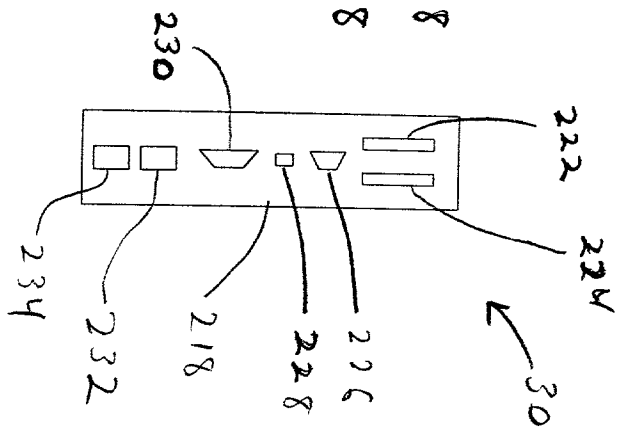


Fig. 4

FIG. 3 is a perspective view of a device 200, and FIG. 4 is a perspective view of a device 200, both views being taken from the right side of the device 200.

**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 as stated below next to my name.

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 claimed and for which a patent is sought on the invention entitled:

WIRELESS INTELLIGENT PERSONAL SERVER

the specification of which is attached hereto unless the following space is checked:

was filed on _____ as United States Application Serial Number _____.

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

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

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 international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

| | <u>Number</u> | <u>Country</u> | <u>Day/Month/Year Filed</u> |
|----|---------------|----------------|-----------------------------|
| 1. | | | |

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

| | <u>Application Number</u> | <u>Filing Date</u> |
|----|---------------------------|--------------------|
| 1. | | |

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, 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 information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

| | <u>Application Number</u> | <u>Filing Date</u> | <u>Status: patented, pending, abandoned</u> |
|----|---------------------------|--------------------|---|
| 1. | | | |

I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and I direct that all correspondence be addressed to that Customer Number.

Customer Number: **020306**
Principal attorney or agent: Richard A. Machonkin
Telephone number: 312-913-0001

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.

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Full name of third joint inventor: Xin Du

Inventor's signature: [Signature] Date: 8/31/00
Residence: Bartlett, Illinois
Citizenship: People's Republic of China
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**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 as stated below next to my name.

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 claimed and for which a patent is sought on the invention entitled:

WIRELESS INTELLIGENT PERSONAL SERVER

the specification of which is attached hereto unless the following space is checked:

was filed on _____ as United States Application Serial Number _____.

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

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

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 international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

| | <u>Number</u> | <u>Country</u> | <u>Day/Month/Year Filed</u> |
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| 1. | | | |

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

| | <u>Application Number</u> | <u>Filing Date</u> |
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| 1. | | |

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, 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 information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

| | <u>Application Number</u> | <u>Filing Date</u> | <u>Status: patented, pending, abandoned</u> |
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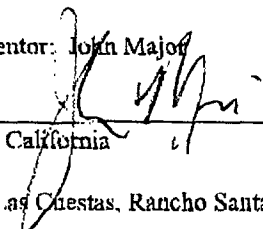
I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and I direct that all correspondence be addressed to that Customer Number.

Customer Number: 020306
Principal attorney or agent: Richard A. Machonkin
Telephone number: 312-913-0001

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.

Full name of first inventor: Edward F. Bachner, III

Inventor's signature: _____ Date: _____
Residence: Lockport, Illinois
Citizenship: US
Post Office Address: 15522 West Hawk Haven Road, Lockport, Illinois 60441

Full name of second joint inventor: John Major
Inventor's signature:  _____ Date: 5/7/00
Residence: Rancho Santa Fe, California
Citizenship: US
Post Office Address: 16720 Las Cuestas, Rancho Santa Fe, California 92067

Full name of third joint inventor: Xin Du
Inventor's signature: _____ Date: _____
Residence: Bartlett, Illinois
Citizenship: People's Republic of China
Post Office Address: 1536 Knoll Crest, Bartlett, Illinois 60103



PATENT NUMBER

U.S. UTILITY Patent Application

JCR
JCR61

O.I.P.E. PATENT DATE

SCANNED M.H. UR O.A. CS

| APPLICATION NO. | CONT/PRIOR | CLASS | SUBCLASS | ART UNIT | EXAMINER |
|-----------------|------------|-------|----------|----------|----------|
| 09/652734 | | 455 | 419 | 2684 | FERGUSON |

APPLICANTS

Edward Bachner
John Major
Xin Du

Wireless intelligent personal server

PTO-2040
12/99

| ISSUING CLASSIFICATION | | | | | | | |
|------------------------------|----------|--------------------|-----------------------------------|--|--|--|--|
| ORIGINAL | | CROSS REFERENCE(S) | | | | | |
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| <input type="checkbox"/> TERMINAL DISCLAIMER | DRAWINGS | | | CLAIMS ALLOWED | |
| | Sheets Drwg. | Figs. Drwg. | Print Fig. | Total Claims | Print Claim for O.G. |
| <input type="checkbox"/> The term of this patent subsequent to _____ (date) has been disclaimed. | _____ (Assistant Examiner) (Date) | | | NOTICE OF ALLOWANCE MAILED | |
| <input type="checkbox"/> The term of this patent shall not extend beyond the expiration date of U.S. Patent. No. _____ | _____ (Primary Examiner) (Date) | | | ISSUE FEE | |
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| POSITION | INITIALS | ID NO. | DATE |
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| FEE DETERMINATION | JKW | 70331 | |
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| FORMALITY REVIEW | dk | 56861 | 10/19/00 |
| RESPONSE FORMALITY REVIEW | | | |

INDEX OF CLAIMS

- ✓ Rejected
- = Allowed
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UTILITY PATENT APPLICATION TRANSMITTAL

Submit an original and a duplicate for fee processing
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ADDRESS TO:

Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

Attorney Docket No. MBHB00-399
First Named Inventor Edward F. Bachner, III
Express Mail No. EL028731226US
Total Pages 51

APPLICATION ELEMENTS

- 1. Transmittal Form with Fee
- 2. Specification (including claims and abstract) [Total Pages 40]
- 3. Drawings [Total Sheets 3]
- 4. Oath or Declaration [Total Pages 4]
 - a. Newly executed
 - b. Copy from prior application
 [Note Boxes 5 and 17 below]
 - i. Deletion of Inventor(s) Signed statement attached deleting inventor(s) named in the prior application
- 5. Incorporation by Reference: The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
- 6. Microfiche Computer Program
- 7. Nucleotide and/or Amino Acid Sequence Submission
 - a. Computer Readable Copy
 - b. Paper Copy
 - c. Statement verifying above copies


ACCOMPANYING APPLICATION PARTS

- 8. Assignment Papers
- 9. Power of Attorney
- 10. English Translation Document (if applicable)
- 11. Information Disclosure Statement (IDS)
 - PTO-1449 Form
 - Copies of IDS Citations
- 12. Preliminary Amendment
- 13. Return Receipt Postcard (Should be specifically itemized)
- 14. Small Entity Statement(s)
 - Enclosed
 - Statement filed in prior application; status still proper and desired
- 15. Certified Copy of Priority Document(s)
- 16. Other:

- 17. This is a CONTINUING APPLICATION. Please note the following:
 - a. This is a Continuation Divisional Continuation-in-part of prior application
 - b. Cancel in this application original claims ___ of the prior application before calculating the filing fee.
 - c. Amend the specification by inserting before the first line the sentence:
This is a continuation divisional continuation-in-part of application Serial No.
 - d. The prior application is assigned of record to

UTILITY PATENT APPLICATION TRANSMITTAL

Attorney Docket No. MBHB00-399

| APPLICATION FEES | | | | |
|--|--------------------------------------|--------------|-----------|----------|
| BASIC FEE | | | | \$ 690 |
| CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE | |
| Total Claims | 55 -20= | 35 | x \$18.00 | \$ 630 |
| Independent Claims | 5 -3= | 2 | x \$78.00 | \$ 156 |
| <input type="checkbox"/> Multiple Dependent Claims(s) if applicable | | | +\$270.00 | \$ |
| Total of above calculations = | | | | \$ 1476 |
| Reduction by 50% for filing by small entity = | | | | \$(738) |
| <input checked="" type="checkbox"/> Assignment fee if applicable | | | +\$40.00 | \$ 40 |
| TOTAL = | | | | \$ 778 |
| 18. <input type="checkbox"/> Please charge my Deposit Account No. 13-2490 in the amount of \$ | | | | |
| 19. <input checked="" type="checkbox"/> A check in the amount of \$778 is enclosed. | | | | |
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| a. <input checked="" type="checkbox"/> Fees required under 37 CFR 1.16. | | | | |
| b. <input checked="" type="checkbox"/> Fees required under 37 CFR 1.17. | | | | |
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| 21. <input checked="" type="checkbox"/> The Commissioner is hereby generally authorized under 37 CFR 1.136(a)(3) to treat any future reply in this or any related application filed pursuant to 37 CFR 1.53 requiring an extension of time as incorporating a request therefor, and the Commissioner is hereby specifically authorized to charge Deposit Account No. 13-2490 for any fee that may be due in connection with such a request for an extension of time. | | | | |
| 22. CERTIFICATE OF MAILING | | | | |
| I hereby certify that I directed that the correspondence identified above be deposited with the United States Postal Service as "Express Mail Post Office to Addressee" under 37 CFR § 1.10 on the date indicated below and is addressed to the Asst. Commissioner for Patents, Box Patent Application, Washington, DC 20231. | | | | |
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| PATENT & TRADEMARK OFFICE | | | | |
|  | | | | |
| 020306 | | | | |
| 24. CORRESPONDENCE ADDRESS | | | | |
| Name | McDonnell Boehnen Hulbert & Berghoff | | | |
| Address | 300 South Wacker Drive, Suite 3200 | | | |
| City, State, Zip | Chicago, Illinois 60606 | | | |
| 25. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED | | | | |
| Name | Richard A. Machonkin | | | |
| Reg. No. | 41,962 | | | |
| Signature | <i>Richard A. Machonkin</i> | | | |
| Date | August 31, 2000 | | | |

09-01-00

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JCE93 U.S. PTO

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ACCOMPANYING APPLICATION PARTS

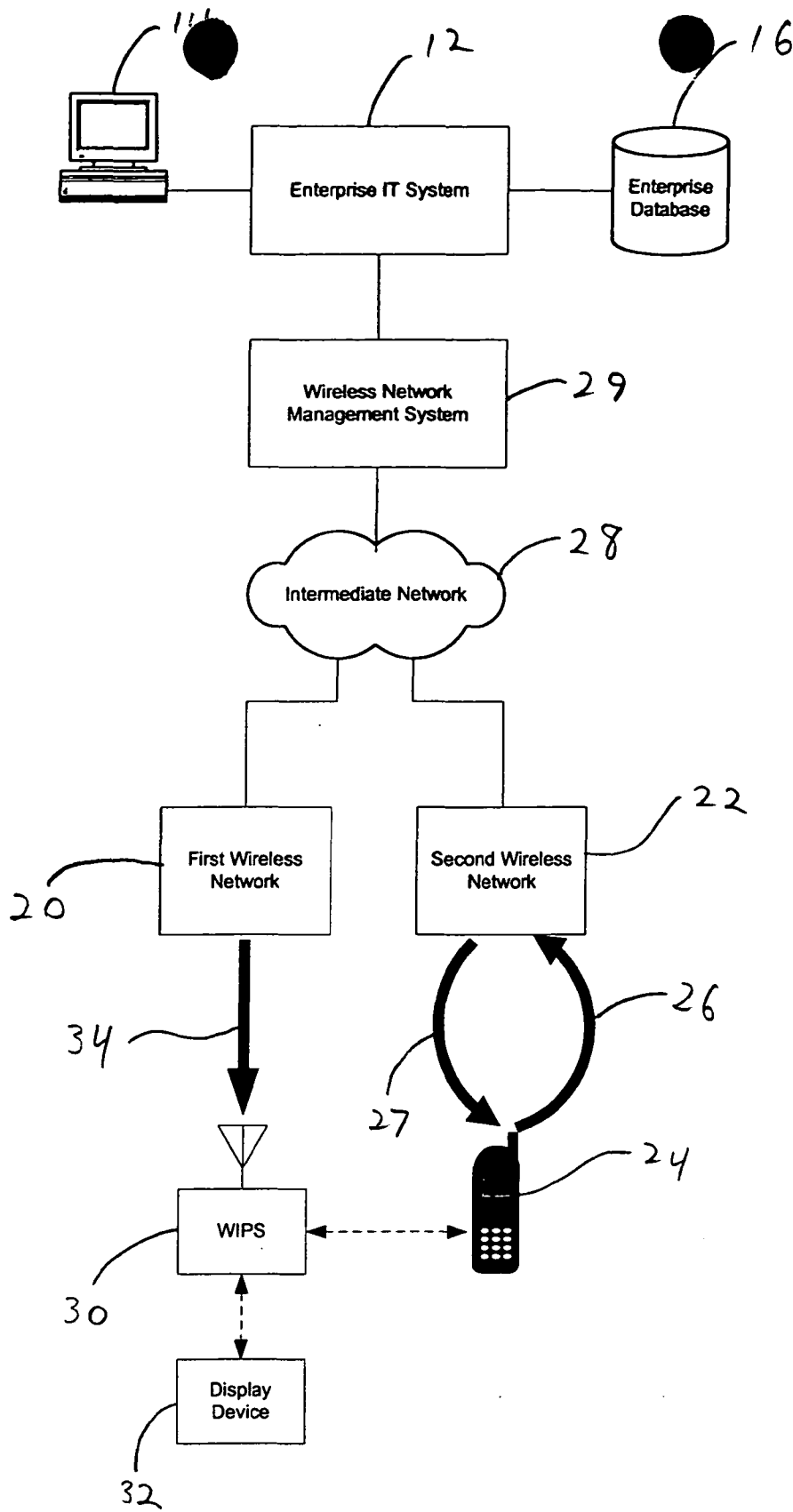
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Attorney Docket No. MBHB00-399

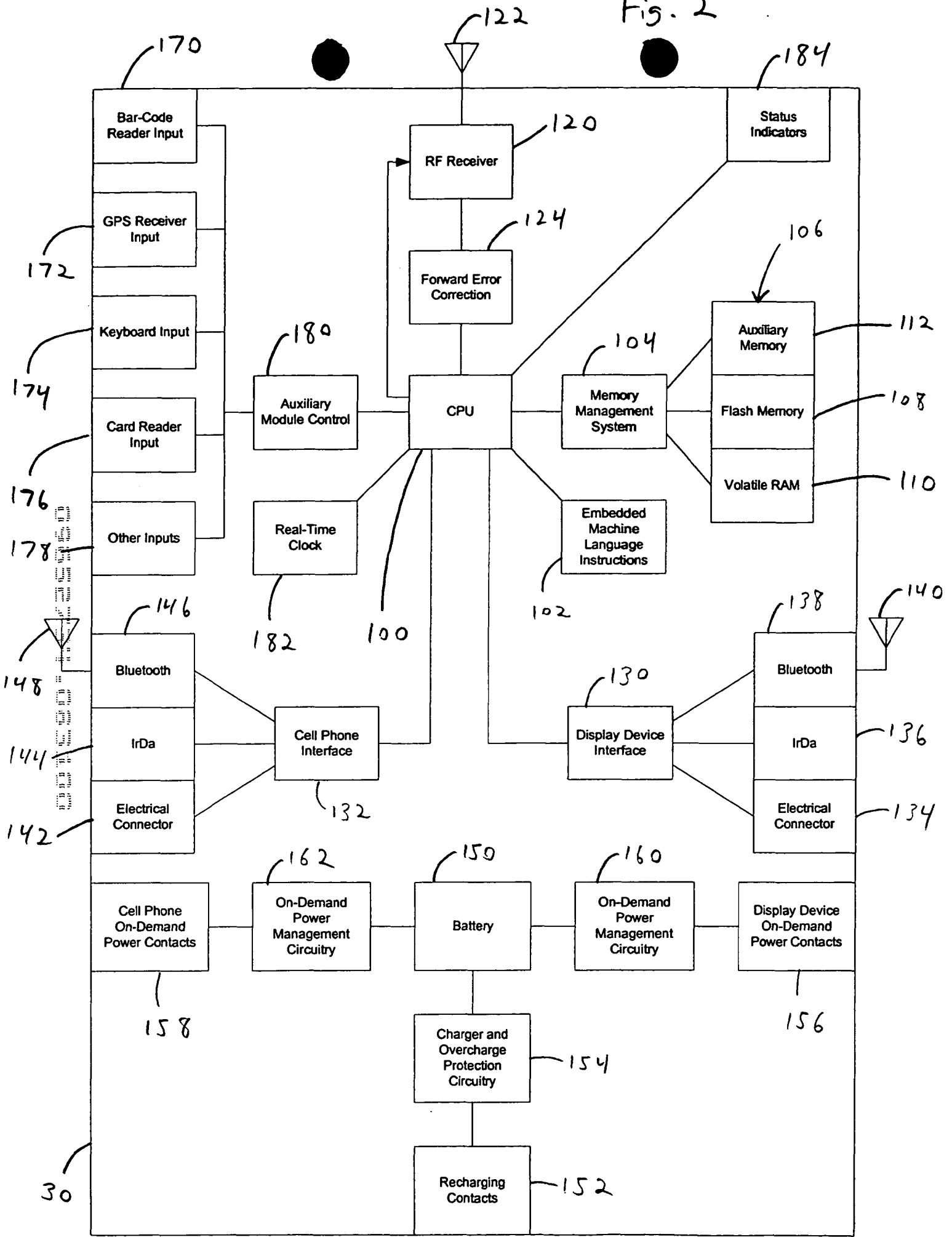
| APPLICATION FEES | | | | |
|--|--------------------------------------|--------------|-----------|----------|
| BASIC FEE | | | | \$ 690 |
| CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE | |
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| Name | McDonnell Boehnen Hulbert & Berghoff | | | |
| Address | 300 South Wacker Drive, Suite 3200 | | | |
| City, State, Zip | Chicago, Illinois 60606 | | | |
| 25. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED | | | | |
| Name | Richard A. Machonkin | | | |
| Reg. No. | 41,962 | | | |
| Signature | <i>Richard A. Machonkin</i> | | | |
| Date | August 31, 2000 | | | |



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Fig. 1

Fig. 2



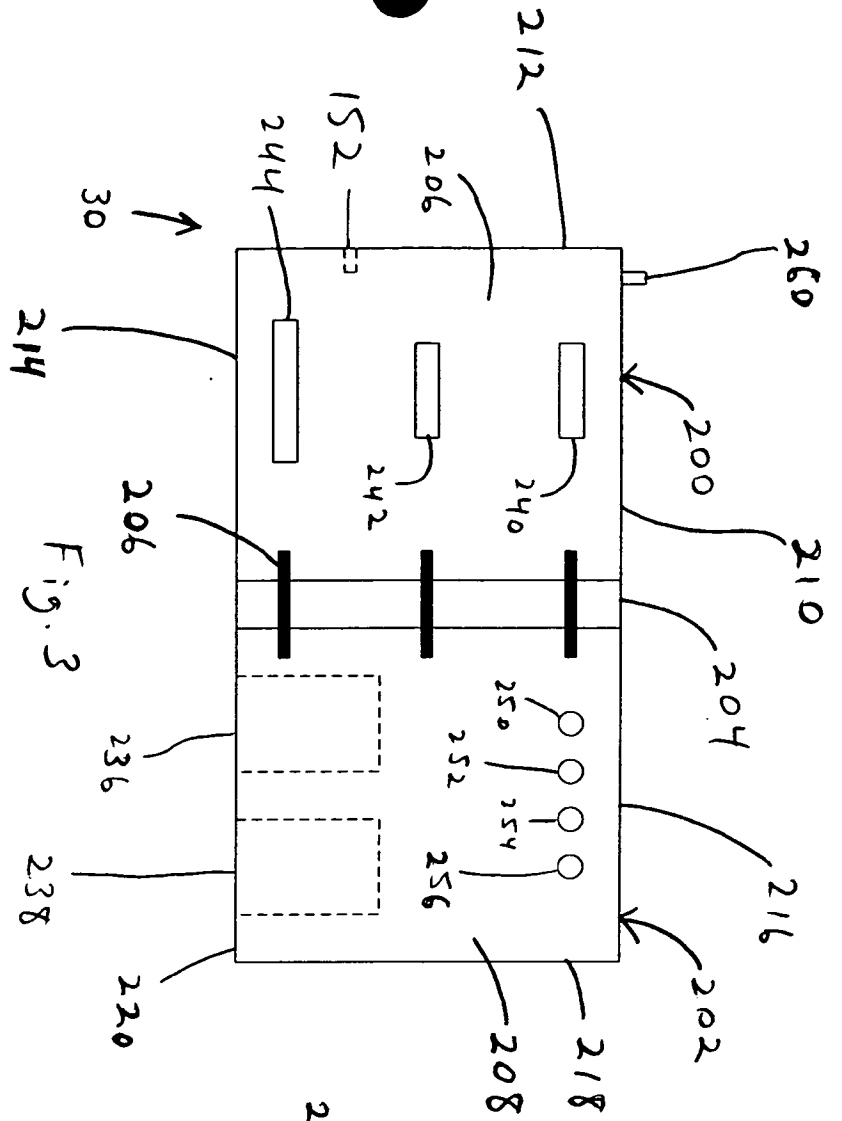


Fig. 3

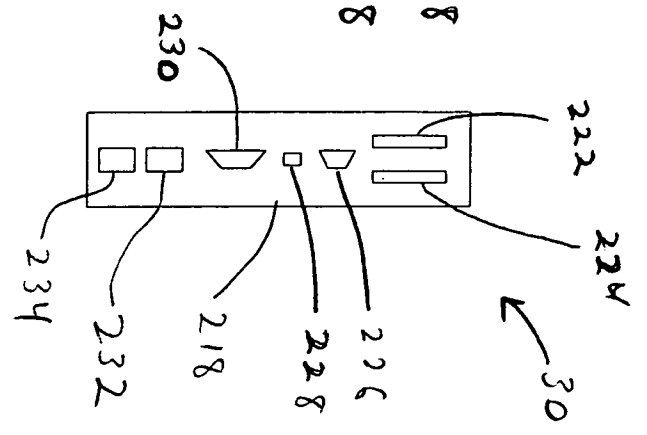


Fig. 4

FIG. 3

APPLICATION FOR UNITED STATES LETTERS PATENT

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(Case No. MBHB00-399)

Title: Wireless Intelligent Personal Server

10

Inventor(s): Edward F. Bachner, III, a citizen of U.S.A., residing at 15522 West Hawk Haven Road, Lockport, Illinois 60441

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John Major, a citizen of U.S.A., residing at 16720 Las Cuestas, Rancho Santa Fe, California 92067

Xin Du, a citizen of China, residing at 1536 Knoll Crest, Bartlett, Illinois 60103

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Assignee: Double-Time Corporation
110 East Schiller Street
Suite 203
Elmhurst, IL 60126

BACKGROUND OF THE INVENTION

A. Field of the Invention

This invention relates to the field of wireless telecommunications. More particularly, this invention relates to a wireless intelligent personal server that receives data transmitted over a wireless communications channel and automatically processes it so as to maintain a copy of at least one electronic file stored in a source computer.

B. Description of Related Art

A typical modern office uses a number of different databases of information that are frequently updated. Examples of such databases include schedules, contact lists, price lists, real estate lists, and incoming e-mails. Such databases are typically stored as electronic files on either an office-wide server or on individual personal computers located in the office space. Typically, individual workers in the office space are able to use personal computers, usually with network connections, to access the databases. More particularly, the personal computers typically run applications that retrieve the desired information from the databases and display it to the user. With this configuration, the most up-to-date versions of the databases are typically available to the individual workers, even though the electronic database files are frequently updated.

However, many workers often work outside of the office environment at least one day per week, and, typically, it is more difficult to gain access to the most up-to-date versions of important electronic files when outside of the office environment. A currently used solution is to use portable computers to "dial in" to the office network using the PSTN, Internet, or other wireline networks. However, mobile workers do not

always have access to wireline connections at all desired times. Accordingly, wireless communications systems have been developed by which mobile workers can access their office databases even without a wireline connection. As an example, some wireless telephones are able to send and receive limited amounts of data using the wireless application protocol (WAP).

However, most of these wireless communications approaches, including the WAP approach, use a “pull” methodology, whereby the user first requests the information and then waits for a response. This “pull” methodology has the disadvantage of high latency and, typically, high cost. The high latency arises from the delay that typically occurs in each step of the process of retrieving the desired information. In particular, there is the time spent entering the keystrokes needed to make the request, the airtime spent transmitting the request, the delay in having the request reaching the office network through intermediate networks, the delay in having the office network search through its databases to formulate a response, and the delay in transmitting the response through the intermediate networks and then over the air interface. The high latency is not only troublesome to the user; it leads to high costs due to the airtime needed to process the request and the response.

The problem becomes more acute the more interactive the transaction becomes. A user using WAP to retrieve a new e-mail message with an attachment provides a simple illustration of the problem. First, the user requests the new e-mail message and receives it after waiting for the latency period described above, for which the user is typically charged airtime. Second, the user reads the new e-mail message and sees that it has an attachment. Then the user must make another request to receive the attachment.

The user waits for another latency period to receive it, thereby typically incurring additional airtime charges. Moreover, the latency period may be quite long, because files attached to e-mails are often quite large. Accordingly, existing “pull” approaches, such as WAP have substantial disadvantages.

5 Another problem with many technologies for receiving data over wireless channels is that they are highly device-specific, i.e., they are based on providing wireless functionality to existing devices, such as specific models of personal digital assistants (PDAs). However, there are a number of problems with device-specific approaches. First, many people use different computing devices at different times, so that providing
10 only one of the user’s computing devices with wireless functionality is, at best, only a partial solution. Second, different computing devices differ in their abilities to handle different types of data. For example, desktop PCs typically have much more memory than PDAs, and desktop PCs often have access to high quality monitors, speakers, and peripherals to display information and provide functionality to the user in ways that are
15 unavailable to typical PDAs. On the other hand, PDAs also have many advantages over a desktop PC, such as portability. In addition to the availability of different hardware, different computing devices may have different operating systems and applications available to them. Accordingly, approaches that provide wireless functionality only to specific devices have substantial disadvantages.

20 For example, Kaufman, U.S. Patent No. 6,034,621, discloses systems and methods for communicating changes made to a data file on a personal computer (PC) to a personal digital assistant (PDA). In accordance with some of the disclosed embodiments, when the data file on the PC is changed, synchronization information is transmitted over

a paging network to a pager that is connected to the PDA, such as by a serial or parallel connection. A synchronization routine in the PDA then interacts with the synchronization information output from the pager to update the data file in the PDA.

While potentially reducing the latency problem, at least for small amounts of data, the Kaufman approach suffers from a number of disadvantages. First, PDAs are not typically on all of the time. Thus, update information may be missed because of the PDA being off. Second, PDAs typically have a very limited memory, i.e., 8 megabytes or less. Because of this limited memory, mobile workers may not be able to access some of the very large electronic files that they can access at their offices.

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SUMMARY OF THE INVENTION

In a first principal aspect, the present invention provides a wireless intelligent personal server that comprises a radio frequency (RF) receiver for receiving downstream data transmitted over a wireless communications channel, a memory, a central processing unit (CPU), a set of embedded machine language instructions that are executable by the CPU for processing the downstream data to provide at least one electronic file in the memory, and a first interface for allowing an external display device to access the at least one electronic file.

In a second principal aspect, the present invention provides a wireless data communication system that comprises a wireless intelligent personal server and a wireless telephone in communication with the wireless intelligent personal server. The wireless intelligent personal server includes a memory and a radio frequency (RF) receiver. The RF receiver receives downstream data transmitted over a first wireless communications channel, and the wireless intelligent personal server processes the downstream data to provide at least one electronic file in the memory. The wireless telephone transmits an acknowledgement over a second wireless communications channel when the wireless intelligent personal server receives the downstream data.

In a third principal aspect, the present invention provides a wireless data display system that comprises a wireless intelligent personal server and a display device in communication with the wireless intelligent personal server. The wireless intelligent personal server includes a memory and a radio frequency (RF) receiver. The RF receiver receives downstream data transmitted over a wireless communications channel, and the wireless intelligent personal server processes the downstream data to provide at least one

electronic file. The display device has at least one application that accesses the at least one electronic file to display information to a user.

In a fourth principal aspect, the present invention provides a method for updating a target electronic file to reflect changes made to a source electronic file. In accordance with the method, the target electronic file is stored in a wireless intelligent personal server. The wireless intelligent personal server receives downstream data transmitted over a wireless communications channel. The downstream data reflects changes made to the source electronic file. The wireless intelligent personal server automatically updates the target electronic file with the downstream data to provide an updated electronic file. A display device is brought into communication with the wireless intelligent personal server, and the display device accesses the updated electronic file.

In a fifth principal aspect, the present invention provides a method for creating, without user intervention, an electronic file on a wireless intelligent personal server. In accordance with the method, the wireless intelligent personal server receives downstream data transmitted over a wireless communications channel. The wireless intelligent personal server automatically creates the electronic file from the downstream data. A display device is brought into communication with the wireless intelligent personal server, and the display device accesses the electronic file.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a functional block diagram of a wireless synchronization system, in accordance with an exemplary embodiment of the present invention.

Figure 2 is a functional block diagram of a wireless intelligent personal server, in accordance with an exemplary embodiment of the present invention.

Figure 3 is a front plan view of the wireless intelligent personal server of Figure 2, in accordance with an exemplary embodiment of the present invention.

Figure 4 is a side plan view of the wireless intelligent personal server of Figure 2, in accordance with an exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Figure 1 is a functional block diagram of a wireless communication system 10 in accordance with an exemplary embodiment of the present invention. System 10 includes an enterprise information technology (IT) system 12, which typically includes a plurality of computers and other devices networked together to provide computing and information technology services for a business or other organization. As shown in Figure 1, one or more personal computers, such as personal computer (PC) 14, are connected to enterprise IT system 12. Enterprise IT system 12 may also have access to a centralized database for the enterprise, such as enterprise database 16, as shown in Figure 1. Enterprise IT system 12 may be located entirely within one office area, or it may be distributed over various remote locations.

System 10 also includes a first wireless network 20 and a second wireless network 22. First wireless network 20 is able to transmit data, at least intermittently, over one or

more downstream wireless channels to wireless receivers operating within its wireless coverage area. Preferably, first wireless network 20 uses subcarriers of frequency modulated (FM) radio transmissions and/or televisions transmissions to provide the downstream wireless channels. Most preferably, the subcarriers used by first wireless network 20 are modulated using orthogonal frequency division multiplexing (ODFM) in order to minimize multipath effects, such as fading and distortion, and to increase data throughput. Alternatively, first wireless network 20 may be a one-way paging network, which may use the FLEX™ protocol of Motorola, Inc., a two-way paging network, which may use the ReFLEX™ protocol of Motorola, Inc., or it may wirelessly transmit data by some other means.

Second wireless network 22 is preferably a cellular or PCS network that provides two-way wireless communications, in a format, such as AMPS, TDMA, CDMA, or GSM, for wireless telephones, such as wireless telephone 24. Thus, with reference to Figure 1, wireless telephone 24 is able to transmit to wireless network 22 over an upstream channel 26 and is able to receive from wireless network 22 using a downstream channel 27.

An intermediate network 28 is connected to first wireless network 20 and to second wireless network 22, and enterprise IT system 12 uses a wireless network management system 29 to communicate with wireless networks 20 and 22, via intermediate network 28. Intermediate network 28 maybe any wide-area network (WAN) or local-area network (LAN) capable of transmitting digital data between enterprise IT system 12 and wireless networks 20 and 22. Preferably, intermediate network 28 is either the Internet or a private corporate network.

A wireless intelligent personal server (WIPS) 30 is able to receive data wirelessly transmitted by first wireless network 20. When WIPS 30 receives data transmitted by wireless network 20, WIPS 30 stores it in its memory, as described in more detail below. WIPS 30 is able to transfer the data stored in its memory to and from different types of display devices 32, on at least an intermittent basis, as indicated by the dotted line in Figure 1. WIPS 30 may also be able to transfer data from its memory to and from wireless telephone 24 on at least an intermittent basis, as indicated by the dotted line in Figure 1.

Display device 32 is a device that has a user interface for displaying the data stored in WIPS 30. More particularly, display device 32 typically runs one or more applications to access the data stored in WIPS 30 and to display it to the user. The applications on display device 32 may also allow the user to modify the data stored in WIPS 30. Display device 32 may be a fixed-mounted device, such as a desktop PC, an advanced video game device, such as a Sony "PlayStation 2" device, or a set-top television controller box, such as the type used to access services such as WebTV© (and which may also provide game-type functionality), or display device 32 may be a portable device, such as a laptop PC or a personal digital assistant (PDA). Moreover, WIPS 30 preferably allows different kinds of display device 32 to access the data stored on it at different times. For example, a user may use a first desktop PC as display device 32 to access the data stored in WIPS 30 at work, may use a PDA as display device 32 to access the data stored in WIPS 30 while traveling, and may use a Sony "PlayStation 2" device as display device 32 while at home.

Data transfer between WIPS 30 and wireless telephone 24 and display device 32 may occur in various ways. For example, WIPS 30 may be electrically connected to wireless telephone 24 and/or display device 32. Such electrical connection may be direct, i.e., so that electrical contacts on WIPS 30 directly contact electrical contacts on wireless telephone 24 and/or display device 32. Alternatively, the electrical connection may be through electrical cables, which may be provided with standard connectors, such as USB connectors. Data transfer between WIPS 30 and wireless telephone 24 and display device 32 may also be wireless. For example, WIPS 30 and either wireless telephone 24 or display device 32 may be provided with infrared ports, such as IrDA ports. Alternatively, WIPS 30 and either wireless telephone 24 or display device 32 may use short-range RF communication, such as the Bluetooth protocol, to transfer data. Other methods for data transfer may also be used. For example, WIPS 30 may be provided with a flash memory card, in which case data transfer to display device 32 may be effected by removing the flash memory card from WIPS 30 and connecting it to display device 32. In any event, the connections between WIPS 30 and wireless telephone 24 and display device 32 may be only intermittent. For example, in some embodiments, wireless telephone 24 may be directly electrically connected to WIPS 30 most of the time. However, the user may disconnect wireless telephone 24 from WIPS 30 in order to make or receive calls.

WIPS 30 receives data transmitted by first wireless network 20 over a downstream channel 34. Because this data transmission may occur at any time, WIPS 30 is preferably always on in order to receive the transmission. When WIPS 30 receives a data transmission, WIPS 30 determines whether the transmission is intended for it, and, if

it is, WIPS 30 processes the data transmission accordingly. Typically, this means that WIPS 30 uses the data from the transmission either to update one or more of the files stored in its memory or to add a new file to its memory. Preferably, WIPS 30 performs these functions automatically, so that the user can receive the data while performing other tasks. As described in more detail below, the user is then able to use display device 32 to access the data stored in WIPS 30.

Once WIPS 30 has successfully received the data transmission, WIPS 30 preferably sends an acknowledgement signal. In preferred embodiments, WIPS 30 uses wireless telephone 24 to send the acknowledgement signal to second wireless network 22 over an upstream channel 36. To accomplish this, WIPS 30 may make use of electrical contacts, provided in most types of wireless telephone 24, that enable wireless telephone 24 to be remotely controlled. Thus, WIPS 30 sends signals to wireless telephone 24 to cause it to dial a predetermined telephone number and then, once the call is established, to transmit the acknowledgement signal. Because the acknowledgement signal will typically be a digital signal, WIPS 30 may use different techniques for transmitting it, depending on the type of wireless telephone 24. For example, if wireless telephone 24 can only transmit analog signals, then WIPS 30 preferably modulates the digital acknowledgement signal before transmitting it to wireless telephone 24. If wireless telephone 24 can transmit digital signals, such as signals in CDMA, TDMA, or GSM format, then WIPS 30 may transmit the acknowledgement signal to wireless telephone 24 in digital packet form.

However, at certain times when WIPS 30 is ready to send the acknowledgement signal, wireless telephone 24 may not be available. For example, wireless telephone 24 may

not be connected to, or in the range of wireless communication with, WIPS 30. Wireless telephone 24 may also be unavailable because it is turned off or because it is engaged in a telephone call. When wireless telephone 24 is unavailable, WIPS 30 preferably postpones the acknowledgement until wireless telephone 24 becomes available for use. First wireless network 20 will typically re-transmit the data intended for WIPS 30 until the acknowledgement from WIPS 30 is received.

As an alternative approach, WIPS 30 may be able to transmit wireless signals on its own, without the need for wireless telephone 24. For example, WIPS 30 may use cellular digital packet data (CDPD) technology to transmit signals to second wireless network 22 over upstream channel 26. As another approach, first wireless network 20 may be a two-way network, in which case, WIPS 30 may use the upstream channels of first wireless network 20.

As noted above, the data stored in WIPS 30 may be accessed by display device 32. Preferably, display device 32 accesses the memory in WIPS 30 as it would an external device, such as an external hard drive or a server on a local area network (LAN). In this way, display device 32 can take advantage of the much larger memory that may be available in WIPS 30.

In addition, a user may use different display devices to access the data stored in WIPS 30 at different times. For example, a user may use a desktop PC to access WIPS 30 while at home, a laptop PC to access WIPS 30 while at work, a customer's device to access WIPS 30 while visiting a customer, and a PDA to access WIPS 30 while traveling. In this way, WIPS 30 may serve as a convenient storage device so that a user's important

files are available wherever the user goes and are automatically and continually updated with new information wherever the user travels within the range of wireless network 20.

In this way, the electronic files stored in WIPS 30 may be automatically updated to reflect changes in the corresponding electronic files of enterprise IT system 12. This capability can be very important to a user who maintains important data files on enterprise IT system 12 at work but who also needs to access the information while the user is traveling. Such important data files may include the user's calendar of appointments, inventory availability and current pricing, contacts, and incoming e-mail messages.

For example, if the user is out of the office, the user's secretary may use computer 14 to enter a new appointment into the user's calendar. The calendar is typically stored as an electronic file on computer 14, enterprise database 16, or elsewhere on enterprise IT system 12. By means of WIPS 30, the user is able to have access to the updated calendar in the following way. Enterprise IT 12 sends the information needed to update the calendar to wireless network management system 29, which, in turn, transmits it to first wireless network 20 via intermediate network 28. First wireless network 20 then transmits the update information to WIPS 30 over downstream channel 34. WIPS 30 receives the transmission and uses the information to update the calendar stored as an electronic file in its memory. To signal that it has successfully received the update information, WIPS 30 uses wireless telephone 24 to transmit an acknowledgement over upstream channel 26 to second wireless network 22. Second wireless network 22, in turn, transmits the acknowledgement to wireless network management system 29, via intermediate network 28. Preferably, wireless network management system 29 resends

the update information, via intermediate network 28, to first wireless network 20 for re-transmission until management system 29 receives the acknowledgement, in order to ensure that WIPS 30 receives the update information. In this way, updates to important files on enterprise IT system 12 are automatically sent to WIPS 30, so that WIPS 30 will
5 maintain up-to-date copies of these important files. The user then brings WIPS 30 into communication with display device 32 in order to access the electronic files stored in WIPS 30.

In many cases, it is desirable to have changes made to the electronic files stored in WIPS 30 reflected in the files stored in enterprise IT system 12. In particular, display
10 device 32 may change the electronic files stored in WIPS 30 that it accesses. For example, the accessed electronic file may be the user's incoming e-mail messages, in which case the user may wish to delete the incoming e-mails after the user has read them. WIPS 30 may make the change, e.g., deleting one or more of the incoming e-mail messages, in the electronic file stored in its memory. WIPS 30 may also generate a
15 stream of upstream data in order to have the change reflected in the corresponding electronic file in enterprise IT system 12. WIPS 30 causes wireless telephone 24 to transmit the upstream data over upstream channel 26 to second wireless network 22, which then passes the upstream data to wireless network management system 29, via intermediate network 28. Management system 29 recognizes that a change is being
20 requested, and, if the requested change is validated, management system 29 passes the upstream data to enterprise IT network 12. Enterprise IT network 12, in turn, uses the upstream data to change its copy of the electronic file.

System 10 may also “push” other files to WIPS 30. For example, system 10 may “push” subscription data transmissions, such as stock closing prices. System 10 may push audio files, such as conference calls or books in an audio format. System 10 may also push the calendars of others in a user’s organization to allow scheduling of meetings.

5 Shown in Figure 2 is a functional block diagram of WIPS 30, in accordance with an exemplary embodiment of the present invention. The operation of WIPS 30 is controlled by a central processing unit (CPU) 100 that executes a set of embedded machine language instructions 102. Embedded machine language instructions 102 are preferably contained a nonvolatile memory, such as a flash memory or a read only
10 memory (ROM).

CPU 100 also has access, via a memory management system 104, to a memory system 106 for storing the electronic files that WIPS 30 automatically updates and that display devices are able to access. Memory system 106 preferably includes a non-volatile memory, such as a flash memory 108. The electronic files are stored primarily in
15 flash memory 108. In preferred embodiments, flash memory 108 also contains embedded machine language instructions 102. Accordingly, flash memory 108 preferably has a capacity of 96 megabytes or larger, in order to be able to accommodate large electronic files. Flash memory 108 may also be removable and substitutable by the user.

Memory system 106 may also include other types of memory, such as a volatile
20 random access memory (RAM) 110. Volatile RAM 110 may be DRAM, SRAM, or other type. Memory system 106 may also include an auxiliary memory 112, which may be a hard disk drive, such as the 340 megabyte Microdrive™ from IBM. Memory management system 104 manages memory system 106 by keeping track where memory

is available in system 106 and routing data from CPU 100 to be stored in memory accordingly.

WIPS 30 includes a radio frequency (RF) receiver 120, which is provided with an antenna 122. Antenna 122 preferably includes crossed dipole segments, with each dipole
5 tuned to resonate on opposite ends of the desired receiving band, so as to minimize multipath and cross-polarization fading.

RF receiver 120 receives signals from first wireless network 20 carried in wireless communication channel 34 and demodulates the signals in wireless communication channel 34 to extract the digital data. As shown in Figure 2, RF receiver 120 is
10 preferably controlled by CPU 100 to scan through the various wireless channels available to locate usable signals, i.e., signals using the correct modulation scheme and a low bit-error rate.

As noted above, wireless network 20 preferably uses OFDM subcarriers to FM and/or television broadcasts as its wireless communication channels. In the case that
15 wireless network 20 is a two-paging network that uses the ReFLEX™ protocol, then the CreaLink™2 XT two-way data transceiver, available from Motorola, Inc., is an example of a system that may be used as RF receiver 120.

In order to make transmissions more reliable, the data carried in wireless communication channel 34 preferably includes forward error correction codes.
20 Accordingly, the digital data from RF receiver 120 is preferably processed by forward error correction circuitry 124 in order to utilize the forward error codes, as needed, to provide corrected digital data. Forward error correction circuitry 124 may be provided by

using the AHA4210 single-chip forward error correction device, which is available from Advanced Hardware Architectures, Pullman, Washington.

CPU 100 also typically controls a display device interface 130 and a wireless telephone interface 132. Display device interface 130 allows display device 32 to access electronic files stored in memory system 106. In some embodiments, interface 130 may provide display 32 only read-only access to memory system 106. Preferably, however, interface 130 also allows display device 32 to change the electronic files stored in memory system 106. In general, access by display device 32 will involve the transfer of digital data between WIPS 30 and display device 32. As noted above, this transfer of digital data may be over an electrical connection, or it may be over a wireless connection, such as IrDA or Bluetooth. Thus, display device interface 130 is preferably connected to at least one electrical connector 134 to electrically connect to display device 32. However, display device interface 130 may also be connected to an IrDa port 136 and/or to a Bluetooth transceiver 138 provided with an antenna 140.

Wireless telephone interface 132 allows WIPS 30 to control wireless telephone 24. As described above, WIPS 30 typically controls wireless telephone 24 to transmit signals to wireless network 22 over upstream wireless channel 26. The signals that WIPS 30 causes wireless telephone 24 to transmit may be simple acknowledgement signals or they may include digital data that reflects changes made to one or more electronic files stored in memory system 106. Accordingly, WIPS 30 may be provided with one or more means for transferring digital data to wireless telephone 24. Wireless telephone interface 132 is preferably connected to at least one electrical connector 142 to allow WIPS 30 to be electrically connected to wireless telephone 24. Interface 132 may also be connected

to an IrDa port 144 and/or a Bluetooth transceiver 146 with an antenna 148 to allow communication with wireless telephone 24.

CPU 100, executing embedded machine language instructions 102, automatically controls the operation of WIPS 30 in the following way. When WIPS 30 receives a transmission, over wireless channel 34, containing downstream data, RF receiver 120 receives the transmission and demodulates it to retrieve the digital data. CPU 100 examines the digital data from RF receiver 120, optionally via forward error correction circuitry 124, to determine whether it is intended for WIPS 30. CPU 100, running instructions 102, may make this determination in various ways. Preferably, the digital data in the transmission will identify the intended recipient(s), such as by providing a destination code in a header of the transmission. CPU 100 then compares the destination code with a list of valid destination codes for WIPS 30, which list may be stored in memory system 106. The valid destination codes may be of various types, such as broadcast, multicast, or individual. A broadcast destination code would indicate that the transmission is intended for all devices in the coverage area of wireless network 20. A multicast destination code would indicate that the transmission is intended for a group of devices. An individual destination code would indicate that the transmission is intended for a specific WIPS. In any event, if the destination code in the transmission matches one of the valid destination codes for WIPS 30, then the transmission is intended for it.

If the digital data is intended for WIPS 30, then CPU 100, executing embedded machine language instructions 102, examines the digital data to determine how it should be processed. This determination may be made in various ways. Preferably, however, the header of the transmission will include a processing code to instruct WIPS 30 on how

to process the downstream data. For example, some processing codes may indicate that the downstream data represents an entirely new file. In response, CPU 100, executing machine language instructions 102, would create a new electronic file, such as in flash memory 108, with the downstream data.

5 Other processing codes may indicate that the downstream data should be used to update a “target,” i.e., already-existing, electronic file stored in WIPS 30. The target electronic file would also typically be identified in the header of the transmission. In response, CPU 100, executing machine language instructions 102, processes the downstream data to modify the target electronic file and thereby provide an update
10 electronic file stored in memory system 106. To make the update process more efficient, the transmission may also contain an update script directing how CPU 100, running machine language instructions 102, should use the downstream data to update the target electronic file.

15 Still other processing codes may direct CPU 100 to perform other functions. For example, processing codes may specify that the downstream data should be used to update embedded machine language instructions 102.

20 Once CPU 100 receives a transmission intended for it, CPU 100 preferably controls WIPS 30 to send an acknowledgement signal. Thus, if wireless telephone 24 is in communication with WIPS 30, then CPU 100 preferably sends a signal to wireless telephone 24, via wireless telephone interface 132, to cause wireless telephone 24 to send an acknowledgement signal over upstream wireless channel 26. If wireless telephone 24 is not in communication with WIPS 30, then CPU 100 waits to send this signal until wireless telephone 24 is in communication with WIPS 30.

When display device 32 is in communication with WIPS 30, display device 32 typically runs one or more applications that need access to one or more of the electronic files stored in memory system 106. In such cases, display device 32 sends a signal to CPU 100, via display device interface 130, requesting access to the particular electronic file. If CPU 100 grants the access, then CPU 100 will typically copy portions of the requested file and transmit the copied portions to display device 32, via interface 130, as needed by the particular application. In this way, the electronic file is maintained in memory system 106 so that it will be available for later use.

Particular applications running on display device 32 may also attempt to change portions of the one or more accesses electronic files. In such cases, display device will typically transmit to CPU 100, via interface 130, a stream of digital data that embodies some or all of the requested changes. If CPU 100 allows the requested changes, then CPU 100 changes the electronic files stored in memory system 106 accordingly. If wireless telephone 24 is in communication with WIPS 30, then CPU 100 also causes wireless telephone 24, via wireless telephone interface 132, to transmit change data, i.e., digital data that embodies the changes to the electronic files, over upstream wireless channel 26. If wireless telephone 24 is not in communication with WIPS 30, then CPU 100 waits until wireless telephone 24 is in communication with WIPS 30.

In some cases, the downstream data received by WIPS 30 may be encrypted. For example, attachments to e-mail messages are commonly encrypted. A common approach for such encryption uses a public key infrastructure (PKI), such as "Pretty Good Privacy" (PGP) software. In the PGP approach, each user is assigned two codes: a public key and a private key. Each user uses his or her own private key to decrypt messages intended for

that user, and uses an intended recipient's public key in order to encrypt messages intended for that recipient.

WIPS 30 preferably stores encrypted data in its encrypted form. Appropriate applications on display device 32 may then access the encrypted files stored in memory system 106 and decrypt them. For example, in the PGP approach, only users having the proper private key, which may be stored in display device 32, can decrypt the files stored in WIPS 30. Thus, having WIPS 30 store files in encrypted form provides better security by preventing users of display devices that do not have the proper private key from accessing the encrypted files.

On the other hand, the PGP approach of requiring that a sender maintain public keys for all intended recipients can consume substantial memory. In particular, each recipient's public key may be over a thousand characters long. Because many types of display devices, such as PDAs, have very limited memory, WIPS 30 may advantageously be used to store the public keys in its memory system 106.

WIPS 30 is powered by a battery 150 that is preferably rechargeable. Accordingly, WIPS 30 is provided with recharger contacts 152 to allow an external recharger to be connected. Charger circuitry 154 selectively couples recharging contacts 152 with battery 150 to control the process of recharging battery 150. Charger circuitry 154 preferably includes overcharge protection circuitry, such as is described in U.S. Patent No. 5,867,008, which is incorporated herein by reference.

Preferably, battery 150 may also be used as a supplemental power source for display device 32 and wireless telephone 24. Accordingly, WIPS 30 is preferably provided with display device power contacts 156, for electrical connection to recharger

contacts on display device 32, and with wireless telephone power contacts 158, for electrical connection to recharger contacts on wireless telephone 24. On-demand power management circuitry 160 selectively connects battery 150 to power contacts 156, and on-demand power management circuitry 162 selectively connects battery 150 to power contacts 158. On-demand power management circuitry 160 and 162 control the delivery of power to display device 32 and wireless telephone 24, respectively. Examples of such on-demand power management circuitry are described in co-pending U.S. Application No. 09/123,775, filed on July 28, 1998, which is incorporated herein by reference.

As shown in Figure 2, WIPS 30 may also include various inputs 170-178 for connecting various functional modules and external devices. CPU 100 communicates with inputs 170-178, typically via one or more auxiliary module controls 180. Inputs 170-178 may be standard peripheral ports, such as serial, parallel, or USB, or slots for standard-sized cards or modules, such as PCMCIA, CompactFlash, or Handspring™ Springboard™, depending on the external device or module to be connected. For example, WIPS 30 may include a bar-code reader input 170 for connecting a bar-code reader. For example, a bar code wand card, with integrated bar code scanner, is available from Socket Communications, Inc. (Newark, California) in a CompactFlash format. WIPS 30 may include a GPS receiver input 172 for connecting a global positioning system (GPS) receiver. For example, the Earthmate® GPS receiver, available from DeLorme (Yarmouth, Maine) can be connected to a serial port. WIPS 30 may include a keyboard input 174 for connecting an external keyboard. WIPS 30 may include a card reader input 176 for connecting a card reader. For example, the CardScan 500 business

card scanner, available from Corex Technologies Corp. (Cambridge, Massachusetts), can be connected to computers via a USB or parallel port.

In general, WIPS 30 may also include other inputs 178 for connecting other devices. Such other devices may include biometrics devices. For example, the
5 Ethenticator MS 3000 is a fingerprint verifier available from Ethentica (Lake Forest, California) in a PCMCIA format. Such other devices may also include other wireless devices. For example, the CUE Radio, available from CUE Corporation (Irvine, California), is a Handspring™ Springboard™ expansion module that is able to receive traffic, weather, and other data broadcast over FM subcarriers.

10 In addition, CPU 100 preferably has access to an internal real-time clock 182. CPU 100 may also control one or more status indicators 184. Status indicators 184 provide user-discernible indications of the status of WIPS 30. For example, one of status indicators 184 may indicate that WIPS 30 is on. Another one of status indicators 184 may indicate that WIPS 30 has received downstream data intended for it. Status
15 indicators 184 may provide a visible and/or audible indication. Thus, for example, one of status indicators 184 may light up or beep when WIPS 30 receives a new e-mail message.

Figures 3 and 4 show a preferred mechanical configuration for WIPS 30. In general, WIPS 30 is preferably configured to attach to a paper-based folio, such as a Day-Timer™ folio. Thus, WIPS 30 preferably includes a left section 200, corresponding to
20 the front cover of the paper folio, a right section 202, corresponding to the back cover of the paper folio, and a flexible section 204 joining sections 200 and 202. More particularly, left section 200 has a left folio-facing surface 206, against which the front cover of the paper folio may rest, and right section 202 has a right folio-facing surface

208, against which the back cover of the paper folio may rest. Left section 200 also has a top side 210, a left side 212, and a bottom side 214, as shown in Figure 3. Similarly, right section 202 has a top side 216, a right side 218 and a bottom side 220.

Flexible section 204 allows surface 206 of section 200 and surface 208 of section 202 to move toward and away from each other, as the paper folio is closed and opened, respectively. WIPS 30 is preferably provided with loose-leaf binder rings that can be opened and closed to attach and disattach, respectively, the paper folio to WIPS 30. Alternatively, other means could be used to attach WIPS 30 to the paper folio.

The internal components of WIPS 30, such as CPU 100 and battery 150, may be mounted inside of either left section 200 or right section 202, or they may be distributed between sections 200 and 202. Various slots, connectors, and other external components may be mounted on one or more of surfaces 206 and 208 and sides 210-220. For example, as shown in Figure 4, right side 218 may be provided with a PCMCIA slot 222, a flash memory slot 224, a serial port 226, a parallel port 228, a USB port 230, an IrDA port 232, and a specialized connector 234 for connecting a cable to wireless telephone 24. External components may also be provided in other locations in WIPS 30. For example, as shown in Figure 3, bottom side 220 may also be provided with slots, such as PCMCIA slots 236 and 238. Recharging contacts 152 may be provided in left side 212. External components may also be mounted on surfaces 206 and 208. For example, surface 206 may be provided with connectors 240 and 242 for connecting modules, such as Springboard™ modules, and may also include a connector 244 for connecting an external keyboard. Status indicators 250-256, which may be light emitting diodes (LEDs), may also be mounted on surface 208, as shown in Figure 3. Status indicators 250-256 may

indicate various conditions relating to WIPS 30, such as whether it is on, whether it has received new data, or certain types of files, such as new e-mail messages, whether it has available memory remaining, whether the battery is low, or whether WIPS 30 has encountered a fault condition. WIPS 30 may also have a GPS antenna 260, which may be built into top side 210, as shown in Figure 3, or built into a separate GPS module (not shown).

Although a representative configuration for mounting the external components for WIPS 30, such as slots and connectors, is shown in Figures 3 and 4, many other configurations may be used. In addition, although WIPS 30 may be connected to various external devices, such as an external keyboard, WIPS 30 preferably does not itself have a user interface or means for displaying the data that it stores. This is because display device 32 is intended to be used to perform these functions.

The approach of the present invention of providing a wireless intelligent personal server with a large memory and then using a display device to access files stored in the memory provides a number of advantages over existing wireless approaches. First, in contrast to prior art approaches of providing only specific devices with wireless functionality, preferred approaches of the present invention are substantially device independent, in that different display devices may be used to access the WIPS at different times.

Second, the preferred embodiments of the present invention provide a low apparent latency. In particular, although latency may be associated with transmitting downstream data to the WIPS, because the downstream data is “pushed” to the WIPS, i.e., transmitted without the user having to ask for it, and because the WIPS automatically

receives the downstream data and updates its memory accordingly, the up-to-date information, such as the user's new e-mail messages and the current schedule, will be available on the WIPS on a nearly continual basis. Thus, in contrast to many prior art approaches, such as the WAP "pull" approach, a user need not incur airtime to retrieve
5 the up-to-date information. Instead, the user may simply and easily access the up-to-date information by bringing the WIPS into communication with the display device.

Third, the preferred embodiments of the present invention substantially standardize the process of retrieving data over wireless communications channels. This is because the WIPS stores its data in a very generic format, namely electronic files,
10 which display devices may then access in much the same way that they access files on hard drives or network servers. The preferred embodiments of the present invention do not need either proprietary file formats or proprietary synchronization routines to allow display devices to access the data stored in the WIPS. Accordingly, little or no modification may be required to use existing applications on many display devices.

15 Although various embodiments of this invention have been shown and described, it should be understood that various modifications and substitutions, as well as rearrangements and combinations of the preceding embodiments, can be made by those skilled in the art, without departing from the novel spirit and scope of this invention. Accordingly, the true spirit and scope of the invention is defined by the appended claims,
20 to be interpreted in light of the foregoing specification.

What is claimed is:

1. A wireless intelligent personal server, comprising:
 - a radio frequency (RF) receiver for receiving downstream data transmitted over a first wireless communications channel;
 - 5 a memory;
 - a central processing unit (CPU);
 - a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and
 - 10 a first interface for allowing an external display device to access said at least one electronic file.
2. The wireless intelligent personal server of claim 1, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in
15 said memory.
3. The wireless intelligent personal server of claim 1, wherein said at least one electronic file is a new electronic file.
- 20 4. The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device read-only access to said at least one electronic file.

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5. The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device to change said at least one electronic file.

6. The wireless intelligent personal server of claim 1, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

7. The wireless intelligent personal server of claim 6, wherein said external display device is a personal digital assistant (PDA).

8. The wireless intelligent personal server of claim 1, wherein said first interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

9. The wireless intelligent personal server of claim 1, further comprising:
a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

10. The wireless intelligent personal server of claim 9, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

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11. The wireless intelligent personal server of claim 10, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

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12. The wireless intelligent personal server of claim 1, further comprising:
a second interface for controlling a wireless telephone to transmit at least one signal.

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13. The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

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14. The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device.

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15. The wireless intelligent personal server of claim 12, further comprising:
a battery for powering said wireless intelligent personal server.

16. The wireless intelligent personal server of claim 15, further comprising:
first power contacts for electrically connecting to recharger contacts disposed on
said external display device; and
a first power management circuit for selectively connecting said battery to said
5 first power contacts.

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17. The wireless intelligent personal server of claim 15, further comprising:
second power contacts for electrically connecting to recharger contacts disposed
on said wireless telephone; and
10 a second power management circuit for selectively connecting said battery to said
second power contacts.

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18. The wireless intelligent personal server of claim 1, further comprising:
a bar-code input for connecting a bar-code reader.

19. The wireless intelligent personal server of claim 1, further comprising:
a GPS input for connecting a global positioning system (GPS) receiver.

20. The wireless intelligent personal server of claim 1, further comprising:
20 a keyboard input for connecting an external keyboard.

21. The wireless intelligent personal server of claim 1, further comprising:
a card reader input for connecting a card reader.

22. A wireless data communication system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent personal server processing said downstream data to provide at least one electronic file in said memory; and

a wireless telephone in communication with said wireless intelligent personal server, said wireless telephone transmitting an acknowledgment signal over a second wireless communications channel when said wireless intelligent personal server receives said downstream data.

23. The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes an interface for allowing an external display device to access said at least one electronic file.

24. The wireless data communication system of claim 23, wherein said interface allows said external display device read-only access to said at least one electronic file.

25. The wireless data communication system of claim 23, wherein said interface allows said external display device to change said at least one electronic file.

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26. The wireless data communication system of claim 23, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, personal digital assistant (PDA), and set-top television controller box.

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27. The wireless data communication system of claim 26, wherein said external display device is a personal digital assistant (PDA).

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28. The wireless data communication system of claim 23, wherein said interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

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29. The wireless data communication system of claim 23, wherein said wireless telephone transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

30. The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

31. The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

5 a first power management circuit for selectively connecting said battery to said first power contacts.

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32. The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

10 second power contacts electrically connected to recharger contacts disposed on said external display device; and

a second power management circuit for selectively connecting said battery to said first power contacts.

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33. A wireless data display system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said
20 wireless intelligent personal server processing said downstream data to provide at least one electronic file; and

a display device in communication with said wireless intelligent personal server, said display device having at least one application that accesses said at least one electronic file to display information to a user.

5 34. The wireless data display system of claim 33, wherein said at least one application is able to change said at least one electronic file stored in said memory.

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35. The wireless data display system of claim 33, wherein said display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

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36. The wireless data display system of claim 35, wherein said display device is a personal digital assistant (PDA).

37. The wireless data display system of claim 33, wherein wireless intelligent personal server includes a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

20 38. The wireless data display system of claim 37, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

39. The wireless data display system of claim 37, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said display device.

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40. The wireless data display system of claim 33, wherein said wireless intelligent personal server includes an interface for controlling a wireless telephone to transmit at least one signal.

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41. The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

42. The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said display device.

43. The wireless data display system of claim 33, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

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44. The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said display device; and

5 a first power management circuit for selectively connecting said battery to said first power contacts.

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45. The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

10 second power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

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46. A method for updating a target electronic file to reflect changes made to a source electronic file, said method comprising the steps of:

storing said target electronic file in a wireless intelligent personal server;

20 said wireless intelligent personal server receiving downstream data transmitted over a first wireless communications channel, said downstream data reflecting said changes made to said source electronic file;

said wireless intelligent personal server automatically updating said target electronic file with said downstream data to provide an updated electronic file;

bringing an external display device into communication with said wireless intelligent personal server; and

accessing said updated electronic file with said display device.

5 47. The method of claim 46, further comprising the step of:

said wireless intelligent personal server transmitting at least one signal over a second wireless communications channel.

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10 48. The method of claim 47, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

15 49. The method of claim 46, further comprising the step of:

said wireless intelligent personal server causing a wireless telephone to transmit at least one signal over a second wireless communications channel.

20 50. The method of claim 49, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

51. A method for creating, without user intervention, an electronic file on a wireless intelligent personal server, said method comprising the steps of:

said wireless intelligent personal server receiving downstream data transmitted over a first wireless communications channel;

said wireless intelligent personal server automatically creating said electronic file from said downstream data;

bringing an external display device into communication with said wireless intelligent personal server; and

5 accessing said electronic file with said display device.

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52. The method of claim 51, further comprising the step of:

said wireless intelligent personal server transmitting at least one signal over a second wireless communications channel.

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53. The method of claim 52, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

54. The method of claim 51, further comprising the step of:

15 said wireless intelligent personal server causing a wireless telephone to transmit at least one signal over a second wireless communications channel.

55. The method of claim 54, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

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ABSTRACT

A wireless intelligent personal server includes a radio frequency (RF) receiver, a memory for storing electronic files, a set of embedded machine language instructions, a central processing unit (CPU), a first interface for a display device, such as a personal digital assistant (PDA), and a second interface for a wireless telephone. The RF receiver receives downstream data transmitted over a downstream wireless communications channel. The CPU executes the machine language instructions to process the downstream data and, thereby, either update an existing target electronic file stored in the memory, so that the target electronic file reflects changes made to a source electronic file, or create a new electronic file in the memory. A display device may be brought into communication with the wireless intelligent personal server, via the first interface, to access the electronic files stored in the memory. The wireless intelligent personal server may also transmit an upstream signal over an upstream wireless communication channel, such as by using a wireless telephone, in communication via the second interface. The upstream signal may acknowledge receipt of the downstream data, or it may include upstream data reflecting changes to the electronic files stored in the memory made by the display device.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Attorney's Docket No. MBHB00-399)

Applicant or
Patentee: Edward F. Bachner, III, et al.

Serial or
Patent No. _____ Filed or
Issued: _____

Title: **WIRELESS INTELLIGENT PERSONAL SERVER**

**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 C.F.R. § 1.9(f) AND § 1.27(e)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

- the owner of the small business concern identified below:
 an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN **Double-Time Corporation**

ADDRESS OF CONCERN **110 East Schiller Street, Suite 203, Elmhurst, Illinois 60126**

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 C.F.R. § 121, and referenced in 37 C.F.R. § 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time, or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled Wireless Intelligent Personal Server by inventor(s) Edward F. Bachner III, John Major, and Xin Du.

- 1 -

described in

- the specification filed herewith.
 Application Serial No. _____, filed _____.
 Patent No. _____, issued _____.

If the rights held by the above identified small business concern are not exclusive, each individual concern or organization having rights in the invention must file verified statements averring to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR § 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR § 1.9(d), or a nonprofit organization under 37 CFR § 1.9(e).

Each person, concern or organization having any rights to the invention is listed below:

- No such person, concern or organization exists.
 Each such person, concern or organization is listed below.

Separate verified statements are required from each named person, concern or organization having rights in the invention averring to their status as small entities. (37 CFR § 1.27).

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. § 1.28(b))

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, any patent issuing therein, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: Edward F. Bachner, III

TITLE IN ORGANIZATION: Chief Technology Officer and Vice Chairman

ADDRESS OF PERSON SIGNING: 110 East Schiller Street, Suite 203, Elmhurst, Illinois 60126

Signature: Edward F. Bachner

Date: 31 August 2000

- 2 -

**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 as stated below next to my name.

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 claimed and for which a patent is sought on the invention entitled:

WIRELESS INTELLIGENT PERSONAL SERVER

the specification of which is attached hereto unless the following space is checked:

was filed on _____ as United States Application Serial Number _____.

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

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

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 international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

Number Country Day/Month/Year Filed

1.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number Filing Date

1.

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, 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 information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application Number Filing Date Status: patented, pending, abandoned

1.

I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and I direct that all correspondence be addressed to that Customer Number.

Customer Number: **020306**
Principal attorney or agent: Richard A. Machonkin
Telephone number: 312-913-0001

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.

Full name of first inventor: Edward F. Bachner, III

Inventor's signature: Edward F. Bachner, III Date: 8/31/00
Residence: Lockport, Illinois
Citizenship: US
Post Office Address: 15522 West Hawk Haven Road, Lockport, Illinois 60441

Full name of second joint inventor: John Major

Inventor's signature: _____ Date: _____
Residence: Rancho Santa Fe, California
Citizenship: US
Post Office Address: 16720 Las Cuestas, Rancho Santa Fe, California 92067

Full name of third joint inventor: Xin Du

Inventor's signature: Xin Du Date: 8/31/00
Residence: Bartlett, Illinois
Citizenship: People's Republic of China
Post Office Address: 1536 Knoll Crest, Bartlett, Illinois 60103

**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 as stated below next to my name.

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 claimed and for which a patent is sought on the invention entitled:

WIRELESS INTELLIGENT PERSONAL SERVER

the specification of which is attached hereto unless the following space is checked:

was filed on _____ as United States Application Serial Number _____.

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

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

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 international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

Number Country Day/Month/Year Filed

1.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number Filing Date

1.

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, 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 information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application Number Filing Date Status: patented, pending, abandoned

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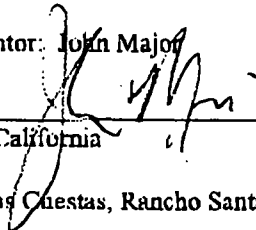
I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and I direct that all correspondence be addressed to that Customer Number.

Customer Number: 020306
Principal attorney or agent: Richard A. Machonkin
Telephone number: 312-913-0001

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.

Full name of first inventor: Edward F. Bachner, III

Inventor's signature: _____ Date: _____
Residence: Lockport, Illinois
Citizenship: US
Post Office Address: 15522 West Hawk Haven Road, Lockport, Illinois 60441

Full name of second joint inventor: John Major
Inventor's signature:  Date: 5/7/00
Residence: Rancho Santa Fe, California
Citizenship: US
Post Office Address: 16720 Las Cuestas, Rancho Santa Fe, California 92067

Full name of third joint inventor: Xin Du

Inventor's signature: _____ Date: _____
Residence: Bartlett, Illinois
Citizenship: People's Republic of China
Post Office Address: 1536 Knoll Crest, Bartlett, Illinois 60103



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



Bib Data Sheet

| | | | | |
|---|---|-------------------------------|---|--|
| SERIAL NUMBER 09/652,734 | FILING DATE 08/31/2000 RULE - | CLASS 455 | GROUP ART UNIT 2681 | ATTORNEY DOCKET NO. MBHBOO-399 |
| APPLICANTS Edward F. Bachner III, Lockport, IL ; John Major, Rancho Santa Fe, CA ; Xin Du, Bartlett, IL ; | | | | |
| ** CONTINUING DATA ***** <i>KE NONE</i> | | | | |
| ** FOREIGN APPLICATIONS ***** <i>KE NONE</i> | | | | |
| IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 10/17/2000 ** SMALL ENTITY ** | | | | |
| Foreign Priority claimed 35 USC 119 (a-d) conditions met | <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance | STATE OR COUNTRY IL | SHEETS DRAWING 3 | TOTAL CLAIMS 55 |
| Verified and Acknowledged | Examiner's Signature <i>JK</i> Initials | | | INDEPENDENT CLAIMS 5 |
| ADDRESS 020306 | | | | |
| TITLE Wireless intelligent personal server | | | | |
| FILING FEE RECEIVED 738 | FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following: | | <input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit | |

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

09/11/2000 JWASHING 00000164 09652734

| | | |
|-----------|--------|----|
| 01 FC:201 | 345.00 | OP |
| 02 FC:202 | 78.00 | OP |
| 03 FC:203 | 315.00 | OP |

Repln. Ref: 09/11/2000 JWASHING 0018584600
DAH:132490 Name/Number:09652734
FC: 704 \$40.00 CR

PTO-1556
(5/87)

*U.S. GPO: 1999-459-082/19144

PATENT APPLICATION FEE DETERMINATION RECORD

Effective December 29, 1999

Application or Docket Number

652734

CLAIMS AS FILED - PART I

(Column 1) (Column 2)

| FOR | NUMBER FILED | NUMBER EXTRA |
|----------------------------------|-----------------|--------------|
| BASIC FEE | | |
| TOTAL CLAIMS | 55 minus 20 = * | 35 |
| INDEPENDENT CLAIMS | 5 minus 3 = * | 2 |
| MULTIPLE DEPENDENT CLAIM PRESENT | | |

SMALL ENTITY TYPE OR

OTHER THAN SMALL ENTITY

| RATE | FEE | | RATE | FEE |
|--------|-------------------|------|--------|--------|
| | 345.00 | ② OR | | 690.00 |
| X\$ 9= | 315 ⁰⁰ | OR | X\$18= | |
| X39= | 78 ⁰⁰ | OR | X78= | |
| +130= | | OR | +260= | |
| TOTAL | 738 ⁰⁰ | OR | TOTAL | |

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

CLAIMS AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

| AMENDMENT A | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
|--|----------------------------------|-------|------------------------------------|---------------|
| | Total | * 76 | Minus | ** 55 |
| Independent | * 7 | Minus | *** 5 | = 2 |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM | | | | |

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

| RATE | ADDITIONAL FEE | | RATE | ADDITIONAL FEE |
|------------------|----------------|----|------------------|----------------|
| X\$ 9= | 189 | OR | X\$18= | |
| X39= | 84 | OR | X78= | |
| +130= | 0 | OR | +260= | |
| TOTAL ADDIT. FEE | 273 | OR | TOTAL ADDIT. FEE | |

(Column 1) (Column 2) (Column 3)

| AMENDMENT B | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
|--|----------------------------------|-------|------------------------------------|---------------|
| | Total | * | Minus | ** |
| Independent | * | Minus | *** | = |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM | | | | |

| RATE | ADDITIONAL FEE | | RATE | ADDITIONAL FEE |
|------------------|----------------|----|------------------|----------------|
| X\$ 9= | | OR | X\$18= | |
| X39= | | OR | X78= | |
| +130= | | OR | +260= | |
| TOTAL ADDIT. FEE | | OR | TOTAL ADDIT. FEE | |

(Column 1) (Column 2) (Column 3)

| AMENDMENT C | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
|--|----------------------------------|-------|------------------------------------|---------------|
| | Total | * | Minus | ** |
| Independent | * | Minus | *** | = |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM | | | | |

| RATE | ADDITIONAL FEE | | RATE | ADDITIONAL FEE |
|------------------|----------------|----|------------------|----------------|
| X\$ 9= | | OR | X\$18= | |
| X39= | | OR | X78= | |
| +130= | | OR | +260= | |
| TOTAL ADDIT. FEE | | OR | TOTAL ADDIT. FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



PATENT

UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

| | | |
|----------------------------------|---|---------------------------------|
| In the Application of: |) | |
| |) | |
| Bachner III, et al. |) | Art Unit: 2681 |
| |) | |
| Serial No.: 09/652,734 |) | |
| |) | Examiner: To Be Assigned |
| Filed: August 31, 2000 |) | |
| |) | |
| For: Wireless Intelligent |) | |
| Personal Server |) | |

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8/15/01
MB

INFORMATION DISCLOSURE STATEMENT

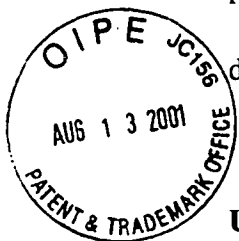
Commissioner for Patents
Washington, D.C. 20231-9999

Dear Sir:

Pursuant to the duty of disclosure provided by 35 C.F.R. § 1.56 and §§ 1.97-98, the applicants wish to make the following references of record in the above-identified application. Copies of the references are submitted herewith. These references are also listed in the enclosed Form PTO-1449. It is requested that the documents be given careful consideration and that they be cited of record in the prosecution history of the present application so that they will appear on the face of the patent issuing from the present application.

Portions of the references may be material to the examination of the pending claims, however no such admission is intended. 37 C.F.R. 1.97 (h). The references have not been reviewed in sufficient detail to make any other representation and, in particular, no representation is intended as to the relative importance of any portion of the

references. This Statement is not a representation that the cited references have effective dates early enough to be "prior art" within the meaning of 35 U.S.C. sections 102 or 103.



CITED REFERENCES

U.S. Patent Documents

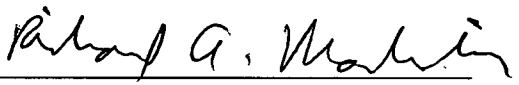
| <u>Document Number</u> | <u>Date</u> | <u>Name</u> | <u>Class</u> | <u>Filing Date</u> <u>If appropriate</u> |
|------------------------|-------------|-----------------------|--------------|---|
| 4477807 | 10/16/84 | Nakajima et al. | 340/825.44 | 06/04/82 |
| 5043721 | 08/27/91 | May | 340/825.44 | 12/18/89 |
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| 5689825 | 11/18/97 | Averbuch et al. | 455/89 | 07/28/95 |
| 5719936 | 02/17/98 | Hillenmayer | 379/447 | 02/29/96 |
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Other Documents

1. Minds@Work Digital Wallet Installation Guide and User's Guide, 06/30/00, pp. 1-44.
2. Sprint PCS Data Kit User Guide, 1999, Sprint Spectrum L.P., pp. 1, 42-67.
3. Ethentica company information, and Ethenticator MS 3000 product description and specifications, <http://www.ethentica.com/>, August 16, 2000.
4. Socket Communications, Inc. corporate information, Bar Code Wand overview and Bar Code Laser Scanner Card overview, <http://www.socketcom.com/>, August 16, 2000.
5. Socket Communications, Inc. Digital Phone Cards overview, and frequently asked questions & answers, <http://www.socketcom.com/>, July 24, 2000.
6. CUE Corporation company info, and CUE Radio overview, <http://www.cue.net/>, August 11, 2000.

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff

Date: August 10, 2001

By: 
Richard A. Machonkin
Registration No. 41,962



COPY OF PAPERS
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2681

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

PATENT

COPY OF PAPERS
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#3
8/24/02
MB

In the Application of:)
)
Bachner III, et al.)
)
Serial No.: 09/652,734)
)
Filed: August 31, 2000)
)
For: Wireless Intelligent)
Personal Server)

Art Unit: 2681

Examiner: To Be Assigned

Commissioner for Patents
Washington, D.C. 20231-9999

RECEIVED

AUG 14 2002

Technology Center 2600

TRANSMITTAL LETTER

1. We are transmitting herewith the attached papers for the above-identified patent application:

- Information Disclosure Statement
- Form PTO-1449 (1 sheet)
- Copies of cited references (1 US Patent and 2 Other Documents)
- Return Receipt Postcard

2. **GENERAL AUTHORIZATION TO CHARGE OR CREDIT FEES:** Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490. A duplicate copy of this sheet is enclosed.

3. **CERTIFICATE OF MAILING UNDER 37 CFR § 1.8:** The undersigned hereby certifies that this Transmittal Letter and the papers, as described in paragraph 1 herein-above, are being deposited with the United States Postal Service with sufficient postage as "First Class Mail" in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on this 25^h day of July, 2002.

By: Richard A. Machonkin
Richard A. Machonkin
Registration No. 41,962



#5/a
PRE
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J2-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No. MBHB00-399)

In the Application of:)
)
Bachner III, et al.)
)
Serial No.: 09/652,734)
)
Filing Date: August 31, 2000)
)
For: Wireless Intelligent Personal Server)

Examiner: Unassigned
Group Art Unit: 2681

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

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AUG 19 2002

Dear Sir:

Technology Center 2600

Please enter the following amendments.

In the claims:

Please add new claims 56-76 as follows:

56. (New) A wireless intelligent personal server, comprising:
a radio frequency (RF) transceiver for receiving downstream data transmitted over a first
wireless communications channel;
a memory;
a central processing unit (CPU);
a set of embedded machine language instructions, said set of embedded machine
language instructions being executable by said CPU for processing said downstream data to
provide at least one electronic file in said memory; and
a first interface for allowing an external display device to access said at least one
electronic file.

a!

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TELEPHONE (312) 913-0001

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INDEXED
AUG 20 2002
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57. (New) The wireless intelligent personal server of claim 56, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

58. (New) The wireless intelligent personal server of claim 56, wherein said at least one electronic file is a new electronic file.

59. (New) The wireless intelligent personal server of claim 56, wherein said first interface allows said external display device access to said at least one electronic file.

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cont
60. (New) The wireless intelligent personal server of claim 56, wherein said first interface allows said external display device to change said at least one electronic file.

61. (New) The wireless intelligent personal server of claim 56, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

62. (New) The wireless intelligent personal server of claim 61, wherein said external display device is a personal digital assistant (PDA).

63. (New) The wireless intelligent personal server of claim 56, wherein said RF transceiver transmits at least one signal over a second wireless communications channel.

64. (New) The wireless intelligent personal server of claim 63, wherein said RF transceiver transmits an acknowledgement signal over said second wireless communications channel when said RF transceiver receives said downstream data.

65. (New) The wireless intelligent personal server of claim 64, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

66. (New) The wireless intelligent personal server of claim 56, further comprising:
a bar-code input for connecting a bar-code reader.

al
cont 67. (New) The wireless intelligent personal server of claim 56, further comprising:
a GPS input for connecting a global positioning system (GPS) receiver.

68. (New) The wireless intelligent personal server of claim 56, further comprising:
a keyboard input for connecting an external keyboard.

69. (New) The wireless intelligent personal server of claim 56, further comprising:
a card reader input for connecting a card reader.

70. (New) A wireless data display system, comprising:
a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) transceiver, said RF transceiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless

intelligent personal server processing said downstream data to provide at least one electronic file;
and

a display device in communication with said wireless intelligent personal server, said display device having at least one application that accesses said at least one electronic file to display information to a user.

71. (New) The wireless data display system of claim 70, wherein said at least one application is able to change said at least one electronic file stored in said memory.

all cont
72. (New) The wireless data display system of claim 70, wherein said display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

73. (New) The wireless data display system of claim 70, wherein said display device is a personal digital assistant (PDA).

74. (New) The wireless data display system of claim 70, wherein said RF transceiver transmits an acknowledgement signal over a second wireless communications channel when said RF transceiver receives said downstream data.

75. (New) The wireless data display system of claim 74, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said display device.

*al
cont*

76. (New) The wireless data display system of claim 70, wherein said wireless intelligent personal server includes a battery for powering said display device.

Respectfully submitted,

Date: August 6, 2002

Richard A. Machonkin
Richard A. Machonkin
Registration No. 41,962

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

2001/11

In re Application of:

Bachner III, et al.

Serial No.: 09/652,734

Filed: August 31, 2000

For: WIRELESS INTELLIGENT PERSONAL SERVER



Examiner:

Group Art Unit: 2681

COPY OF PAPERS
ORIGINALLY FILED

Commissioner for Patents
Washington, D.C. 20231

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AUG 19 2002

Technology Center 2600

TRANSMITTAL LETTER

Sir:

In regard to the above identified application:

1. We are transmitting herewith the attached:

- a) Preliminary Amendment
- b) Second Supplemental Information Disclosure Statement
- c) Form PTO-1449 (1 sheet)
- d) Copy of the cited reference (1 US Patent)
- e) Return Receipt Postcard

2. With respect to additional fees:

A. No additional fee is required.

B. An additional fee is required and has been calculated as shown below:

| CLAIMS AS AMENDED | | | | | | |
|--|--|-------|--|-------------------------|-------------|--------------------------|
| (1) | (2) Claims Remaining After Amendment | (3) | (4) Highest No. Previously Paid For | (5) Present Extra | (6) Rate | (7) Additional Fee |
| Total Claims | 76 | Minus | 55 | 21 | X \$9 | \$189.00 |
| Indep. Claims | 7 | Minus | 5 | 2 | X \$42 | \$84.00 |
| Total Additional Fee For this Amendment | | | | | \$273.00 | |

C. Attached is a check in the amount of \$273.00.

D. Charge the total additional fee to our Deposit Account No. 13-2490.
A duplicate copy of this sheet is enclosed.

3. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490.
A duplicate copy of this sheet is enclosed.

4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1 hereinabove, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on this 6th day of August, 2002.

By: Richard A. Machonkin
Richard A. Machonkin
Reg. No. 41,962



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No. MBHB00-399)

6/B
3/4/03
MB

In the Application of:)
)
 Bachner III, et al.)
)
 Serial No.: 09/652,734)
)
 Filing Date: August 31, 2000)
)
 For: Wireless Intelligent Personal Server)

Examiner: Unassigned

Group Art Unit: 2681

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

RECEIVED

MAR 04 2003

Dear Sir:

Technology Center 2600

Please enter the following amendments.

In the claims:

Please add new claims 77-80 as follows:

77. (New) The wireless intelligent personal server of claim 56, further comprising a second interface for controlling a wireless telephone to transmit at least one signal.

B1

78. (New) The wireless data display system of claim 70, wherein said wireless intelligent personal server includes an interface for controlling a wireless telephone to transmit at least one signal.

79. (New) The wireless intelligent personal server of claim 8, wherein said first and second external display devices are different kinds of display device.

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McDONNELL BOEHNEN
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TELEPHONE (312) 913-0001

B1
80. (New) The wireless data communication system of claim 28, wherein said first and second external display devices are different kinds of display device.

Respectfully submitted,

Date: February 21, 2003

Richard A. Machonkin
Richard A. Machonkin
Registration No. 41,962



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

In re: Application of:)
Bachner III, et al.) Examiner: Unassigned
Serial No.: 09/652,734)
Group Art Unit: 2681
Filed: August 31, 2000)
For: WIRELESS INTELLIGENT PERSONAL SERVER)

Commissioner for Patents
Washington, D.C. 20231

TRANSMITTAL LETTER

Sir:
In regard to the above identified application:

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MAR 04 2003

Technology Center 2600

- 1. We are transmitting herewith the attached:
 - a) Preliminary Amendment
 - b) Return Receipt Postcard

- 2. With respect to additional fees:
 - a) An additional fee is required and has been calculated as shown below:

| CLAIMS AS AMENDED | | | | | | |
|--|--|-------|--|-------------------------|-------------|--------------------------|
| (1) | (2) Claims Remaining After Amendment | (3) | (4) Highest No. Previously Paid For | (5) Present Extra | (6) Rate | (7) Additional Fee |
| 80 | 80 | Minus | 76 | 4 | X \$9 | \$36.00 |
| Total Additional Fee For this Amendment | | | | | \$36.00 | |

3. X Charge the total additional fee to our Deposit Account No. **13-2490**. A duplicate copy of this sheet is enclosed.

4. Please charge any additional fees or credit overpayment to Deposit Account No. **13-2490**. duplicate copy of this sheet is enclosed.

5. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1 hereinabove, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on this 21st day of February 21, 2003

By: Richard A. Machonkin
Richard A. Machonkin
Reg. No. 41,962

| L Number | Hits | Search Text | DB | Time stamp |
|----------|-------|---|--------------------|------------------|
| - | 360 | 455/419.ccls. | USPAT; US-PGPUB | 2003/04/01 13:33 |
| - | 26 | file with memory and 455/419.ccls. | USPAT; US-PGPUB | 2003/03/25 15:31 |
| - | 24 | display\$3 and (file with memory and 455/419.ccls.) | USPAT; US-PGPUB | 2003/03/25 15:49 |
| - | 14515 | (downstream or download\$3) with (software or file) | USPAT; US-PGPUB | 2003/03/25 15:50 |
| - | 56 | 455/419.ccls. and ((downstream or download\$3) with (software or file)) | USPAT; US-PGPUB | 2003/03/25 15:50 |
| - | 39111 | display\$3 with (software or file) | USPAT; US-PGPUB | 2003/03/25 15:51 |
| - | 17 | (455/419.ccls. and ((downstream or download\$3) with (software or file))) and (display\$3 with (software or file)) | USPAT; US-PGPUB | 2003/03/25 15:51 |
| - | 59755 | (plural\$4 or multi or multiple) near4 display\$ | USPAT; US-PGPUB | 2003/04/01 11:17 |
| - | 714 | 455/418-420.ccls. | USPAT; US-PGPUB | 2003/04/01 12:30 |
| - | 43 | ((plural\$4 or multi or multiple) near4 display\$) and 455/418-420.ccls. | USPAT; US-PGPUB | 2003/04/01 11:16 |
| - | 61196 | (plural\$4 or multi or multiple or dual) near4 display\$ | USPAT; US-PGPUB | 2003/04/01 11:18 |
| - | 43 | ((plural\$4 or multi or multiple) near4 display\$) and 455/418-420.ccls.) and ((plural\$4 or multi or multiple or dual) near4 display\$) | USPAT; US-PGPUB | 2003/04/01 11:27 |
| - | 268 | 455/566.ccls. and ((plural\$4 or multi or multiple or dual) near4 display\$) | USPAT; US-PGPUB | 2003/04/01 11:27 |
| - | 48 | pda and (455/566.ccls. and ((plural\$4 or multi or multiple or dual) near4 display\$)) | USPAT; US-PGPUB | 2003/04/01 12:25 |
| - | 37 | download\$3 and (455/566.ccls. and ((plural\$4 or multi or multiple or dual) near4 display\$)) | USPAT; US-PGPUB | 2003/04/01 11:28 |
| - | 4 | shar\$3 near3 display and 455/566.ccls. | USPAT; US-PGPUB | 2003/04/01 12:26 |
| - | 483 | 455/418-420.ccls. and display | USPAT; US-PGPUB | 2003/04/01 12:30 |
| - | 185 | download\$3 and (455/418-420.ccls. and display) | USPAT; US-PGPUB | 2003/04/01 12:31 |
| - | 17 | 455/566.ccls. and charg\$3 same contact | USPAT; US-PGPUB | 2003/04/01 13:41 |
| - | 411 | pda and charg\$ same contact | USPAT; US-PGPUB | 2003/04/01 13:48 |
| - | 1 | 455/556.ccls. and (pda and charg\$ same contact) | USPAT; US-PGPUB | 2003/04/01 13:42 |
| - | 3 | 455/573.ccls. and (pda and charg\$ same contact) | USPAT; US-PGPUB | 2003/04/01 13:43 |
| - | 271 | display and (pda and charg\$ same contact) | USPAT; US-PGPUB | 2003/04/01 13:43 |
| - | 3 | 455/556,557.ccls. and (display and (pda and charg\$ same contact)) | USPAT; US-PGPUB | 2003/04/01 13:44 |
| - | 25 | 455/\$.ccls. and (display and (pda and charg\$ same contact)) | USPAT; US-PGPUB | 2003/04/01 13:55 |
| - | 197 | 455/573.ccls. | USPAT; US-PGPUB | 2003/04/01 13:48 |
| - | 63 | charg\$ same contact and 455/573.ccls. | USPAT; US-PGPUB | 2003/04/01 13:54 |
| - | 26 | display and (charg\$ same contact and 455/573.ccls.) | USPAT; US-PGPUB | 2003/04/01 13:49 |
| - | 1448 | charg\$ same contact same display | USPAT; US-PGPUB | 2003/04/01 13:55 |
| - | 237 | (mobile or wireless or cellular) and (charg\$ same contact same display) | USPAT; US-PGPUB | 2003/04/01 14:27 |
| - | 25 | 455/\$.ccls. and ((mobile or wireless or cellular) and (charg\$ same contact same display)) | USPAT; US-PGPUB | 2003/04/01 14:28 |
| - | 46 | card adj reader and gps and 455/\$.ccls. | USPAT; US-PGPUB | 2003/04/01 14:25 |

| | | | | |
|---|--------|---|----------|------------------|
| - | 591429 | charg\$6 or recharg\$6 near3 display | USPAT; | 2003/04/01 14:28 |
| - | 70284 | (mobile or wireless or cellular) and (charg\$6 or recharg\$6 near3 display) | US-PGPUB | 2003/04/01 14:29 |
| - | 4201 | 455/\$.ccls. and ((mobile or wireless or cellular) and (charg\$6 or recharg\$6 near3 display)) | USPAT; | 2003/04/01 14:29 |
| - | 4313 | (charg\$6 or recharg\$6) near3 display | US-PGPUB | 2003/04/01 14:29 |
| - | 798 | (mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display) | USPAT; | 2003/04/01 14:56 |
| - | 94 | 455/\$.ccls. and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | US-PGPUB | 2003/04/01 14:36 |
| - | 282 | (contact or terminal) with display and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | USPAT; | 2003/04/01 14:38 |
| - | 107 | (charg\$3 or recharg\$4) with (contact or terminal) with display and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | US-PGPUB | 2003/04/01 14:56 |
| - | 71 | (charg\$3 or recharg\$4) same (contact or terminal) near3 display and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | USPAT; | 2003/04/01 14:45 |
| - | 116 | recharg\$4 near3 display | US-PGPUB | 2003/04/01 15:01 |
| - | 36 | (mobile or wireless or cellular) and (recharg\$4 near3 display) | USPAT; | 2003/04/01 15:02 |
| - | 153 | recharg\$4 same power\$3 near3 display | US-PGPUB | 2003/04/01 15:02 |
| - | 62 | (mobile or wireless or cellular or radio) and (recharg\$4 same power\$3 near3 display) | USPAT; | 2003/04/01 15:02 |
| - | 52 | ("D281977" "3685723" "3826900" "3971925" "4006397" "4121574" "4143417" "4180204" "4210802" "4227258" "4251798" "4279021" "4335303" "4359631" "4408120" "4409470" "4411016" "4456793" "4460120" "4471165" "4471345" "4481382" "4483683" "4486624" "4488035" "4488678" "4489313" "4491725" "4496831" "4503288" "4508935" "4519066" "4523087" "4528443" "4528444" "4569421" "4570057" "4575625" "4578571" "4588881" "4593155" "4621189" "4625276" "4628193" "4634810" "4654818" "4680455" "4692740" "4739316" "4773032" "4806906" "4835372").PN. | USPAT | 2003/04/01 15:23 |
| - | 470 | 455/418-420.ccls. | USPAT | 2003/04/02 11:39 |
| - | 10170 | download\$ same (software or file) | USPAT | 2003/04/02 11:50 |
| - | 57 | 455/418-420.ccls. and (download\$ same (software or file)) | USPAT | 2003/04/02 11:40 |
| - | 154 | download\$ and 455/418-420.ccls. | USPAT | 2003/04/02 12:29 |
| - | 31 | ("4731605" "5062132" "5077790" "5297191" "5297192" "5333177" "5414751" "5481259" "5485505" "5524135" "5594782" "5603084" "5619213" "5649321" "5799084" "5821903" "5878339" "5881235" "5903835" "5909183" "5926756" "5930703" "5937347" "5940752" "5956634" "5974312" "6014561" "6029065" "6041229" "6043780" "6122523").PN. | USPAT | 2003/04/02 11:55 |
| - | 0 | 6487403.URPN. | USPAT | 2003/04/02 11:58 |
| - | 19 | ("4016542" "4456793" "4661659" "4700378" "4850009" "4916441" "4969180" "5153903" "5157687" "5249220" "5349638" "5533097" "5636211" "5655214" "5671267" "5771453" "5802467" "5831664" "5949775").PN. | USPAT | 2003/04/02 12:03 |
| - | 4 | 6289213.URPN. | USPAT | 2003/04/02 12:04 |
| - | 27 | ("4112252" "4232299" "4775928" "5045948" "5111296" "5204768" "5359367" "5365264" "5396546" "5428388" "5428806" "5539478" "5563630" "5574964" "5592482" "5602854" "5608449" "5729535" "5732212" "5736968" "5745483" "5787259" "5790201" "5805806" "5844893" "5880721" "6008777").PN. | USPAT | 2003/04/02 12:10 |
| - | 7 | ("4414661" "4837858" "4940974" "4984247" "5070536" "5142534" "5297144").PN. | USPAT | 2003/04/02 12:12 |
| - | 270 | 455/11.1.ccls. | USPAT | 2003/04/02 12:29 |
| - | 20 | download\$ and 455/11.1.ccls. | USPAT | 2003/04/02 12:32 |
| - | 3302 | (person\$3 or private) near3 server | USPAT | 2003/04/02 12:35 |
| - | 304469 | mobile or wireless or cellular or radio | USPAT | 2003/04/02 12:34 |

| | | | | |
|---|------|--|-------|------------------|
| - | 1196 | ((person\$3 or private) near3 server) and (mobile or wireless or cellular or radio) | USPAT | 2003/04/02 12:34 |
| - | 366 | (mobile or wireless or cellular or radio) near (telephone or phone) and (((person\$3 or private) near3 server) and (mobile or wireless or cellular or radio)) | USPAT | 2003/04/02 12:35 |
| - | 128 | (person\$3 or private) near3 server same download\$3 | USPAT | 2003/04/02 12:36 |
| - | 19 | ((mobile or wireless or cellular or radio) near (telephone or phone) and (((person\$3 or private) near3 server) and (mobile or wireless or cellular or radio))) and ((person\$3 or private) near3 server same download\$3) | USPAT | 2003/04/02 12:36 |



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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |

20306 7590 04/11/2003

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CHICAGO, IL 60606

EXAMINER

FERGUSON, KEITH

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2683

DATE MAILED: 04/11/2003

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

Office Action Summary

| | | |
|--------------------------------------|---------------------------------------|--|
| Application No. 09/652,734 | Applicant(s) BACHNER ET AL. | |
| Examiner Keith T. Ferguson | Art Unit 2683 | |

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

Period for Reply

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

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

Status

- 1) Responsive to communication(s) filed on 31 August 2000.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-80 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7,9-27 and 29-78 is/are rejected.
- 7) Claim(s) 8,28,79 and 80 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

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

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

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

A person shall be entitled to a patent unless -

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

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

2. Claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71 and 74-78 are rejected under 35 U.S.C. 102(e) as being anticipated by Criss et al..

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Regarding claims 1,4,33,56,59 and 70, Criss et al. discloses a wireless intelligent personal server (mobile terminal)(wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082); and a first interface (in communication with) for allowing an external display (access read only) device to access said at least one electronic file to a user (paragraph 0094).

Regarding claims 2,34,57,58 and 71, Criss et al. discloses said downstream data reflects changes made to at least one source electronic file (files do not match or new) (paragraph 0075), said at least one is electronic file being an updated version of at least one existing electronic file stored in said memory (paragraph 0075).

Regarding claim 3, Criss et al. discloses wherein said at least one electronic file is a new electronic file (paragraph 0075 and 0076).

Regarding claims 5 and 60, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claims 9,37,47,52,54 and 63, Criss et al. discloses a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel (paragraph 0057).

Regarding claims 10,38,48,53,55,64 and 74, Criss et al. discloses said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data (paragraph 0072 and 0073).

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Regarding claims 11,39,65 and 75, Criss et al. discloses said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 12 and 40, Criss et al. discloses a second interface (keypad or touch sensitive screen) for controlling a wireless telephone to transmit at least one signal (paragraph 0053).

Regarding claims 13,41 and 77, Criss et al. discloses said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data (paragraphs 0053 and 0072).

Regarding claims 14,42,49,50 and 78, Criss et al. discloses said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 15,43 and 76, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

Regarding claims 18 and 66, Criss et al. discloses a bar-code input for connecting a bar-code reader (fig 2 number 44).

Regarding claims 20 and 68, Criss et al. discloses a keyboard input for connecting an external keyboard (paragraph 0053).

Regarding claims 46 and 51, Criss et al. discloses a method for updating a target electronic file to reflect changes made to a source electronic file (paragraph 0015), comprising a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless

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communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082); and a first interface (in communication with) for allowing an external display device to access said at least one electronic file to a user (paragraph 0094).

Claim Rejections - 35 USC § 103

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

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

4. Claims 6,7,35,36,61,62,72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Grew et al..

Regarding claims 6,7,35,36,61,62,72 and 73, Criss et al. discloses a wireless intelligent personal Server as discussed supra in claims 1,33,56 and 70 above. Criss et al. differs from claims 6,7,35,36,61,62,72 and 73 of the present invention in that it do not disclose said external display device is a

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personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Criss et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

5. Claims 16 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gombrich.

Regarding claims 16 and 44, Criss et al. discloses a wireless intelligent personal Server as discussed supra in claims 1,12,15,33 and 43 above. Criss et al. differs from claims 16 and 44 of the present invention in that it do not disclose first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said

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battery to said first power contacts (col. 7 lines 35-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Criss et al. with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

6. Claims 17 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Shimura.

Regarding claims 17 and 45, Criss et al. discloses a wireless intelligent personal Server as discussed supra in claims 1,12,15,33 and 43 above. Criss et al. differs from claims 17 and 45 of the present invention in that it do not disclose a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide

Criss et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

7. Claims 19,20,21,67 and 69 are rejected under 35 U.S.C.

103(a) as being unpatentable over Criss et al. in view of Ausems et al..

Regarding claims 19,20,21,67 and 69, Criss et al. discloses a wireless intelligent personal Server as discussed supra in claims 1 and 56 above. Criss et al. differs from claims 19,20,21,67 and 69 of the present invention in that it do not disclose a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader. Ausems et al. teaches a GPS input for connecting a global positioning system (GPS) receiver (col. 5 lines 35-46) and a card reader input for connecting a card reader (col. 3 lines 15-20 and col. 5 lines 46-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Criss et al. with a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader in order to determine

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the mobile terminal position and provide access to a wireless network by using its SIM card, as taught by Ausems et al..

8. Claims 22-25,29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Ogasawara.

Regarding claims 22-24, Criss et al. discloses a wireless intelligent personal server (mobile terminal) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082); and a first interface for allowing an external display (i.e. read only access) device to access said at least one electronic file (paragraph 0094). Criss et al. differs from claim 22 of the present invention in that it do not disclose a wireless telephone in communication with said wireless intelligent personal server, said wireless telephone transmitting an acknowledgment signal over a second wireless communications channel when said wireless intelligent personal server receives said downstream data. Ogasawara teaches a wireless telephone (fig. 1 number 18) in communication with said wireless intelligent personal server (fig. 1 number 10 and 11), said wireless telephone transmitting an acknowledgment signal over a second wireless communications channel when said wireless intelligent personal server receives said downstream data (col. 6 lines 12-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made To provide Criss et al. with a wireless telephone in communication with said wireless intelligent personal server, said wireless telephone transmitting an acknowledgment signal over a second wireless communications channel when said wireless intelligent personal server receives said downstream data in order for a wireless telephone to receive files to perform electric shopping while exchanging bar code signals of can goods, as taught by Ogasawara.

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Regarding claim 25, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claim 29, Criss et al. discloses said mobile terminal transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claim 30, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

9. Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Ogasawara as applied to claims 22 and 23 above and in further view of Grew et al..

The combination of Criss et al. and Ogasawara differs from claims 26 and 27 of the claimed invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Ogasawara with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Ogasawara as applied to claims 22 and 30 above and in further view of Shimura.

The combination of Criss et al. and Ogasawara differs from claims 31 of the claimed invention in that they do not disclose a first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and a first power management circuit for selectively connecting said battery to said first power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting

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said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Ogasawara with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Ogasawara as applied to claims 22 and 30 above and in further view of Gombrich.

The combination of Criss et al. and Ogasawara differs from claim 32 of the claimed invention in that they do not disclose a second power contacts electrically connected to recharger contacts disposed on said external display device; and a second power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Ogasawara with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

Allowable Subject Matter

12. Claims 8,28,79 and 80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith T. Ferguson whose telephone number is (703) 305-4888. The examiner can normally be reached on 6:30am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Keith Ferguson *KF*
Art Unit 2683
April 3, 2003


WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Notice of References Cited

Application/Control No.

09/652,734

Applicant(s)/Patent Under Reexamination
BACHNER ET AL.

Examiner

Keith T. Ferguson

Art Unit

2683

Page 1 of 1

U.S. PATENT DOCUMENTS

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|---|--|-----------------|---------------|----------------|
| | A | US-6,512,919 | 01-2003 | Ogasawara | 455/422 |
| | B | US-6,434,403 | 08-2002 | Ausems et al. | 455/556 |
| | C | US-5,754,625 | 05-1998 | Shimura | 455/573 |
| | D | US-4,916,441 | 04-1990 | Gombrich | 455/575 |
| | E | US-20010029178 | 10-2001 | Criss et al. | 455/419 |
| | F | US- | | | |
| | G | US- | | | |
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| | M | US- | | | |

FOREIGN PATENT DOCUMENTS

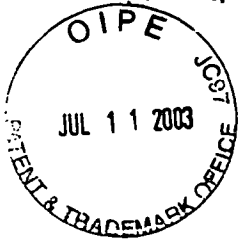
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NON-PATENT DOCUMENTS

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

T



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Docket No. 00-399)

#9C
fd
11/10/03

In re the Application of:)
)
 Edward F. Bachner, III, et al.)
)
 Serial No.: 09/652,734)
)
 Filed: August 31, 2000)
)
 For: WIRELESS INTELLIGENT)
 PERSONAL SERVER)

Confirmation No. 3628
Examiner: Keith Ferguson
Group Art Unit 2683

RECEIVED
JUL 17 2003
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION MAILED APRIL 11, 2003

Sir:

In response to the Office Action mailed April 11, 2003, please enter the following amendments and consider the following remarks. An Information Disclosure Statement is submitted herewith.

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims, which begins on page 3 of this paper.

Remarks begin on page 21 of this paper.

07/16/2003 JBALINAN 00000026 09652734

01 FC:1806

180.00 OP

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Amendments to the Specification:

Please replace the first full paragraph on page 12 with the following amended paragraph:

C) Once WIPS 30 has successfully received the data transmission, WIPS 30 preferably sends an acknowledgement signal. In preferred embodiments, WIPS 30 uses wireless telephone 24 to send the acknowledgement signal to second wireless network 22 over an upstream channel ~~36~~26. To accomplish this, WIPS 30 may make use of electrical contacts, provided in most types of wireless telephone 24, that enable wireless telephone 24 to be remotely controlled. Thus, WIPS 30 sends signals to wireless telephone 24 to cause it to dial a predetermined telephone number and then, once the call is established, to transmit the acknowledgement signal. Because the acknowledgement signal will typically be a digital signal, WIPS 30 may use different techniques for transmitting it, depending on the type of wireless telephone 24. For example, if wireless telephone 24 can only transmit analog signals, then WIPS 30 preferably modulates the digital acknowledgement signal before transmitting it to wireless telephone 24. If wireless telephone 24 can transmit digital signals, such as signals in CDMA, TDMA, or GSM format, then WIPS 30 may transmit the acknowledgement signal to wireless telephone 24 in digital packet form.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- C2
1. (original) A wireless intelligent personal server, comprising:
 - a radio frequency (RF) receiver for receiving downstream data transmitted over a first wireless communications channel;
 - a memory;
 - a central processing unit (CPU);
 - a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and
 - a first interface for allowing an external display device to access said at least one electronic file.

 2. (original) The wireless intelligent personal server of claim 1, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

3. (original) The wireless intelligent personal server of claim 1, wherein said at least one electronic file is a new electronic file.

4. (original) The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device read-only access to said at least one electronic file.

C2
5. (original) The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device to change said at least one electronic file.

6. (original) The wireless intelligent personal server of claim 1, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

7. (original) The wireless intelligent personal server of claim 6, wherein said external display device is a personal digital assistant (PDA).

8. (original) The wireless intelligent personal server of claim 1, wherein said first interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

9. (original) The wireless intelligent personal server of claim 1, further comprising:

a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

10. (original) The wireless intelligent personal server of claim 9, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

CJ

11. (original) The wireless intelligent personal server of claim 10, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

12. (original) The wireless intelligent personal server of claim 1, further comprising:

a second interface for controlling a wireless telephone to transmit at least one signal.

13. (original) The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

14. (original) The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device.

15. (original) The wireless intelligent personal server of claim 12, further comprising:

a battery for powering said wireless intelligent personal server.

CJ

16. (original) The wireless intelligent personal server of claim 15, further comprising:

first power contacts for electrically connecting to recharger contacts disposed on said external display device; and

a first power management circuit for selectively connecting said battery to said first power contacts.

17. (original) The wireless intelligent personal server of claim 15, further comprising:

second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

18. (original) The wireless intelligent personal server of claim 1, further comprising:

a bar-code input for connecting a bar-code reader.

19. (original) The wireless intelligent personal server of claim 1, further comprising:

a GPS input for connecting a global positioning system (GPS) receiver.

CJ

20. (original) The wireless intelligent personal server of claim 1, further comprising:

a keyboard input for connecting an external keyboard.

21. (original) The wireless intelligent personal server of claim 1, further comprising:

a card reader input for connecting a card reader.

22. (currently amended) A wireless data communication system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent personal server processing said downstream data to provide at least one electronic file in said memory; and

a wireless telephone in communication with said wireless intelligent personal server, wherein said wireless intelligent personal server causes said wireless telephone to transmit ~~transmitting~~ an acknowledgment signal over a second wireless communications channel when said wireless intelligent personal server receives said downstream data.

23. (original) The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes an interface for allowing an external display device to access said at least one electronic file.

C2

24. (original) The wireless data communication system of claim 23, wherein said interface allows said external display device read-only access to said at least one electronic file.

25. (original) The wireless data communication system of claim 23, wherein said interface allows said external display device to change said at least one electronic file.

26. (original) The wireless data communication system of claim 23, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, personal digital assistant (PDA), and set-top television controller box.

27. (original) The wireless data communication system of claim 26, wherein said external display device is a personal digital assistant (PDA).

28. (original) The wireless data communication system of claim 23, wherein said interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

CJ 29. (original) The wireless data communication system of claim 23, wherein said wireless telephone transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

30. (original) The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

31. (original) The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a first power management circuit for selectively connecting said battery to said first power contacts.

32. (original) The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

second power contacts electrically connected to recharger contacts disposed on said external display device; and

a second power management circuit for selectively connecting said battery to said first power contacts.

C2

33. (currently amended) A wireless data display system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent personal server processing said downstream data to provide at least one electronic file; and

a separate display device in communication with said wireless intelligent personal server, said separate display device having at least one application that accesses said at least one electronic file to display information to a user.

34. (original) The wireless data display system of claim 33, wherein said at least one application is able to change said at least one electronic file stored in said memory.

35. (currently amended) The wireless data display system of claim 33, wherein said separate display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

36. (currently amended) The wireless data display system of claim 35, wherein said separate display device is a personal digital assistant (PDA).

37. (original) The wireless data display system of claim 33, wherein wireless intelligent personal server includes a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

CJ

38. (original) The wireless data display system of claim 37, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

39. (original) The wireless data display system of claim 37, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said display device.

40. (original) The wireless data display system of claim 33, wherein said wireless intelligent personal server includes an interface for controlling a wireless telephone to transmit at least one signal.

41. (original) The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

42. (currently amended) The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said separate display device.

C2

43. (original) The wireless data display system of claim 33, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

44. (currently amended) The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said separate display device; and

a first power management circuit for selectively connecting said battery to said first power contacts.

45. (original) The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

second power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

46. (original) A method for updating a target electronic file to reflect changes made to a source electronic file, said method comprising the steps of:

storing said target electronic file in a wireless intelligent personal server;

CA said wireless intelligent personal server receiving downstream data transmitted over a first wireless communications channel, said downstream data reflecting said changes made to said source electronic file;

said wireless intelligent personal server automatically updating said target electronic file with said downstream data to provide an updated electronic file;

bringing an external display device into communication with said wireless intelligent personal server; and

accessing said updated electronic file with said display device.

47. (original) The method of claim 46, further comprising the step of:

said wireless intelligent personal server transmitting at least one signal over a second wireless communications channel.

48. (original) The method of claim 47, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

49. (original) The method of claim 46, further comprising the step of:
said wireless intelligent personal server causing a wireless telephone to transmit at
least one signal over a second wireless communications channel.

50. (original) The method of claim 49, wherein said at least one signal includes
an acknowledgement signal for acknowledging receipt of said downstream data.

C2

51. (original) A method for creating, without user intervention, an electronic file
on a wireless intelligent personal server, said method comprising the steps of:

said wireless intelligent personal server receiving downstream data transmitted
over a first wireless communications channel;

said wireless intelligent personal server automatically creating said electronic file
from said downstream data;

bringing an external display device into communication with said wireless
intelligent personal server; and

accessing said electronic file with said display device.

52. (original) The method of claim 51, further comprising the step of:
said wireless intelligent personal server transmitting at least one signal over a
second wireless communications channel.

53. (original) The method of claim 52, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

54. (original) The method of claim 51, further comprising the step of:
said wireless intelligent personal server causing a wireless telephone to transmit at least one signal over a second wireless communications channel.

55. (original) The method of claim 54, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

CA

56. (previously presented) A wireless intelligent personal server, comprising:
a radio frequency (RF) transceiver for receiving downstream data transmitted over a first wireless communications channel;
a memory;
a central processing unit (CPU);
a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and
a first interface for allowing an external display device to access said at least one electronic file.

57. (previously presented) The wireless intelligent personal server of claim 56, wherein said downstream data reflects changes made to at least one source electronic file,

said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

58. (previously presented) The wireless intelligent personal server of claim 56, wherein said at least one electronic file is a new electronic file.

CJ
59. (previously presented) The wireless intelligent personal server of claim 56, wherein said first interface allows said external display device access to said at least one electronic file.

60. (previously presented) The wireless intelligent personal server of claim 56, wherein said first interface allows said external display device to change said at least one electronic file.

61. (previously presented) The wireless intelligent personal server of claim 56, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

62. (previously presented) The wireless intelligent personal server of claim 61, wherein said external display device is a personal digital assistant (PDA).

63. (previously presented) The wireless intelligent personal server of claim 56, wherein said RF transceiver transmits at least one signal over a second wireless communications channel.

64. (previously presented) The wireless intelligent personal server of claim 63, wherein said RF transceiver transmits an acknowledgement signal over said second wireless communications channel when said RF transceiver receives said downstream data.

C2

65. (previously presented) The wireless intelligent personal server of claim 64, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

66. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a bar-code input for connecting a bar-code reader.

67. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a GPS input for connecting a global positioning system (GPS) receiver.

68. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a keyboard input for connecting an external keyboard.

69. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a card reader input for connecting a card reader.

CJ 70. (currently amended) A wireless data display system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) transceiver, said RF transceiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent personal server processing said downstream data to provide at least one electronic file; and

a separate display device in communication with said wireless intelligent personal server, said separate display device having at least one application that accesses said at least one electronic file to display information to a user.

71. (previously presented) The wireless data display system of claim 70, wherein said at least one application is able to change said at least one electronic file stored in said memory.

72. (currently amended) The wireless data display system of claim 70, wherein said separate display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

73. (currently amended) The wireless data display system of claim 70, wherein said separate display device is a personal digital assistant (PDA).

C2
74. (previously presented) The wireless data display system of claim 70, wherein said RF transceiver transmits an acknowledgement signal over a second wireless communications channel when said RF transceiver receives said downstream data.

75. (currently amended) The wireless data display system of claim 74, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said separate display device.

76. (currently amended) The wireless data display system of claim 70, wherein said wireless intelligent personal server includes a battery for powering said separate display device.

77. (previously presented) The wireless intelligent personal server of claim 56, further comprising a second interface for controlling a wireless telephone to transmit at least one signal.

78. (previously presented) The wireless data display system of claim 70, wherein said wireless intelligent personal server includes an interface for controlling a wireless telephone to transmit at least one signal.

79. (previously presented) The wireless intelligent personal server of claim 8, wherein said first and second external display devices are different kinds of display device.

80. (previously presented) The wireless data communication system of claim 28, wherein said first and second external display devices are different kinds of display device.

REMARKS

1. Introduction

In the Office Action mailed April 11, 2003, the Examiner rejected claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71, and 74-78 under 35 U.S.C. § 102(e) as being anticipated by Criss et al., U.S. Pub. No. 2001/0029178 (“Criss”). The Examiner also rejected claims under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of other prior art. Specifically, the Examiner rejected claims 6, 7, 35, 36, 61, 62, 72, and 73 over Criss in view of Grewe et al., U.S. Patent No. 5,625,673 (“Grewe”), rejected claims 16 and 44 over Criss in view of Gombrich, U.S. Patent No. 4,916,441 (“Gombrich”), rejected claims 17 and 45 over Criss in view of Shimura, U.S. Patent No. 5,754,624 (“Shimura”), rejected claims 19-21, 67, and 69 over Criss in view of Ausems et al., U.S. Patent No. 6,434,403 (“Ausems”), rejected claims 22-25, 29, and 30 over Criss in view of Ogasawara, U.S. Patent No. 6,512,919 (“Ogasawara”), rejected claims 26 and 27 over Criss in view of Ogasawara and in further view of Grewe, rejected claim 31 over Criss in view of Ogasawara and in further view to Shimura, and rejected claim 32 over Criss in view of Ogasawara and in further view of Gombrich.

The Examiner indicated that claims 8, 28, 79, and 80 contained allowable subject matter but objected to these claims as being dependent upon rejected base claims.

Claims 22, 33, 35, 36, 42, 44, 70, 72, 73, 75, and 76 are currently amended. For the reasons set forth below, Applicants respectfully request reconsideration and allowance of the claims, as amended.

2. Response to Rejections

a. Claims 1-21, 56-69, 77, and 79

Of these claims, claims 1 and 56 are independent. The Examiner has rejected claims 1 and 56 under § 102(e) as being anticipated by Criss.

In response, Applicants submit that Criss does not disclose each and every element in either claim 1 or 56 and, thus, does not anticipate these claims. In particular, claims 1 and 56 each recite “a first interface for allowing an external display device to access said at least one electronic file.” However, the Examiner has not established that Criss discloses this element. Regarding the “first interface” and “external display device” recited in claims 1 and 56, the Examiner has cited paragraph 0094 of Criss. This paragraph in Criss states that “available software packages are displayed on the display 46.” However, Criss does not describe “display 46” as an “external display device.” To the contrary, Figure 2 and paragraph 0053 of Criss make clear that display 46 is not an external display device but is instead part of mobile terminal 36 (which the Examiner has alleged corresponds to the wireless intelligent portable server recited in claims 1 and 56). Thus, the Examiner has not identified any disclosure in Criss of an *external* display device used with mobile terminal 36, much less an *interface* for such an external display device. Indeed, since display 46 is already a part of mobile terminal 36, Criss teaches away from an interface for an external display device as recited in claims 1 and 56.

Accordingly, Applicants respectfully submit that claims 1 and 56 are allowable over Criss and the other prior art of record. Applicants further submit that claims 2-21, 57-69, 77, and 79 are allowable as being dependent on allowable claims.

b. Claims 22-32 and 80

Of these claims, claim 22 is independent. The Examiner has rejected claim 22 under § 103(a) as being unpatentable over Criss in view of Ogasawara. In making this rejection, the Examiner conceded that Criss does not disclose a wireless telephone (in communication with the wireless intelligent personal server) that transmits an acknowledgement signal when the wireless intelligent personal server receives the downstream data. Instead, the Examiner cited Ogasawara (at Fig. 1 and col. 6, lines 12-16) for these elements. In Ogasawara the Examiner identified wireless telephone 18 and alleged that store server 10 and its wired connection 11 correspond to the wireless intelligent personal server of claim 22.

In response, Applicants have amended claim 22 to clarify that the wireless intelligent personal server causes the wireless telephone to transmit an acknowledgement signal when the wireless intelligent personal server receives the downstream data. Support for this amendment may be found, for example, at page 12, lines 7-14 of the present application. In contrast, Ogasawara discloses that that the “purchaser merely dials the telephone number of the store server 10 or remote server 26 with the wireless telephone 18” (col. 6, lines 5-7). Thus, Ogasawara teaches away from the wireless data communication system of claim 22, in which the wireless intelligent personal server causes the wireless telephone to transmit an acknowledgement signal.

Accordingly, Applicants respectfully submit that claim 22, as amended, is allowable over Criss, Ogasawara, and the other prior art of record. Applicants further submit that claims 23-32 and 80 are allowable as depending from an allowable claim.

c. Claims 33-45, 70-76, and 78

Of these claims, claims 33 and 70 are independent. The Examiner has rejected claims 33 and 70 under § 102(e) as being anticipated by Criss. In making this rejection, the Examiner apparently identified mobile terminal 36 as allegedly corresponding to the “wireless intelligent personal server” recited in claims 33 and 70 and apparently identified display 46 as allegedly corresponding to the “display device” recited in claims 33 and 70.

In response, Applicants have amended claims 33 and 70 to recite a “separate display device.” Figure 1 of the present application shows an example of a separate display device in communication with a wireless intelligent personal server. As described on page 11, lines 1-19 of the present application, a separate display device may be electrically connected to the wireless intelligent personal server, e.g., via electrical contacts or via electrical cables, or it may be in communication with the wireless intelligent personal server in other ways. In contrast, Figure 2 and paragraph 0053 of Criss make clear that display 46 is *part of* mobile terminal 36. Thus, Criss teaches away from the *separate* display device recited in claims 33 and 70, as amended.

Accordingly, Applicants respectfully submit that claims 33 and 70, as amended, are allowable over Criss and the other prior art of record. Applicants further submit that claims 34-45, 71-76, and 78 are allowable as depending from allowable claims.

d. Claims 46-55

Of these claims, claims 46 and 51 are independent. The Examiner has rejected claims 46 and 51 under § 102(e) as being anticipated by Criss.

In response, Applicants submit that Criss does not disclose each and every element in either claim 46 or 51 and, thus, does not anticipate these claims. In particular, claims 46

and 51 each recite the step of “bringing an external display device into communication with ~~the~~ said wireless intelligent personal server.” However, the Examiner has not established that Criss discloses this step. Regarding the “first interface” and “external display device” recited in claims 46 and 51, the Examiner has cited paragraph 0094 of Criss. This paragraph in Criss states that “available software packages are displayed on the display 46.” However, Criss does not describe “display 46” as an “external display device.” To the contrary, Figure 2 and paragraph 0053 of Criss make clear that display 46 is not an external display device but is instead part of mobile terminal 36 (which the Examiner has alleged corresponds to the wireless intelligent portable server recited in claims 46 and 51). Thus, the Examiner has not identified any disclosure in Criss of bringing an *external* display device into communication with a wireless intelligent personal server. Indeed, since display 46 is already a part of mobile terminal 36, Criss teaches away from using an external display device as recited in claims 46 and 51.

Accordingly, Applicants respectfully submit that claims 46 and 51 are allowable over Criss and the other prior art of record. Applicants further submit that claims 47-50 and 52-55 are allowable as being dependent on allowable claims.

2. **Conclusion**

Applicants submit that the present application is now in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, he is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

**McDONNELL BOEHNEN
HULBERT & BERGHOFF**

Dated: July 11, 2003

By: Richard A. Machonkin
Richard A. Machonkin
Reg. No. 41,962



0-7-11-3

#828/3703
D.J. Ferguson
T.D. Switzer
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

In the Application of:)
)
 Bachner III, et al.)
)
 Serial No.: **09/652,734**)
)
 Filed: **August 31, 2000**)
)
 For: **Wireless Intelligent**)
 Personal Server)

Confirmation No. 3628

Art Unit: 2683

Examiner: **Keith Ferguson**

RECEIVED

JUL 17 2003

Technology Center 2600

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

TRANSMITTAL LETTER

1. We are transmitting herewith the attached papers for the above-identified patent application:

- Response to Office Action
- Form PTO-1449 (1 sheet)
- Copies of 11 cited references
- Return Receipt Postcard

2. With respect to fees, a check is enclosed for \$180.00.

3. **GENERAL AUTHORIZATION TO CHARGE OR CREDIT FEES:** Please charge any additional fees or credit overpayment to Deposit Account No. **13-2490**. A duplicate copy of this sheet is enclosed.

4. **CERTIFICATE OF MAILING UNDER 37 CFR § 1.10:** The undersigned hereby certifies that this Transmittal Letter and the papers, as described in paragraph 1 herein-above, are being deposited with the United States Postal Service with sufficient postage as "**Express Mail**", **EV 333564569**, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 11th day of **July, 2003**.

By: Richard A. Machonkin
Richard A. Machonkin
Registration No. 41,962



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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |

20306 7590 01/21/2004

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EXAMINER

FERGUSON, KEITH

ART UNIT PAPER NUMBER

2683

DATE MAILED: 01/21/2004

10

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

Office Action Summary

| | | |
|-------------------------------|--------------------------------|--|
| Application No. 09/652,734 | Applicant(s) BACHNER ET AL. | |
| Examiner Keith T. Ferguson | Art Unit 2683 | |

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

Period for Reply

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

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

Status

- 1) Responsive to communication(s) filed on 11 July 2003.
- 2a) This action is FINAL.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-80 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7, 9-27 and 29-78 is/are rejected.
- 7) Claim(s) 8, 28, 79 and 80 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

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

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-80 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

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

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

3. Claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71 and 74-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al., newly cited reference.

Regarding claims 1, 4, 33, 56, 59 and 70, Criss et al. discloses a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions,

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said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075, 0076 and 0082). Criss et al. differs from claims 1, 56 and 70 of the present invention in that it does not explicitly disclose a first interface for allowing an external (separate) display device to access an electronic file. Wecker et al. teaches a first interface (sync. Component) (fig. 1 number 28) for allowing an external (separated) display (fig. 1 number 16 and fig. 5 number 77) device to access an electronic file (col. 4 lines 6-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for allowing an external (separated) display device to access an electronic file in order to synchronize a downloaded file of the mobile terminal with a personal computer so that each can exchange information or share information with one another, as taught by Wecker et al..

Regarding claims 2, 34, 57, 58 and 71, Criss et al. discloses said downstream data reflects changes made to at least one source electronic file (files do not match or new) (paragraph 0075), said at least one is electronic file being an updated version of at least one existing electronic file stored in said memory (paragraph 0075).

Regarding claim 3, Criss et al. discloses wherein said at least one electronic file is a new electronic file (paragraph 0075 and 0076).

Regarding claims 5 and 60, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claims 9, 37, 47, 52, 54 and 63, Criss et al. discloses a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel (paragraph 0057).

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Regarding claims 10,38,48,53,55,64 and 74, Criss et al. discloses said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data (paragraph 0072 and 0073).

Regarding claims 11,39,65 and 75, Criss et al. discloses said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 12 and 40, Criss et al. discloses a second interface (keypad or touch sensitive screen) for controlling a wireless telephone to transmit at least one signal (paragraph 0053).

Regarding claims 13,41 and 77, Criss et al. discloses said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data (paragraphs 0053 and 0072).

Regarding claims 14,42,49,50 and 78, Criss et al. discloses said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 15,43 and 76, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

Regarding claims 18 and 66, Criss et al. discloses a bar-code input for connecting a bar-code reader (fig 2 number 44).

Regarding claims 20 and 68, Criss et al. discloses a keyboard input for connecting an external keyboard (paragraph 0053).

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Regarding claims 46 and 51, Criss et al. discloses a method for updating a target electronic file to reflect changes made to a source electronic file (paragraph 0015), comprising a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075, 0076 and 0082). Criss et al. differs from claims 46 and 51 of the present invention in that it does not explicitly disclose a first interface for bringing an external display device to access an electronic file. Wecker et al. teaches a first interface (sync. Component) (fig. 1 number 28) for bringing an external (separated) display (fig. 1 number 16 and fig. 5 number 77) device to access an electronic file (col. 4 lines 6-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for bringing an external (separated) display device to access an electronic file in order to synchronize a downloaded file of the mobile terminal with a personal computer so that each can exchange information or share information with one another, as taught by Wecker et al..

4. Claims 6, 7, 35, 36, 61, 62, 72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1, 33, 56, 70 above and in further view of Grew et al..

Regarding claims 6, 7, 35, 36, 61, 62, 72 and 73, the combination of Criss et al. and Wecker et al. differs from claims 6, 7, 35, 36, 61, 62, 72 and 73 of the present invention in that they do not disclose said external display device is a personal digital

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assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

5. Claims 16 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1,12,15 and 33 above and in further view of Gombrich.

Regarding claims 16 and 44, the combination of Criss et al. and Wecker et al. differs from claims 16 and 44 of the present invention in that they do not disclose first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power

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management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

6. Claims 17 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1,12,14,43, and 33 above and in further view of Shimura.

Regarding claims 17 and 45, the combination of Criss et al. and Wecker et al. differs from claims 17 and 45 of the present invention in that they do not disclose a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless

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telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

7. Claims 19,20,21,67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1 and 56 above and in further view of Ausems et al..

Regarding claims 19,20,21,67 and 69, the combination of Criss et al. and Wecker et al. differs from claims 19,20,21,67 and 69 of the present invention in that they do not disclose a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader. Ausems et al. teaches a GPS input for connecting a global positioning system (GPS) receiver (col. 5 lines 35-46) and a card

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reader input for connecting a card reader (col. 3 lines 15-20 and col. 5 lines 46-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader in order to determine the mobile terminal position and provide access to a wireless network by using its SIM card, as taught by Ausems et al..

8. Claims 22-25, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg, newly cited reference.

Regarding claims 22-24, Criss et al. discloses a wireless intelligent personal server (mobile terminal) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075, 0076 and 0082); and a first interface for allowing an external display (i.e. read only access) device to access said at least one electronic file (paragraph 0094). Criss et al. differs from claim 22 of the present invention in that it do not disclose a wireless telephone in communication with said wireless intelligent personal server, said wireless intelligent personal server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel. Gerszberg teaches a wireless telephone (fig. 2 number ~~221~~^{221a}) in communication with said wireless intelligent personal server (fig. 2 number 208), said

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wireless intelligent personal server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel (col. 4 line 67 through col. 5 line 42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made To provide Criss et al. with a wireless telephone in communication with said wireless intelligent personal server, Wrong said wireless intelligent personal server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel in order for a wireless telephone to send an acknowledgment that the updated files sent are received within the wireless telephone, as taught by Gerszberg.

Regarding claim 25, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claim 29, Criss et al. discloses said mobile terminal transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claim 30, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

9. Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg as applied to claims 22 and 23 above and in further view of Grew et al..

The combination of Criss et al. and Gerszberg differs from claims 26 and 27 of the claimed invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Gerszberg with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

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10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg as applied to claims 22 and 30 above and in further view of Shimura.

The combination of Criss et al. and Gerszberg differs from claims 31 of the claimed invention in that they do not disclose a first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and a first power management circuit for selectively connecting said battery to said first power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Gerszberg with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg as applied to claims 22 and 30 above and in further view of Gombrich.

The combination of Criss et al. and Gerszberg differs from claim 32 of the claimed invention in that they do not disclose a second power contacts electrically connected to recharger contacts disposed on said external display device; and a second power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Gerszberg with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

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Allowable Subject Matter

12. Claims 8,28,79 and 80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith T. Ferguson whose telephone number is (703) 305-4888. The examiner can normally be reached on 6:30am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Application/Control Number: 09/652,734

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Keith Ferguson *KF*

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December 30, 2003

Notice of References Cited

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| | L | US- | | | |
| | M | US- | | | |

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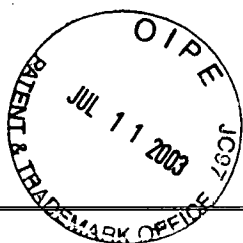
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 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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| FORM PTO-1449 (Rev. 2-32) | U. S. Department of Commerce Patent and Trademark Office | Atty. Docket No. MBHB00-399 | Serial No. 09/652,734 |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several Sheets is Necessary) | | Applicant: Bachner III, et al. | |
| | | Filing Date: 08/31/00 | Group: 2683 |



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| EXAMINER <i>Keith Ferguson</i> | | | DATE CONSIDERED <i>12/30/03</i> | | | |

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



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Docket No. 00-399)

In re the Application of:)
)
 Edward F. Bachner, III, et al.)
)
 Serial No.: 09/652,734)
)
 Filed: August 31, 2000)
)
 For: WIRELESS INTELLIGENT)
 PERSONAL SERVER)

Confirmation No. 3628
Examiner: Keith Ferguson
Group Art Unit 2683

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

RESPONSE TO THE OFFICE ACTION MAILED JANUARY 21, 2004

Sir:

In response to the Office Action mailed January 21, 2004, please enter the following amendments and consider the following remarks.

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 20 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

DI

1. (currently amended) A wireless intelligent personal server, comprising:

- a radio frequency (RF) receiver for receiving downstream data transmitted over a first wireless communications channel;
- a memory;
- a central processing unit (CPU);
- a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and
- a first interface for allowing an external display device to selectively access said at least one electronic file.

2. (original) The wireless intelligent personal server of claim 1, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

3. (original) The wireless intelligent personal server of claim 1, wherein said at least one electronic file is a new electronic file.

4. (original) The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device read-only access to said at least one electronic file.

5. (original) The wireless intelligent personal server of claim 1, wherein said first interface allows said external display device to change said at least one electronic file.

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6. (original) The wireless intelligent personal server of claim 1, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

7. (original) The wireless intelligent personal server of claim 6, wherein said external display device is a personal digital assistant (PDA).

8. (original) The wireless intelligent personal server of claim 1, wherein said first interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

9. (original) The wireless intelligent personal server of claim 1, further comprising:

a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

10. (original) The wireless intelligent personal server of claim 9, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

DI 11. (original) The wireless intelligent personal server of claim 10, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

12. (original) The wireless intelligent personal server of claim 1, further comprising:

a second interface for controlling a wireless telephone to transmit at least one signal.

13. (original) The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

14. (original) The wireless intelligent personal server of claim 12, wherein said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device.

15. (original) The wireless intelligent personal server of claim 12, further comprising:

a battery for powering said wireless intelligent personal server.

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16. (original) The wireless intelligent personal server of claim 15, further comprising:

first power contacts for electrically connecting to recharger contacts disposed on said external display device; and

a first power management circuit for selectively connecting said battery to said first power contacts.

17. (original) The wireless intelligent personal server of claim 15, further comprising:

second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

18. (original) The wireless intelligent personal server of claim 1, further comprising:

a bar-code input for connecting a bar-code reader.

19. (original) The wireless intelligent personal server of claim 1, further comprising:

a GPS input for connecting a global positioning system (GPS) receiver.

DI 20. (original) The wireless intelligent personal server of claim 1, further comprising:

a keyboard input for connecting an external keyboard.

21. (original) The wireless intelligent personal server of claim 1, further comprising:

a card reader input for connecting a card reader.

22. (previously presented) A wireless data communication system, comprising:
a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent personal server processing said downstream data to provide at least one electronic file in said memory; and

a wireless telephone in communication with said wireless intelligent personal server, wherein said wireless intelligent personal server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communications channel when said wireless intelligent personal server receives said downstream data.

23. (original) The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes an interface for allowing an external display device to access said at least one electronic file.

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24. (original) The wireless data communication system of claim 23, wherein said interface allows said external display device read-only access to said at least one electronic file.

25. (original) The wireless data communication system of claim 23, wherein said interface allows said external display device to change said at least one electronic file.

26. (original) The wireless data communication system of claim 23, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, personal digital assistant (PDA), and set-top television controller box.

27. (original) The wireless data communication system of claim 26, wherein said external display device is a personal digital assistant (PDA).

28. (original) The wireless data communication system of claim 23, wherein said interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

29. (original) The wireless data communication system of claim 23, wherein said wireless telephone transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

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30. (original) The wireless data communication system of claim 22, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

31. (original) The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a first power management circuit for selectively connecting said battery to said first power contacts.

32. (original) The wireless data communication system of claim 30, wherein said wireless intelligent personal server includes:

second power contacts electrically connected to recharger contacts disposed on said external display device; and

a second power management circuit for selectively connecting said battery to said first power contacts.

33. (currently amended) A wireless data display system, comprising:

DI a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent personal server processing said downstream data to provide at least one electronic file; and

a separate display device in communication with said wireless intelligent personal server, said separate display device having at least one application that selectively accesses said at least one electronic file to display information to a user.

34. (original) The wireless data display system of claim 33, wherein said at least one application is able to change said at least one electronic file stored in said memory.

35. (previously presented) The wireless data display system of claim 33, wherein said separate display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

36. (previously presented) The wireless data display system of claim 35, wherein said separate display device is a personal digital assistant (PDA).

37. (original) The wireless data display system of claim 33, wherein wireless intelligent personal server includes a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

DI 38. (original) The wireless data display system of claim 37, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

39. (original) The wireless data display system of claim 37, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said display device.

40. (original) The wireless data display system of claim 33, wherein said wireless intelligent personal server includes an interface for controlling a wireless telephone to transmit at least one signal.

41. (original) The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

42. (previously presented) The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said separate display device.

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43. (original) The wireless data display system of claim 33, wherein said wireless intelligent personal server includes a battery for powering said wireless intelligent personal server.

44. (previously presented) The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

first power contacts electrically connected to recharger contacts disposed on said separate display device; and

a first power management circuit for selectively connecting said battery to said first power contacts.

45. (original) The wireless data display system of claim 43, wherein said wireless intelligent personal server includes:

second power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

46. (currently amended) A method for updating a target electronic file to reflect changes made to a source electronic file, said method comprising the steps of:

storing said target electronic file in a wireless intelligent personal server;

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said wireless intelligent personal server receiving downstream data transmitted over a first wireless communications channel, said downstream data reflecting said changes made to said source electronic file;

said wireless intelligent personal server automatically updating said target electronic file with said downstream data to provide an updated electronic file;

bringing an external display device into communication with said wireless intelligent personal server; and

selectively accessing said updated electronic file with said display device.

47. (original) The method of claim 46, further comprising the step of:

said wireless intelligent personal server transmitting at least one signal over a second wireless communications channel.

48. (original) The method of claim 47, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

49. (original) The method of claim 46, further comprising the step of:
said wireless intelligent personal server causing a wireless telephone to transmit at least one signal over a second wireless communications channel.

50. (original) The method of claim 49, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

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51. (currently amended) A method for creating, without user intervention, an electronic file on a wireless intelligent personal server, said method comprising the steps of:

said wireless intelligent personal server receiving downstream data transmitted over a first wireless communications channel;

said wireless intelligent personal server automatically creating said electronic file from said downstream data;

bringing an external display device into communication with said wireless intelligent personal server; and

selectively accessing said electronic file with said display device.

52. (original) The method of claim 51, further comprising the step of:
said wireless intelligent personal server transmitting at least one signal over a second wireless communications channel.

53. (original) The method of claim 52, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

54. (original) The method of claim 51, further comprising the step of:
said wireless intelligent personal server causing a wireless telephone to transmit at least one signal over a second wireless communications channel.

D1

55. (original) The method of claim 54, wherein said at least one signal includes an acknowledgement signal for acknowledging receipt of said downstream data.

56. (currently amended) A wireless intelligent personal server, comprising:
a radio frequency (RF) transceiver for receiving downstream data transmitted over a first wireless communications channel;
a memory;
a central processing unit (CPU);
a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and
a first interface for allowing an external display device to selectively access said at least one electronic file.

57. (previously presented) The wireless intelligent personal server of claim 56, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

58. (previously presented) The wireless intelligent personal server of claim 56, wherein said at least one electronic file is a new electronic file.

DI 59. (previously presented) The wireless intelligent personal server of claim 56, wherein said first interface allows said external display device access to said at least one electronic file.

60. (previously presented) The wireless intelligent personal server of claim 56, wherein said first interface allows said external display device to change said at least one electronic file.

61. (previously presented) The wireless intelligent personal server of claim 56, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

62. (previously presented) The wireless intelligent personal server of claim 61, wherein said external display device is a personal digital assistant (PDA).

63. (previously presented) The wireless intelligent personal server of claim 56, wherein said RF transceiver transmits at least one signal over a second wireless communications channel.

64. (previously presented) The wireless intelligent personal server of claim 63, wherein said RF transceiver transmits an acknowledgement signal over said second wireless communications channel when said RF transceiver receives said downstream data.

D1

65. (previously presented) The wireless intelligent personal server of claim 64, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

66. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a bar-code input for connecting a bar-code reader.

67. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a GPS input for connecting a global positioning system (GPS) receiver.

68. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a keyboard input for connecting an external keyboard.

69. (previously presented) The wireless intelligent personal server of claim 56, further comprising:

a card reader input for connecting a card reader.

DI

70. (currently amended) A wireless data display system, comprising:

a wireless intelligent personal server, said wireless intelligent personal server including a memory and a radio frequency (RF) transceiver, said RF transceiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent personal server processing said downstream data to provide at least one electronic file; and

a separate display device in communication with said wireless intelligent personal server, said separate display device having at least one application that selectively accesses said at least one electronic file to display information to a user.

71. (previously presented) The wireless data display system of claim 70, wherein said at least one application is able to change said at least one electronic file stored in said memory.

72. (previously presented) The wireless data display system of claim 70, wherein said separate display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

73. (previously presented) The wireless data display system of claim 70, wherein said separate display device is a personal digital assistant (PDA).

DI 74. (previously presented) The wireless data display system of claim 70, wherein said RF transceiver transmits an acknowledgement signal over a second wireless communications channel when said RF transceiver receives said downstream data.

75. (previously presented) The wireless data display system of claim 74, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said separate display device.

76. (previously presented) The wireless data display system of claim 70, wherein said wireless intelligent personal server includes a battery for powering said separate display device.

77. (previously presented) The wireless intelligent personal server of claim 56, further comprising a second interface for controlling a wireless telephone to transmit at least one signal.

78. (previously presented) The wireless data display system of claim 70, wherein said wireless intelligent personal server includes an interface for controlling a wireless telephone to transmit at least one signal.

DI 79. (previously presented) The wireless intelligent personal server of claim 8, wherein said first and second external display devices are different kinds of display device.

80. (previously presented) The wireless data communication system of claim 28, wherein said first and second external display devices are different kinds of display device.

REMARKS

1. Introduction

In the Office Action mailed January 21, 2004, the Examiner rejected claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71, and 74-78 under 35 U.S.C. § 103(a) as being unpatentable over Criss et al., U.S. Pub. No. 2001/0029178 (“Criss”) in view of Wecker et al., U.S. Patent No. 6,311,058 (“Wecker”).

The Examiner rejected claims 6, 7, 35, 36, 61, 62, 72, and 73 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Grewe et al., U.S. Patent No. 5,625,673 (“Grewe”).

The Examiner rejected claims 16 and 44 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Gombrich, U.S. Patent No. 4,916,441 (“Gombrich”).

The Examiner rejected claims 17 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Shimura, U.S. Patent No. 5,754,624 (“Shimura”).

The Examiner rejected claims 19-21, 67, and 69 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Ausems et al., U.S. Patent No. 6,434,403 (“Ausems”).

The Examiner rejected claims 22-25, 29, and 30 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg, U.S. Patent No. 5,297,192 (“Gerszberg”).

The Examiner rejected claims 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and in further view of Grewe.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and in further view to Shimura.

The Examiner rejected claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and in further view of Gombrich.

The Examiner indicated that claims 8, 28, 79, and 80 contained allowable subject matter but objected to these claims as being dependent upon rejected base claims.

For the reasons set forth below, Applicants respectfully request reconsideration and allowance of the claims, as amended.

2. Response to Rejections

a. Claims 1-21 and 33-79

Of these claims, claims 1, 33, 46, 51, 56, and 70 are independent. The Examiner rejected each of these independent claims under § 103(a) as being unpatentable over Criss in view of Wecker.

In response, Applicants submit that the Examiner has not made a *prima facie* case of obviousness because the Examiner has not identified a plausible rationale for why one of ordinary skill in the art would have been motivated to combine the teachings of Criss with the teachings of Wecker. The Examiner acknowledged that Criss does not disclose an interface for allowing an external display device to access at least one electronic file but, citing Wecker, alleged that it would have been obvious to modify the mobile terminal of Criss to provide such an interface. According to the Examiner, the motivation for this modification would have been “in order to synchronized [sic: synchronize] a downloaded file of the mobile terminal with a personal computer so that each can exchange information or share information with on [sic: one] another, as taught by Wecker et al.” One flaw in the Examiner’s argument, however, is that the downloaded file of the mobile terminal in Criss

is the mobile terminal's *operating software*, not information that would normally be stored on or accessed by a personal computer. (Criss, ¶¶ 75, 76). It is simply not plausible that one of ordinary skill would have been motivated to provide an interface in the mobile terminal of Criss so that the mobile terminal's operating software could be synchronized with a personal computer.

In any event, Applicants have amended independent claims 1, 33, 46, 51, 56, and 70 to make clear that the external display device can *selectively* access the electronic file. Support for this amendment may be found, for example, in lines 1-7 on page 21 of the specification. Moreover, the specification notes that the display device can access the wireless intelligent personal server in much the same way as it would access a server on a local area network. *See* p. 13, lines 13-17; p. 27, lines 7-14. In contrast, Wecker teaches file synchronization between a mobile device and a personal computer but does not teach using the personal computer to selectively access a file on the mobile device. Thus, with these amendments, independent claims 1, 33, 46, 51, 56, and 70 are clearly patentable over the combination of Criss and Wecker.

For at least the foregoing reasons, Applicants respectfully submit that claims 1-21 and 33-79, as amended, are allowable over Criss, Wecker, and the other prior art of record.

b. Claims 22-32 and 80

Of these claims, claim 22 is independent. The Examiner rejected claim 22 under § 103(a) as being unpatentable over Criss in view of Gerszberg.

In response, Applicants respectfully submit that the Examiner has misread Gerszberg, with the result that the rejection under § 103(a) is improper. In particular, the Examiner stated that "Gerszberg teaches a wireless telephone (fig. 2 number 22) in

communication with said wireless intelligent personal server (fig. 2 number 208).” However, Figure 2 of Gerszberg does not show any “number 22,” nor does it show a wireless telephone in communication with a wireless intelligent personal server. Instead, Figure 2 is a functional block diagram of a mobile data telephone set 200 (col. 4, lines 49-50), and “number 208” is a transceiver controller within radio transceiver 201, which, in turn, is part of mobile data telephone set 200 (col. 4, lines 52-53, 67).

As best as the Examiner’s statements can be understood, the Examiner may have intended to refer to number 212 in Figure 2, rather than to number 22. However, number 212 is simply a handset. Gerszberg does not disclose causing handset 212 to transmit an acknowledgement signal when a wireless intelligent personal server receives downstream data. To the contrary, Gerszberg teaches using radio transceiver 201 to transmit and receive signals (col. 4, lines 52-57). Thus, it would be radio transceiver 201, not handset 212, that would be transmitting the “ACK” acknowledgement signal to the cellular service provider (col. 5, lines 23-28). Indeed, handset 212 is reconnected to audio processor 213 only *after* the cellular service provider determines that the downloading operation has been successfully completed (col. 5, lines 32-39). Thus, the combination of Criss and Gerszberg fails to teach “said wireless intelligent personal server causes said wireless telephone to transmit an acknowledgement signal over a second wireless communications channel when said wireless intelligent personal server receives said downstream data,” as recited in claim 22.

For at least the foregoing reasons, Applicants respectfully submit that claims 22-32 and 80 are allowable over Criss, Gerszberg, and the other prior art of record.

2. **Conclusion**

Applicants submit that the present application is now in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, he is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

Dated: April 20, 2004

By: Richard A. Machonkin
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

In the Application of:)
)
 Edward F. Bachner, III, et al.)
)
 Serial No.: **09/652,734**)
)
 Filed: **August 31, 2000**)
)
 For: **WIRELESS INTELLIGENT**)
 PERSONAL SERVER)

Confirmation No. **3628**

Examiner: **Keith Ferguson**

Art Unit: **2683**

RECEIVED

APR 23 2004

Technology Center 2600

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

TRANSMITTAL LETTER

1. We are transmitting herewith the attached papers for the above-identified patent application:

Response to Office Action Mailed January 21, 2004

Return Receipt Postcard

2. With respect to fees, there are no fees.

3. **GENERAL AUTHORIZATION TO CHARGE OR CREDIT FEES:** Please charge any additional fees or credit overpayment to Deposit Account No. **13-2490**. A duplicate copy of this sheet is enclosed.

4. **CERTIFICATE OF MAILING UNDER 37 CFR § 1.10:** The undersigned hereby certifies that this Transmittal Letter and the papers, as described in paragraph 1 herein-above, are being deposited with the United States Postal Service with sufficient postage as "**Express Mail**", **EV 333555505**, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this **20th** day of **April, 2004**.

By: Richard A. Machonkin

Richard A. Machonkin

Registration No. 41,962



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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |

20306 7590 07/14/2004

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EXAMINER

FERGUSON, KEITH

ART UNIT PAPER NUMBER

2683

12

DATE MAILED: 07/14/2004

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

Office Action Summary

| | | |
|-------------------------------|--------------------------------|--|
| Application No. 09/652,734 | Applicant(s) BACHNER ET AL. | |
| Examiner Keith T. Ferguson | Art Unit 2683 | |

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

Period for Reply

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

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

Status

- 1) Responsive to communication(s) filed on 02 April 2004.
- 2a) This action is FINAL.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-80 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7, 9-27 and 29-78 is/are rejected.
- 7) Claim(s) 8-28, 79 and 80 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-80 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

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

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

3. Claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71 and 74-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al., newly cited reference.

Regarding claims 1, 4, 33, 56, 59 and 70, Criss et al. discloses a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions,

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said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082). Criss et al. differs from claims 1,56 and 70 of the present invention in that it does not explicitly disclose a first interface for allowing an external (separate) display device to access an electronic file. Wecker et al. teaches a first interface (sync. Component)(fig. 1 number 28) for allowing an external (separated) display (fig. 1 number 16 and fig. 5 number 77) device to selectively access an electronic file (col. 4 lines 6-34 and claim 1, col. 15 lines 19-30, claim 10, col. 16 lines 9-15 and claim 11, col. 16 lines 15-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for allowing an external (separated) display device to selectively access an electronic file in order to upload a software file of the mobile terminal with a software file of the host so that each can compare or exchange information with one another so that the latest version of software is implemented, as taught by Wecker et al..

Regarding claims 2,34,57,58 and 71, Criss et al. discloses said downstream data reflects changes made to at least one source electronic file (files do not match or new)(paragraph 0075), said at least one is electronic file being an updated version of at least one existing electronic file stored in said memory (paragraph 0075).

Regarding claim 3, Criss et al. discloses wherein said at least one electronic file is a new electronic file (paragraph 0075 and 0076).

Regarding claims 5 and 60, Criss et al. discloses said first interface (fig. 2 number 42)(keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claims 9,37,47,52,54 and 63, Criss et al. discloses a radio frequency (RF) transmitter for transmitting at

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least one signal over a second wireless communications channel (paragraph 0057).

Regarding claims 10,38,48,53,55,64 and 74, Criss et al. discloses said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data (paragraph 0072 and 0073).

Regarding claims 11,39,65 and 75, Criss et al. discloses said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 12 and 40, Criss et al. discloses a second interface (keypad or touch sensitive screen) for controlling a wireless telephone to transmit at least one signal (paragraph 0053).

Regarding claims 13,41 and 77, Criss et al. discloses said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data (paragraphs 0053 and 0072).

Regarding claims 14,42,49,50 and 78, Criss et al. discloses said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 15,43 and 76, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

Regarding claims 18 and 66, Criss et al. discloses a bar-code input for connecting a bar-code reader (fig 2 number 44).

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Regarding claims 20 and 68, Criss et al. discloses a keyboard input for connecting an external keyboard (paragraph 0053).

Regarding claims 46 and 51, Criss et al. discloses a method for updating a target electronic file to reflect changes made to a source electronic file (paragraph 0015), comprising a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075, 0076 and 0082). Criss et al. differs from claims 46 and 51 of the present invention in that it does not explicitly disclose a first interface for bringing an external display device to access an electronic file. Wecker et al. teaches a first interface (sync. Component) (fig. 1 number 28) for bringing an external (separated) display (fig. 1 number 16 and fig. 5 number 77) device to access an electronic file (col. 4 lines 6-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for bringing an external (separated) display device to access an electronic file in order to synchronize a downloaded file of the mobile terminal with a personal computer so that each can exchange information or share information with one another, as taught by Wecker et al..

4. Claims 6, 7, 35, 36, 61, 62, 72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1, 33, 56, 70 above and in further view of Grew et al..

Regarding claims 6, 7, 35, 36, 61, 62, 72 and 73, the combination of Criss et al. and Wecker et al. differs from claims 6, 7, 35,

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36,61,62,72 and 73 of the present invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al., teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

5. Claims 16 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1,12,15 and 33 above and in further view of Gombrich.

Regarding claims 16 and 44, the combination of Criss et al. and Wecker et al. differs from claims 16 and 44 of the present invention in that they do not disclose first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically

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connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

6. Claims 17 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1,12,14,43, and 33 above and in further view of Shimura.

Regarding claims 17 and 45, the combination of Criss et al. and Wecker et al. differs from claims 17 and 45 of the present invention in that they do not disclose a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power

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contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

7. Claims 19,20,21,67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. as applied to claims 1 and 56 above and in further view of Ausems et al..

Regarding claims 19,20,21,67 and 69, the combination of Criss et al. and Wecker et al. differs from claims 19,20,21,67 and 69 of the present invention in that they do not disclose a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader.

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Ausems et al. teaches a GPS input for connecting a global positioning system (GPS) receiver (col. 5 lines 35-46) and a card reader input for connecting a card reader (col. 3 lines 15-20 and col. 5 lines 46-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Wecker et al. with a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader in order to determine the mobile terminal position and provide access to a wireless network by using its SIM card, as taught by Ausems et al..

8. Claims 22-25, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg, newly cited reference.

Regarding claims 22-24, Criss et al. discloses a wireless intelligent personal server (mobile terminal) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075, 0076 and 0082); and a first interface for allowing an external display (i.e. read only access) device to access said at least one electronic file (paragraph 0094). Criss et al. differs from claim 22 of the present invention in that it do not disclose a wireless telephone in communication with said wireless intelligent personal server, said wireless intelligent personal server causes

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said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel. Gerszberg teaches a wireless telephone (fig. 1 number 101) in communication with said wireless intelligent personal server (fig. 1 number 105), said wireless intelligent personal server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel (col. 4 line 67 through col. 5 line 42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made To provide Criss et al. with a wireless telephone in communication with said wireless intelligent personal server, said wireless intelligent personal server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel in order for a wireless telephone to send an acknowledgment that the updated files sent are received within the wireless telephone, as taught by Gerszberg.

Regarding claim 25, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claim 29, Criss et al. discloses said mobile terminal transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claim 30, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

9. Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg as applied to claims 22 and 23 above and in further view of Grew et al..

The combination of Criss et al. and Gerszberg differs from claims 26 and 27 of the claimed invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Gerszberg with said external display device is a personal digital assistant (PDA) in

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order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg as applied to claims 22 and 30 above and in further view of Shimura.

The combination of Criss et al. and Gerszberg differs from claims 31 of the claimed invention in that they do not disclose a first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and a first power management circuit for selectively connecting said battery to said first power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Gerszberg with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg as applied to claims 22 and 30 above and in further view of Gombrich.

The combination of Criss et al. and Gerszberg differs from claim 32 of the claimed invention in that they do not disclose a second power contacts electrically connected to recharger contacts disposed on said external display device; and a second power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Gerszberg with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power

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management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

Allowable Subject Matter

12. Claims 8,28,79 and 80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

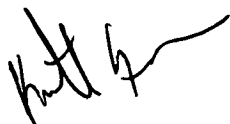
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith T. Ferguson whose telephone number is (703) 305-4888. The examiner can normally be reached on 6:30am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2683

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith Ferguson
Art Unit 2683
July 6, 2004



Examiner Note: You must sign this form unless it is an attachment to another form.

SUBSTANCE OF THE INTERVIEW

Unless the paragraph above has been checked to indicate to the contrary, a formal written reply to the last office action has already been filed. Applicants given one month from this interview date to file a statement of the substance of the interview and must include the substance of the interview. (See MPEP, Section 713.02(a) for a complete list of the requirements.)

It is not necessary for applicant to provide a separate record of the substance of the interview. A further description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached. It is not necessary for applicant to provide a separate record of the substance of the interview.

Description of the general nature of what was agreed to if an agreement was reached or any other comments.

Identification of prior art discussed: PT 1 as Record

Claim(s) discussed: Claims 1-3 as Record

Agreement: was reached. was not reached.

Exhibit shown or demonstration conducted: Yes No. If yes, brief description: Demonstration of a wireless server

Type: Telephonic Video Conference Personal (copy is given to applicant applicant's representative)

Date of interview: 9/21/04

(1) Richard Machavkin

(2) Edward Bachner

(3) William Test

All participants (applicant, applicants representative, PTO personnel):

INTERVIEW SUMMARY

DATE MAILED:

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ARTICLE NUMBER: PAPER NUMBER

EXAMINER:

APPLICATION NUMBER: FILING DATE: FIRST NAMED APPLICANT: ATTORNEY, DOCKET NO.

09/22/04



Manual of Patent Examining Procedure, Section 713.04 Substance of Interview must Be Made of Record

Except as otherwise provided, a complete written statement as to the substance of any face-to-face or telephone interview with regard to an application must be made of record in the application, whether or not an agreement with the examiner was reached at the interview.

§1-133 Interviews

(b) In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111 and 1.135. (35 U.S.C. 132)

§ 1.2. Business to be transacted in writing. All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete a two-sheet carbon Interleaf Interview Summary Form for each interview held after January 1, 1978 where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks in neat handwritten form using a ball point pen. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, pointing out typographical errors or unreadable script in Office actions or the like, or resulting in an examiner's amendment that fully sets forth the agreement are excluded from the interview recordation procedures below.

The Interview Summary Form shall be given an appropriate paper number, placed in the right hand portion of the file, and listed on the "Contents" list on the file wrapper. In a personal interview, the duplicate copy of the Form is removed and given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephonic interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication.

The Form provides for recordation of the following information:

- Application Number of the application
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (personal or telephonic)
- Name of participant(s) (applicant, attorney or agent, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the claims discussed
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). (Agreements as to allowability are tentative and do not restrict further action by the examiner to the contrary.)
- The signature of the examiner who conducted the interview
- Names of other Patent and Trademark Office personnel present.

The Form also contains a statement reminding the applicant of his responsibility to record the substance of the interview.

It is desirable that the examiner orally remind the applicant of his obligation to record the substance of the interview in each case unless both applicant and examiner agree that the examiner will record same. Where the examiner agrees to record the substance of the interview, or when it is adequately recorded on the Form or in an attachment to the Form, the examiner should check a box at the bottom of the Form informing the applicant that he need not supplement the Form by submitting a separate record of the substance of the interview.

It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview:

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner. The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he feels were or might be persuasive to the examiner,
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete or accurate, the examiner will give the applicant one month from the date of the notifying letter to complete the reply and thereby avoid abandonment of the application (37 CFR 1.135(c)).

Examiner to Check for Accuracy

Applicant's summary of what took place at the interview should be carefully checked to determine the accuracy of any argument or statement attributed to the examiner during the interview. If there is an inaccuracy and it bears directly on the question of patentability, it should be pointed out in the next Office letter. If the claims are allowable for other reasons of record, the examiner should send a letter setting forth his or her version of the statement attributed to him. If the record is complete and accurate, the examiner should place the indication "interview record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Docket No. 00-399)

RECEIVED

OCT 04 2004

In re the Application of:

Edward F. Bachner, III, et al.

Serial No.: 09/652,734

Filed: August 31, 2000

For: WIRELESS INTELLIGENT
PERSONAL SERVER

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Confirmation Technology Center 2600

Examiner: Keith Ferguson

Group Art Unit 2683

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

RESPONSE TO THE OFFICE ACTION MAILED JULY 14, 2004

Sir:

In response to the Office Action mailed July 14, 2004, please enter the following amendments and consider the following remarks.

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 20 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A wireless intelligent ~~personal~~ network server, comprising:

a radio frequency (RF) receiver for receiving downstream data transmitted over a first wireless communications channel;

a memory;

a central processing unit (CPU);

a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and

a first interface for allowing an external display device to selectively access said at least one electronic file.

2. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

3. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, wherein said at least one electronic file is a new electronic file.

4. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, wherein said first interface allows said external display device read-only access to said at least one electronic file.

5. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, wherein said first interface allows said external display device to change said at least one electronic file.

6. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

7. (currently amended) The wireless intelligent ~~personal~~ network server of claim 6, wherein said external display device is a personal digital assistant (PDA).

8. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, wherein said first interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

9. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, further comprising:

a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

10. (currently amended) The wireless intelligent ~~personal~~ network server of claim 9, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

11. (currently amended) The wireless intelligent ~~personal~~ network server of claim 10, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

12. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, further comprising:

a second interface for controlling a wireless telephone to transmit at least one signal.

13. (currently amended) The wireless intelligent ~~personal~~ network server of claim 12, wherein said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

14. (currently amended) The wireless intelligent ~~personal~~ network server of claim 12, wherein said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device.

15. (currently amended) The wireless intelligent ~~personal~~ network server of claim 12, further comprising:

a battery for powering said wireless intelligent ~~personal~~ network server.

16. (currently amended) The wireless intelligent ~~personal~~ network server of claim 15, further comprising:

first power contacts for electrically connecting to recharger contacts disposed on said external display device; and

a first power management circuit for selectively connecting said battery to said first power contacts.

17. (currently amended) The wireless intelligent ~~personal~~ network server of claim 15, further comprising:

second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

18. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, further comprising:

a bar-code input for connecting a bar-code reader.

19. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, further comprising:

a GPS input for connecting a global positioning system (GPS) receiver.

20. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, further comprising:

a keyboard input for connecting an external keyboard.

21. (currently amended) The wireless intelligent ~~personal~~ network server of claim 1, further comprising:

a card reader input for connecting a card reader.

22. (currently amended) A wireless data communication system, comprising:

a wireless intelligent ~~personal~~ network server, said wireless intelligent ~~personal~~ network server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent ~~personal~~ network server processing said downstream data to provide at least one electronic file in said memory; and

a wireless telephone in communication with said wireless intelligent ~~personal~~ network server, wherein said wireless intelligent ~~personal~~ network server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communications channel when said wireless intelligent ~~personal~~ network server receives said downstream data.

23. (currently amended) The wireless data communication system of claim 22, wherein said wireless intelligent ~~personal~~ network server includes an interface for allowing an external display device to access said at least one electronic file.

24. (original) The wireless data communication system of claim 23, wherein said interface allows said external display device read-only access to said at least one electronic file.

25. (original) The wireless data communication system of claim 23, wherein said interface allows said external display device to change said at least one electronic file.

26. (original) The wireless data communication system of claim 23, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, personal digital assistant (PDA), and set-top television controller box.

27. (original) The wireless data communication system of claim 26, wherein said external display device is a personal digital assistant (PDA).

28. (original) The wireless data communication system of claim 23, wherein said interface allows a first external display device to access said at least one electronic file at a first time and allows a second external display device to access said at least one electronic file at a second time.

29. (original) The wireless data communication system of claim 23, wherein said wireless telephone transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

30. (currently amended) The wireless data communication system of claim 22, wherein said wireless intelligent ~~personal~~ network server includes a battery for powering said wireless intelligent ~~personal~~ network server.

31. (currently amended) The wireless data communication system of claim 30, wherein said wireless intelligent ~~personal~~ network server includes:

first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a first power management circuit for selectively connecting said battery to said first power contacts.

32. (currently amended) The wireless data communication system of claim 30, wherein said wireless intelligent ~~personal~~ network server includes:

second power contacts electrically connected to recharger contacts disposed on said external display device; and

a second power management circuit for selectively connecting said battery to said first power contacts.

33. (currently amended) A wireless data display system, comprising:

a wireless intelligent ~~personal~~ network server, said wireless intelligent ~~personal~~ network server including a memory and a radio frequency (RF) receiver, said RF receiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent ~~personal~~ network server processing said downstream data to provide at least one electronic file; and

a separate display device in communication with said wireless intelligent ~~personal~~ network server, said separate display device having at least one application that selectively accesses said at least one electronic file to display information to a user.

34. (original) The wireless data display system of claim 33, wherein said at least one application is able to change said at least one electronic file stored in said memory.

35. (previously presented) The wireless data display system of claim 33, wherein said separate display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

36. (previously presented) The wireless data display system of claim 35, wherein said separate display device is a personal digital assistant (PDA).

37. (currently amended) The wireless data display system of claim 33, wherein wireless intelligent ~~personal~~ network server includes a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel.

38. (original) The wireless data display system of claim 37, wherein said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data.

39. (original) The wireless data display system of claim 37, wherein said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said display device.

40. (currently amended) The wireless data display system of claim 33, wherein said wireless intelligent ~~personal~~ network server includes an interface for controlling a wireless telephone to transmit at least one signal.

41. (original) The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data.

42. (previously presented) The wireless data display system of claim 40, wherein said interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said separate display device.

43. (currently amended) The wireless data display system of claim 33, wherein said wireless intelligent ~~personal~~ network server includes a battery for powering said wireless intelligent personal server.

44. (currently amended) The wireless data display system of claim 43, wherein said wireless intelligent ~~personal~~ network server includes:

first power contacts electrically connected to recharger contacts disposed on said separate display device; and

a first power management circuit for selectively connecting said battery to said first power contacts.

45. (currently amended) The wireless data display system of claim 43, wherein said wireless intelligent ~~personal~~ network server includes:

second power contacts electrically connected to recharger contacts disposed on said wireless telephone; and

a second power management circuit for selectively connecting said battery to said second power contacts.

46. (currently amended) A method for updating a target electronic file to reflect changes made to a source electronic file, said method comprising the steps of:

storing said target electronic file in a wireless intelligent ~~personal~~ network server;
said wireless intelligent ~~personal~~ network server receiving downstream data transmitted over a first wireless communications channel, said downstream data reflecting said changes made to said source electronic file;

said wireless intelligent ~~personal~~ network server automatically updating said target electronic file with said downstream data to provide an updated electronic file;

bringing an external display device into communication with said wireless intelligent ~~personal~~ network server; and

selectively accessing said updated electronic file with said display device.

47. (currently amended) The method of claim 46, further comprising the step of:
said wireless intelligent ~~personal~~ network server transmitting at least one signal
over a second wireless communications channel.

48. (original) The method of claim 47, wherein said at least one signal includes
an acknowledgement signal for acknowledging receipt of said downstream data.

49. (currently amended) The method of claim 46, further comprising the step of:
said wireless intelligent ~~personal~~ network server causing a wireless telephone to
transmit at least one signal over a second wireless communications channel.

50. (original) The method of claim 49, wherein said at least one signal includes
an acknowledgement signal for acknowledging receipt of said downstream data.

51. (currently amended) A method for creating, without user intervention, an
electronic file on a wireless intelligent ~~personal~~ network server, said method comprising
the steps of:

said wireless intelligent ~~personal~~ network server receiving downstream data
transmitted over a first wireless communications channel;

said wireless intelligent ~~personal~~ network server automatically creating said
electronic file from said downstream data;

bringing an external display device into communication with said wireless
intelligent ~~personal~~ network server; and

selectively accessing said electronic file with said display device.

52. (currently amended) The method of claim 51, further comprising the step of:
said wireless intelligent ~~personal~~ network server transmitting at least one signal
over a second wireless communications channel.

53. (original) The method of claim 52, wherein said at least one signal includes
an acknowledgement signal for acknowledging receipt of said downstream data.

54. (currently amended) The method of claim 51, further comprising the step of:
said wireless intelligent ~~personal~~ network server causing a wireless telephone to
transmit at least one signal over a second wireless communications channel.

55. (original) The method of claim 54, wherein said at least one signal includes
an acknowledgement signal for acknowledging receipt of said downstream data.

56. (currently amended) A wireless intelligent ~~personal~~ network server,
comprising:

a radio frequency (RF) transceiver for receiving downstream data transmitted over
a first wireless communications channel;

a memory;

a central processing unit (CPU);

a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory; and

a first interface for allowing an external display device to selectively access said at least one electronic file.

57. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, wherein said downstream data reflects changes made to at least one source electronic file, said at least one electronic file being an updated version of at least one existing electronic file stored in said memory.

58. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, wherein said at least one electronic file is a new electronic file.

59. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, wherein said first interface allows said external display device access to said at least one electronic file.

60. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, wherein said first interface allows said external display device to change said at least one electronic file.

61. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, wherein said external display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

62. (currently amended) The wireless intelligent ~~personal~~ network server of claim 61, wherein said external display device is a personal digital assistant (PDA).

63. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, wherein said RF transceiver transmits at least one signal over a second wireless communications channel.

64. (currently amended) The wireless intelligent ~~personal~~ network server of claim 63, wherein said RF transceiver transmits an acknowledgement signal over said second wireless communications channel when said RF transceiver receives said downstream data.

65. (currently amended) The wireless intelligent ~~personal~~ network server of claim 64, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device.

66. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, further comprising:

a bar-code input for connecting a bar-code reader.

67. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, further comprising:

a GPS input for connecting a global positioning system (GPS) receiver.

68. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, further comprising:

a keyboard input for connecting an external keyboard.

69. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, further comprising:

a card reader input for connecting a card reader.

70. (currently amended) A wireless data display system, comprising:

a wireless intelligent ~~personal~~ network server, said wireless intelligent ~~personal~~ network server including a memory and a radio frequency (RF) transceiver, said RF transceiver being for receiving downstream data transmitted over a first wireless communications channel, said wireless intelligent ~~personal~~ network server processing said downstream data to provide at least one electronic file; and

a separate display device in communication with said wireless intelligent ~~personal~~ network server, said separate display device having at least one application that selectively accesses said at least one electronic file to display information to a user.

71. (previously presented) The wireless data display system of claim 70, wherein said at least one application is able to change said at least one electronic file stored in said memory.

72. (previously presented) The wireless data display system of claim 70, wherein said separate display device is a computer selected from the group consisting of desktop personal computer, laptop personal computer, and personal digital assistant (PDA).

73. (previously presented) The wireless data display system of claim 70, wherein said separate display device is a personal digital assistant (PDA).

74. (previously presented) The wireless data display system of claim 70, wherein said RF transceiver transmits an acknowledgement signal over a second wireless communications channel when said RF transceiver receives said downstream data.

75. (previously presented) The wireless data display system of claim 74, wherein said RF transceiver transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said separate display device.

76. (currently amended) The wireless data display system of claim 70, wherein said wireless intelligent ~~personal~~ network server includes a battery for powering said separate display device.

77. (currently amended) The wireless intelligent ~~personal~~ network server of claim 56, further comprising a second interface for controlling a wireless telephone to transmit at least one signal.

78. (currently amended) The wireless data display system of claim 70, wherein said wireless intelligent ~~personal~~ network server includes an interface for controlling a wireless telephone to transmit at least one signal.

79. (currently amended) The wireless intelligent ~~personal~~ network server of claim 8, wherein said first and second external display devices are different kinds of display device.

80. (previously presented) The wireless data communication system of claim 28, wherein said first and second external display devices are different kinds of display device.

REMARKS

1. Introduction

In the Office Action mailed July 14, 2004, the Examiner rejected claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71, and 74-78 under 35 U.S.C. § 103(a) as being unpatentable over Criss et al., U.S. Pub. No. 2001/0029178 (“Criss”) in view of Wecker et al., U.S. Patent No. 6,311,058 (“Wecker”).

The Examiner rejected claims 6, 7, 35, 36, 61, 62, 72, and 73 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Grewe et al., U.S. Patent No. 5,625,673 (“Grewe”).

The Examiner rejected claims 16 and 44 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Gombrich, U.S. Patent No. 4,916,441 (“Gombrich”).

The Examiner rejected claims 17 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Shimura, U.S. Patent No. 5,754,624 (“Shimura”).

The Examiner rejected claims 19-21, 67, and 69 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Ausems et al., U.S. Patent No. 6,434,403 (“Ausems”).

The Examiner rejected claims 22-25, 29, and 30 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg, U.S. Patent No. 5,297,192 (“Gerszberg”).

The Examiner rejected claims 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and in further view of Grewe.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and in further view to Shimura.

The Examiner rejected claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and in further view of Gombrich.

The Examiner indicated that claims 8, 28, 79, and 80 contained allowable subject matter but objected to these claims as being dependent upon rejected base claims.

For the reasons set forth below, Applicants respectfully request reconsideration and allowance of the claims, as amended.

2. Response to Rejections

Applicants thank the Examiner for scheduling the face-to-face interview conducted on September 21, 2004. The interview was attended by Edward F. Bachner, III and Richard A. Machonkin, on behalf of Applicants, and by Examiners William Trost and Keith Ferguson. At the interview, the pending claims were discussed, particularly claim 1, and the prior art of record was discussed, particularly Criss and Wecker. The interview included a demonstration of an implementation of the invention, comprising (1) a wireless server that stored files received over a wireless communications channel and (2) a laptop computer, as display device, coupled to the wireless server via a wireless interface. The demonstration showed how the display device was able to selectively access files stored on the wireless server. The general thrust of the arguments presented to the Examiners was that the teachings of Criss and Wecker did not make the invention obvious under § 103(a). It was agreed that replacing the terminology “wireless intelligent personal server” with

“wireless intelligent network server” throughout the claims would more clearly define the invention and would overcome the prior art of record.

Accordingly, Applicants have amended the claims to replace the terminology “wireless intelligent personal server” with “wireless intelligent network server.” Support for this amendment can be found, for example, at page 13, lines 13-17 and at page 27, lines 7-14 of the specification. Applicants respectfully submit that the claims, as amended, are now allowable over the prior art of record.

3. Conclusion

Applicants submit that the present application is now in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, he is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

Dated: September 29, 2004

By: Richard A. Machonkin
Richard A. Machonkin
Reg. No. 41,962

**McDONNELL BOEHNEN
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FORM PTO-1449
(Rev. 2-32)

U.S. Department of Commerce
Patent and Trademark Office

Atty. Docket No.

Serial No.

00-399

09/652,734



FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

RECEIVED

OCT 04 2004

Technology Center 2600

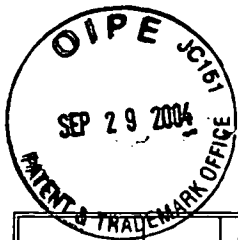
Applicant: Bachner, III, et al.

Filing Date:
August 31, 2000

Group: 2683

U.S. PATENT DOCUMENTS

| Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date if Appropriate |
|------------------|-----------------|---------------|---------------------|-------|----------|----------------------------|
| | 5,438,611 | Aug. 1, 1995 | Campana, Jr. et al. | | | May 23, 1994 |
| | 5,479,472 | Dec. 26, 1995 | Campana, Jr. at al. | | | May 20, 1991 |
| | 5,625,670 | Apr. 26, 1997 | Campana, Jr. et al. | | | May 18, 1995 |
| | 5,802,312 | Sep. 1, 1998 | Lazaridis et al. | | | Sep. 27, 1994 |
| | 5,819,172 | Oct. 6, 1998 | Campana, Jr. et al. | | | Apr. 23, 1997 |
| | 6,058,106 | May 2, 2000 | Cudak et al. | | | Oct. 20, 1997 |
| | 6,067,451 | May 23, 2000 | Campana, Jr. et al. | | | Sep. 28, 1998 |
| | 6,317,592 | Nov. 13, 2001 | Campana, Jr. et al. | | | Dec. 6, 1999 |
| | 6,389,457 | May 14, 2002 | Lazaridis et al. | | | Feb. 13, 2001 |
| | 6,401,113 | Jun. 4, 2002 | Lazaridis et al. | | | Feb. 13, 2001 |
| | 6,418,324 | Jul. 9, 2002 | Doviak | | | Sep. 17, 1999 |
| | 6,430,601 | Aug. 6, 2002 | Eldridge et al. | | | Mar. 16, 1999 |
| | 6,446,118 | Sep. 3, 2002 | Gottlieb | | | Feb. 29, 2000 |
| | 6,516,202 | Feb. 4, 2003 | Hawkins et al. | | | Aug. 12, 1999 |
| | 6,546,425 | Apr. 8, 2003 | Hanson et al. | | | Jun. 11, 1999 |
| | 6,680,923 | Jan. 20, 2003 | Leon | | | May 23, 2000 |
| | 6,701,378 | Mar. 2, 2004 | Gilhuly et al. | | | Sep. 23, 1999 |
| | 6,721,288 | Apr. 13, 2004 | King et al. | | | Oct. 13, 1998 |



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

| | |
|----------|---|
| | International Preliminary Examination Report, dated 25 May 2004, for International Application No. PCT/US01/41919 |
| EXAMINER | DATE CONSIDERED |

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.

RECEIVED
OCT 04 2004
Technology Center 2600



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

In the Application of:)
)
Edward F. Bachner, III, et al.)
)
Serial No.: **09/652,734**)
)
Filed: **August 31, 2000**)
)
For: **WIRELESS INTELLIGENT**)
PERSONAL SERVER)

Confirmation No. **3628**

Examiner: **Keith Ferguson**

Art Unit: **2683**

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OCT 04 2004

Technology Center 2600

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

TRANSMITTAL LETTER

- We are transmitting herewith the attached papers for the above-identified patent application:
 - Response to Office Action Mailed July 14, 2004
 - Form PTO-1449 with copies of 19 cited references
 - Return Receipt Postcard
- With respect to fees, enclosed is a check in the amount of \$180.00.
- GENERAL AUTHORIZATION TO CHARGE OR CREDIT FEES:** Please charge any additional fees or credit overpayment to Deposit Account No. **13-2490**. A duplicate copy of this sheet is enclosed.
- CERTIFICATE OF MAILING UNDER 37 CFR § 1.10:** The undersigned hereby certifies that this Transmittal Letter and the papers, as described in paragraph 1 herein-above, are being deposited with the United States Postal Service with sufficient postage as **"Express Mail", EV 333555584**, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this **29th** day of **September, 2004**.

By: Richard A. Machonkin
Richard A. Machonkin
Registration No. 41,962

10/01/2004 MBLANCO 00000036 09652734

01 FC:1806

180.00 OP

PATENT APPLICATION FEE DETERMINATION RECORD
Effective December 29, 1999

Application or Docket Number

652734 9/652734

CLAIMS AS FILED - PART I

SMALL ENTITY TYPE OR OTHER THAN SMALL ENTITY

| FOR | NUMBER FILED (Column 1) | NUMBER EXTRA (Column 2) |
|----------------------------------|-------------------------|-------------------------|
| BASIC FEE | | |
| TOTAL CLAIMS | 55 minus 20 = | 35 |
| INDEPENDENT CLAIMS | 5 minus 3 = | 2 |
| MULTIPLE DEPENDENT CLAIM PRESENT | | |

| RATE | FEE | OR | RATE | FEE |
|--------|-------------------|-----|--------|--------|
| | 345.00 | (2) | | 690.00 |
| X\$ 9= | 315 ⁰⁰ | OR | X\$18= | |
| X39= | 78 ⁰⁰ | OR | X78= | |
| +130= | | OR | +260= | |
| TOTAL | 738 ⁰⁰ | OR | TOTAL | |

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

CLAIMS AS AMENDED - PART II

SMALL ENTITY OR OTHER THAN SMALL ENTITY

Bluber

| | CLAIMS REMAINING AFTER AMENDMENT (Column 1) | HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2) | PRESENT EXTRA (Column 3) |
|--|---|---|--------------------------|
| Total | 76 Minus | 55 | = 21 |
| Independent | 7 Minus | 3 | = 2 |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM | | | |

| RATE | ADDITIONAL FEE | OR | RATE | ADDITIONAL FEE |
|------------------|----------------|----|------------------|----------------|
| X\$ 9= | 189 | OR | X\$18= | |
| X39= | 84 | OR | X78= | |
| +130= | 0 | OR | +260= | |
| TOTAL ADDIT. FEE | 273 | OR | TOTAL ADDIT. FEE | |

2/26/03

| | CLAIMS REMAINING AFTER AMENDMENT (Column 1) | HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2) | PRESENT EXTRA (Column 3) |
|--|---|---|--------------------------|
| Total | 80 Minus | 76 | = 4 |
| Independent | 7 Minus | 7 | = |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM | | | |

| RATE | ADDITIONAL FEE | OR | RATE | ADDITIONAL FEE |
|------------------|----------------|----|------------------|----------------|
| X\$ 9= | 36 | OR | X\$18= | |
| X39= | | OR | X78= | |
| +130= | | OR | +260= | |
| TOTAL ADDIT. FEE | 36 | OR | TOTAL ADDIT. FEE | |

7/11/03

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

| RATE | ADDITIONAL FEE | OR | RATE | ADDITIONAL FEE |
|------------------|----------------|----|------------------|----------------|
| X\$ 9= | | OR | X\$18= | |
| X39= | | OR | X78= | |
| +130= | | OR | +260= | |
| TOTAL ADDIT. FEE | | OR | TOTAL ADDIT. FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

East Search Notes

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|-------|--|--------------------|------------------|---------|------------------|
| | | charg\$ same contact same display | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:55 |
| | | charg\$ same contact and 455/573. ccls. | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:54 |
| | | pda and charg\$ same contact | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:48 |
| | | (plural\$4 or multi or multiple or dual) near4 display\$ | US-PGPUB; USPAT | OR | ON | 2003/04/01 11:18 |
| | | (plural\$4 or multi or multiple) near4 display\$ | US-PGPUB; USPAT | OR | ON | 2003/04/01 11:17 |
| L1 | 0 | ("morris.in.").PN. | US-PGPUB; USPAT | OR | OFF | 2005/02/16 12:40 |
| L2 | 13484 | morris.in. | US-PGPUB; USPAT | OR | ON | 2005/02/16 12:40 |
| L3 | 265 | server and l2 | US-PGPUB; USPAT | OR | ON | 2005/02/16 12:40 |
| L4 | 136 | (mobile or wireless or cellular) and l3 | US-PGPUB; USPAT | OR | ON | 2005/02/16 12:42 |
| L5 | 1 | "20010029178".pn. | US-PGPUB; USPAT | OR | ON | 2005/02/16 12:50 |
| L6 | 1 | "6311058".pn. | US-PGPUB; USPAT | OR | ON | 2005/02/16 13:46 |
| L7 | 1 | "5297192".pn. | US-PGPUB; USPAT | OR | ON | 2005/02/16 13:46 |
| S1 | 360 | 455/419.ccls. | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:33 |
| S2 | 26 | file with memory and 455/419.ccls. | US-PGPUB; USPAT | OR | ON | 2003/03/25 15:31 |
| S3 | 24 | display\$3 and (file with memory and 455/419.ccls.) | US-PGPUB; USPAT | OR | ON | 2003/03/25 15:49 |
| S4 | 14515 | (downstream or download\$3) with (software or file) | US-PGPUB; USPAT | OR | ON | 2003/03/25 15:50 |
| S5 | 56 | 455/419.ccls. and ((downstream or download\$3) with (software or file)) | US-PGPUB; USPAT | OR | ON | 2003/03/25 15:50 |
| S6 | 39111 | display\$3 with (software or file) | US-PGPUB; USPAT | OR | ON | 2003/03/25 15:51 |
| S7 | 17 | (455/419.ccls. and ((downstream or download\$3) with (software or file))) and (display\$3 with (software or file)) | US-PGPUB; USPAT | OR | ON | 2003/03/25 15:51 |
| S8 | 714 | 455/418-420.ccls. | US-PGPUB; USPAT | OR | ON | 2003/04/01 12:30 |
| S9 | 43 | ((plural\$4 or multi or multiple) near4 display\$) and 455/418-420.ccls. | US-PGPUB; USPAT | OR | ON | 2003/04/01 11:16 |

| | | | | | | |
|-----|--------|--|-----------------|----|----|------------------|
| S10 | 43 | ((plural\$4 or multi or multiple) near4 display\$) and 455/418-420.ccls.) and ((plural\$4 or multi or multiple or dual) near4 display\$) | US-PGPUB; USPAT | OR | ON | 2003/04/01 11:27 |
| S11 | 268 | 455/566.ccls. and ((plural\$4 or multi or multiple or dual) near4 display\$) | US-PGPUB; USPAT | OR | ON | 2003/04/01 11:27 |
| S12 | 48 | pda and (455/566.ccls. and ((plural\$4 or multi or multiple or dual) near4 display\$)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 12:25 |
| S13 | 37 | download\$3 and (455/566.ccls. and ((plural\$4 or multi or multiple or dual) near4 display\$)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 11:28 |
| S14 | 4 | shar\$3 near3 display and 455/566.ccls. | US-PGPUB; USPAT | OR | ON | 2003/04/01 12:26 |
| S15 | 483 | 455/418-420.ccls. and display | US-PGPUB; USPAT | OR | ON | 2003/04/01 12:30 |
| S16 | 185 | download\$3 and (455/418-420.ccls. and display) | US-PGPUB; USPAT | OR | ON | 2003/04/01 12:31 |
| S17 | 17 | 455/566.ccls. and charg\$3 same contact | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:41 |
| S18 | 1 | 455/556.ccls. and (pda and charg\$ same contact) | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:42 |
| S19 | 3 | 455/573.ccls. and (pda and charg\$ same contact) | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:43 |
| S20 | 271 | display and (pda and charg\$ same contact) | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:43 |
| S21 | 3 | 455/556,557.ccls. and (display and (pda and charg\$ same contact)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:44 |
| S22 | 25 | "455"/\$.ccls. and (display and (pda and charg\$ same contact)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:55 |
| S23 | 197 | 455/573.ccls. | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:48 |
| S24 | 26 | display and (charg\$ same contact and 455/573.ccls.) | US-PGPUB; USPAT | OR | ON | 2003/04/01 13:49 |
| S25 | 237 | (mobile or wireless or cellular) and (charg\$ same contact same display) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:27 |
| S26 | 25 | "455"/\$.ccls. and ((mobile or wireless or cellular) and (charg\$ same contact same display)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:28 |
| S27 | 46 | card adj reader and gps and "455"/\$.ccls. | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:25 |
| S28 | 591429 | charg\$6 or recharg\$6 near3 display | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:28 |
| S29 | 70284 | (mobile or wireless or cellular) and (charg\$6 or recharg\$6 near3 display) | US-PGPUB; USPAT | OR | ON | 2005/02/16 12:41 |

| | | | | | | |
|-----|------|---|-----------------|----|----|------------------|
| S30 | 4201 | "455"/\$.ccls. and ((mobile or wireless or cellular) and (charg\$6 or recharg\$6 near3 display)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:29 |
| S31 | 4313 | (charg\$6 or recharg\$6) near3 display | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:29 |
| S32 | 798 | (mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:56 |
| S33 | 94 | "455"/\$.ccls. and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:36 |
| S34 | 282 | (contact or terminal) with display and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:38 |
| S35 | 107 | (charg\$3 or recharg\$4) with (contact or terminal) with display and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:56 |
| S36 | 71 | (charg\$3 or recharg\$4) same (contact or terminal) near3 display and ((mobile or wireless or cellular) and ((charg\$6 or recharg\$6) near3 display)) | US-PGPUB; USPAT | OR | ON | 2003/04/01 14:45 |
| S37 | 116 | recharg\$4 near3 display | US-PGPUB; USPAT | OR | ON | 2003/04/01 15:01 |
| S38 | 36 | (mobile or wireless or cellular) and (recharg\$4 near3 display) | US-PGPUB; USPAT | OR | ON | 2003/04/01 15:02 |
| S39 | 153 | recharg\$4 same power\$3 near3 display | US-PGPUB; USPAT | OR | ON | 2003/04/01 15:02 |
| S40 | 62 | (mobile or wireless or cellular or radio) and (recharg\$4 same power\$3 near3 display) | US-PGPUB; USPAT | OR | ON | 2003/04/01 15:02 |
| S41 | 52 | ("D281977" "3685723" "3826900" "3971925" "4006397" "4121574" "4143417" "4180204" "4210802" "4227258" "4251798" "4279021" "4335303" "4359631" "4408120" "4409470" "4411016" "4456793" "4460120" "4471165" "4471345" "4481382" "4483683" "4486624" "4488035" "4488678" "4489313" "4491725" "4496831" "4503288" "4508935" "4519066" "4523087" "4528443" "4528444" "4569421" "4570057" "4575625" "4578571" "4588881" "4593155" "4621189" "4625276" "4628193" "4634810" "4654818" "4680455" "4692740" "4739316" "4773032" "4806906" "4835372").PN. | USPAT | OR | ON | 2003/04/01 15:23 |

| | | | | | | |
|-----|--------|---|-------|----|----|------------------|
| S42 | 470 | 455/418-420.ccls. | USPAT | OR | ON | 2003/04/02 11:39 |
| S43 | 10170 | download\$ same (software or file) | USPAT | OR | ON | 2003/04/02 11:50 |
| S44 | 57 | 455/418-420.ccls. and (download\$ same (software or file)) | USPAT | OR | ON | 2003/04/02 11:40 |
| S45 | 154 | download\$ and 455/418-420.ccls. | USPAT | OR | ON | 2003/04/02 12:29 |
| S46 | 31 | ("4731605" "5062132" "5077790" "5297191" "5297192" "5333177" "5414751" "5481259" "5485505" "5524135" "5594782" "5603084" "5619213" "5649321" "5799084" "5821903" "5878339" "5881235" "5903835" "5909183" "5926756" "5930703" "5937347" "5940752" "5956634" "5974312" "6014561" "6029065" "6041229" "6043780" "6122523").PN. | USPAT | OR | ON | 2003/04/02 11:55 |
| S47 | 0 | "6487403".URPN. | USPAT | OR | ON | 2003/04/02 11:58 |
| S48 | 19 | ("4016542" "4456793" "4661659" "4700378" "4850009" "4916441" "4969180" "5153903" "5157687" "5249220" "5349638" "5533097" "5636211" "5655214" "5671267" "5771453" "5802467" "5831664" "5949775").PN. | USPAT | OR | ON | 2003/04/02 12:03 |
| S49 | 4 | "6289213".URPN. | USPAT | OR | ON | 2003/04/02 12:04 |
| S50 | 27 | ("4112252" "4232299" "4775928" "5045948" "5111296" "5204768" "5359367" "5365264" "5396546" "5428388" "5428806" "5539478" "5563630" "5574964" "5592482" "5602854" "5608449" "5729535" "5732212" "5736968" "5745483" "5787259" "5790201" "5805806" "5844893" "5880721" "6008777").PN. | USPAT | OR | ON | 2003/04/02 12:10 |
| S51 | 7 | ("4414661" "4837858" "4940974" "4984247" "5070536" "5142534" "5297144").PN. | USPAT | OR | ON | 2003/04/02 12:12 |
| S52 | 270 | 455/11.1.ccls. | USPAT | OR | ON | 2003/04/02 12:29 |
| S53 | 20 | download\$ and 455/11.1.ccls. | USPAT | OR | ON | 2003/04/02 12:32 |
| S54 | 3302 | (person\$3 or private) near3 server | USPAT | OR | ON | 2003/04/02 12:35 |
| S55 | 304469 | mobile or wireless or cellular or radio | USPAT | OR | ON | 2003/04/02 12:34 |
| S56 | 1196 | ((person\$3 or private) near3 server) and (mobile or wireless or cellular or radio) | USPAT | OR | ON | 2003/04/02 12:34 |

| | | | | | | |
|-----|-----|--|------------------------------|----|-----|------------------|
| S57 | 366 | (mobile or wireless or cellular or radio) near (telephone or phone) and (((person\$3 or private) near3 server) and (mobile or wireless or cellular or radio)) | USPAT | OR | ON | 2003/04/02 12:35 |
| S58 | 128 | (person\$3 or private) near3 server same download\$3 | USPAT | OR | ON | 2003/04/02 12:36 |
| S59 | 19 | ((mobile or wireless or cellular or radio) near (telephone or phone) and (((person\$3 or private) near3 server) and (mobile or wireless or cellular or radio))) and ((person\$3 or private) near3 server same download\$3) | USPAT | OR | ON | 2003/04/02 12:36 |
| S60 | 1 | ("5995852").PN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2003/04/03 10:35 |

dy



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 NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |

20306 7590 02/23/2005

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
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CHICAGO, IL 60606

EXAMINER

FERGUSON, KEITH

ART UNIT PAPER NUMBER

2683

DATE MAILED: 02/23/2005

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

Office Action Summary

Application No.

09/652,734

Applicant(s)

BACHNER ET AL.

Examiner

Keith T. Ferguson

Art Unit

2683

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

Period for Reply

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

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

Status

- 1) Responsive to communication(s) filed on 29 September 2004.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-80 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7,9-27 and 29-78 is/are rejected.
- 7) Claim(s) 8,28,79 and 80 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/16/05.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

Art Unit: 2683

Response to Arguments

1. Applicant's arguments with respect to claims 1-80 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

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

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

3. Claims 1-5,9-15,18,33,34,37-43,46-60,63-66,68,70,71 and 74-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al., newly cited reference.

Regarding claims 1,4,33,56,59 and 70, Criss et al. discloses a wireless intelligent personal server (mobile terminal)(wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to

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provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082). Criss et al. differs from claims 1,56 and 70 of the present invention in that it does not explicit disclose a first interface for allowing an external (separate) display device to access an electronic file and the mobile terminal is a wireless intelligent network server. Wecker et al. teaches a first interface (sync. Component)(fig. 1 number 28) for allowing an external (separated) display device (desktop computer) (fig. 1 number 16 and fig. 5 number 77) to selectively access an electronic file from a mobile device (col. 4 lines 6-34 and claim 1, col. 15 lines 19-30, claim 10, col. 16 lines 9-15 and claim 11, col. 16 lines 15-24). Fillibrown et al. teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network (paragraph 0061). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for allowing an external (separated) display device to selectively access an electronic file and the mobile terminal is a wireless intelligent network server in order for the mobile terminal to upload a software file with a software file of the host so that a user of a personal computer can compare or exchange information with the mobile terminal and view that the latest version of software implemented from the host, as taught by Wecker et al., and Fillibrown et al..

Regarding claims 2,34,57,58 and 71, Criss et al. discloses said downstream data reflects changes made to at least one source electronic file (files do not match or new)(paragraph 0075), said at least one is electronic file being an updated version of at least one existing electronic file stored in said memory (paragraph 0075).

Regarding claim 3, Criss et al. discloses wherein said at least one electronic file is a new electronic file (paragraph 0075 and 0076).

Regarding claims 5 and 60, Criss et al. discloses said first interface (fig. 2 number 42)(keypad) allows said external

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display device to change said at least one electronic file (paragraph 0094).

Regarding claims 9,37,47,52,54 and 63, Criss et al. discloses a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel (paragraph 0057).

Regarding claims 10,38,48,53,55,64 and 74, Criss et al. discloses said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data (paragraph 0072 and 0073).

Regarding claims 11,39,65 and 75, Criss et al. discloses said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 12 and 40, Criss et al. discloses a second interface (keypad or touch sensitive screen) for controlling a wireless telephone to transmit at least one signal (paragraph 0053).

Regarding claims 13,41 and 77, Criss et al. discloses said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data (paragraphs 0053 and 0072).

Regarding claims 14,42,49,50 and 78, Criss et al. discloses said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 15,43 and 76, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

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Regarding claims 18 and 66, Criss et al. discloses a bar-code input for connecting a bar-code reader (fig 2 number 44).

Regarding claims 20 and 68, Criss et al. discloses a keyboard input for connecting an external keyboard (paragraph 0053).

Regarding claims 46 and 51, Criss et al. discloses a method for updating a target electronic file to reflect changes made to a source electronic file (paragraph 0015), comprising a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075, 0076 and 0082). Criss et al. differs from claims 46 and 51 of the present invention in that it does not explicitly disclose a first interface for allowing an external (separate) display device to access an electronic file and the mobile terminal is a wireless intelligent network server. Wecker et al. teaches a first interface (sync. Component) (fig. 1 number 28) for allowing an external (separated) display device (desktop computer) (fig. 1 number 16 and fig. 5 number 77) to selectively access an electronic file from a mobile device (col. 4 lines 6-34 and claim 1, col. 15 lines 19-30, claim 10, col. 16 lines 9-15 and claim 11, col. 16 lines 15-24). Fillibrown et al. teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network (paragraph 0061). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for allowing an external (separated) display device to selectively access an electronic file and the mobile terminal is a wireless intelligent network server in order for the mobile terminal to upload a software file with a software file of the host so that a user of a personal computer can compare or exchange information with the mobile terminal and view that the latest

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version of software implemented from the host, as taught by Wecker et al., and Fillibrown et al..

4. Claims 6,7,35,36,61,62,72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1,33,56,70 above and in further view of Grew et al..

Regarding claims 6,7,35,36,61,62,72 and 73, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 6,7,35, 36,61,62,72 and 73 of the present invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Wecker et al. and Fillibrown et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

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5. Claims 16 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1,12,15 and 33 above and in further view of Gombrich.

Regarding claims 16 and 44, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 16 and 44 of the present invention in that they do not disclose first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Wecker et al. and Fillibrown et al. with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts

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in order to recharge said display when reviewing download files, as taught by Gombrich.

6. Claims 17 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1,12,14,43, and 33 above and in further view of Shimura.

Regarding claims 17 and 45, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 17 and 45 of the present invention in that they do not disclose a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Wecker et al. and Fillibrown et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a

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second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

7. Claims 19,20,21,67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1 and 56 above and in further view of Ausems et al..

Regarding claims 19,20,21,67 and 69, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 19,20,21,67 and 69 of the present invention in that they do not disclose a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader. Ausems et al. teaches a GPS input for connecting a global positioning system (GPS) receiver (col. 5 lines 35-46) and a card reader input for connecting a card reader (col. 3 lines 15-20 and col. 5 lines 46-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Wecker et al. and Fillibrown et al. with a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader in order to determine

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the mobile terminal position and provide access to a wireless network by using its SIM card, as taught by Ausems et al..

8. Claims 22-25,29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al., newly cited reference.

Regarding claims 22-24, Criss et al. discloses a wireless data communication system (fig.1) comprising a mobile terminal (wireless personal server) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082); the mobile terminal in communication with a network server (fig.1 numbers 36 and 30), and a first interface for allowing an external display (i.e. read only access) device to access said at least one electronic file (paragraph 0094). Criss et al. differs from claim 22 of the present invention in that it do not disclose the mobile terminal is a wireless intelligent network server, and said wireless intelligent network server causes a wireless telephone to transmit an acknowledgment signal over a second wireless communication channel. Gerszberg teaches a wireless telephone (fig. 1 number 101) in communication with a service provider (wireless network server) (fig. 1 number 105), the service provider (fig. 1 number 105) causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel (col. 4 line 67 through col. 5 line 42). Fillibrown et al. teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network (paragraph 0061). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Criss et al. with the mobile terminal is a wireless intelligent network server, and said wireless intelligent network server causes said wireless telephone to transmit an acknowledgment

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signal over a second wireless communication channel in order for the wireless data communication system to receive an acknowledgment that the updated files within the mobile terminal are received from the host and transferred to a wireless telephone for viewing, as taught by Gerszberg and Fillibrown et al..

Regarding claim 25, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claim 29, Criss et al. discloses said mobile terminal transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claim 30, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

9. Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al. as applied to claims 22 and 23 above and in further view of Grew et al..

The combination of Criss et al., Gerszberg and Fillibrown et al. differs from claims 26 and 27 of the claimed invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Fillibrown et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al. as applied to claims 22 and 30 above and in further view of Shimura.

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The combination of Criss et al., Gerszberg and Fillibrown et al. differs from claims 31 of the claimed invention in that they do not disclose a first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and a first power management circuit for selectively connecting said battery to said first power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Fillibrown et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al. as applied to claims 22 and 30 above and in further view of Gombrich.

The combination of Criss et al., Gerszberg and Fillibrown et al. differs from claim 32 of the claimed invention in that they do not disclose a second power contacts electrically connected to recharger contacts disposed on said external display device; and a second power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Fillibrown et al. with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

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Allowable Subject Matter

12. Claims 8,28,79 and 80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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

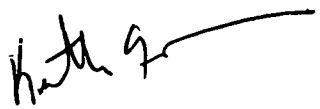
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith T. Ferguson whose telephone number is (703) 305-4888. The examiner can normally be reached on 6:30am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith Ferguson
Art Unit 2683
February 16, 2005



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| FORM PTO-1449 (Rev. 2-32) | U.S. Department of Commerce Patent and Trademark Office | Atty. Docket No. 00-399 | Serial No. 09/652,734 |
| | | FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT | |
| | | RECEIVED OCT 04 2004 Technology Center 2600 | |
| Applicant: Bachner, III, et al. | | Filing Date: August 31, 2000 | Group: 2683 |



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| Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date if Appropriate |
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| International Preliminary Examination Report, dated 25 May 2004, for International Application No. PCT/US01/41919 | |
| EXAMINER <i>Keith Ferguson</i> | DATE CONSIDERED <i>2/16/05</i> |

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.

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| Notice of References Cited | Application/Control No. 09/652,734 | Applicant(s)/Patent Under Reexamination BACHNER ET AL. | |
| | Examiner Keith T. Ferguson | Art Unit 2683 | Page 1 of 1 |

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

Index of Claims



Application No.

09/652,734

Examiner

Keith T. Ferguson

Applicant(s)

BACHNER ET AL.

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Search Notes



Application No.

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Examiner

Keith T. Ferguson

Applicant(s)

BACHNER ET AL.

Art Unit

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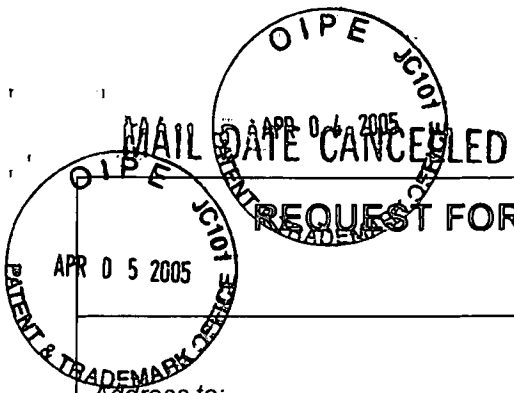
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**SEARCH NOTES
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| | DATE | EXMR |
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**REQUEST FOR CONTINUED EXAMINATION (RCE)
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| Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 | Attorney Docket No.: 00-399 Application No.: 09/652,734 Filing Date: Aug. 31, 2000 First Named Inventor: Bachner Group Art Unit: 2683 Examiner Name: Keith Ferguson |
|---|--|

This is a Request for Continued Examination (RCE) under 37 C.F.R. §1.114 of the above-identified application.

1. Submission required under 37 C.F.R. § 1.114. Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
 - a. Previously submitted
 - i. Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on
 - ii. Consider the arguments in the Appeal Brief or Reply Brief previously filed on
 - iii. Other
 - b. Enclosed
 - i. Amendment/Reply
 - ii. Affidavit(s)/Declaration(s)
 - iii. Information Disclosure Statement (IDS)
 - iv. Other
2. Miscellaneous
 - a. Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17 (i) required)
 - b. Other

| APPLICATION FEES | | |
|--|-----------|-------------|
| BASIC FEE | | \$ 790.00 |
| <input type="checkbox"/> Extension of Time fee | | +\$ |
| <input checked="" type="checkbox"/> Other | +\$180.00 | \$ 180.00 |
| Total of above calculations = | | \$ 970.00 |
| Reduction by 50% for filing by small entity = | | \$ (395.00) |
| TOTAL = | | \$ 575.00 |

04/07/2005 AHONDAF1 00000016 09652734

01 FC:2801 395.00-0P

04/07/2005 AHONDAF1 00000019 09652734

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RCE REQUEST TRANSMITTAL

Attorney Docket No. 00-399

3. Please charge my Deposit Account No. 13-2490 in the amount of \$
4. A check in the amount of \$575.00 is enclosed.
5. The Commissioner is hereby authorized to credit overpayments or charge any additional fees of the following types to Deposit Account No. 13-2490:
- a. Fees required under 37 CFR 1.16.
 - b. Fees required under 37 CFR 1.17.
 - c. Fees required under 37 CFR 1.18.
6. The Commissioner is hereby generally authorized under 37 CFR 1.136(a)(3) to treat any future reply in this or any related application filed pursuant to 37 CFR 1.53 requiring an extension of time as incorporating a request therefor, and the Commissioner is hereby specifically authorized to charge Deposit Account No. 13-2490 for any fee that may be due in connection with such a request for an extension of time.

7. CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being transmitted by facsimile to the U.S. Patent and Trademark Office at 703-872-9306, or being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on the date indicated below.

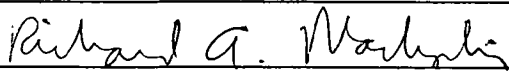
I hereby certify that, under 37 CFR § 1.10, I directed that the correspondence identified above be deposited with the United States Postal Service as "Express Mail Post Office to Addressee," addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the date indicated below. Express Mail No. EV565829395US.

8. USPTO CUSTOMER NUMBER

20306

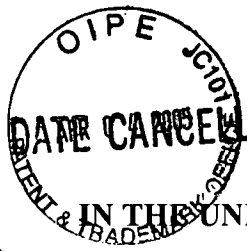
McDonnell Boehnen Hulbert & Berghoff LLP

9. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

| | |
|-----------|---|
| Name | Richard A. Machonkin |
| Reg. No. | 41,962 |
| Signature |  |
| Date | April 5, 2005 |

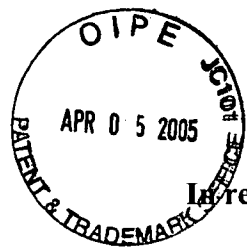
RCE (Rev. 11/27/00)

MAIL DATE CANCELLED



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Docket No. 00-399)



Re the Application of:)
Edward F. Bachner, III, et al.)
Serial No.: 09/652,734)
Filed: August 31, 2000)
For: WIRELESS INTELLIGENT)
PERSONAL SERVER)

Confirmation No. 3628
Examiner: Keith Ferguson
Group Art Unit 2683

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

RESPONSE TO THE OFFICE ACTION MAILED FEBRUARY 23, 2005

Sir:

In response to the Office Action mailed February 23, 2005, please consider the following remarks.

Remarks begin on page 2 of this paper.

04/07/2005 AWONDAF1 00000019 09652734
02 FC:1806 180.00 0P

~~04/07/2005 AWONDAF1 00000016 09652734~~
~~02 FC:1806 180.00 0P~~

REMARKS

1. Introduction

In the Office Action mailed February 23, 2005, the Examiner rejected claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71, and 74-78 under 35 U.S.C. § 103(a) as being unpatentable over Criss et al., U.S. Pub. No. 2001/0029178 (“Criss”) in view of Wecker et al., U.S. Patent No. 6,311,058 (“Wecker”) and Fillebrown et al., U.S. Pub. No. 2004/0204041 (“Fillebrown”).

The Examiner rejected claims 6, 7, 35, 36, 61, 62, 72, and 73 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Fillebrown.

The Examiner rejected claims 16 and 44 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and Fillebrown and in further view of Gombrich, U.S. Patent No. 4,916,441 (“Gombrich”).

The Examiner rejected claims 17 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and Fillebrown and in further view of Shimura, U.S. Patent No. 5,754,624 (“Shimura”).

The Examiner rejected claims 19-21, 67, and 69 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and Fillebrown and in further view of Ausems et al., U.S. Patent No. 6,434,403 (“Ausems”).

The Examiner rejected claims 22-25, 29, and 30 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg, U.S. Patent No. 5,297,192 (“Gerszberg”) and Fillebrown.

The Examiner rejected claims 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Fillebrown and in further view of Grewe.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Fillebrown and in further view to Shimura.

The Examiner rejected claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Fillebrown and in further view of Gombrich.

The Examiner indicated that claims 8, 28, 79, and 80 contained allowable subject matter but objected to these claims as being dependent upon rejected base claims.

For the reasons set forth below, Applicants respectfully request reconsideration and allowance of the claims.

2. Response to Rejections

All of the Examiner's rejections rely on Fillebrown as a newly cited reference. However, the Examiner has not established that Fillebrown is prior art. The Fillebrown application was filed on February 1, 2001, after the August 31, 2000 filing date of the present application. Fillebrown also claims priority on a provisional application filed on June 16, 2000. The Examiner appears to have assumed that the June 16, 2000 date applies. However, the reference date under 35 U.S.C. § 102(e) of a published U.S. application that claims priority to a provisional application is the filing date of the provisional application "if the provisional application(s) properly supports the subject matter relied upon to make the rejection in compliance with 35 U.S.C. 112, first paragraph." MPEP § 2136.03(III). The Examiner has not made the required showing that the provisional application properly

supports the subject matter relied upon to make the rejections. For that reason alone, that Examiner's claim rejections are improper and should be withdrawn.

Moreover, the provisional application clearly does not support the subject matter relied upon to make the rejections. In making the rejections, the Examiner has relied upon paragraph 61 of Fillebrown for the proposition that Fillebrown "teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network." However, this teaching is not found in the provisional application. If the Examiner believes otherwise, then the Examiner is respectfully requested to point out the specific text and/or figures in the provisional application that provide this teaching. A copy of Provisional Application No. 60/212,203, on which Fillebrown claims priority, is attached as Exhibit A for the Examiner's convenience.

Because the Examiner has not established that the newly cited reference, Fillebrown, is prior art that can be used to reject the claims, Applicants respectfully submit that the claims are clearly allowable. In particular, Applicants made the claim amendments that the Examiner agreed during the September 21, 2004 interview would overcome the prior art of record. Since that time, the Examiner has had ample opportunity to search for other prior art but has only come up with Fillebrown, a reference that the Examiner has not established is prior art. Accordingly, Applicants respectfully submit that the time has come to allow the claims as they are written.

3. **Conclusion**

Applicants submit that the present application is in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, he is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

Dated: April 5, 2005

By: Richard A. Machonkin
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| FORM PTO-1449 (Rev. 2-32) U. S. Department of Commerce Patent and Trademark Office FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT | Atty. Docket No. 00-399 | Serial No. 09/652,734 |
| | Applicant: Bachner III, et al. | |
| | Filing Date: 08/31/2000 | Group: 2683 |

FOREIGN PATENT DOCUMENTS

| Examiner Initials | Document Number | Date | Country | Class | Subclass | Translation | |
|-------------------|-----------------|--------------|---------|-------|----------|-------------|----|
| | | | | | | Yes | No |
| | EP 1 016 986 A2 | July 5, 2000 | EPO | | | | X |
| | | | | | | | |

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

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| EXAMINER | DATE CONSIDERED | |

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(19)



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EP 1 016 986 A2

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EUROPEAN PATENT APPLICATION

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(30) Priority: 29.12.1998 US 222121

(71) Applicant: SUN MICROSYSTEMS, INC. Palo Alto, California 94043 (US)

(54) Propagating updates efficiently in hierarchically structured data under a push model

(57) One embodiment of the present invention provides a system that efficiently propagates changes in hierarchically organized data to remotely cached copies of the data. The system operates by receiving changes (402) to the data located on the server (204), and applying (404) the changes to the data on the server (204). These changes are propagated to remotely cached copies of the data on a client (206, 208, 210, 212) in response to an event on a server, and independently of events on the client, by (1) determining differences (406) between the current version of the data at the server and an older copy of the data at the client, which the server has stored locally; (2) using the differences to construct (408) an update for the copy of the data,

which may include node insertion and node deletion operations for hierarchically organized nodes in the data; and (3) sending (410) the update to the client where the update is applied to the copy of the data to produce an updated copy of the data. According to one aspect of the present invention, the act of determining differences, and the act of using the differences to construct the update both take place during a single pass through the data. According to another aspect of the present invention, the update for the copy of the data may include node copy, node move, node collapse, node split, node swap and node update operations.

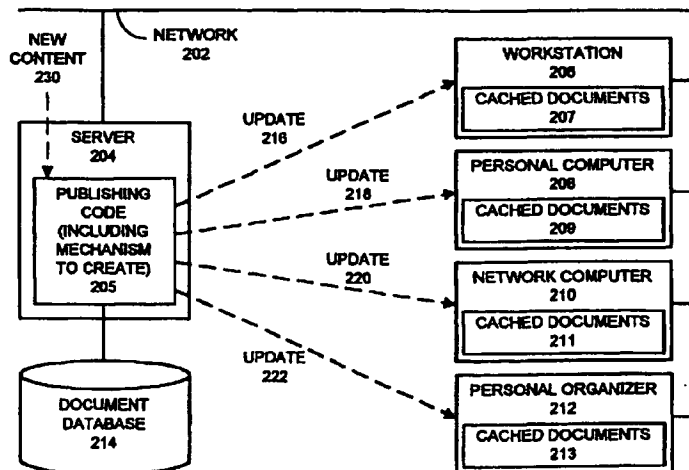


FIG. 2

EP 1 016 986 A2

Description

BACKGROUND

[0001] The present invention relates to distributed computing systems and databases. More particularly, the present invention relates to a method and an apparatus that facilitates detecting changes in hierarchically structured data and producing corresponding updates for remote copies of the hierarchically structured data.

[0002] The advent of the Internet has led to the development of web browsers that allow a user to navigate through inter-linked pages of textual data and graphical images distributed across geographically distributed web servers. Unfortunately, as the Internet becomes increasingly popular, the Internet often experiences so much use that accesses from web browsers to web servers often slow to a crawl.

[0003] In order to alleviate this problem, a copy of a portion of a web document from a web server (document server) can be cached on a client computer system, or alternatively, on an intermediate proxy server, so that an access to the portion of the document does not have to travel all the way back to the document server. Instead, the access can be serviced from a cached copy of the portion of the document located on the local computer system or on the proxy server.

[0004] However, if the data on the document server is frequently updated, these updates must propagate to the cached copies on proxy servers and client computer systems. Such updates are presently propagated by simply sending a new copy of the data to the proxy servers and client computer systems. However, this technique is often inefficient because most of the data in the new copy is typically the same as the data in the cached copy. In this case, it would be more efficient to simply send changes to the data instead of sending a complete copy of the data.

[0005] This is particularly true when the changes to the data involve simple manipulations in hierarchically structured data. Hierarchically structured data typically includes a collection of nodes containing data in a number of forms including textual data, database records, graphical data, and audio data. These nodes are typically inter-linked by pointers (or some other type of linkage) into a hierarchical structure, which has nodes that are subordinate to other nodes, such as a tree -- although other types of linkages are possible.

[0006] Manipulations of hierarchically structured data may take the form of operations on nodes, such as node insertions, node deletions or node movements. Although such operations can be succinctly stated and easily performed, there presently exists no mechanism to transmit such operations to update copies of the hierarchically structured data. Instead, existing systems first apply the operations to the data, and then transmit the data across the network to update copies of the data on local machines and proxy servers.

SUMMARY

[0007] One embodiment of the present invention provides a system that efficiently propagates changes in hierarchically organized data to remotely cached copies of the data. The system operates by receiving changes to the data located on the server, and applying the changes to the data on the server. These changes are propagated to remotely cached copies of the data in response to an event on the server and independently of the client, by (1) determining differences between the current version of the data at the server and an older copy of the data at the client, which the server has stored locally; (2) using the differences to construct an update for the copy of the data, which may include node insertion and node deletion operations for hierarchically organized nodes in the data; and (3) sending the update to the client where the update is applied to the copy of the data to produce an updated copy of the data. According to one aspect of the present invention, the act of determining differences, and the act of using the differences to construct the update both take place during a single pass through the data. According to another aspect of the present invention, the update for the copy of the data may include node copy, node move, node collapse, node split, node swap and node update operations.

BRIEF DESCRIPTION OF THE FIGURES

[0008]

FIG. 1 illustrates a computer system including a web browser and a web server in accordance with an embodiment of the present invention.

FIG. 2 illustrates a computer system including a server that automatically updates local copies of documents in accordance with another embodiment of the present invention.

FIG. 3 is a flow chart illustrating how a client requests an update from a server in accordance with an embodiment of the present invention.

FIG. 4 is a flow chart illustrating how a server automatically updates local copies of documents in accordance with an embodiment of the present invention.

FIG. 5 is a flow chart illustrating how the system creates updates for a new copy of hierarchically structured data in accordance with an embodiment of the present invention.

FIGS. 6A-6I illustrate the steps involved in creating updates to transform a document tree T1 into a document tree T2.

DETAILED DESCRIPTION

[0009] The following description is presented to enable any person skilled in the art to make and use the

invention, and is provided in the context of a particular application and its requirements. Various modifications to the disclosed embodiments will be readily apparent to those skilled in the art, and the general principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the present invention. Thus, the present invention is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles and features disclosed herein.

[0010] The data structures and code described in this detailed description are typically stored on a computer readable storage medium, which may be any device or medium that can store code and/or data for use by a computer system. This includes, but is not limited to, magnetic and optical storage devices such as disk drives, magnetic tape, CDs (compact discs) and DVDs (digital video discs), and computer instruction signals embodied in a carrier wave. For example, the carrier wave may carry information across a communications network, such as the Internet.

Computer System

[0011] FIG. 1 illustrates a computer system including a web browser and a web server in accordance with an embodiment of the present invention. In the illustrated embodiment, network 102 couples together server 104 and client 106. Network 102 generally refers to any type of wire or wireless link between computers, including, but not limited to, a local area network, a wide area network, or a combination of networks. In one embodiment of the present invention, network 102 includes the Internet. Server 104 may be any node coupled to network 102 that includes a mechanism for servicing requests from a client for computational or data storage resources. Client 106 may be any node coupled to network 102 that includes a mechanism for requesting computational or data storage resources from server 104.

[0012] Server 104 contains web server 112, which stores data for at least one web site in the form of inter-linked pages of textual and graphical information. Web server 112 additionally includes a mechanism to create updates for remotely cached copies of data from web server 112.

[0013] Web server 112 stores textual and graphical information related to various websites in document database 116. Document database 116 may exist in a number of locations and in a number of forms. In one embodiment of the present invention, database 116 resides within the same computer system as server 104. In another embodiment, document database resides at a remote location, and is accessed by server 104 through network 102. Note that portions of document database 116 may reside in volatile or non-volatile semiconductor memory. Alternatively, portions of document database 116 may reside within rotating storage

devices containing magnetic, optical or magneto-optical storage media.

[0014] Client 106 includes web browser 114, which allows a user 110 viewing display 108 to navigate through various websites coupled to network 102. Web browser 114 stores cached copies 118 of portions of website documents in local storage on client 106.

[0015] During operation the system illustrated in FIG. 1 operates generally as follows. In communicating with web browser 114, user 110 generates an access to a document in web server 112. In processing the access, web browser 114 first examines cached copies 118 to determine if the access is directed to a portion of a web document that is already cached within client 106. If so, client 106 makes an update request 120, which is transferred across network 102 to server 104. In response to the request, server 104 generates an update 122, which is transferred to web browser 114. Update 122 is then applied to the cached copies 118 in order to update cached copies 118. Finally, the access is allowed to proceed on the cached copies 118.

[0016] Note that although the example illustrated in FIG. 1 deals with web documents for use with web browsers and web servers, in general the present invention can be applied to any type of data. This may include data stored in a hierarchical database. This may also include data related to a directory service that supports a hierarchical name space.

[0017] Also, server 104 and web server 112 may actually be a proxy server that stores data in transit between a web server and web browser 114. In this case, the invention operates on communications between the proxy server and web browser 114.

[0018] In a variation on the embodiment illustrated in FIG. 1, client 106 is a "thin client" with limited memory space for storing cached copies of documents 118. In this variation, when client 106 requests a document, only a subset of the document that client 106 is actually viewing sent from server 104 to client 106. This subset is adaptively updated as client 106 navigates through the document.

[0019] In another variation on the above embodiment, documents from document database 116 are tree-structured. In this variation, documents or portions of documents that are sent from server 104 to client 106 are first validated to ensure that they specify a proper tree structure before they are sent to client 106. This eliminates the need for client 106 to validate the data. (Validation is typically performed by parsing the data, constructing a tree from the data, and validating that the tree is properly structured.) Reducing this work on the client side can be particularly useful for thin clients, which may lack computing resources for performing such validation operations.

[0020] FIG. 2 illustrates a computer system including a server that automatically updates local copies of documents in accordance with another embodiment of the present invention. In the embodiment illustrated in

FIG. 2, network 202 couples together server 204 with workstation 206, personal computer 208, network computer 210 and personal organizer 212. Network 202 generally refers to any type of wire or wireless link between computers, including, but not limited to, a local area network, a wide area network, or a combination of networks. In one embodiment of the present invention, network 202 includes the Internet. Server 204 may be any node coupled to network 202 that includes a mechanism for servicing requests from a client for computational or data storage resources. Server 204 communicates with a number of clients, including workstation 206, personal computer 208, network computer 210 and personal organizer 212. In general, a client may include any node coupled to network 202 that contains a mechanism for requesting computational or data storage resources from server 204. Note that network computer 210 and personal organizer 212 are both "thin clients," because they have rely on servers, such as server 204 for data storage and computational resources. Personal organizer 212 refers to any of a class of portable personal organizers containing computational and memory resources. For example, personal organizer 212 might be a PALMPILOT™ distributed by the 3COM Corporation of Sunnyvale, California. (PalmPilot is a trademark of the 3COM Corporation).

[0021] In the illustrated embodiment, workstation 206, personal computer 208, network computer 210 and personal organizer 212 contain cached documents 207, 209, 211 and 213, respectively. Cached documents 207, 209, 211 and 213 contain locally cached portions of documents from server 204.

[0022] Server 204 is coupled to document database 214, which includes documents to be distributed to clients 206, 208, 210 and 212. Document database 214 may exist in a number of locations and in a number of forms. In one embodiment of the present invention, document database 214 resides within the same computer system as server 204. In another embodiment, document database resides at a remote location that is accessed by server 204 across network 202. Portions of document database 214 may reside in volatile or non-volatile semiconductor memory. Alternatively, portions of document database 214 may reside within rotating storage devices containing magnetic, optical or magneto-optical storage media.

[0023] Server 204 includes publishing code 205, which includes computer code that disseminates information across network 202 to workstation 206, personal computer 208, network computer 210 and personal organizer 212. Publishing code 205 includes a mechanism that automatically creates updates for locally cached copies of documents from document database 214 stored in clients 206, 208, 210 and 212.

[0024] During operation, the system illustrated in FIG. 2 operates generally as follows. Publishing code 205 periodically receives new content 230, and uses

new content 230 to update documents within document database 214. Publishing code also periodically constructs updates for remotely cached copies of documents from document database 214, and sends these updates to clients, such as workstation 206, personal computer 208, network computer 210 and personal organizer 212. Note that these updates do not simply contain new versions of cached documents, but rather specify changes to cached documents.

Updating Process

[0025] FIG. 3 is a flow chart illustrating how a client requests an update from a server in accordance with an embodiment of the present invention. This flow chart describes the operation of the invention with reference to the embodiment illustrated in FIG. 1. First, the system receives a request access the data (step 302). In FIG. 1, this corresponds to user 110 requesting access to a web page or a portion of a web page through web browser 114 on client 106. Next, the system determines if client 106 contains a copy of the data (step 304). This corresponds to web browser 114 looking in cached copies 118 for the requested data. If the data is not present on client 106, the system simply sends a copy of the requested data from server 104 to client 106 (step 306), and this copy is stored in cached documents 118.

[0026] If a copy of the data is present on client 106, client 106 sends an update request 120 to server 104 requesting an update to the copy (step 308). In one embodiment of the present invention, update request 120 includes a time stamp indicating how long ago the previous update to cached documents 118 was created. In response to update request 120, server 104 determines differences between the copy of the data on client 106, and the data from document database 116 (step 310). These differences are used to construct an update 122, which specifies operations to update the copy of the data on client 106 (step 312). Note that if client 106 sends a timestamp along with the request in step 308, the timestamp can be used to determine the differences between the data on server 104 and the cached copy of the data on client 106. In another embodiment of the present invention, server 104 saves update 122, so that server 104 can send update 122 to other clients. In yet another embodiment, server 104 keeps track of changes to the data from document database 116 as the changes occur; these changes are aggregated into update 122. This eliminates the need to actually find differences between the data from document database 116 and the cached copy of the data on client 106.

[0027] Also note that the operations specified by update 122 may include manipulations of nodes with in the data. For example, if the data is hierarchically organized as nodes in a tree structure, the update may specify tree node manipulation operations, such as move, swap, copy, insert and delete operations for leaf nodes. The data may also specify sub-tree move, copy, swap,

insert, delete operations, as well as internal node splitting and internal node collapsing operations. Transmitting such node manipulation operations, instead of transmitting the data that results after the node manipulation operations have been applied to the data, can greatly reduce the amount of data that must be transmitted to update a copy of the data on client 106.

[0028] The update may additionally include a Multipurpose Internet Mail Extensions (MIME) content type specifying that the update contains updating operations for hierarchically organized data. This informs a client receiving update 122 that update 122 contains update information, and not regular data. The MIME content type may specify that update 122 contains updating information that has been validated by sewer 104 so that client 106 does not have to validate update 122.

[0029] In one embodiment of the present invention, the steps of determining the differences (step 310) and constructing the update 122 (step 312) take place concurrently during a single pass through the data. This technique has performance advantages over performing these steps separately in two passes through the data.

[0030] Next, update 122 is sent from sewer 104 to client 106 (step 314), and client 106 applies update 122 to the copy of the data (step 316). In one embodiment of the present invention, the copy of the data is stored in semiconductor memory within client 106, and hence applying update 122 to the copy of the data involves fast memory operations, instead of slower disk access operations.

[0031] Finally, the original access to the data (from step 302) is allowed to proceed, so that user 110 can view the data on display 108. The above process is repeated for successive accesses to the copy of the data on client.

[0032] Note that although the illustrated embodiment of the present invention operates in the context of a web browser and a web server, the present invention can be applied in any context where updates to data have to be propagated to copies of the data. For example, the present invention can be applied to distributed database systems.

[0033] FIG. 4 is a flow chart illustrating how sewer 204 (from FIG. 2) automatically updates local copies of documents in accordance with an embodiment of the present invention. This embodiment is an implementation of a "push" model, in which data is pushed from a sewer 204 to clients 206, 208, 210 and 212 without the clients having to ask for the data. This differs from a "request" model, in which the clients have to explicitly request data before it is sent as is illustrated in FIG. 1.

[0034] The flow chart illustrated in FIG. 4 describes the operation of the invention with reference to the embodiment illustrated in FIG. 2. First, sewer 204 receives new content 230 (step 402). This new content 230 may take the form of live updates to document database 214, for example in the form of stock pricing infor-

mation. New content 230 is used to update documents or other data objects within document database 214 on server 204 (step 404).

[0035] Next, publishing code 205 within sewer 204 determines differences between the data in document database 214 and copies of the data on clients (subscribers) 206, 208, 210 and 212, (step 406). These differences are used to construct updates 216, 218, 220 and 222, which specify operations to change copies of the data on clients 206, 208, 210 and 212, respectively (step 408).

[0036] Updates 216, 218, 220 and 222 may specify operations that manipulate nodes within the data. For example, if the data is hierarchically organized as nodes in a tree structure, updates 216, 218, 220 and 222 may specify tree node manipulation operations, such as move, swap, copy, insert and delete operations for leaf nodes. The data may also specify sub-tree move, copy, swap, insert, delete operations, as well as internal node splitting and internal node collapsing operations. Transmitting such node manipulation operations, instead of transmitting the data after node manipulation operations have been applied to it, can greatly reduce the amount of data that must be transmitted to update copies of the data on clients 206, 208, 210 and 212.

[0037] In one embodiment of the present invention, the steps of determining the differences (step 406) and of constructing updates 216, 218, 220 and 222 (step 408) takes place concurrently during a single pass through the data. This can have a significant performance advantage over performing these steps in two separate passes through the data.

[0038] Next, updates 216, 218, 220 and 222 are sent from server 204 to clients 206, 208, 210 and 212 (step 410), respectively. Clients 206, 208, 210 and 212 apply updates 216, 218, 220 and 222 to their local copies of the data 207, 209, 211 and 213, respectively (step 412). In one embodiment of the present invention, these updates are applied to are applied the local copies 207, 209, 211 and 213 "in memory," without requiring disk accesses. This allows to updates to be performed very rapidly.

[0039] The above process is periodically repeated by the system in order to keep copies of the data on clients 206, 208, 210 and 212 at least partially consistent with the data on server 204. This updating process may be repeated at any time interval from, for example, several seconds to many days.

Process of Creating Updates

[0040] FIG. 5 is a flow chart illustrating how the system creates updates at the server for a new copy of hierarchically structured data in accordance with an embodiment of the present invention. This embodiment assumes that the data is hierarchically organized as a collection of nodes in a tree structure. This tree structure includes a root node that can have a number of chil-

children. These children can also have children, and so on, until leaf nodes, which have no children, are reached. Note that the below-described process for creating updates requires only a single pass through the data. During this single pass the system determines differences between old and new trees and creates corresponding updates to convert the old tree into the new tree. This eliminates the need for a separate time-consuming pass through the data to create updates from differences.

[0041] The system starts with an old tree (old_t) and a new tree (new_t). The system first matches leaf nodes of old_t and new_t (step 502). In doing so, the system may look for exact matches or partial matches of the data stored in the leaf nodes. In the case of partial matches, if the quality of a match is determined to be above a preset threshold, the leaf nodes are considered to be "matched." Next, the system generates deletion operations to remove nodes from old_t which are not present in new_t (step 504).

[0042] In the next phase, the system repeats a number of steps (506, 508, 510 and 512) for ascending levels of the tree. First, for a given level, the system generates node insertion operations for nodes that are present in new_t but not in old_t (step 506). Also, if the position of a node in old_t is different from the position of the same node in new_t, the system generates a move operation, to move the node from its position in old_t to its new position in new_t (step 508). Additionally, if a parent node in old_t does not have all of the same children in new_t, the system generates a node split operation for the parent, splitting the parent node into a first parent and a second parent (step 510). The first parent inherits all of the children that are present in new_t, and the second parent inherits the remaining children. If a parent node in old_t has all of the same children and additional children in new_t, the system generates a node collapse operation to bring all the children together in new_t (step 512).

[0043] Additionally, if all of the children of a first parent in old_t move to a second parent in new_t, the system generates a node collapse operation to collapse the first parent into the second parent so that all of the children of the first parent are inherited by the second parent.

[0044] The system repeats the above-listed steps 506, 508, 510 and 512 until the root of the tree is reached. At this point all of the operations that have been generated are assembled together to create an update that transforms old_t into new_t (step 514).

Example

[0045] Let us consider the example tree illustrated in Figure 6A. This tree may represent a document consisting of sections, paragraphs and individual sentences containing parsable character data. Assume that the document grammar also allows documents to contain

non-character data, say numeric data, as is represented by the leaf node identifier 'd'. All nodes in FIG. 6A include a name (tag), a value, and an associated value identifier. Since the leaf nodes actually contain data, value identifiers are assigned to them before the process starts; whereas, for an internal node, a value identifier is assigned during the comparison process based upon the value of identifiers of the internal node's children. Note that in some embodiments of the present invention, the tree data structure as represented in memory may conform to the World Wide Web Consortium document object model (W3CDOM).

[0046] Additionally, in some embodiments of the present invention, the hierarchically organized data includes data that conforms to the Extensible Markup Language (XML) standard. In other embodiments of the present invention, the hierarchically organized data includes data that conforms HyperText Markup Language (HTML) standard, and other markup language standards.

Notational Semantics

[0047] We represent each leaf node by the path from root node to the leaf node containing the position of each node along the path. Hence, the notation for each of the leaf nodes in FIG. 6A is as follows:

D0.Se0.P0.S0 (left-most node)
 D0.Se0.P0.S1
 D0.Se0.P0.S2
 D0.Se0.P0.S3
 D0.Se0.P1.S0
 D0.Se1.N0
 D0.Se2.P0.S0
 D0.Se2.P1.S0
 D0.Se2.P1.S1
 D0.Se2.P2.S0
 D0.Se2.P2.S1 (right-most node)

The above notation is used to locate and represent any node in the tree, whether it be a leaf node or internal node.

[0048] The notational semantics for each of the tree transformation operations is as follows:

- * MOV(D0.Se0.P0.S2, D0.Se2.P1.S0). In FIG. 6A, this operation moves the leaf node with value identifier 'a'. Note that a similar operation can be used to represent a movement of an internal node. In the case of an internal node, the entire sub-tree moves. Thus, the movement of an individual node or a sub-tree can be an inter-parent move or an intra-parent move.
- * SWP(D0.Se0.P0.S2, D0.Se0.P0.S1). This operation is permitted only in the case of nodes that share a common parent (i.e., intra-parent only). The operation swaps the position of the affected nodes,

under the common parent. In the case of internal nodes, entire sub-trees are swapped.

- * CPY(D0.Se0.P0, D0.Se2.P2). This operation replicates a node by making an identical copy on the node. In the case of internal nodes, the entire sub-tree is copied.
- * INS(D0.Se0.P0.S0, a', {data}). This operation inserts a node in the tree at the given position and assigns to it a value identifier a' along with the {data}. In the case of an internal node, {data}assigned contains a null value.
- * DEL(D0.Se0.P0) This operation deletes a node and all of its children.
- * SPT(D0.Se0.P0, l) This operation splits a parent node into a first node and a second node. All of the children of the parent node starting at position l are transferred to the first node. The remaining children are transferred to the second node. The first node gets the same tag type as the original parent node.
- * CLP(D0.Se0.P0, D0.Se0.P1). This operation collapses the contents of a first node and a second node. The resulting node gets the same tag type as the first node. The children of the second become the right-most children of the resulting node.
- * UPD(D0.Se0.P0.S2, {delta}). This operation specifies a change(delta) to the contents of a leaf node. The {delta} itself describes how to apply (or merge) the change.

[0049] The example described below generates a set of operations to transform an old tree T1 (FIG. 6A) into a new tree T2 (FIG. 6B). Note that in this example the leaf nodes contain actual data, and the internal nodes simply contain tags which organize and describe the data. There are three phases in the process, including: (1) matching the leaf nodes in T1 and T2; (2) deleting nodes in T1 with no match in T2; and (3) modifying or moving nodes the remaining nodes to create T1.

Phase 1: Matching Leaf Nodes

[0050] The first step is to generate a unique identifier for each of the leaf nodes in T2 based on the content of the leaf node. This can be accomplished by using a hash function to generate a unique identifier for each of the leaf nodes. If two leaf nodes have the same content, then the hash function generates the same identifier. If two leaf nodes have the same identifier, it will not cause problems, because the process uses the root node to leaf node path to identify the individual nodes.

[0051] Next, the process assigns value identifiers to leaf nodes of T1. For a given leaf node in T1, the process uses a hash function to generate a unique identifier, which matches one of the leaf node identifiers in T2. If the identifier generated does not match any of the identifiers in T2, then process attempts to find a closest matching leaf node in T2, based on some matching criteria. For example, the process may use the Longest

Common Sub-sequence (LCS) algorithm ("Data Structures and Algorithms," Aho, Alfred V., Hopcroft, John E. and Ullman, Jeffrey D., Addison-Wesley, 1983, pp. 189-194) to determine a percentage match between the contents of leaf nodes in T1 and T2. The matching criterion can be flexible. For example, the matching criterion may specify a minimum of 30% commonality in order for the leaf nodes to be matched.

[0052] Allowing matches to be made on an acceptable matching criteria provides a measure of flexibility. In case a given leaf node's content has been only slightly modified in going from T1 to T2, the system simply matches the node with its modified version in T2. The process subsequently makes the leaf nodes consistent through the UPD(node, delta) operation. However, if the commonality between leaf nodes being matched does not satisfy the matching criterion, the process assigns a unique value identifier to the leaf node in T1, which indicates that the leaf node has been deleted.

[0053] In the worst case, the time complexity of finding a match between the leaf nodes will be $O(K^2)$, where K is the number of unique leaf node identifiers in T1 and T2. In the best case, where the leaf nodes in T1 and T2 match in a straightforward manner, the complexity will be 2^*K . However, the number of changes in a document from one version to another is typically fairly small, in which case only a few leaf nodes need to be matched based on the weak matching criteria.

Phase 2: Deletion phase

[0054] After the matching phase is complete, there may be some leaf nodes in T1, which are not matched to nodes in T2. These unmatched are deleted as follows.

- * For unmatched leaf nodes in T1 (from left to right), create a delete operation, such as DEL(D0.Se2.P2.S0).
- * Reduce the number of delete operations, by replacing them with sub-tree delete operations, if possible. If all children belonging to a parent are to be deleted, the delete operation of each of the children can be replaced by a single delete operation of the parent node. This involves scanning the deletion list, looking for common parents. If T1 has K levels, at most K-1 scans are needed to identify a common parent for deletion. Notice that while scanning the ith level, unreduced nodes in the i+1 level can be ignored, since they cannot be further reduced.
- * After the reductions are performed, the final deletion list is repositioned, because deleting a node at position '0' alters the relative positioning of adjacent nodes. Hence, if two delete operations are to be performed on nodes that have a common parent, then the second delete operation needs to be altered to reflect the change in position of the sec-

ond node to be deleted.

[0055] In the instant example, leaf nodes y, t, h and i in FIG. 6A are unmatched. In accordance with the first step, the system creates following delete operations,

```
DEL(D0.Se0.P0.S0),
DEL(D0.Se0.P0.S1),
DEL(D0.Se2.P2.S0),
DEL(D0.Se2.P2.S1).
```

In the second step, scanning left to right (scan level 4), the system notices that all of D0.Se2.P2's children are to be deleted. By reducing the individual delete operations "DEL(D0.Se2.P2.S0)" and "DEL(D0.Se2.P2.S1)" into a single delete operation of the parent "DEL(D0.Se2.P2)" we are left the following delete operations.

```
DEL(D0.Se0.P0.S0),
DEL(D0.Se0.P0.S1),
DEL(D0.Se2.P2).
```

[0056] Continuing with the level 3 scan, the system notices that the only eligible delete operation for reduction is DEL(D0.Se2.P2), since the other delete operations DEL(D0.Se0.P0.S0) and DEL(D0.Se0.P0.S1) are at level 4. Since D0.Se2.P2's parent has other children which do not participate in the delete operation, the reduction ends at scan level 3.

[0057] In the third step, the system checks to see if applying the first delete operation will affect the relative node position of any other delete operation. This involves looking for nodes having the same parent as the node being deleted. If such a node exists, the system adjusts its node position accordingly. Note that the entire deletion list need not be scanned to identify sibling nodes, because of the inherent ordering in the deletion list ensures that deletion operations for sibling nodes will be close together in the deletion list.

[0058] Continuing with the example, the system notices that applying the delete operation DEL(D0.Se0.P0.y0) will affect the relative positioning of sibling node D0.Se0.P0.t1. So, the system adjusts the position of its sibling (See FIG. 6C). Hence, the final deletion list becomes,

```
DEL(D0.Se0.P0.S0),
DEL(D0.Se0.P0.S1),
DEL(D0.Se2.P2).
```

Phase 3: Modification Phase

[0059] The modification phase brings together the children of internal nodes, in a bottom-up fashion. This involves scanning all the nodes from the bottom-most level (furthest from the root), and scanning each level until level zero is reached. Note that the identity of each

internal node is established by the collective identity of its children. For example, if a parent node's children are identified as 'a' and 'b' respectively, then the identity of the parent is 'ab.'

[0060] Also, if a parent node is left with no children as a result of a move operation, the parent node is deleted. Furthermore, in the special case where there is a skewed tree or sub-tree of nodes having just one child, i.e., a->b->c->d, when node 'd' is deleted, node 'c' is also be deleted. This action is repeated until node 'a' is deleted as well. Instead of generating an individual delete operation for each one of the nodes, the chain of delete operations is reduced to a single delete operation of the grandest common parent of all nodes being deleted.

[0061] Pseudo-code for one embodiment of the modification phase appears below.

```
For each level _i in T2 (leaf to the root) {
```

```
1. TO_BE_COMPLETED_LIST = list of all the
   node value identifiers at level _i in T2.
```

```
2. If the node in the
   TO_BE_COMPLETED_LIST is the root node,
   find the matching node 't' in T1'. If 't' happens is
   a root node, break from the loop. Else, partition
   T1' into two nodes, such that the sub-tree
   rooted at 't' is moved away from T1', and
   becomes another tree (T1"). Next, delete the
   source partition (T1) by deleting its grandest
   common parent (the root). T1" and T2 are now
   identical.
```

```
} (end of for loop)
```

```
3. Pick one of the nodes 'k' from
   TO_BE_COMPLETED_LIST, typically the left-
   most node. SIBLING_LIST = siblings of 'k',
   including 'k'. Note that we use the term 'node' in
   place of a node identifier, for convenience.
```

```
4. If none of the nodes in the SIBLING_LIST
   have a matching node in T1', create a parent
   node 'p' in T1', having the same tag type as the
   one in T2 (i.e. same as the parent of the nodes
   in the sibling list in T2). Insert all of the nodes in
   the sibling list into the newly created parent
   node in T1'. Next, move the newly created node
   (along with its children) to be the child of any
   internal node, preferably, one of the parent
   nodes at level _i-2, if such a level exists.
```

```
5. Let S be the subset of nodes in the
   SIBLING_LIST that have a match in T1'. Find a
   parent node 'p' in T1', which has the most sib-
   lings in the SIBLING_LIST.
```

- Move the rest of the matched nodes in S. to be the children of 'p'. If any subset of nodes being moved have a common parent 'q', and if 'q' has no other children, then collapse 'q' into 'p'. Else, individual nodes are moved by separate move operations.
 - The unmatched nodes in the SIBLING_LIST are inserted into 'p'.
 - Order the children of 'p' through swap operations. At the end of the swaps, all the children of 'p' which do not happen to be the children of its peer, if any, are gathered in the right-most corner. If there are such children, then a node split operation is performed, so that 'p' has exactly the same children as its peer. The newly created node (sub-tree) is at the same level as 'p' and has the same parent as 'p'. Also, the tag type of 'p' is changed to be the same as its peer in T2, if it is different.
6. Assign a node identity to 'p', which is the collective identity of its latest children. Similarly, assign an identical identity to the peer node of 'p' in T2.
7. TO_BE_COMPLETED_LIST = TO_BE_COMPLETED_LIST-SIBLING LIST.
8. If TO BE COMPLETED LIST is not equal to NULL, then return to step 2, else continue.

[0062] Note that the above node movement operations cause changes in the relative positioning of sibling nodes. Hence, the node operations generated by the process should take into account the positional changes caused by node movements.

[0063] The system now applies the modification algorithm on T1' from FIG 6C.

Level 3 scan

[0064] Applying steps 1 and 2, TO_BE_COMPLETED_LIST = {g, c, f, e, b, a, z} and SIBLING_LIST = {g, c}. The system locates the children 'g' and 'c' in T1', and chooses D0.Se2.P1 to be the parent. Applying step 4, the system notices that nodes D0.Se2.P1 and D0.Se0.P1 need to be collapsed. This brings together all the nodes in the SIBLING_LIST under a common parent (See FIG. 6D).

CLP(D0.Se2.P1, D0.Se0.P1)

[0065] Next, the system uses swap operations to re-order the nodes (see FIG. 6E),

SWP(D0.Se2.P1.S1, D0.Se2.P1.S0)
SWP(D0.Se2.P1.S2, D0.Se2.P1.S1)

[0066] Next, a split operation is performed to move away children which do not truly belong to the parent (see FIG. 6F)

SPT(D0.Se2.P1, 2)

[0067] Applying step 5, the system generates an identity for D0.Se2.P1 and its peer in T2 (see FIG. 6G). Though T2 is not shown, it is assumed that the identity has been assigned

[0068] Applying step 6, the system determines that TO_BE_COMPLETED_LIST = {f, e, b, a, z}. Since TO_BE_COMPLETED_LIST is not empty, the system returns to step 2. SIBLING_LIST = {f}. Step 3 and 4 do not produce any changes. Step 5 assigns an identity to D0.Se2.P2. Step 6 removes 'f' from TO_BE_COMPLETED_LIST. Repeating the same, the system eliminates 'd', and 'e' from TO_BE_COMPLETED_LIST.

[0069] At this point, TO_BE_COMPLETED_LIST = {b, a, z} and SIBLING_LIST = {b, a, z}. Step 4 selects node D0.Se0.P0 as a matching node. At this point, node 'z' in the SIBLING_LIST is unmatched in T2. Hence, the system inserts node 'z'. Next, the system applies swap operations to order the children of D0.Se0.P0. Now, TO_BE_COMPLETED LIST is NULL (see FIG. 6H).

INS(D0.Se0.P0.S0, z, {data})
SWP(D0.Se0.P0.S2, D0.Se0.P0.S0)

Level 2 scan

[0070] Applying steps 1 and 2 the system determines TO_BE_COMPLETED_LIST = {gc, f, e, baz} and SIBLING_LIST = {gc, f}. Applying step 4, the system chooses D0.Se2 as the parent. The system next applies swap operations to order the children, and then split the parent D0.Se2 to move away children that do not belong to D0.Se2. Applying step 5, the system generates identities for D0.Se2 and its peer in T2 (see FIG. 6I).

SWP(D0.Se2.P0, D0.Se2.P1)
SWP(D0.Se2.P1, D0.Se2.P2)
SPT(D0.Se2, 2)

[0071] Now, TO_BE_COMPLETED_LIST = {e, baz} and SIBLING_LIST = {e, baz}. Applying step 4, the system chooses D0.Se0 as the parent. Since, P(e) is the only child, the system collapses D0.Se0 and D0.Se3, and then re-orders the children through swap operations. Applying step 5, the system generates identities for D0.Se0 and its peer in T2 (see FIG. 6J).

CLP(D0.Se0, D0.Se3)
SWP(D0.Se0.P0, D0.Se0.P1)

Level 1 scan

[0072] Applying steps 1 and 2 the system determines TO_BE_COMPLETED_LIST = {ebaz, d, gcf} and SIBLING_LIST = {ebaz, d, gcf}. Step 4 selects D0 as the parent, and applies the swap operations to re-order its children, which produces T2 (see FIG 6K).

SWP(D0.Se0, D0.Se1)

[0073] Hence, the final set of transformations to transform T1 to T2 is:

DEL(D0.Se0.P0.S0),
 DEL(D0.Se0.P0.S0),
 DEL(D0.Se2.P2),
 CLP(D0.Se2.P1, D0.Se0.P1),
 SWP(D0.Se2.P1.S1, D0.Se2.P1.S0),
 SWP(D0.Se2.P1.S2, D0.Se2.P1.S1),
 SPT(D0.Se2.P1, 2),
 INS(D0.Se0.P0.S0, z, {data}),
 SWP(D0.Se0.P0.S2, D0.Se0.P0.S0),
 SWP(D0.Se2.P0, D0.Se2.P1),
 SWP(D0.Se2.P1, D0.Se2.P2),
 SPT(D0.Se2, 2),
 CLP(D0.Se0, D0.Se3),
 SWP(D0.Se0.P0, D0.Se0.P1), and
 SWP(D0.Se0, D0.Se1).

[0074] Additionally, if partial matches of leaf nodes were made, the leaf nodes need to be updated using UPD operations.

[0075] The above process requires all nodes in T2 be visited and matched with corresponding nodes in T1 once. The complexity of matching the internal nodes is $O(n1+n2)$, where $n1$ and $n2$ are the internal node counts of T1 and T2, respectively. Note that nodes can be matched by hashing node value identifiers.

[0076] Node movements and modifications also add to the overhead. If we consider a cost-based analysis, the cost of a transformation operation on a node 'Y' is a function of the number of children of 'Y'. Thus, the net cost of all transformations will be a function of the total number of nodes involved directly or indirectly in the transformation.

[0077] Since there are no cycles in the transforming operations, the overhead contributed by the node movements is bounded by $O(LK)$, where L is the number of levels in the tree, and K is a the number of leaf nodes. However, typically the number of nodes involved in the movements is very small and does not involve all the nodes in a tree.

[0078] Hence, the worst case time complexity of the algorithm is a summation of the cost of matching leaf nodes $O(K^2)$, the cost of matching internal nodes $O(n1+n2)$, and overhead contributed by node movements $O(LK)$. In an average case analysis, where the number of changes to a document are less than, for

example, 20%, the time complexity is a summation of, the cost of matching leaf nodes $O(K)$, the cost of matching internal nodes $O(n1+n2)$, and overhead contributed by node movements $O(K)$.

Optimizations

[0079] There exist a number of additional optimizations that can be applied to the above process.

- * While trying to find a parent 'p' in T1' which has the most children in the SIBLING_LIST, if there is tie, choose a parent with the same tag-type as the one in T2.
- * While re-ordering nodes within the same parent (intra-node movement) through swap operations, if the node being moved out is not in the SIBLING_LIST, it can be directly moved to be the right-most child.
- * While re-ordering nodes within the same parent (intra-node movement) through swap operations, if the node being moved out is in the SIBLING_LIST, try to position the node being moved out through another swap operation.

[0080] The foregoing descriptions of embodiments of the invention have been presented for purposes of illustration and description only. They are not intended to be exhaustive or to limit the invention to the forms disclosed. Many modifications and variations will be apparent to practitioners skilled in the art. Accordingly, the above disclosure is not intended to limit the invention. The scope of the invention is defined by the appended claims.

Claims

1. A method for propagating changes in hierarchically organized data located on a server (204) to a copy of the data (207, 209, 211, 213) located on a client (206, 208, 210, 212), comprising:

receiving (402) the changes (230) to the data (214) on the server (204);
 applying (404) the changes to the data (214) on the server (204); and
 responsively to an event on the server and independently of the client, propagating the changes to the copy of the data by,

determining differences (406) between the data (214) on the server (204) and the copy of the data which the server has locally available,
 using the differences to construct (408) an update (216, 218, 220, 222) for the copy of the data which the server has locally available, wherein the update may include node

- insertion and node deletion operations for hierarchically organized nodes in the data, and
 sending (410) the update (216, 218, 220, 222) from the server (204) to the client (206, 208, 210, 212).
2. The method of claim 1, wherein the acts of determining (406) the differences and constructing (408) the update take place during a single pass through the data.
 3. The method of claim 1 or claim 2, wherein the event on the server includes a timer completing a preprogrammed time interval.
 4. The method of any one of claims 1 to 3, wherein the event on the server includes a change to the data located on the server.
 5. The method of any one of claims 1 to 4, wherein the act of propagating the changes to the copy of the data on the client takes place automatically at regular time intervals or at irregular time intervals.
 6. The method of any one of claims 1 to 5, wherein the act of determining the differences (406) involves aggregating the changes to the data and/or examining the data after the changes have been applied to the data.
 7. The method of any one of claims 1 to 6, wherein the update (216, 218, 220, 222) includes a Multipurpose Internet Mail Extensions (MIME) content type specifying that the update (216, 218, 220, 222) contains updating operations for hierarchically organized data.
 8. The method of any one of claims 1 to 7, wherein the update may include one or more of the following:
 - a) a node copy operation that makes an identical copy of a node as well as any subtree of the node that may exist,
 - b) a node move operation that moves a node to another location in a tree of hierarchically organized nodes,
 - c) a node split operation that splits a node into a pair of nodes, and divides any children of the node that may exist between the pair of nodes,
 - d) a node collapse operation that collapses a pair of nodes into a single node, which inherits any children of the pair of nodes that may exist.
 - e) a node deletion operation that includes deleting any nodes that are subordinate to the node,
 - f) a node swap operation that swaps two nodes as well as any subtrees of the nodes that may
- exist,
- g) a node update operation.
9. The method of any one of claims 1 to 8, wherein the data that is hierarchically organized includes data that conforms to the HyperText Markup Language (HTML) standard or the Extensible Markup Language (XML) standard.
 10. The method of any one of claims 1 to 9, wherein the data that is hierarchically organized includes a hierarchical database, and/or a directory service that supports a hierarchical name space.
 11. The method of any one of claims 1 to 10, wherein the copy of the data located on the client (206, 208, 210, 212) contains a subset of the data (214) on the server (204).
 12. The method of any one of claims 1 to 11, wherein the server (204) includes a proxy server for caching data in transit between a server (204) and a client (206, 208, 210, 212).
 13. The method of any one of claims 1 to 12, wherein the update (216, 218, 220, 222) includes data that is validated at the server (204).
 14. A computer readable storage medium storing instructions that when executed by a computer cause the computer to perform the method of any one of claims 1 to 13.
 15. An apparatus that propagates changes in data located on a server to a copy of the data located on a client, comprising:
 - a receiving mechanism (205) that receives (402) the changes to the data on the server;
 - a change application mechanism (205) that applies the changes (404) to the data on the server;
 - a difference determining mechanism that determines differences (406) between the data on the server and the copy of the data which the server has locally available, wherein the difference determining mechanism operates responsively to an event on the server and independently of the client;
 - an update creation mechanism that constructs (408) an update for the copy of the data, wherein the update may include node insertion and node deletion operations for hierarchically organized nodes in the data; and
 - an update sending mechanism, that sends (410) the update from the server to the client.
 16. The apparatus of claim 15, wherein the difference

determining mechanism and the update creation mechanism operate concurrently during a single pass through the data.

17. The apparatus of claim 15 or claim 16, further comprising an updating mechanism on the client that applies the update to the copy of the data to produce an updated copy of the data. 5
18. The apparatus of any one of claims 15 to 17, wherein the update additionally includes at least one from the group of node move, node collapse, node split and node update operations. 10
19. The apparatus of any one of claims 15 to 18, wherein the update includes a Multipurpose Internet Mail Extensions (MIME) content type specifying that the update contains updating operations for hierarchically organized data. 15
20. The apparatus of any one of claims 15 to 19, wherein the copy of the data located on the client (206, 208, 210, 212) contains a subset of the data on the server (204). 20
21. The apparatus of any one of claims 15 to 20, wherein the update includes data that is validated at the server (204). 25
22. A method for propagating changes in data located on a server to a copy of the data located on a client, comprising: 30
- receiving (410) at the client an update (216, 218, 220, 222) for the copy of the data from the server (204), wherein the update may include node insertion and node deletion operations for hierarchically organized nodes in the data; 35
- applying (412) the update to the copy of the data to produce an updated copy of the data. 40
23. The method of claim 22, wherein the update additionally includes at least one from the group of, node move, node collapse, node split and node update operations. 45
24. The method of claim 22 or claim 23, wherein the update includes a Multipurpose Internet Mail Extensions (MIME) content type specifying that the update contains updating operations for hierarchically organized data. 50
25. The method of any one of claims 22 to 24, wherein the copy of the data located on the client contains a subset of the data on the server. 55
26. The method of any one of claims 22 to 25, wherein the update includes data that is validated at the

server.

27. The method of any one of claims 22 to 26, wherein the act of applying the update to the copy of the data takes place in semiconductor memory, whereby the update is able to proceed rapidly in the absence of time-consuming I/O operations.

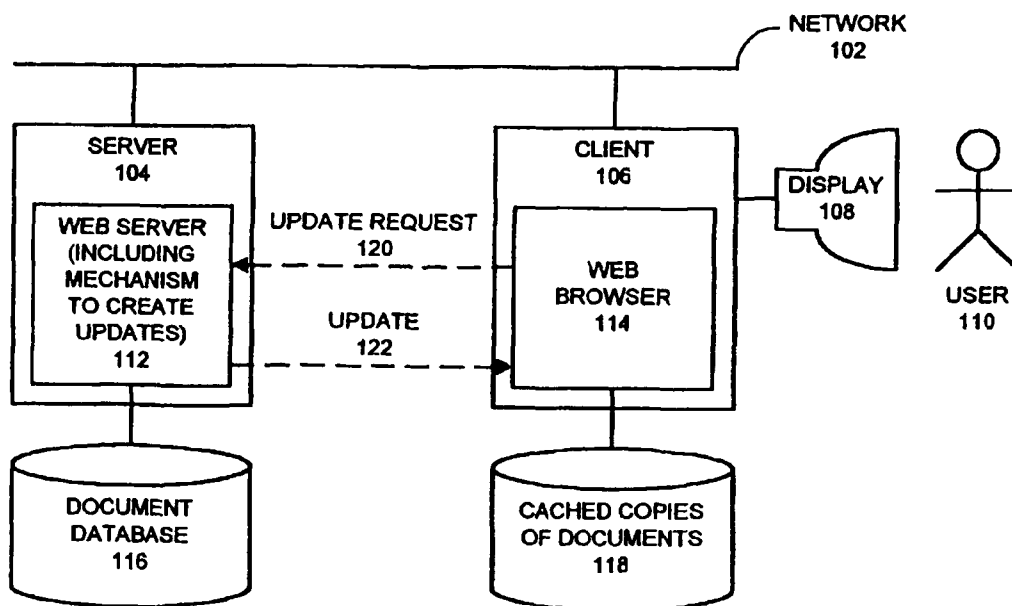


FIG. 1

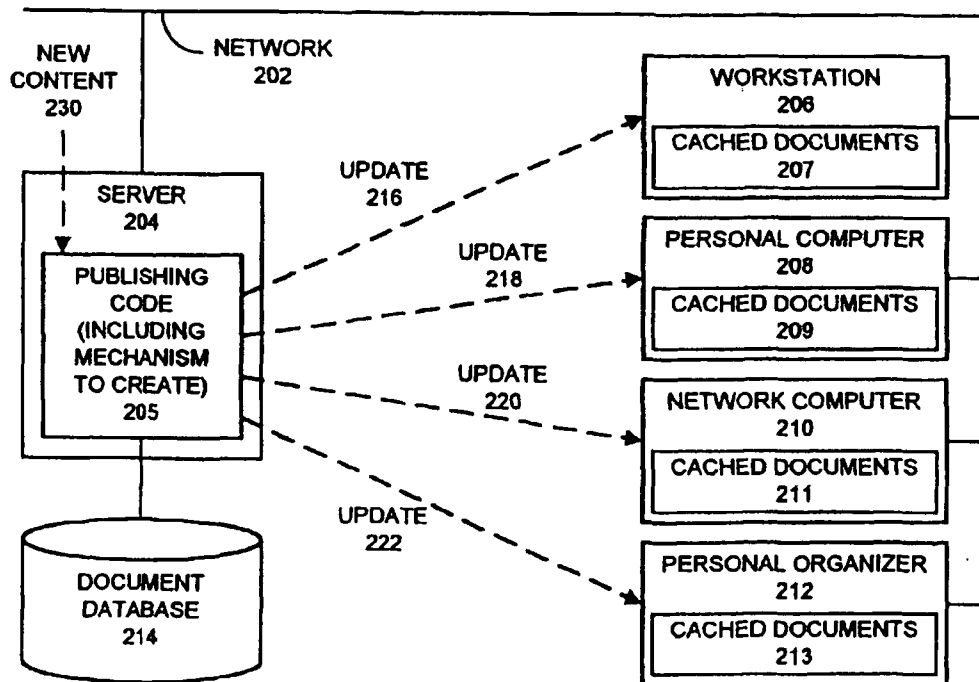


FIG. 2

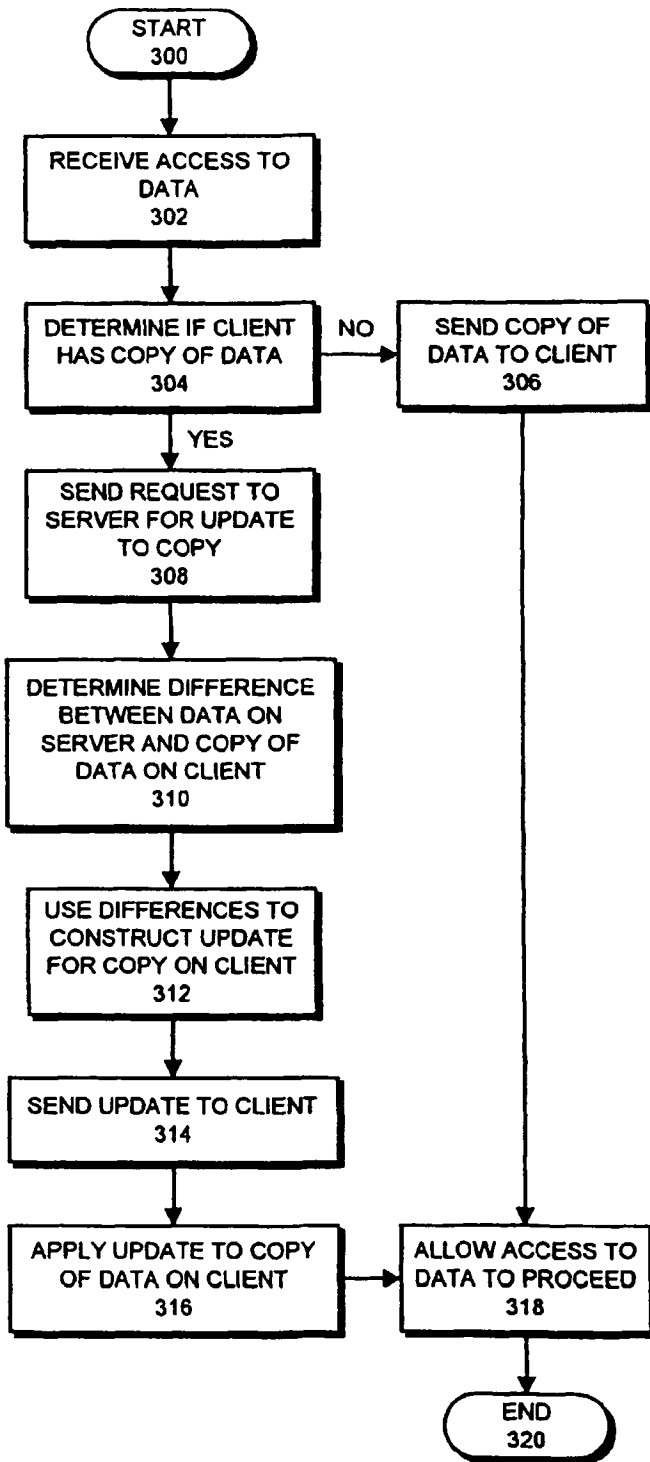


FIG. 3

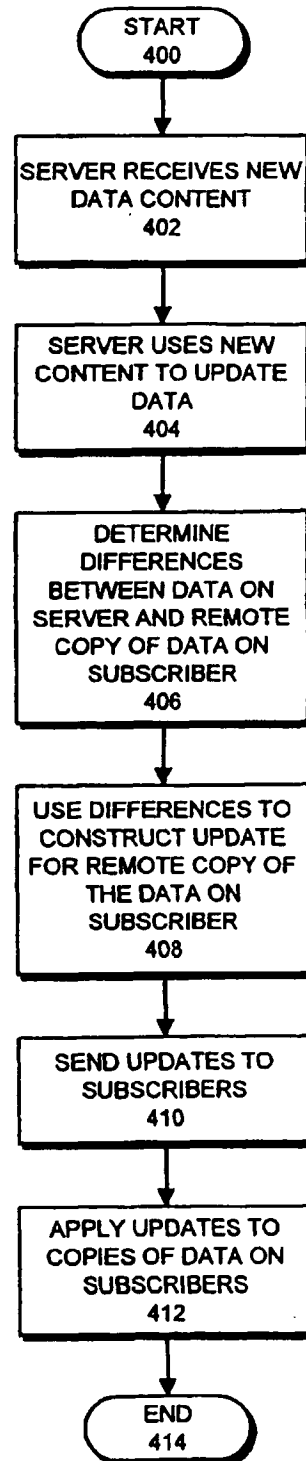


FIG. 4

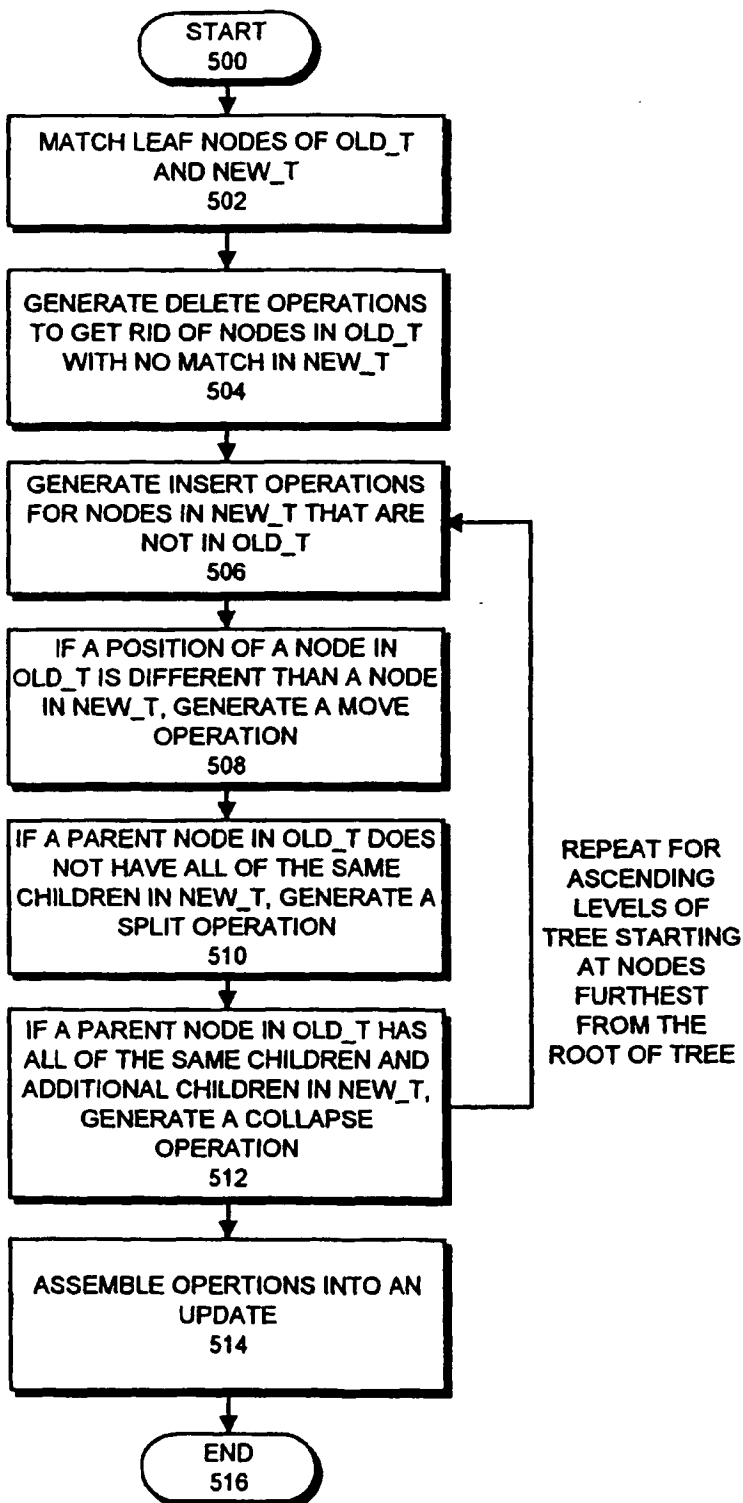


FIG. 5

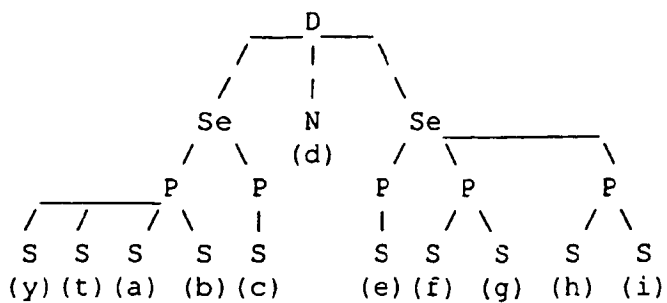


Figure 6A: Sample Document Tree (T1)

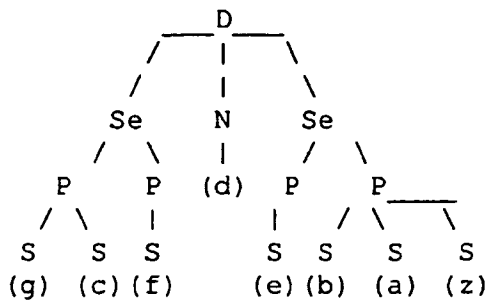


Figure 6B: Modified Document Tree (T2)

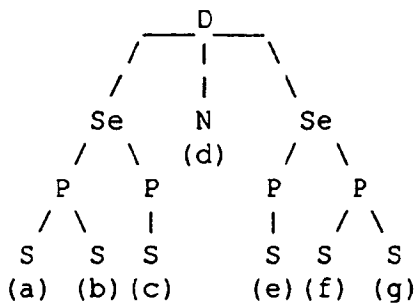


Figure 6C: Document Tree (T1') after deletion phase

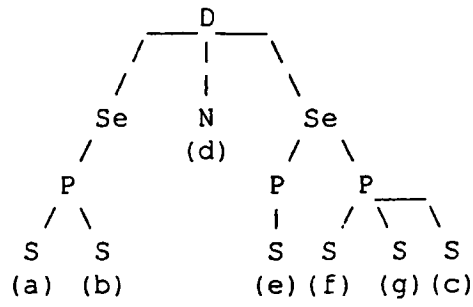


FIG. 6D

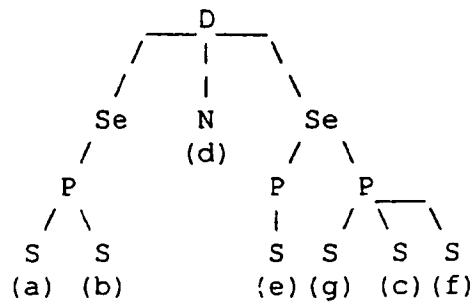


FIG. 6E

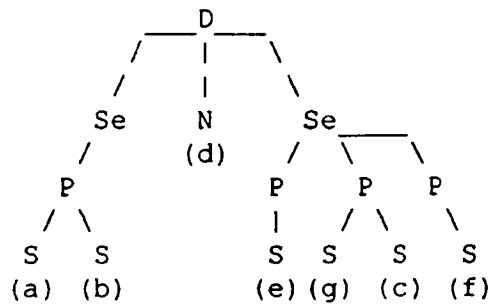


FIG. 6F

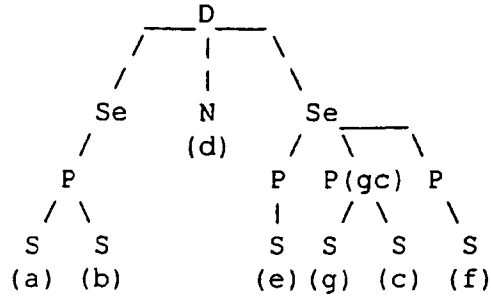


FIG. 6G

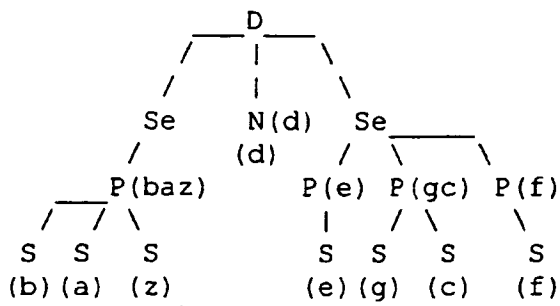


FIG. 6H

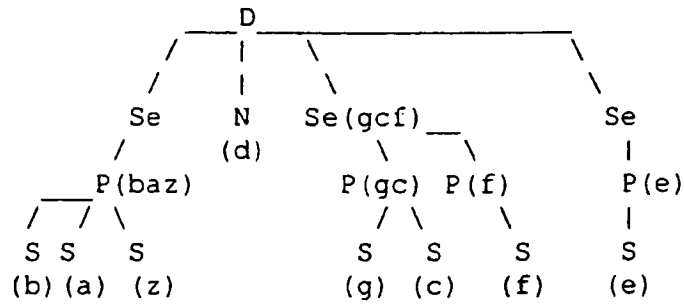


FIG. 6I

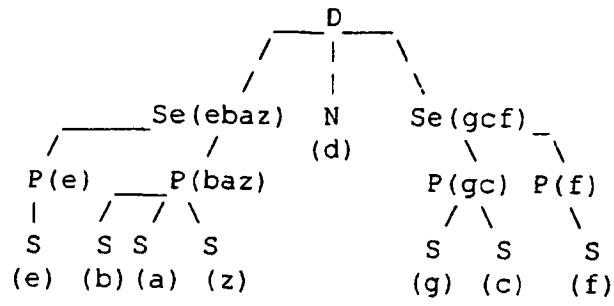


FIG. 6J

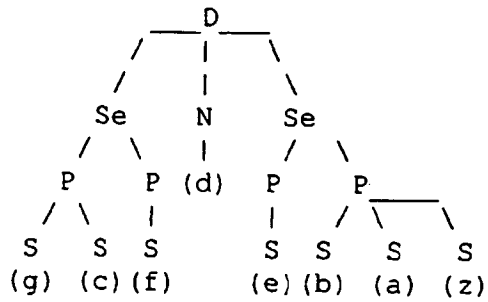


FIG. 6K

PATENT APPLICATION FEE DETERMINATION RECORD

Effective JANUARY, 2003

Application or Docket Number

09/652734

CLAIMS AS FILED - PART I

RC9

| | (Column 1) | (Column 2) |
|----------------------------------|--------------------------|--------------|
| TOTAL CLAIMS | | |
| FOR | NUMBER FILED | NUMBER EXTRA |
| TOTAL CHARGEABLE CLAIMS | 80 minus 20 = | |
| INDEPENDENT CLAIMS | 7 minus 3 = | |
| MULTIPLE DEPENDENT CLAIM PRESENT | <input type="checkbox"/> | |

SMALL ENTITY TYPE

OR OTHER THAN SMALL ENTITY

| RATE | FEE |
|-----------|--------|
| BASIC FEE | 375.00 |
| X\$ 9= | |
| X42= | |
| +140= | |
| TOTAL | |

| RATE | FEE |
|-----------|--------|
| BASIC FEE | 790.00 |
| X\$18= | |
| X86= | |
| +280= | |
| TOTAL | 790 |

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

CLAIMS AS AMENDED - PART II

| | (Column 1) | (Column 2) | (Column 3) |
|---|----------------------------------|------------------------------------|---------------|
| AMENDMENT A | CLAIMS REMAINING AFTER AMENDMENT | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
| | Total | Minus | ** |
| | Independent | Minus | *** |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/> | | | |

SMALL ENTITY TYPE

OR OTHER THAN SMALL ENTITY

| RATE | ADDITIONAL FEE |
|------------------|----------------|
| X\$ 9= | |
| X42= | |
| +140= | |
| TOTAL ADDIT. FEE | |

| RATE | ADDITIONAL FEE |
|------------------|----------------|
| X\$18= | |
| X86= | |
| +280= | |
| TOTAL ADDIT. FEE | |

| | (Column 1) | (Column 2) | (Column 3) |
|---|----------------------------------|------------------------------------|---------------|
| AMENDMENT B | CLAIMS REMAINING AFTER AMENDMENT | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
| | Total | Minus | ** |
| | Independent | Minus | *** |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/> | | | |

| RATE | ADDITIONAL FEE |
|------------------|----------------|
| X\$ 9= | |
| X42= | |
| +140= | |
| TOTAL ADDIT. FEE | |

| RATE | ADDITIONAL FEE |
|------------------|----------------|
| X\$18= | |
| X86= | |
| +280= | |
| TOTAL ADDIT. FEE | |

| | (Column 1) | (Column 2) | (Column 3) |
|---|----------------------------------|------------------------------------|---------------|
| AMENDMENT C | CLAIMS REMAINING AFTER AMENDMENT | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA |
| | Total | Minus | ** |
| | Independent | Minus | *** |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/> | | | |

| RATE | ADDITIONAL FEE |
|------------------|----------------|
| X\$ 9= | |
| X42= | |
| +140= | |
| TOTAL ADDIT. FEE | |

| RATE | ADDITIONAL FEE |
|------------------|----------------|
| X\$18= | |
| X86= | |
| +280= | |
| TOTAL ADDIT. FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

| | | | | |
|------------|------------|-----------------------|------------|------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |
|------------|------------|-----------------------|------------|------|

| | | | | |
|-------|------|------------|--|--|
| 20306 | 7590 | 06/30/2005 | | |
|-------|------|------------|--|--|

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CHICAGO, IL 60606

EXAMINER

FERGUSON, KEITH

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2683

DATE MAILED: 06/30/2005

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

Office Action Summary

| | | |
|--------------------------------------|---------------------------------------|--|
| Application No. 09/652,734 | Applicant(s) BACHNER ET AL. | |
| Examiner Keith T. Ferguson | Art Unit 2683 | |

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

Period for Reply

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

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

Status

- 1) Responsive to communication(s) filed on 05 April 2005.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-80 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7, 9-27 and 29-78 is/are rejected.
- 7) Claim(s) 8, 28, 79 and 80 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/5/05.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-80 have been considered but are moot in view of the previous ground(s) of rejection.

Claim Rejections - 35 USC § 103

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

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

3. Claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71 and 74-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al., newly cited reference.

Regarding claims 1, 4, 33, 56, 59 and 70, Criss et al. discloses a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig.

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1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082). Criss et al. differs from claims 1,56 and 70 of the present invention in that it does not explicitly disclose a first interface for allowing an external (separate) display device to access an electronic file and the mobile terminal is a wireless intelligent network server. Wecker et al. teaches a first interface (sync. Component)(fig. 1 number 28) for allowing an external (separated) display device (desktop computer) (fig. 1 number 16 and fig. 5 number 77) to selectively access an electronic file from a mobile device (col. 4 lines 6-34 and claim 1, col. 15 lines 19-30, claim 10, col. 16 lines 9-15 and claim 11, col. 16 lines 15-24). Fillibrown et al. teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network (paragraph 0061). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for allowing an external (separated) display device to selectively access an electronic file and the mobile terminal is a wireless intelligent network server in order for the mobile terminal to upload a software file with a software file of the host so that a user of a personal computer can compare or exchange information with the mobile terminal and view that the latest version of software implemented from the host, as taught by Wecker et al., and Fillibrown et al..

Regarding claims 2,34,57,58 and 71, Criss et al. discloses said downstream data reflects changes made to at least one source electronic file (files do not match or new)(paragraph 0075), said at least one is electronic file being an updated version of at least one existing electronic file stored in said memory (paragraph 0075).

Regarding claim 3, Criss et al. discloses wherein said at least one electronic file is a new electronic file (paragraph 0075 and 0076).

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Regarding claims 5 and 60, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claims 9,37,47,52,54 and 63, Criss et al. discloses a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel (paragraph 0057).

Regarding claims 10,38,48,53,55,64 and 74, Criss et al. discloses said RF transmitter transmits an acknowledgement signal over said second wireless communications channel when said RF receiver receives said downstream data (paragraph 0072 and 0073).

Regarding claims 11,39,65 and 75, Criss et al. discloses said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 12 and 40, Criss et al. discloses a second interface (keypad or touch sensitive screen) for controlling a wireless telephone to transmit at least one signal (paragraph 0053).

Regarding claims 13,41 and 77, Criss et al. discloses said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data (paragraphs 0053 and 0072).

Regarding claims 14,42,49,50 and 78, Criss et al. discloses said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

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Regarding claims 15,43 and 76, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

Regarding claims 18 and 66, Criss et al. discloses a bar-code input for connecting a bar-code reader (fig 2 number 44).

Regarding claims 20 and 68, Criss et al. discloses a keyboard input for connecting an external keyboard (paragraph 0053).

Regarding claims 46 and 51, Criss et al. discloses a method for updating a target electronic file to reflect changes made to a source electronic file (paragraph 0015), comprising a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075,0076 and 0082). Criss et al. differs from claims 46 and 51 of the present invention in that it does not explicit disclose a first interface for allowing an external (separate) display device to access an electronic file and the mobile terminal is a wireless intelligent network server. Wecker et al. teaches a first interface (sync. Component) (fig. 1 number 28) for allowing an external (separated) display device (desktop computer) (fig. 1 number 16 and fig. 5 number 77) to selectively access an electronic file from a mobile device (col. 4 lines 6-34 and claim 1, col. 15 lines 19-30, claim 10, col. 16 lines 9-15 and claim 11, col. 16 lines 15-24). Fillibrown et al. teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network (paragraph 0061). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. (mobile terminal) with a first interface for allowing an external (separated) display device to selectively access an

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electronic file and the mobile terminal is a wireless intelligent network server in order for the mobile terminal to upload a software file with a software file of the host so that a user of a personal computer can compare or exchange information with the mobile terminal and view that the latest version of software implemented from the host, as taught by Wecker et al., and Fillibrown et al..

4. Claims 6,7,35,36,61,62,72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1,33,56,70 above and in further view of Grew et al..

Regarding claims 6,7,35,36,61,62,72 and 73, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 6,7,35, 36,61,62,72 and 73 of the present invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Wecker et al. and Fillibrown et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated

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software file sent from the host computer, as taught by Grew et al..

5. Claims 16 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1,12,15 and 33 above and in further view of Gombrich.

Regarding claims 16 and 44, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 16 and 44 of the present invention in that they do not disclose first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Wecker et al. and Fillibrown et al. with first power contacts for electrically

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connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

6. Claims 17 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1,12,14,43, and 33 above and in further view of Shimura.

Regarding claims 17 and 45, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 17 and 45 of the present invention in that they do not disclose a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the

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combination of Criss et al., Wecker et al. and Fillibrown et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

7. Claims 19,20,21,67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Wecker et al. and Fillibrown et al. as applied to claims 1 and 56 above and in further view of Ausems et al..

Regarding claims 19,20,21,67 and 69, the combination of Criss et al., Wecker et al. and Fillibrown et al. differs from claims 19,20,21,67 and 69 of the present invention in that they do not disclose a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader. Ausems et al. teaches a GPS input for connecting a global positioning system (GPS) receiver (col. 5 lines 35-46) and a card reader input for connecting a card reader (col. 3 lines 15-20 and col. 5 lines 46-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Wecker et al. and Fillibrown et al. with a GPS input for

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connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader in order to determine the mobile terminal position and provide access to a wireless network by using its SIM card, as taught by Ausems et al..

8. Claims 22-25, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al., newly cited reference.

Regarding claims 22-24, Criss et al. discloses a wireless data communication system (fig.1) comprising a mobile terminal (wireless personal server) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 1 number 50); a central processing unit (CPU) (fig. 1 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said downstream data to provide at least one electronic file in said memory (paragraphs 0075, 0076 and 0082); the mobile terminal in communication with a network server (fig.1 numbers 36 and 30), and a first interface for allowing an external display (i.e. read only access) device to access said at least one electronic file (paragraph 0094). Criss et al. differs from claim 22 of the present invention in that it do not disclose the mobile terminal is a wireless intelligent network server, and said wireless intelligent network server causes a wireless telephone to transmit an acknowledgment signal over a second wireless communication channel. Gerszberg teaches a wireless telephone (fig. 1 number 101) in communication with a service provider (wireless network server) (fig. 1 number 105), the service provider (fig. 1 number 105) causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel (col. 4 line 67 through col. 5 line 42).). Fillibrown et al. teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network (paragraph 0061).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Criss et al. with the mobile terminal is a wireless intelligent network server, and said wireless intelligent network server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel in order for the wireless data communication system to receive an acknowledgment that the updated files within the mobile terminal are received within a wireless telephone, as taught by Gerszberg and Fillibrown et al..

Regarding claim 25, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claim 29, Criss et al. discloses said mobile terminal transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claim 30, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

9. Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al. as applied to claims 22 and 23 above and in further view of Grew et al..

The combination of Criss et al., Gerszberg and Fillibrown et al. differs from claims 26 and 27 of the claimed invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Fillibrown et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

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10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al. as applied to claims 22 and 30 above and in further view of Shimura.

The combination of Criss et al., Gerszberg and Fillibrown et al. differs from claims 31 of the claimed invention in that they do not disclose a first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and a first power management circuit for selectively connecting said battery to said first power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Fillibrown et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Fillibrown et al. as applied to claims 22 and 30 above and in further view of Gombrich.

The combination of Criss et al., Gerszberg and Fillibrown et al. differs from claim 32 of the claimed invention in that they do not disclose a second power contacts electrically connected to recharger contacts disposed on said external display device; and a second power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Fillibrown et al. with first power contacts for electrically connecting to recharger contacts disposed on said

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external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

Allowable Subject Matter

12. Claims 8,28,79 and 80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

13. Applicant's arguments filed April 5, 2005 have been fully considered but they are not deemed to be persuasive. The following are explanations to the applicant arguments:

14. Argument: Applicant alleges the provisional application clearly does not support the subject matter relied upon to make the rejections. In making the rejections, the Examiner has relied upon paragraph 0061 of Fillebrown for the proposition that Fillebrown teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network. However, this teaching is not found in the provisional application. If the Examiner believes otherwise, then the Examiner is respectfully requested to point out the specific text and/or figures in the provisional application that provide this teaching.

Explanation: Examiner respectfully disagrees because the provisional application clearly teaches a computer as an application server (wireless server) with bluetooth capabilities (fig. 1). See Page 7, 2.5 PC workstation with Bluetooth capabilities. The provisional application teaches a home network diagram wherein video is transmitted wirelessly to the tablets from the PC. Platform. Fillibrown et al. further teaches in

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the provisional application a Bluetooth evolution personal area network wherein a laptop computer is used as the application server with Bluetooth capabilities. The Fillibrown et al. U.S. Publication 2004/0204041 teaches a wireless server (fig. 1 number 140) that may be implemented as a handheld device, personal computer, internet appliance, or other computing platform capable of executing software algorithms needed to enable a personal wireless network (paragraph 0061). The provisional application does not recite the same paragraph 0061 of the U.S. Publication, however, the wireless server of the Publication is the same device as the computer as an application server in the provisional application (see fig. 1 in the provisional application).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith T. Ferguson whose telephone number is (571) 272-7865. The examiner can normally be reached on 6:30am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (571) 272-7872. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith Ferguson
Art Unit 2683
June 14, 2005



MAILED DATE CANCELLED
 APR 05 2005
 PATENT & TRADEMARK OFFICE

| | | | | |
|------------------------------|--|--|-----------------------------------|--------------------------|
| FORM PTO-1449 (Rev. 2-32) | U. S. Department of Commerce Patent and Trademark Office | | Atty. Docket No. 00-399 | Serial No. 09/652,734 |
| | FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | Applicant: Bachner III, et al. | |
| | | | Filing Date: 08/31/2000 | Group: 2683 |

APR 05 2005
 PATENT & TRADEMARK OFFICE

FOREIGN PATENT DOCUMENTS

| Examiner Initials | Document Number | Date | Country | Class | Subclass | Translation | |
|-------------------|-----------------|--------------|---------|-------|----------|-------------|----|
| | | | | | | Yes | No |
| KF | EP 1 016 986 A2 | July 5, 2000 | EPO | | | | X |
| | | | | | | | |

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

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| EXAMINER | Keim Ferguson | DATE CONSIDERED 6/14/05 |

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

Index of Claims



Application/Control No.

09/652,734

Examiner

Keith T. Ferguson

Applicant(s)/Patent under Reexamination

BACHNER ET AL.

Art Unit

2683

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Docket No. 00-399)

| | | |
|--------------------------------|---|--------------------------|
| In re the Application of: |) | |
| |) | Confirmation No. 3628 |
| Edward F. Bachner, III, et al. |) | |
| |) | Examiner: Keith Ferguson |
| Serial No.: 09/652,734 |) | |
| |) | Group Art Unit 2683 |
| Filed: August 31, 2000 |) | |
| |) | |
| For: WIRELESS INTELLIGENT |) | |
| PERSONAL SERVER |) | |

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

RESPONSE TO THE OFFICE ACTION MAILED ON JUNE 30, 2005

Sir:

In response to the Office Action mailed June 30, 2005, please consider the following remarks.

Remarks begin on page 2 of this paper.

REMARKS

1. Introduction

In the Office Action mailed June 30, 2005, the Examiner rejected claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71, and 74-78 under 35 U.S.C. § 103(a) as being unpatentable over Criss et al., U.S. Pub. No. 2001/0029178 (“Criss”) in view of Wecker et al., U.S. Patent No. 6,311,058 (“Wecker”) and Fillebrown et al., U.S. Pub. No. 2004/0204041 (“Fillebrown”).

The Examiner rejected claims 6, 7, 35, 36, 61, 62, 72, and 73 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and in further view of Fillebrown.

The Examiner rejected claims 16 and 44 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and Fillebrown and in further view of Gombrich, U.S. Patent No. 4,916,441 (“Gombrich”).

The Examiner rejected claims 17 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and Fillebrown and in further view of Shimura, U.S. Patent No. 5,754,624 (“Shimura”).

The Examiner rejected claims 19-21, 67, and 69 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Wecker and Fillebrown and in further view of Ausems et al., U.S. Patent No. 6,434,403 (“Ausems”).

The Examiner rejected claims 22-25, 29, and 30 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg, U.S. Patent No. 5,297,192 (“Gerszberg”) and Fillebrown.

The Examiner rejected claims 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Fillebrown and in further view of Grewe.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Fillebrown and in further view to Shimura.

The Examiner rejected claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Fillebrown and in further view of Gombrich.

The Examiner indicated that claims 8, 28, 79, and 80 contained allowable subject matter but objected to these claims as being dependent upon rejected base claims.

For the reasons set forth below, Applicants respectfully request reconsideration and allowance of the claims.

2. Statement of Substance of Interview

Applicants thank the Examiner for scheduling the telephonic interview conducted on November 16, 2005. The participants in the interview were Richard A. Machonkin, on behalf of Applicants, and Examiner Keith Ferguson. During the interview, the Fillebrown reference was discussed, with reference to the claims that were rejected based on Fillebrown.

The general thrust of Applicants' argument was that Fillebrown does not constitute prior art because the passage in paragraph 61 of the published application, on which the Examiner relied, is not supported by the Fillebrown provisional application. The Examiner agreed, noting that the "application server" in Figure 1 of the provisional application is a PC rather than a laptop or handheld computer. Thus, the Examiner agreed that he could not use Fillebrown as prior art.

3. **Response to Claim Rejections**

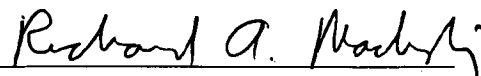
All of the Examiner's claim rejections rely on Fillebrown. However, as the Fillebrown application was filed on February 1, 2001 (after the August 31, 2000 filing date of the present application) and claims priority on a provisional application filed on June 16, 2000, Fillebrown can be used as prior art only "if the provisional application(s) properly supports the subject matter relied upon to make the rejection in compliance with 35 U.S.C. 112, first paragraph." MPEP § 2136.03(III). The Examiner has now agreed that the provisional application does not support the subject matter relied upon in the Examiner's claim rejections, and the Examiner has agreed that Fillebrown cannot be used as prior art. As a result, none of the Examiner's claim rejections can be maintained.

Applicants submit that the present application is in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, he is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

Dated: November 30, 2005

By:



Richard A. Machonkin
Reg. No. 41,962

**McDONNELL BOEHNEN
HULBERT & BERGHOFF LLP**
300 South Wacker Drive
Chicago, IL 60606
Tel.: (312) 913-0001
Fax: (312) 913-0002



PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)

| | |
|---|--|
| <p>ADDRESS TO:</p> <p>Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450</p> | <p>Attorney Docket No.: 00-399</p> <p>Application No.: 09/652,734</p> <p>Filing Date: August 31, 2000</p> <p>First Named Inventor: Bachner</p> <p>Group Art Unit: 2683</p> <p>Examiner: Keith Ferguson</p> |
|---|--|

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and appropriate **small-entity** fee are as follows (check time period desired):

- One Month (37 CFR 1.17(a)(1)) \$
- Two Months (37 CFR 1.17(a)(2)) \$225.00
- Three Months (37 CFR 1.17(a)(3)) \$
- Four Months (37 CFR 1.17(a)(4)) \$
- Five Months (37 CFR 1.17(a)(5)) \$

Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount shown above is reduced by one-half, and the resulting fee is: \$225.00.

Check in the amount of \$225.00 is enclosed for the Two Month Extension of Time fee for a small entity.

The Commissioner is hereby authorized to charge any fees which may be required or to credit any overpayment to Deposit Account Number 13-2490. I have enclosed a duplicate copy of this sheet.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

| | |
|-----------|-----------------------------|
| Name | Richard A. Machonkin |
| Reg. No. | 41,962 |
| Signature | <i>Richard A. Machonkin</i> |
| Date | November 30, 2005 |

EXT (Rev. 1/3/01)

12/02/2005 HADELR1 00000047 09652734 225.00 0P
 01 FC:2252

PATENT APPLICATION FEE DETERMINATION RECORD

Effective JANUARY, 2003

Application or Patent Number

09/652934

CLAIMS AS FILED - PART I

SMALL ENTITY TYPE OR OTHER THAN SMALL ENTITY

| | (Column 1) | (Column 2) |
|---|--------------|--------------|
| TOTAL CLAIMS | | |
| FOR | NUMBER FILED | NUMBER EXTRA |
| TOTAL CHARGEABLE CLAIMS | 80 minus 20 | |
| INDEPENDENT CLAIMS | 7 minus 3 | |
| MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/> | | |

| RATE | FEE | OR | RATE | FEE |
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| BASIC FEE | 375.00 | OR | BASIC FEE | 790.00 |
| X\$ 9= | | OR | X\$18= | |
| X42= | | OR | X86= | |
| +140= | | OR | +280= | |
| TOTAL | | OR | TOTAL | 790 |

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

11/30/05 CLAIMS AS AMENDED - PART II

SMALL ENTITY OR OTHER THAN SMALL ENTITY

| AMENDMENT A | (Column 1) | (Column 2) | (Column 3) |
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* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

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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 NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|-----------------------|---------------------|------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |
| 20306 | 7590 | 02/08/2006 | EXAMINER | |
| MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606 | | | FERGUSON, KEITH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2683 | |

DATE MAILED: 02/08/2006

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

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 09/652,734 | Applicant(s) BACHNER ET AL. | |
| | Examiner Keith T. Ferguson | Art Unit 2683 | |

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

- 1) Responsive to communication(s) filed on 13 November 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7,9-27 and 29-78 is/are rejected.
- 7) Claim(s) 8,28,79 and 80 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Response to Arguments

1. Applicant's arguments with respect to claims 1-80 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

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

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,33,51,56 and 72 are rejected under 35 U.S.C. 102(e) as being anticipated by Boals et al., newly recited document.

The claimed invention reads on Boals et al. as follows:

Regarding claims 1 and 56, Boals et al. discloses a remote portable computer (wireless intelligent network server) (fig. 1 number 101 and col. 5 lines 22-31), comprising: a radio frequency (RF) receiver for receiving downstream data transmitted over a first wireless

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communications channel (fig. 1 number 115 and col. 6 lines 51-54), a memory (fig. 1 number 117) a central processing unit (CPU) (fig. 1 number 116); a set of embedded machine language instructions (col. 6 lines 51-54), said set of embedded machine language instructions being executable by said CPU (inherent, as taught in col. 6 lines 51-54) for processing said downstream data to provide windows files or window programs (electronic file) in said memory (col. 6 lines 51-54); and a wireless interface (fig. 1) for allowing an external display (fig. 1 number 113) device to selectively access windows files or window programs (electronic file) (col. 6 lines 51-54).

Regarding claims 33 and 72, Boals et al. discloses a wireless data display system (fig. 1), comprising: a wireless intelligent network server (fig. 1 number 101 and col. 5 lines 22-31), said wireless intelligent network server including a memory (fig. 1 number 117) and a radio frequency (RF) receiver (fig. 1 number 115 and col. 6 lines 51-54), said RF receiver being for receiving downstream data transmitted over a first wireless communications channel (inherent, when the mobile device access window and window files, as taught in col. 6 lines 51-54) , said

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wireless intelligent network server processing said downstream data to provide at least one electronic file (inherent, when the mobile device access window and window files, as taught in col. 6 lines 51-54); and a separate display device (fig. 1 numbers 100 and 113) in communication with said wireless intelligent network server(fig.1), said separate display device having at least window or window files or window programs (one application) that selectively accesses said at least one electronic file to display information to a user (inherent, when the mobile device access window and window files, as taught in col. 6 lines 51-54).

Regarding claim 51, Boals et al. discloses a method/system for creating, without user intervention, an electronic file on a wireless intelligent network server (fig. 1 number 101 and col. 5 lines 22-31 and col. 6 lines 51-54), said method comprising the steps of: said wireless intelligent network server receiving downstream data transmitted over a first wireless communications channel (inherent, when the mobile device access window and window files, as taught in fig. 1 and col. 6 lines 51-54); said wireless intelligent network server automatically creating a windows file or program (electronic file) from said downstream data (col. 6 lines 51-54); bringing an external display device into communication with said wireless intelligent network server (col. 6 lines 51-54); and selectively accessing said electronic file with said display device (col. 6 lines 51-54).

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Claim Rejections - 35 USC § 103

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

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

5. Claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71 and 74-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Boels et al., newly cited reference.

Regarding claims 1, 4, 33, 56, 59 and 70, Criss et al. discloses a wireless intelligent personal server (mobile terminal) (wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 2 number 50); a central processing unit (CPU) (fig. 2 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing data to provide at least one electronic file in said memory from a host computer (paragraphs 0075, 0076 and 0082). Criss et al. differs from claims 1, 56 and 70 of the present invention in that it does not explicitly disclose a first interface for allowing an external (separate) display device to access an electronic file from a wireless intelligent network server. Boels et al. teaches a portable host computer (server) (fig. 1 number 101 and col. 5 lines 22-31) comprising a transmitter/receiver (115), a

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CPU (116) and memory (117) that has a wireless interface for allowing a wireless device (100) to display (113) application programs such as windows and window application program and files received therefrom the portable host computer (col. 6 lines 51-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. with a first interface for allowing an external (separate) display device to access an electronic file from a wireless intelligent network server in order for the user of the mobile terminal to upload a software file with a software file of a portable host computer, compare and exchange information with the portable host computer and view that the latest version of software implemented of the portable host computer within the user office or home which may not have an landline data connection to the host computer, as taught by Boels et al..

Regarding claims 2,34,57,58 and 71, Criss et al. discloses said downstream data reflects changes made to at least one source electronic file (files do not match or new) (paragraph 0075), said at least one is electronic file being an updated version of at least one existing electronic file stored in said memory (paragraph 0075).

Regarding claim 3, Criss et al. discloses wherein said at least one electronic file is a new electronic file (paragraph 0075 and 0076).

Regarding claims 5 and 60, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claims 9,37,47,52,54 and 63, Criss et al. discloses a radio frequency (RF) transmitter for transmitting at least one signal over a second wireless communications channel (paragraph 0057).

Regarding claims 10,38,48,53,55,64 and 74, Criss et al. discloses said RF transmitter transmits an acknowledgement signal over said second wireless

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communications channel when said RF receiver receives said downstream data (paragraph 0072 and 0073).

Regarding claims 11,39,65 and 75, Criss et al. discloses said RF transmitter transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 12 and 40, Criss et al. discloses a second interface (keypad or touch sensitive screen) for controlling a wireless telephone to transmit at least one signal (paragraph 0053).

Regarding claims 13,41 and 77, Criss et al. discloses said second interface controls said wireless telephone to transmit an acknowledgement signal when said RF receiver receives said downstream data (paragraphs 0053 and 0072).

Regarding claims 14,42,49,50 and 78, Criss et al. discloses said second interface controls said wireless telephone to transmit upstream data, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

Regarding claims 15,43 and 76, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

Regarding claims 18 and 66, Criss et al. discloses a bar-code input for connecting a bar-code reader (fig 2 number 44).

Regarding claims 20 and 68, Criss et al. discloses a keyboard input for connecting an external keyboard (paragraph 0053).

Regarding claims 46 and 51, Criss et al. discloses a method for updating a target electronic file to reflect

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changes made to a source electronic file (paragraph 0015), comprising a wireless intelligent personal server (mobile terminal)(wireless display system) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 2 number 50); a central processing unit (CPU) (fig. 2 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being executable by said CPU for processing said data to provide at least one electronic file in said memory from a host computer (paragraphs 0075,0076 and 0082). Criss et al. differs from claims 41 and 56 of the present invention in that it does not explicit disclose a first interface for allowing an external (separate) display device to access an electronic file from a wireless intelligent network server. Boels et al. teaches a portable host computer (server) (fig. 1 number 101 and col. 5 lines 22-31) comprising a transmitter/receiver (115), a CPU (116) and memory (117) that has a wireless interface for allowing a wireless device (100) to display (113) application programs such as windows and window application program and files received therefrom the portable host computer (col. 6 lines 51-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Criss et al. with a first interface for allowing an external (separate) display device to access an electronic file from a wireless intelligent network server in order for the user of the mobile terminal to upload a software file with a software file of a portable host computer, compare and exchange information with the portable host computer and view that the latest version of software implemented of the portable host computer within the user office or home which may not have an landline data connection to the host computer, as taught by Boels et al..

6. Claims 6,7,35,36,61,62,72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Boels et al. as applied to claims 1,33,56,70 above and in further view of Grew et al..

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Regarding claims 6,7,35,36,61,62,72 and 73, the combination of Criss et al. and Boals et al. differs from claims 6,7,35, 36,61,62,72 and 73 of the present invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Boals et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

7. Claims 16 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Boals et al. as applied to claims 1,12,15 and 33 above and in further view of Gombrich.

Regarding claims 16 and 44, the combination of Criss et al. and Boals et al. differs from claims 16 and 44 of the present invention in that they do not disclose first power contacts for electrically connecting to recharger contacts

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disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57-col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Boals et al. with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

8. Claims 17 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Boals et al. as applied to claims 1,12,14,43, and 33 above and in further view of Shimura.

Regarding claims 17 and 45, the combination of Criss et al. and Boals et al. differs from claims 17 and 45 of the present invention in that they do not disclose a second

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power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Boals et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

9. Claims 19,20,21,67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Boals et al. as applied to claims 1 and 56 above and in further view of Ausems et al..

Regarding claims 19,20,21,67 and 69, the combination of Criss et al. and Boals et al. differs from claims

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19,20,21,67 and 69 of the present invention in that they do not disclose a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader. Ausems et al. teaches a GPS input for connecting a global positioning system (GPS) receiver (col. 5 lines 35-46) and a card reader input for connecting a card reader (col. 3 lines 15-20 and col. 5 lines 46-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al. and Boals et al. with a GPS input for connecting a global positioning system (GPS) receiver and a card reader input for connecting a card reader in order to determine the mobile terminal position and provide access to a wireless network by using its SIM card, as taught by Ausems et al..

10. Claims 22-25,29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Boals et al., newly cited reference.

Regarding claims 22-24, Criss et al. discloses a wireless data communication system (fig.1) comprising a mobile terminal (wireless personal server) (fig. 2), comprising: a radio frequency (Rf) receiver for receiving downstream data transmitted over a first wireless communications channel (paragraph 0056); a memory (fig. 2 number 50); a central processing unit (CPU) (fig. 2 number 40); a set of embedded machine language instructions, said set of embedded machine language instructions being

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executable by said CPU for processing said data to provide at least one electronic file in said memory from a host computer (paragraphs 0075,0076 and 0082); the mobile terminal in communication with a network server (fig.1 numbers 36 and 30), and a first interface for allowing an external display (i.e. read only access) device to access said at least one electronic file (paragraph 0094). Criss et al. differs from claim 22 of the present invention in that it do not disclose the host computer is a wireless intelligent network server, and said wireless intelligent network server causes a wireless telephone to transmit an acknowledgment signal over a second wireless communication channel. Gerszberg teaches a wireless telephone (fig. 1 number 101) in communication with a service provider (wireless network server) (fig. 1 number 105), the service provider (fig. 1 number 105) causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel (col. 4 line 67 through col. 5 line 42). Boels et al. teaches a portable host computer (server) (fig. 1 number 101 and col. 5 lines 22-31) comprising a transmitter/receiver (115), a CPU (116) and memory (117) that has a wireless interface for allowing a wireless device (100) to display (113) application programs such as windows and window application program and files received therefrom the portable host computer (col. 6 lines 51-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Criss et al. with the host computer is a wireless intelligent network server, and said wireless intelligent network server causes said wireless telephone to transmit an acknowledgment signal over a second wireless communication channel in order for the wireless data communication system to receive an acknowledgment that the updated files within the mobile terminal are received from the host computer, as taught by Gerszberg and Boals et al..

Regarding claim 25, Criss et al. discloses said first interface (fig. 2 number 42) (keypad) allows said external display device to change said at least one electronic file (paragraph 0094).

Regarding claim 29, Criss et al. discloses said mobile terminal transmits upstream data over said second wireless communications channel, said upstream data reflecting changes to said at least one electronic file made by said external display device (paragraph 0094 and 0095).

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Regarding claim 30, Criss et al. discloses a battery for powering said wireless intelligent personal server (fig. 17 number 505).

11. Claims 26 and 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Boals et al. as applied to claims 22 and 23 above and in further view of Grew et al..

Regarding claims 26 and 27, the combination of Criss et al., Gerszberg and Boals et al. differs from claims 26 and 27 of the claimed invention in that they do not disclose said external display device is a personal digital assistant (PDA). Grew et al. teaches said external display device is a personal digital assistant (PDA) (fig. 2 and col. 1 lines 55-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Boals et al. with said external display device is a personal digital assistant (PDA) in order to have a small personal computer that an user could view download updated software file sent from the host computer, as taught by Grew et al..

12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Boals et al. as applied to claims 22 and 30 above and in further view of Shimura.

Regarding claim 31, the combination of Criss et al., Gerszberg and Boals et al. et al. differs from claims 31 of the claimed invention in that they do not disclose a first power contacts electrically connected to recharger contacts disposed on said wireless telephone; and a first power management circuit for selectively connecting said battery to said first power contacts. Shimura teaches a power contacts for electrically connecting to recharger contacts disposed on said wireless telephone (fig. 2 numbers 31a-31c; and a power management circuit (fig. 2 number 34) for selectively connecting said battery to said power contacts (col. 2 lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Boals et al. with a second power contacts for electrically connecting to recharger contacts disposed on said wireless telephone; and a second power

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management circuit for selectively connecting said battery to said second power contacts in order to recharge the mobile terminal when the battery is low, as taught by Shimura.

13. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Criss et al. in view of Gerszberg and Boals et al. as applied to claims 22 and 30 above and in further view of Gombrich.

Regarding claim 32, the combination of Criss et al., Gerszberg and Boals et al. et al. differs from claim 32 of the claimed invention in that they do not disclose a second power contacts electrically connected to recharger contacts disposed on said external display device; and a second power management circuit for selectively connecting said battery to said first power contacts. Gombrich teaches first power contacts for electrically connecting to recharger contacts disposed on said external display device (col. 8 line 57- col. 9 line 14); and a first power management circuit for selectively connecting said battery to said first power contacts (col. 7 lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the combination of Criss et al., Gerszberg and Boals et al. with first power contacts for electrically connecting to recharger contacts disposed on said external display device; and a first power management circuit for selectively connecting said battery to said first power contacts in order to recharge said display when reviewing download files, as taught by Gombrich.

Allowable Subject Matter

14. Claims 8,28,79 and 80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sopko. (U.S. Patent 6,003,068) discloses a portable server with a cellular telephone interface (fig. 1 number 120 and col. 6 lines 50-60). Morris et al. (U.S. Patent 6,112,206) discloses a portable server in communication with a wireless device (abstract, fig. 1 and fig. 2)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith T. Ferguson whose telephone number is (571) 272-7865. The examiner can normally be reached on 6:30am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (571) 272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith Ferguson
Art Unit 2683
January 24, 2006

KEITH FERGUSON
PRIMARY EXAMINER



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| Notice of References Cited | Application/Control No. 09/652,734 | Applicant(s)/Patent Under Reexamination BACHNER ET AL. | |
| | Examiner Keith T. Ferguson | Art Unit 2683 | Page 1 of 1 |

U.S. PATENT DOCUMENTS

| * | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|--|-----------------|-----------------|----------------|
| * | A US-6,112,206 | 08-2000 | Morris et al. | 707/10 |
| * | B US-6,108,727 | 08-2000 | Boals et al. | 710/68 |
| * | C US-6,003,068 | 12-1999 | Sopko, Karen M. | 709/205 |
| | D US- | | | |
| | E US- | | | |
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FOREIGN PATENT DOCUMENTS

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NON-PATENT DOCUMENTS

| * | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



Application/Control No.

09/652,734

Examiner

Keith T. Ferguson

Applicant(s)/Patent under Reexamination

BACHNER ET AL.

Art Unit

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Docket No. 00-399)

| | | |
|--------------------------------|---|--------------------------|
| In re the Application of: |) | |
| |) | Confirmation No. 3628 |
| Edward F. Bachner, III, et al. |) | |
| |) | Examiner: Keith Ferguson |
| Serial No.: 09/652,734 |) | |
| |) | Group Art Unit 2683 |
| Filed: August 31, 2000 |) | |
| |) | |
| For: WIRELESS INTELLIGENT |) | |
| PERSONAL SERVER |) | |

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

RESPONSE TO THE OFFICE ACTION MAILED ON FEBRUARY 8, 2006

Sir:

In response to the Office Action mailed February 8, 2006, please consider the following remarks.

Remarks begin on page 2 of this paper.

REMARKS

1. Introduction

In the Office Action mailed February 8, 2006, the Examiner rejected claims 1, 33, 34, 51, 56, and 72 under 35 U.S.C. § 102(e) as being anticipated by Boals et al., U.S. Patent No. 6,108,727 (“Boals”).

The Examiner rejected claims 1-5, 9-15, 18, 33, 34, 37-43, 46-60, 63-66, 68, 70, 71, and 74-78 under 35 U.S.C. § 103(a) as being unpatentable over Criss et al., U.S. Pub. No. 2001/0029178 (“Criss”) in view of Boals.

The Examiner rejected claims 6, 7, 35, 36, 61, 62, 72, and 73 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Boals and in further view of Grewe et al., U.S. Patent No. 5,625,673 (“Grewe”).

The Examiner rejected claims 16 and 44 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Boals and in further view of Gombrich, U.S. Patent No. 4,916,441 (“Gombrich”).

The Examiner rejected claims 17 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Boals and in further view of Shimura, U.S. Patent No. 5,754,624 (“Shimura”).

The Examiner rejected claims 19-21, 67, and 69 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Boals and in further view of Ausems et al., U.S. Patent No. 6,434,403 (“Ausems”).

The Examiner rejected claims 22-25, 29, and 30 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg, U.S. Patent No. 5,297,192 (“Gerszberg”) and Boals.

The Examiner rejected claims 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Boals and in further view of Grewe.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Boals and in further view to Shimura.

The Examiner rejected claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Criss in view of Gerszberg and Boals and in further view of Gombrich.

The Examiner indicated that claims 8, 28, 79, and 80 contained allowable subject matter but objected to these claims as being dependent upon rejected base claims.

For the reasons set forth below, Applicants respectfully request reconsideration and allowance of the claims.

2. Statement of Substance of Interview

Applicants thank the Examiner for scheduling the telephonic interview conducted on May 9, 2006. The participants in the interview were Richard A. Machonkin, on behalf of Applicants, and Examiner Keith Ferguson. During the interview, the Boals reference was discussed, with reference to claim 1.

Applicants' representative argued that host 101 in Boals, on which the Examiner relied, is not a server based on (i) the fact that Figure 2 in Boals distinguishes between host 101 and server 108 and (ii) the fact that host 101 communicates with wireless interface device 100 by transmitting "video events" to wireless interface device 100, e.g., as described in col. 13, lines 33-37.

Applicants' representative also argued that the Examiner did not adequately explain what disclosure in Boals supposedly meets the element of "embedded machine language

instructions ... for processing said downstream data to provide at least one electronic file in said memory,” as recited in claim 1. The Examiner cited to col. 6, lines 51-54 of Boals. However, that section simply states that wireless interface device 100 is able to access files residing at host 101; it does not disclose that the files on host 101 are provided by downstream data transmitted by wireless interface device 100. To the contrary, Boals discloses that the data that host 101 receives from wireless interface device 100 are simply “pen events,” e.g., as described in col. 13, lines 25-32.

No agreement was reached during the interview.

3. **Response to Claim Rejections**

All of the Examiner’s claim rejections rely on Boals. However, the Examiner has misapprehended the disclosure of Boals in at least two ways:

- The Examiner has alleged that host 101 in Boals constitutes a “wireless intelligent network server,” as recited in Applicants’ claims. In fact, Boals makes clear that host 101 is not a server at all.
- The Examiner has assumed that the files on host 101 accessed by wireless interface device 100 are provided by downstream data from wireless interface device 100. In fact, Boals explains that the data that wireless interface device 100 transmits to host 101 are simply “pen events” regarding the position of a stylus.

These two points are described in more detail below. Applicants respectfully submit that when Boals is properly understood, the Examiner’s claim rejections cannot stand.

a. Host 101 in Boals is not a “network server”

The Examiner’s claim rejections are premised on identifying host 101 in Boals as a “wireless intelligent network server.” Applicants respectfully remind the Examiner that the language “network server” was carefully chosen during the interview conducted on September 21, 2004 in order to more clearly define the invention. Moreover, it was agreed during the interview that amending the claims to recite a “wireless intelligent network server” would overcome the prior art of record, and Applicants amended the claims to recite a “network server” in reliance on this agreement. With this background, Applicants respectfully submit that the Examiner cannot ignore the importance of the “network server” language in the claims.

In particular, the Examiner has asserted that element 101 in Boals is a “wireless intelligent network server.” However, Boals does not describe element 101 as a “server” of any kind. Instead, Boals simply describes element 101 as a “remote host computer,” which can be configured as either a stand-alone unit or as part of a local area network (LAN). *See* col. 5, lines 46-50. Because Boals does not state that host 101 is a server, the Examiner’s identification of host 101 as a “wireless intelligent network server” is without basis.

Moreover, Boals makes clear host 101 is not a server. For example, the LAN embodiment shown in Figure 2 of Boals includes both host 101 and server 108. By distinguishing between host 101 and server 108, Figure 2 confirms that host 101 is not a “server.”

That host 101 is not a server is also made clear by how it communicates with wireless interface device 100. Specifically, what wireless interface device 100 receives from host 101 is a video image to be displayed. *See* col. 6, lines 47-48. Thus, when an

application program running on host 101 generates output data, host 101 transmits “video events” to wireless interface device 100. *See* col. 13, lines 33-37. Wireless interface device 100 receives the video events as display commands, and CPU 112 in wireless interface device 100 executes the display commands to update the display. *See* col. 11, lines 51-59.

This description in Boals indicates that host 101 is not acting as a “network server.” A better description of the communication from host 101 to wireless interface device 100 would be to say that host 101 is acting as a video display driver and wireless interface device 100 is acting as a video monitor.

b. Boals does not teach that the files on host 101 originate from wireless interface device 100

The Examiner’s claim rejections are also premised on the misconception that the files on host 101, which wireless interface device 100 are able to access, also originate from wireless interface device 100. For example, claim 1 recites “a set of embedded machine language instructions ... for processing said downstream data to provide at least one electronic file in said memory.”

In rejecting claim 1, the Examiner alleged that this element was inherent in col. 6, lines 51-54 of Boals. However, that section simply refers to wireless interface device 100 being able to *access* “files residing at the host computer 101.” The section does not state that the files on host 101 are *provided* by processing downstream data (i.e., data that is transmitted over a wireless communications channel) from wireless interface device 100. Nor can the Examiner establish this element inherently:

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

See MPEP § 2112(IV) (emphasis original).

In this case, the Examiner has not provided any reason why the files on host 101 would *necessarily* originate from data transmitted by wireless interface device 100. Furthermore, the mere possibility is not sufficient to establish inherency:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.

See MPEP § 2112(IV) (emphasis original).

In any event, Boals explains that the data that wireless interface device 100 transmits to host 101 are simply “pen events” regarding the position of a stylus. *See* col. 6, lines 38-46, col. 12, lines 14-27. These “pen events” are what host 101 processes as input data. *See* col. 13, lines 25-32. Moreover, Boals explains that this stylus data from wireless interface data 100 is used to *control* programs running in host 101. *See* col. 11, lines 51-57. Thus, the data from wireless interface device 100 does not *provide* the electronic files stored in host 101.

For at least the foregoing reasons, Applicants respectfully submit that the Examiner’s claim rejections (all of which rely on Boals) are improper and should be withdrawn.

4. **Conclusion**

Applicants submit that the present application is in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, he is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,

Dated: June 8, 2006

By: Richard A. Machonkin
Richard A. Machonkin
Reg. No. 41,962

**McDONNELL BOEHNEN
HULBERT & BERGHOFF LLP**
300 South Wacker Drive
Chicago, IL 60606
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)

| | |
|---|---|
| ADDRESS TO: Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 | Attorney Docket No.: 00-399 |
| | Application No.: 09/652,734 |
| | Filing Date: August 31, 2000 |
| | First Named Inventor: Bachner, III, et al |
| | Group Art Unit: 2683 |
| | Examiner: Keith Ferguson |

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application to and including June 8, 2006.

The requested extension and appropriate small-entity fee are as follows (check time period desired):

- One Month (37 CFR 1.17(a)(1)) \$60.00
- Two Months (37 CFR 1.17(a)(2)) \$
- Three Months (37 CFR 1.17(a)(3)) \$
- Four Months (37 CFR 1.17(a)(4)) \$
- Five Months (37 CFR 1.17(a)(5)) \$

- Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount shown above is reduced by one-half, and the resulting fee is: \$ 60.00
- A check in the amount of \$60.00 is enclosed.
- The Commissioner is hereby authorized to charge any fees which may be required or to credit any overpayment to Deposit Account Number 13-2490. I have enclosed a duplicate copy of this sheet.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

| | |
|-----------|-----------------------------|
| Name | Richard A. Machonkin |
| Reg. No. | 41,962 |
| Signature | <i>Richard A. Machonkin</i> |
| Date | June 8, 2006 |

EXT (Rev. 1/3/01)

06/12/2006 DTESSER1 00000068 09652734

01 FC:2251

60.00 0P



06-09-06

TFW 2683/15

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. MBHB00-399)

PATENT

| | | |
|---------------------------------------|---|--------------------------|
| In the Application of: |) | |
| |) | Confirmation No. 3628 |
| Edward F. Bachner, III, et al. |) | |
| |) | |
| Serial No.: 09/652,734 |) | Examiner: Keith Ferguson |
| |) | |
| Filed: August 31, 2000 |) | |
| |) | Art Unit: 2683 |
| For: WIRELESS INTELLIGENT |) | |
| PERSONAL SERVER |) | |

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

TRANSMITTAL LETTER

- We are transmitting herewith the attached papers for the above-identified patent application:
 - Response to Office Action Mailed February 8, 2006;
 - Petition for One Month Extension of Time;
 - Check for \$60.00; and
 - Return Receipt Postcard
- With respect to fees, there is a fee of \$60.00.
- GENERAL AUTHORIZATION TO CHARGE OR CREDIT FEES:** Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490. A duplicate copy of this sheet is enclosed.
- CERTIFICATE OF MAILING UNDER 37 CFR § 1.10:** The undersigned hereby certifies that this Transmittal Letter and the papers, as described in paragraph 1 herein-above, are being deposited with the United States Postal Service with sufficient postage as "Express Mail", EV 333556134 US, in an envelope addressed to: Mail Stop Amendment; Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 8th day of June, 2006.

By: Richard A. Machonkin
Richard A. Machonkin
Registration No. 41,962

EAST Search Notes

EAST Search History

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|--------|--|------------------------|------------------|---------|------------------|
| S1 | 9958 | server near2 (portable or handheld or lightweight or mobile or transportable) | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:18 |
| S2 | 770512 | (wireless or cellular or radio or mobile) | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:24 |
| S3 | 9290 | S1 and S2 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:24 |
| S4 | 73490 | server near2 network | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:25 |
| S5 | 4655 | S3 and S4 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:25 |
| S6 | 23850 | (transceiver or antenna or receiver or transmitter) same server | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:26 |
| S7 | 1369 | S5 and S6 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:26 |
| S8 | 1188 | internet and S7 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:28 |
| S9 | 1664 | network near2 server near2 (portable or handheld or lightweight or mobile or transportable) | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:30 |
| S10 | 1595 | S2 and S9 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:28 |
| S11 | 1430 | internet and S10 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:28 |
| S12 | 261 | "709"/\$.ccls. and S11 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:30 |
| S13 | 216 | display\$3 and S12 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:30 |
| S14 | 955 | network near2 server near2 (portable or handheld or lightweight or mobile or transportable) same (wireless or cellular or radio or mobile) | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:48 |
| S15 | 663 | display\$3 and S14 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:30 |
| S16 | 133 | "709"/\$.ccls. and S15 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:48 |
| S17 | 6 | ("5812776" "6085193" "6457060" "6473609" "6560640" "6742022"). PN. OR ("6952578").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/08/09 10:45 |
| S18 | 7428 | network near2 server with (wireless or cellular or radio or mobile) | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:52 |
| S19 | 929 | S14 and S18 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:48 |

EAST Search History

| | | | | | | |
|-----|--------|--|------------------------------|----|----|------------------|
| S20 | 179 | "709"/\$.ccls. and S19 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:52 |
| S21 | 5228 | server near (wireless or cellular or radio or mobile) | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:52 |
| S22 | 2871 | network near2 server and S21 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:52 |
| S23 | 673 | "709"/\$.ccls. and S22 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:53 |
| S24 | 446 | S14 and S22 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:53 |
| S25 | 194 | "455"/\$.ccls. and S24 | US-PGPUB; USPAT | OR | ON | 2006/08/09 10:53 |
| S26 | 3 | ("4467411" "5204958" "5479657"). PN. OR ("6493762").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/08/09 10:55 |
| S27 | 17 | ("20020080801" "6125113" "6363065" "6463053" "6473423" "6473609" "6516203" "6519458" "6549612" "6549773" "6549776" "6564261" "6567398" "6594484"). PN. OR ("6788667").URPN. | US-PGPUB; USPAT; USOCR | OR | ON | 2006/08/09 10:57 |
| S28 | 405 | (portable or handheld or lightweight or transportable or personal) adj1 server | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:20 |
| S29 | 90 | "709"/\$.ccls. and S28 | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:19 |
| S30 | 14436 | server with (transceiver or antenna or receiver or transmitter) | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:28 |
| S31 | 59 | S28 and S30 | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:20 |
| S32 | 817 | (wireless or cellular or internet or network) adj server with (transceiver or antenna or receiver or transmitter) | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:29 |
| S33 | 119252 | server with (memory or storage or database or rom or ram) | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:30 |
| S34 | 528 | S32 and S33 | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:30 |
| S35 | 434274 | (internet or url or file) | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:31 |
| S36 | 475 | S34 and S35 | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:31 |
| S37 | 103 | "709"/\$.ccls. and S36 | US-PGPUB; USPAT | OR | ON | 2006/08/09 13:31 |



NOTICE OF ALLOWANCE AND FEE(S) DUE

020306 7590 08/24/2006
MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER: FERGUSON, KEITH
ART UNIT: 2617 PAPER NUMBER:
DATE MAILED: 08/24/2006

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 09/652,734, 08/31/2000, Edward F. Bachner III, MBHBOO-399, 3628
TITLE OF INVENTION: WIRELESS INTELLIGENT PERSONAL SERVER

Table with 7 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE
Row 1: nonprovisional, YES, \$700, \$0, \$0, \$700, 11/24/2006

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) 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. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY 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 the same, pay the TOTAL FEE(S) DUE shown above.
B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:
A. Pay TOTAL FEE(S) DUE shown above, or
B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop 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.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including 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: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) 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 or transmission.

020306 7590 08/24/2006

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
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CHICAGO, IL 60606

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| |
|--------------------|
| (Depositor's name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |

TITLE OF INVENTION: WIRELESS INTELLIGENT PERSONAL SERVER

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | YES | \$700 | \$0 | \$0 | \$700 | 11/24/2006 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|-----------------|----------|----------------|
| FERGUSON, KEITH | 2617 | 455-419000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
 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; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

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 _____
 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. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE: (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) : Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted:

- Issue Fee
- Publication Fee (No small entity discount permitted)
- Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- A check is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) 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 United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

Table with columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
09/652,734 08/31/2000 Edward F. Bachner III MBHBOO-399 3628
020306 7590 08/24/2006
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CHICAGO, IL 60606
EXAMINER: FERGUSON, KEITH
ART UNIT: 2617 PAPER NUMBER
DATE MAILED: 08/24/2006

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 531 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 531 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

| | | | |
|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/652,734 | BACHNER ET AL. | |
| | Examiner | Art Unit | |
| | Keith T. Ferguson | 2617 | |

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

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 (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to 6/8/06.
2. The allowed claim(s) is/are 1-80.
3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some* c) None of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>8/9/06</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

KEITH FERGUSON
PRIMARY EX


Art Unit: 2617

Part III 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 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

Authorization for this Examiner's Amendment was given in a telephone interview with Richard Machonkin on August 9, 2006.

The application has been amended as follows:

in claim 1, line 1, "network sever" has been changed to --
personal network server--;

in claim 1, line 7, --within said personal network server--
has been inserted after "instructions";

in claim 2, line 1, "network sever" has been changed to --
personal network server--;

in claim 3, line 1, "network sever" has been changed to --
personal network server--;

in claim 4, line 1, "network sever" has been changed to --
personal network server--;

in claim 5, line 1, "network sever" has been changed to --
personal network server--;

in claim 6, line 1, "network sever" has been changed to --
personal network server--;

in claim 7, line 1, "network sever" has been changed to --
personal network server--;

in claim 8, line 1, "network sever" has been changed to --
personal network server--;

in claim 9, line 1, "network sever" has been changed to --
personal network server--;

in claim 10, line 1, "network sever" has been changed to --
personal network server--;

in claim 11, line 1, "network sever" has been changed to --
personal network server--;

in claim 12, line 1, "network sever" has been changed to --
personal network server--;

in claim 13, line 1, "network sever" has been changed to --
personal network server--;

in claim 14, line 1, "network sever" has been changed to --
personal network server--;

in claim 15, line 1, "network sever" has been changed to --
personal network server--;

in claim 15, line 3, "network sever" has been changed to --

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personal network server--;
in claim 16, line 1, "network sever" has been changed to --
personal network server--;
in claim 17, line 1, "network sever" has been changed to --
personal network server--;
in claim 18, line 1, "network sever" has been changed to --
personal network server--;
in claim 19, line 1, "network sever" has been changed to --
personal network server--;
in claim 20, line 1, "network sever" has been changed to --
personal network server--;
in claim 21, line 1, "network sever" has been changed to --
personal network server--;
in claim 22, line 2, "network sever" has been changed to --
personal network server--;
in claim 22, line 2, "network sever" has been changed to --
personal network server--;
in claim 22, line 4, "network sever" has been changed to --
personal network server--;
in claim 23, line 2, "network sever" has been changed to --
personal network server--;
in claim 30, line 2, "network sever" has been changed to --
personal network server--;
in claim 30, line 3, "network sever" has been changed to --
personal network server--;
in claim 31, line 2, "network sever" has been changed to --
personal network server--;
in claim 32, line 2, "network sever" has been changed to --
personal network server--;
in claim 33, line 2, "network sever" has been changed to --
personal network server--;
in claim 33, line 3, "network sever" has been changed to --
personal network server--;
in claim 33, line 5, "network sever" has been changed to --
personal network server--;
in claim 33, line 7, "network sever" has been changed to --
personal network server--;
in claim 37, line 2, "network sever" has been changed to --
personal network server--;
in claim 40, line 2, "network sever" has been changed to --
personal network server--;
in claim 44, line 2, "network sever" has been changed to --
personal network server--;
in claim 45, line 2, "network sever" has been changed to --
personal network server--;

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in claim 46, line 3, "network sever" has been changed to --
personal network server--;

in claim 46, line 4, "network sever" has been changed to --
personal network server--;

in claim 46, line 7, "network sever" has been changed to --
personal network server--;

in claim 46, line 10, "network sever" has been changed to --
personal network server--;

in claim 47, line 2, "network sever" has been changed to --
personal network server--;

in claim 49, line 2, "network sever" has been changed to --
personal network server--;

in claim 51, line 2, "network sever" has been changed to --
personal network server--;

in claim 51, line 4, "network sever" has been changed to --
personal network server--;

in claim 51, line 5, "network sever" has been changed to --
personal network server--;

in claim 51, line 7, "network sever" has been changed to --
personal network server--;

in claim 52, line 2, "network sever" has been changed to --
personal network server--;

in claim 54, line 2, "network sever" has been changed to --
personal network server--;

in claim 56, line 1, "network sever" has been changed to --
personal network server--;

in claim 56, line 7, --within said personal network server--
has been inserted after "instructions";

in claim 57, line 1, "network sever" has been changed to --
personal network server--;

in claim 58, line 1, "network sever" has been changed to --
personal network server--;

in claim 59, line 1, "network sever" has been changed to --
personal network server--;

in claim 60, line 1, "network sever" has been changed to --
personal network server--;

in claim 61, line 1, "network sever" has been changed to --
personal network server--;

in claim 62, line 1, "network sever" has been changed to --
personal network server--;

in claim 63, line 1, "network sever" has been changed to --
personal network server--;

in claim 64, line 1, "network sever" has been changed to --
personal network server--;

in claim 65, line 1, "network sever" has been changed to --

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personal network server--;
in claim 66, line 1, "network sever" has been changed to --
personal network server--;
in claim 67, line 1, "network sever" has been changed to --
personal network server--;
in claim 68, line 1, "network sever" has been changed to --
personal network server--;
in claim 69, line 1, "network sever" has been changed to --
personal network server--;
in claim 70, line 2, "network sever" has been changed to --
personal network server--;
in claim 70, line 3, "network sever" has been changed to --
personal network server--;
in claim 70, line 5, "network sever" has been changed to --
personal network server--;
in claim 70, line 8, "network sever" has been changed to --
personal network server--;
in claim 76, line 2, "network sever" has been changed to --
personal network server--;
in claim 77, line 1, "network sever" has been changed to --
personal network server--;
in claim 78, line 2, "network sever" has been changed to --
personal network server--;
in claim 79, line 1, "network sever" has been changed to --
personal network server--.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith T. Ferguson whose telephone number is (571) 272-7865. The examiner can normally be reached on 6:30am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (571) 272-7872. The fax phone number for the

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organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith Ferguson
Art Unit 2617
August 10, 2006

KEITH FERGUSON
PRIMARY EXAMINER



| | | | |
|--------------------------|--------------------------------------|---------------------------------------|--|
| Interview Summary | Application No. 09/652,734 | Applicant(s) BACHNER ET AL. | |
| | Examiner Keith T. Ferguson | Art Unit 2617 | |

All participants (applicant, applicant's representative, PTO personnel):

(1) Keith T. Ferguson. (3)_____.

(2) Richard Machonkin. (4)_____.

Date of Interview: 09 August 2006.

Type: a) Telephonic b) Video Conference
c) Personal [copy given to: 1) applicant 2) applicant's representative]

Exhibit shown or demonstration conducted: d) Yes e) No.
If Yes, brief description: _____.

Claim(s) discussed: 1-80.

Identification of prior art discussed: art of record.

Agreement with respect to the claims f) was reached. g) was not reached. h) N/A.


Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: in claim 1 and throughout, "network sever" will be changed to --personal network server--; in claim 1, line 7, --within said personal network server--will be inserted after "instructions"; in claim 56, line 7, --within said personal network server--will be inserted after "instructions".

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

| | | | |
|--|--|--|--|
| Issue Classification  | Application/Control No. 09/652,734 | Applicant(s)/Patent under Reexamination BACHNER ET AL. | |
| | Examiner Keith T. Ferguson | Art Unit 2617 | |

| ISSUE CLASSIFICATION | | | | | | | | | | |
|------------------------------|----------|--|--------------------|-----------------------------------|-------|-----|-------|-------|-----|-------|
| ORIGINAL | | | CROSS REFERENCE(S) | | | | | | | |
| CLASS | SUBCLASS | | CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | | | |
| 455 | 419 | | 455 | 412.1 | 412.2 | 418 | 422.1 | 550.1 | 557 | 556.1 |
| INTERNATIONAL CLASSIFICATION | | | 709 | 202 | 203 | 216 | 216 | 219 | | |
| H04Q | 7120 | | | | | | | | | |
| H04Q | 7132 | | | | | | | | | |
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|---|--|--|
| Keith Ferguson 8/10/06 Keith Ferguson (Assistant Examiner) (Date) | Keith Ferguson Keith Ferguson 8/10/06 (Primary Examiner) (Date) | Total Claims Allowed: 80 |
| Denise Hopkins 8/22/06 (Legal Instruments Examiner) (Date) | | O.G. Print Claim(s) 1 O.G. Print Fig. 1 |

| <input type="checkbox"/> Claims renumbered in the same order as presented by applicant | | <input type="checkbox"/> CPA | | <input type="checkbox"/> T.D. | | <input type="checkbox"/> R.1.47 | | | | |
|--|----------|------------------------------|----------|-------------------------------|----------|---------------------------------|----------|-----|-----|-----|
| Final | Original | Final | Original | Final | Original | Final | Original | | | |
| 1 | 1 | 33 | 31 | 63 | 61 | | 91 | 121 | 151 | 181 |
| 2 | 2 | 34 | 32 | 64 | 62 | | 92 | 122 | 152 | 182 |
| 3 | 3 | 35 | 33 | 65 | 63 | | 93 | 123 | 153 | 183 |
| 4 | 4 | 36 | 34 | 66 | 64 | | 94 | 124 | 154 | 184 |
| 5 | 5 | 37 | 35 | 67 | 65 | | 95 | 125 | 155 | 185 |
| 6 | 6 | 38 | 36 | 68 | 66 | | 96 | 126 | 156 | 186 |
| 7 | 7 | 39 | 37 | 69 | 67 | | 97 | 127 | 157 | 187 |
| 8 | 8 | 40 | 38 | 70 | 68 | | 98 | 128 | 158 | 188 |
| 10 | 9 | 41 | 39 | 71 | 69 | | 99 | 129 | 159 | 189 |
| 11 | 10 | 42 | 40 | 73 | 70 | | 100 | 130 | 160 | 190 |
| 12 | 11 | 43 | 41 | 74 | 71 | | 101 | 131 | 161 | 191 |
| 13 | 12 | 44 | 42 | 75 | 72 | | 102 | 132 | 162 | 192 |
| 14 | 13 | 45 | 43 | 76 | 73 | | 103 | 133 | 163 | 193 |
| 15 | 14 | 46 | 44 | 77 | 74 | | 104 | 134 | 164 | 194 |
| 16 | 15 | 47 | 45 | 78 | 75 | | 105 | 135 | 165 | 195 |
| 17 | 16 | 48 | 46 | 79 | 76 | | 106 | 136 | 166 | 196 |
| 18 | 17 | 49 | 47 | 77 | 77 | | 107 | 137 | 167 | 197 |
| 19 | 18 | 50 | 48 | 80 | 78 | | 108 | 138 | 168 | 198 |
| 20 | 19 | 51 | 49 | 9 | 79 | | 109 | 139 | 169 | 199 |
| 21 | 20 | 52 | 50 | 30 | 80 | | 110 | 140 | 170 | 200 |
| 22 | 21 | 53 | 51 | | 81 | | 111 | 141 | 171 | 201 |
| 23 | 22 | 54 | 52 | | 82 | | 112 | 142 | 172 | 202 |
| 24 | 23 | 55 | 53 | | 83 | | 113 | 143 | 173 | 203 |
| 25 | 24 | 56 | 54 | | 84 | | 114 | 144 | 174 | 204 |
| 26 | 25 | 57 | 55 | | 85 | | 115 | 145 | 175 | 205 |
| 27 | 26 | 58 | 56 | | 86 | | 116 | 146 | 176 | 206 |
| 28 | 27 | 59 | 57 | | 87 | | 117 | 147 | 177 | 207 |
| 29 | 28 | 60 | 58 | | 88 | | 118 | 148 | 178 | 208 |
| 31 | 29 | 61 | 59 | | 89 | | 119 | 149 | 179 | 209 |
| 32 | 30 | 62 | 60 | | 90 | | 120 | 150 | 180 | 210 |

Index of Claims



Application/Control No.

09/652,734

Examiner

Keith T. Ferguson

Applicant(s)/Patent under Reexamination

BACHNER ET AL.

Art Unit

2617

| | |
|---|----------|
| √ | Rejected |
| = | Allowed |

| | |
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| - | (Through numeral) Cancelled |
| ÷ | Restricted |

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| N | Non-Elected |
| I | Interference |

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| A | Appeal |
| O | Objected |

| Claim | | Date |
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| Final | Original | |
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| Claim | | Date |
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| Final | Original | |
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| Claim | | Date |
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| Final | Original | |
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personal network server--;
 in claim 16, line 1, "network sever" has been changed to --
 personal network server--;
 in claim 17, line 1, "network sever" has been changed to --
 personal network server--;
 in claim 18, line 1, "network sever" has been changed to --
 personal network server--;
 in claim 19, line 1, "network sever" has been changed to --
 personal network server--;
 in claim 20, line 1, "network sever" has been changed to --
 personal network server--;
 in claim 21, line 1, "network sever" has been changed to --
 personal network server--;
 in claim 22, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 22, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 22, line 5, "network sever" has been changed to --
 personal network server--;
 in claim 23, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 30, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 30, line 3, "network sever" has been changed to --
 personal network server--;
 in claim 31, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 32, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 33, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 33, line 3, "network sever" has been changed to --
 personal network server--;
 in claim 33, line 5, "network sever" has been changed to --
 personal network server--;
 in claim 33, line 7, "network sever" has been changed to --
 personal network server--;
 in claim 37, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 40, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 44, line 2, "network sever" has been changed to --
 personal network server--;
 in claim 45, line 2, "network sever" has been changed to --
 personal network server--;

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9/5/06

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in claim 46, line 3, "network sever" has been changed to --
personal network server--;

in claim 46, line 4, "network sever" has been changed to --
personal network server--;

in claim 46, line 7, "network sever" has been changed to --
personal network server--;

in claim 46, line 10, "network sever" has been changed to --
personal network server--;

in claim 47, line 2, "network sever" has been changed to --
personal network server--;

in claim 49, line 2, "network sever" has been changed to --
personal network server--;

in claim 51, line 2, "network sever" has been changed to --
personal network server--;

in claim 51, line 4, "network sever" has been changed to --
personal network server--;

in claim 51, line 7, "network sever" has been changed to --
personal network server--;

in claim 51, line 9, "network sever" has been changed to --
personal network server--;

in claim 52, line 2, "network sever" has been changed to --
personal network server--;

in claim 54, line 2, "network sever" has been changed to --
personal network server--;

in claim 56, line 1, "network sever" has been changed to --
personal network server--;

in claim 56, line 7, --within said personal network server--
has been inserted after "instructions";

in claim 57, line 1, "network sever" has been changed to --
personal network server--;

in claim 58, line 1, "network sever" has been changed to --
personal network server--;

in claim 59, line 1, "network sever" has been changed to --
personal network server--;

in claim 60, line 1, "network sever" has been changed to --
personal network server--;

in claim 61, line 1, "network sever" has been changed to --
personal network server--;

in claim 62, line 1, "network sever" has been changed to --
personal network server--;

in claim 63, line 1, "network sever" has been changed to --
personal network server--;

in claim 64, line 1, "network sever" has been changed to --
personal network server--;

in claim 65, line 1, "network sever" has been changed to --

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9/5/00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Attorney Docket No. 00-399)

| | | |
|--------------------------------|---|--------------------------|
| In re the Application of: |) | |
| |) | |
| Edward F. Bachner, III, et al. |) | |
| |) | Examiner: Keith Ferguson |
| Serial No.: 09/652,734 |) | |
| |) | Group Art Unit 2617 |
| Filed: August 31, 2000 |) | |
| |) | Confirmation No. 3628 |
| For: WIRELESS INTELLIGENT |) | |
| PERSONAL SERVER |) | |

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

STATEMENT OF SUBSTANCE OF INTERVIEW

Applicants present this written statement regarding the substance of the telephonic interview conducted on August 9, 2006. The participants in the interview were Examiner Keith Ferguson and Applicants' representative, Richard A. Machonkin.

During the interview, the Examiner proposed an Examiner's Amendment to change "network server" to "personal network server" throughout the claims and to add "within said personal network server" after "instructions" in claims 1 and 56. The Examiner represented that the claims so amended would be allowable over the prior art of record.

Applicants' representative agreed to the proposed Examiner's Amendment.

Respectfully submitted,

Dated: September 8, 2006

By: Richard A. Machonkin
Richard A. Machonkin
Reg. No. 41,962

Electronic Acknowledgement Receipt

| | |
|--|--------------------------------------|
| EFS ID: | 1191595 |
| Application Number: | 09652734 |
| Confirmation Number: | 3628 |
| Title of Invention: | WIRELESS INTELLIGENT PERSONAL SERVER |
| First Named Inventor: | Edward F. Bachner |
| Customer Number: | 20306 |
| Filer: | Richard A Machonkin |
| Filer Authorized By: | |
| Attorney Docket Number: | MBHBOO-399 |
| Receipt Date: | 08-SEP-2006 |
| Filing Date: | 31-AUG-2000 |
| Time Stamp: | 12:17:32 |
| Application Type: | Utility |
| International Application Number: | |

Payment information:

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|------------------------|----|
| Submitted with Payment | no |
|------------------------|----|

File Listing:

| Document Number | Document Description | File Name | File Size(Bytes) | Multi Part | Pages |
|-----------------|--|---|------------------|------------|-------|
| 1 | Applicant summary of interview with examiner | Statement_Of_Substance_Of_Interview.pdf | 45596 | no | 1 |

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| Total Files Size (in bytes): | 45596 |
| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> | |

| | | | |
|---------------------------------|--|---|--------------------------|
| FORM PTO-1449 (Rev. 2-32) | U.S. Department of Commerce Patent and Trademark Office | Atty. Docket No. 00-399 | Serial No. 09/652,734 |
| | | FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT | |
| | | RECEIVED OCT 04 2004 Technology Center 2600 | |
| Applicant: Bachner, III, et al. | | Filing Date: August 31, 2000 | Group: 2683 |



U.S. PATENT DOCUMENTS

| Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date If Appropriate |
|------------------|-----------------|----------------------------|---------------------|-------------|----------|----------------------------|
| KF | 5,438,611 | Aug. 1, 1995 | Campana, Jr. et al. | | | May 23, 1994 |
| | 5,479,472 | Dec. 26, 1995 | Campana, Jr. et al. | | | May 20, 1991 |
| | 5,625,670 | Apr. 26, 1997 | Campana, Jr. et al. | | | May 18, 1995 |
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| | 6,680,923 | Jan. 20, 2003 ⁴ | Leon | | | May 23, 2000 |
| | 6,701,378 | Mar. 2, 2004 | Gilhuly et al. | | | Sep. 23, 1999 |
| | KF | 6,721,288 | Apr. 13, 2004 | King et al. | | |

McDONNELL BOENKEN
 MURBERT & BERCHOFF LLP
 300 SOUTH WACKER DRIVE
 CHICAGO, ILLINOIS 60606
 TELEPHONE (312) 913-0001

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re the application of: Edward F. BACHNER, III et al.

Application Number: 09/652,734

Filed: August 31, 2000

For: WIRELESS INTELLIGENT PERSONAL SERVER

Confirmation No.: 3628

CERTIFICATE UNDER 37 C.F.R. §3.73(b), REVOCATION OF POWER OF ATTORNEY AND APPOINTMENT OF NEW ATTORNEYS

I, Edward F. Bachner, III, am President of Rosetta-Wireless Corporation, an Illinois corporation ("Assignee"). The Assignee is the owner of the entire right, title and interest in the above-identified patent application ("the Patent Application") by virtue of an assignment from CMM, L.L.C., a Delaware limited liability company, which is in turn the assignee of the Patent Application from Double-Time Corporation, a Delaware corporation, which is in turn the assignee of the Patent Application from the inventors of the Patent Application. As evidence of this assignment, the Assignee points to the respective recordation of the above assignments at:

| Assignor | Assignee | Reel | Frame |
|--|---|-------------|--------------|
| Edward F. Bachner, III, John Major, and Xin Du | Double-Time Corporation, a Delaware corporation | 011623 | 0659 |
| Double-Time Corporation, a Delaware corporation | CMM, L.L.C., a Delaware limited liability company | 013796 | 0225 |
| CMM, L.L.C. a Delaware limited liability company | Rosetta-Wireless Corporation, an Illinois corporation | 013794 | 0375 |

As President of Assignee the undersigned is empowered to sign this document on behalf of the Assignee and has full power to grant and revoke powers of attorney.

Assignee revokes all powers of attorney previously granted.

Assignee hereby appoints Jefferson Perkins, Reg. No. 31,407, as its attorney to prosecute this Patent Application and to transact all business in the U.S. Patent and Trademark Office connected with the Patent Application and with any resulting patent, said attorney being of the firm of Momkus McCluskey Monroe Marsh & Spyrtos, LLC, with full power of substitution

and revocation, to prosecute this application and represent the undersigned before all competent International Authorities.

Please direct all correspondence to:

Momkus McCluskey Monroe Marsh & Spyratos, LLC
3051 Oak Grove Road, Suite 220
Downers Grove, Illinois 60515-1181
Fax: (630) 434-0444
email: jperkins@momlaw.com

CUSTOMER NUMBER 064770

Please direct all telephone calls to:

Jefferson Perkins
(630) 434-0400 Ext. 163

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.

Rosetta-Wireless Corporation

Signature: /Edward F. Bachner, III
Edward F. Bachner, III
Its: President
Date: 25 October 2006

Electronic Acknowledgement Receipt

| | |
|---|--------------------------------------|
| EFS ID: | 1275207 |
| Application Number: | 09652734 |
| International Application Number: | |
| Confirmation Number: | 3628 |
| Title of Invention: | WIRELESS INTELLIGENT PERSONAL SERVER |
| First Named Inventor/Applicant Name: | Edward F. Bachner |
| Customer Number: | 20306 |
| Filer: | Jefferson Perkins/Patricia Romanelli |
| Filer Authorized By: | Jefferson Perkins |
| Attorney Docket Number: | MBHBOO-399 |
| Receipt Date: | 26-OCT-2006 |
| Filing Date: | 31-AUG-2000 |
| Time Stamp: | 12:10:18 |
| Application Type: | Utility |

Payment information:

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|------------------------|----|
| Submitted with Payment | no |
|------------------------|----|

File Listing:

| Document Number | Document Description | File Name | File Size(Bytes) | Multi Part /.zip | Pages (if appl.) |
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| 1 | Power of Attorney | POACertificate.pdf | 95754 | no | 2 |

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Edward F. BACHNER, III et al.
Application Number: 09/652,734
Filing Date: 31 August 2000
Art Unit: 2617
Examiner: Keith Ferguson
Confirmation Number: 3628

Title: WIRELESS INTELLIGENT PERSONAL SERVER

CUSTOMER NO.: 064770

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

TRANSMITTAL OF FORMAL DRAWINGS

Sir:

Applicants transmit herewith 3 sheets of formal drawings in replacement of the informal drawings initially filed in the above-captioned application. The formal drawings are being submitted on or before the payment of the issue fee.

Applicants believe that no fees are due which are associated with the submission of these formal drawings. However, Applicants hereby authorize the Commissioner to charge any deficiency in such fees to Deposit Account No. 50-3982 of Momkus McCluskey Monroe Marsh & Spyratos, LLC.

Respectfully submitted,

| | |
|-------------------|----------------------------|
| <i>NAME:</i> | Jefferson Perkins |
| <i>SIGNATURE:</i> | <u>/Jefferson Perkins/</u> |
| <i>REG. NO.:</i> | 31,407 |
| <i>DATE</i> | October 31, 2006 |

Momkus McCluskey
3051 Oak Grove Road
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Downers Grove, Illinois 60515
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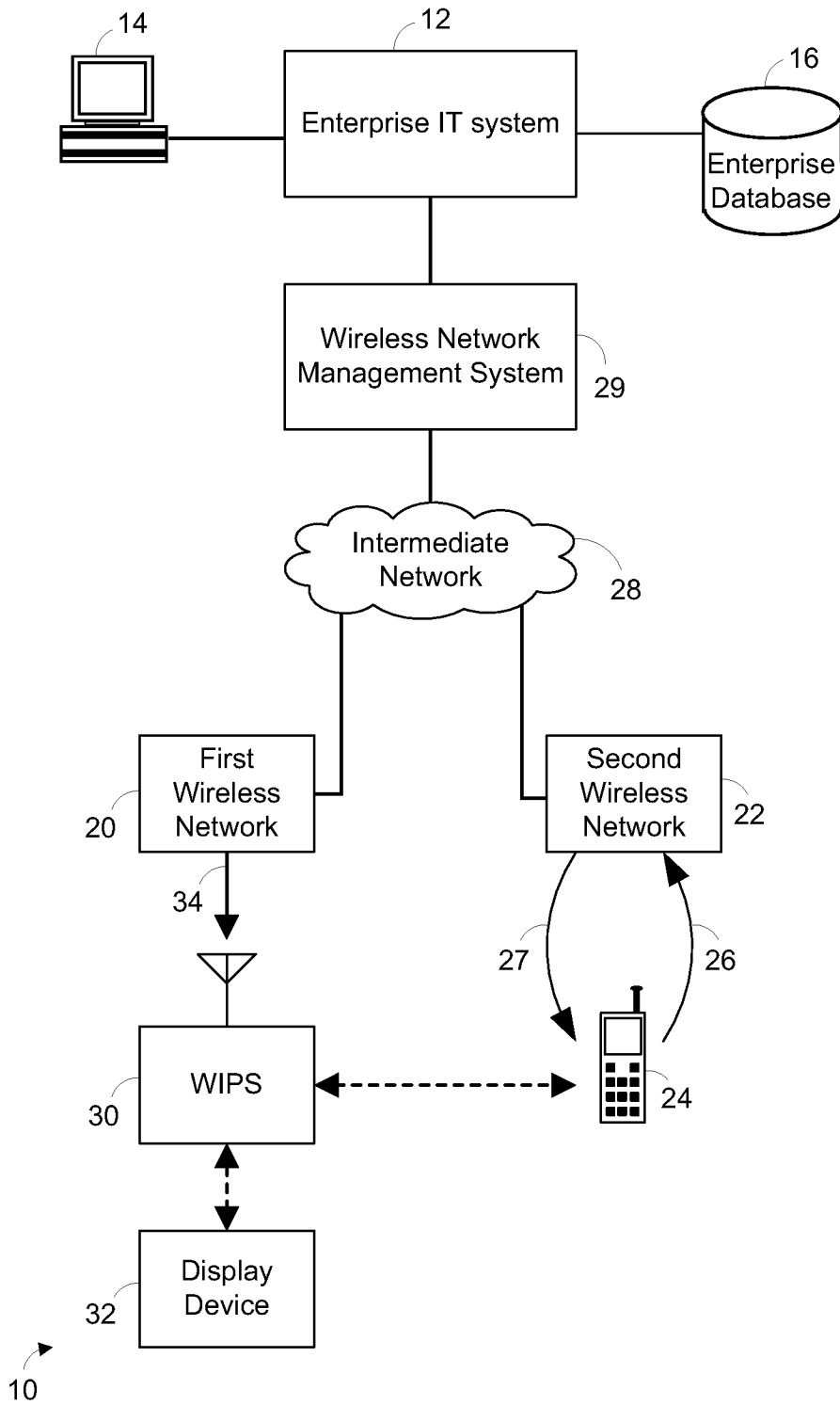
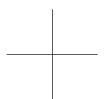
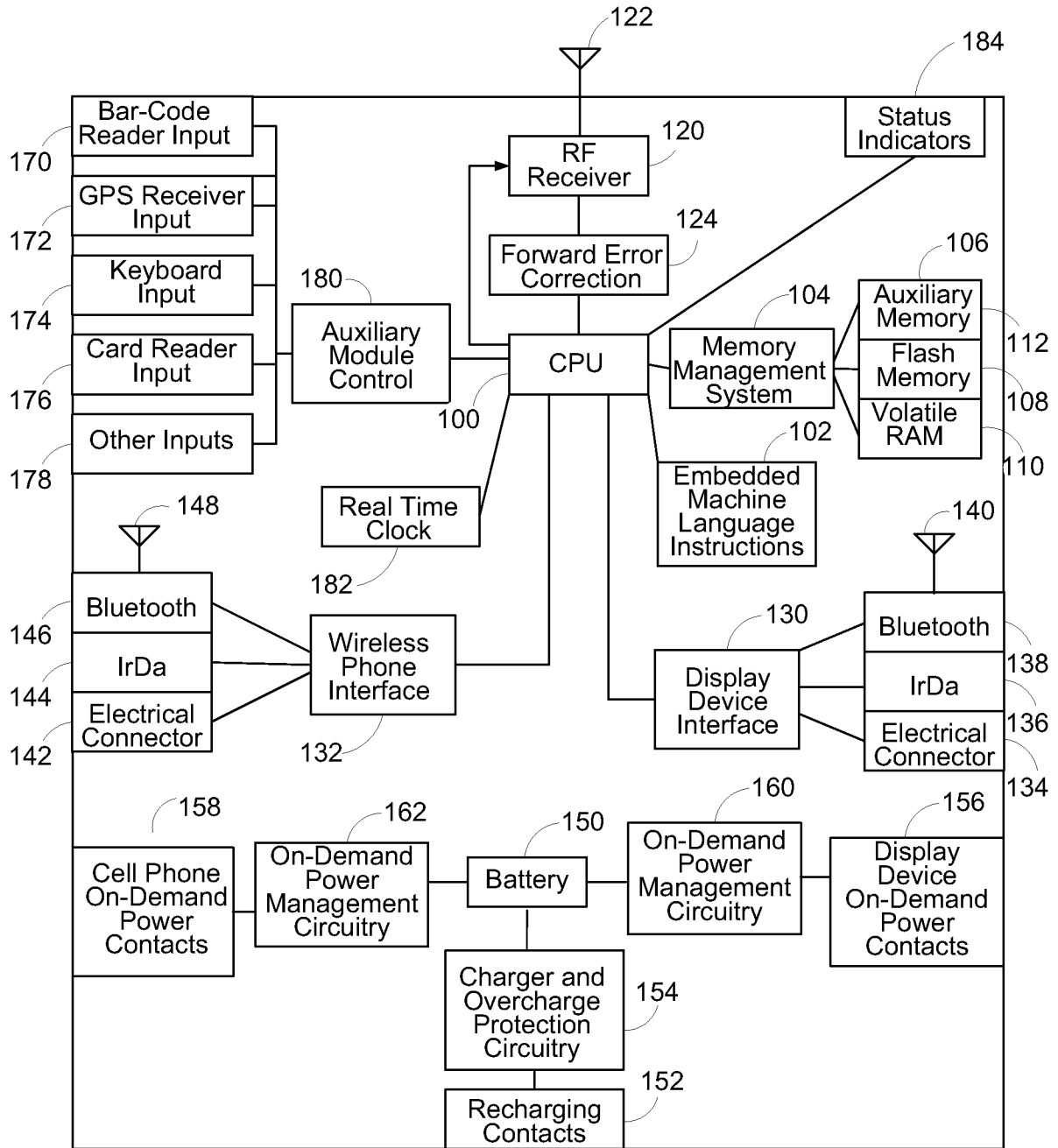


FIG. 1





30 ↗

FIG. 2





3 / 3

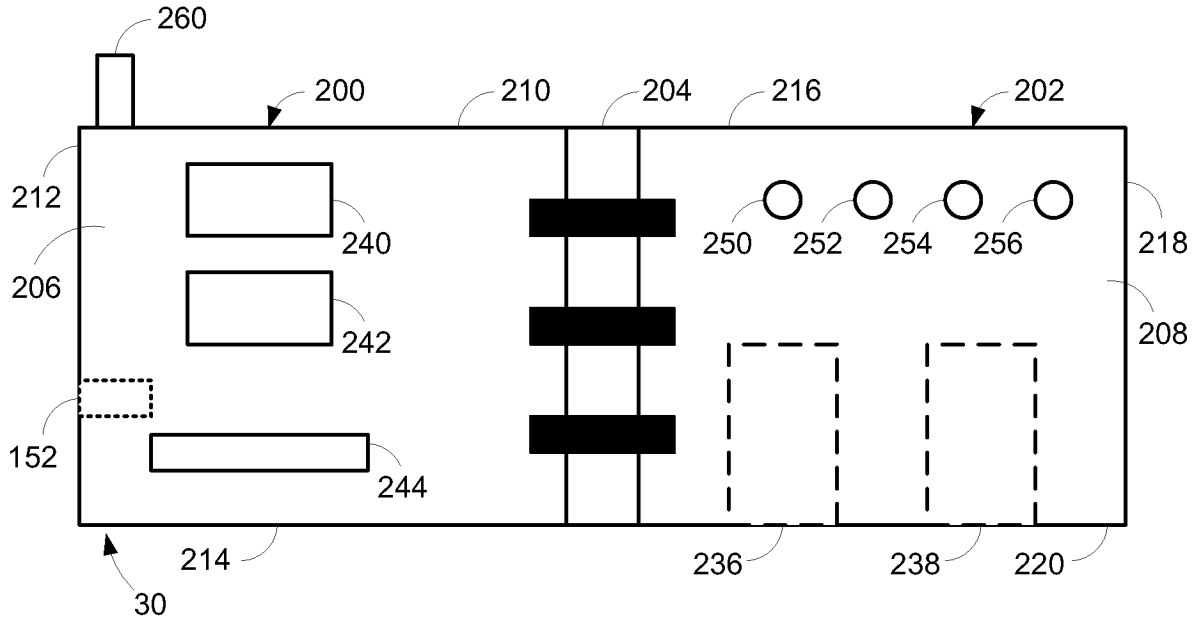


FIG. 3

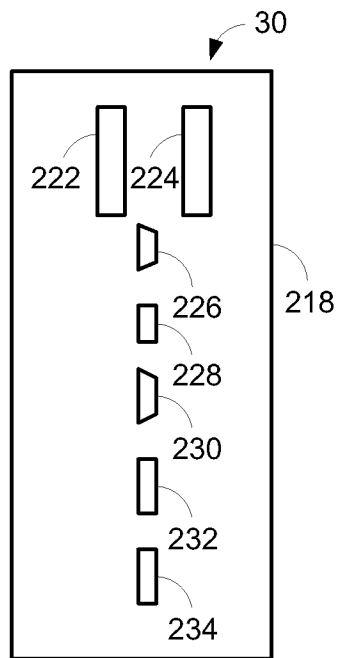
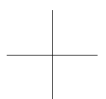


FIG. 4



Electronic Acknowledgement Receipt

| | |
|---|--------------------------------------|
| EFS ID: | 1285364 |
| Application Number: | 09652734 |
| International Application Number: | |
| Confirmation Number: | 3628 |
| Title of Invention: | WIRELESS INTELLIGENT PERSONAL SERVER |
| First Named Inventor/Applicant Name: | Edward F. Bachner |
| Customer Number: | 20306 |
| Filer: | Jefferson Perkins |
| Filer Authorized By: | |
| Attorney Docket Number: | MBHBOO-399 |
| Receipt Date: | 31-OCT-2006 |
| Filing Date: | 31-AUG-2000 |
| Time Stamp: | 17:37:58 |
| Application Type: | Utility |

Payment information:

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| Submitted with Payment | no |
|------------------------|----|

File Listing:

| Document Number | Document Description | File Name | File Size(Bytes) | Multi Part /.zip | Pages (if appl.) |
|-----------------|----------------------|-------------------------|------------------|------------------|------------------|
| 1 | Transmittal letter | Tsmletterformaldwgs.pdf | 91847 | no | 2 |

Warnings:

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|---|----------|-----------------------------|--------|----|---|
| Information: | | | | | |
| 2 | Drawings | formaldrawingscorrected.pdf | 33275 | no | 3 |
| Warnings: | | | | | |
| Information: | | | | | |
| Total Files Size (in bytes): | | | 125122 | | |
| <p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> | | | | | |



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| APPLICATION NUMBER | FILING OR 371 (c) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|------------------------|-----------------------|------------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 |

020306
 MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
 300 S. WACKER DRIVE
 32ND FLOOR
 CHICAGO, IL 60606

CONFIRMATION NO. 3628

OC000000021069201

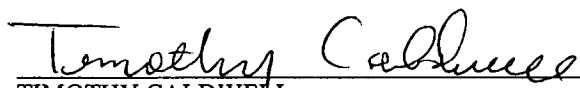
OC000000021069201

Date Mailed: 11/01/2006

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/26/2006.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).



 TIMOTHY CALDWELL
 PATDACAP (571) 272-4200

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| APPLICATION NUMBER | FILING OR 371 (c) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|------------------------|-----------------------|------------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | 30001.000002 |

64770
MOMKUS MCCLUSKEY MONROE MARSH & SPYRATOS, LLC
3051 OAK GROVE ROAD
SUITE 220
DOWNS GROVE, IL 60515-1181

CONFIRMATION NO. 3628
OC000000021069283
OC000000021069283

Date Mailed: 11/01/2006

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/26/2006.

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.


TIMOTHY CALDWELL
PATDACAP (571) 272-4200

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BIBDATASHEET

CONFIRMATION NO. 3628

Bib Data Sheet

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|------------------------------------|---|---------------------|-------------------------------|--|
| SERIAL NUMBER 09/652,734 | FILING OR 371(c) DATE 08/31/2000 RULE | CLASS 455 | GROUP ART UNIT 2617 | ATTORNEY DOCKET NO. 30001.000002 |
|------------------------------------|---|---------------------|-------------------------------|--|

APPLICANTS

Edward F. Bachner III, Lockport, IL;
 John Major, Rancho Santa Fe, CA;
 Xin Du, Bartlett, IL;

** CONTINUING DATA *****

** FOREIGN APPLICATIONS *****

IF REQUIRED, FOREIGN FILING LICENSE GRANTED** SMALL ENTITY **

** 10/17/2000

| | | | | | |
|---|---|-------------------------------|----------------------------|---------------------------|--------------------------------|
| Foreign Priority claimed 35 USC 119 (a-d) conditions met | <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance | STATE OR COUNTRY IL | SHEETS DRAWING 3 | TOTAL CLAIMS 55 | INDEPENDENT CLAIMS 5 |
| Verified and Acknowledged | Examiner's Signature _____ Initials _____ | | | | |

ADDRESS

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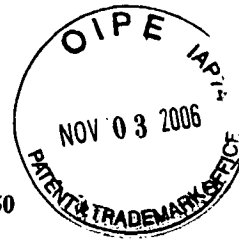
TITLE

WIRELESS INTELLIGENT PERSONAL SERVER

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020306 7590 08/24/2006

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11/06/2006 MGBREM2 00000068 09652734

| | |
|---------------------------|--------------------|
| Patricia Romanelli | (Depositor's name) |
| <i>Patricia Romanelli</i> | (Signature) |
| 31 October 2006 | (Date) |

01 FC:2501 700.00 DP

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/652,734 | 08/31/2000 | Edward F. Bachner III | MBHBOO-399 | 3628 |

TITLE OF INVENTION: WIRELESS INTELLIGENT PERSONAL SERVER

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | YES | \$700 | \$0 | \$0 | \$700 | 11/24/2006 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|-----------------|----------|----------------|
| FERGUSON, KEITH | 2617 | 455-419000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
 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; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

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 Momkus McCluskey
 2 Jefferson Perkins
 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. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Rosetta-Wireless Corporation
 (B) RESIDENCE: (CITY and STATE OR COUNTRY) Oakbrook Terrace, Illinois

Please check the appropriate assignee category or categories (will not be printed on the patent): Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted:
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 Publication Fee (No small entity discount permitted)
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 Payment by credit card. Form PTO-2038 is attached.
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5. Change in Entity Status (from status indicated above)
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NOTE: The Issue Fee and Publication Fee (if required) 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 United States Patent and Trademark Office.

Authorized Signature *Jefferson Perkins* Date 31 October 2006
 Typed or printed name Jefferson Perkins Registration No. 31,407

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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| CHANGE OF CORRESPONDENCE ADDRESS <i>Application</i> Address to: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 | Application Number | 09/652,734 |
| | Filing Date | 08/31/2000 |
| | First Named Inventor | Edward F. BACHNER III |
| | Art Unit | 2617 |
| | Examiner Name | Keith Ferguson |
| | Attorney Docket Number | 30001.000002 |

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Applicant/Inventor

Assignee of record of the entire interest. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

Attorney or agent of record. Registration Number 31,407

Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number _____

Signature *Jefferson Perkins*

Typed or Printed Name Jefferson Perkins

Date 31 October 2006 Telephone (630) 434-0400 X163

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 488 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

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