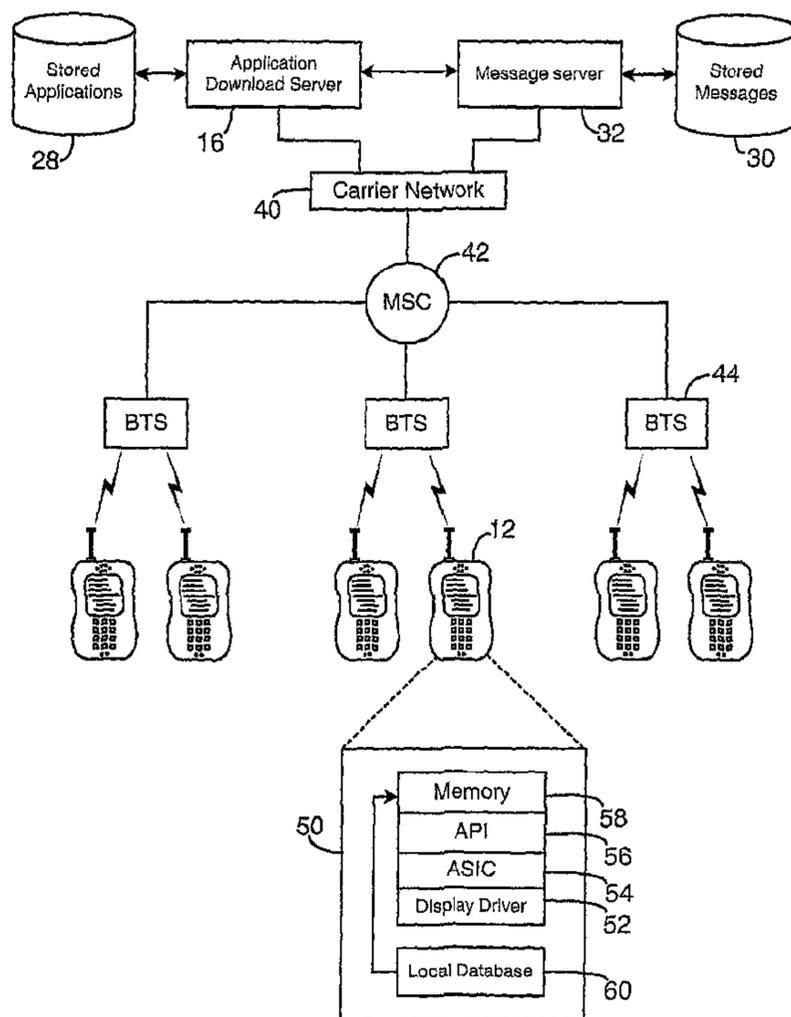




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(57) Abrégé/Abstract:

A system and method for providing a message on the graphic display of a wireless device while the wireless device is connecting to an application download server across a wireless network. When the wireless device attempts to communicate with an application

(57) **Abrégé(suite)/Abstract(continued):**

download server or changes files while navigating an application download server, a message is transmitted across the wireless network to the computer platform of the wireless device and displayed to the user of the wireless device. The message can be transmitted to the wireless device from the same application download server that the wireless device is attempting to connect to or navigate, or alternately, the message can be transmitted from another server on the wireless network.

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### Abstract

A system and method for providing a message on the graphic display of a wireless device while the wireless device is connecting to an application download server across a wireless network. When the wireless device attempts to communicate with an application download server or changes files while navigating an application download server, a message is  
5 transmitted across the wireless network to the computer platform of the wireless device and displayed to the user of the wireless device. The message can be transmitted to the wireless device from the same application download server that the wireless device is attempting to connect to or navigate, or alternately, the message can be transmitted from another server on  
10 the wireless network.

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## SYSTEM AND METHOD FOR PROVIDING MESSAGES ON A WIRELESS DEVICE CONNECTING TO AN APPLICATION SERVER

This is a divisional application of Canadian Patent Application No. 2,474,624.

### BACKGROUND OF THE INVENTION

#### *I. Field of the Invention*

[0001] The present invention generally relates to wireless networks and computer communications across the wireless networks. More particularly, the invention relates to the provision of messages for display on a wireless device while the wireless device attempts to connect with an application download server across a wireless network, or navigates in between application download servers or file structures therewithin.

#### *II. Description of the Related Art*

[0002] Wireless devices, such as cellular telephones, communicate packets including voice and data over a wireless network. Cellular telephones themselves are being manufactured with increased computing capabilities and are becoming tantamount to personal computers and hand-held personal digital assistants ("PDAs"). Some wireless devices, such as select cellular telephones, may have an installed application programming computer platform that allows software developers to create software applications that operate on the wireless device.

[0003] It is anticipated that systems and methods will be developed to transfer data to a wireless device. Accordingly, it is desirable to have systems and methods by which data, such as an advertisement, can be transmitted to a wireless device without substantially impacting the connection time of the wireless device to a server transmitting the message.

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**SUMMARY OF THE INVENTION**

[0003a] According to one embodiment of the present invention, there is provided a system, for providing a message on the graphic display of a wireless device communicating with an application download server, the system comprising: one or more wireless devices, each wireless device including a computer platform and a graphic display thereon, and each wireless device in selective communication to a wireless network; and one or more application download servers in selective communication to the wireless network, and each application download server selectively in communication with one or more wireless devices and selectively downloading data thereto, wherein, upon a wireless device attempting to communicate with at least one application download server across the wireless network, the system transmitting a message to the computer platform of the wireless device across the wireless network, and the wireless device displaying the transmitted message on the graphic display thereof; and wherein, upon a wireless device attempting to communicate with at least one application download server across the wireless network, the message is transmitted to the wireless device from a second server across the wireless network.

[0003b] According to another embodiment of the present invention, there is provided a system, for providing a message on the graphic display of a wireless device communicating with an application download server, the system comprising: one or more wireless devices, each wireless device including a computer platform and a graphic display thereon, and each wireless device in selective communication to a wireless network; and one or more application download servers in selective communication to the wireless network, and each application download server selectively in communication with the one or more wireless devices and selectively downloading data thereto, wherein, upon a wireless device attempting to communicate with at least one application download server across the wireless network, the system transmitting a message to the computer platform of the wireless device across the wireless network, and the wireless device displaying the transmitted message on the graphic display thereof; and wherein, upon a wireless device attempting to communicate with a second application download server across the wireless network, the system transmitting a

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second message to the computer platform of the wireless device across the wireless network, and the wireless device displaying the second transmitted message on the graphic display thereof.

[0003c] According to still another embodiment of the present invention, there is provided a system, for providing a message on the graphic display of a wireless device communicating with an application download server, the system comprising: one or more wireless devices, each wireless device including a computer platform and a graphic display thereon, and each wireless device in selective communication to a wireless network; and one or more application download servers in selective communication to the wireless network, and each application download server selectively in communication with the one or more wireless devices and selectively downloading data thereto, wherein, upon a wireless device attempting to communicate with at least one application download server across the wireless network, the system transmitting a message to the computer platform of the wireless device across the wireless network, and the wireless device displaying the transmitted message on the graphic display thereof; and wherein the wireless device interacts with a file structure on the at least one application download server, and upon a wireless device attempting to change interaction with a file on the at least one application download server, the system transmitting a second message to the computer platform of the wireless device across the wireless network, and the wireless device displaying the second transmitted message on the graphic display thereof.

[0003d] According to yet another embodiment of the present invention, there is provided a method for providing a message on the graphic display of a wireless device, the wireless device including a computer platform and selectively communicating to an application download server across a wireless network, the application download selectively downloading data to the wireless device, the method comprising: attempting to communicate from the wireless device to the application download server across the wireless network; transmitting a message to the wireless device across the wireless network, the message for display on the graphic display of the wireless device; receiving the transmitted message at the computer platform of the wireless device; and displaying the transmitted message on the

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graphic display of the wireless device; wherein transmitting a message to the wireless device across the wireless network includes transmitting a message to the wireless device from a second server across the wireless network.

[0003e] According to a further embodiment of the present invention, there is provided a  
5 method for providing a message on the graphic display of a wireless device, the wireless device including a computer platform and selectively communicating to an application download server across a wireless network, the application download selectively downloading data to the wireless device, the method comprising: attempting to communicate from the wireless device to the application download server across the wireless network; transmitting a  
10 message to the wireless device across the wireless network, the message for display on the graphic display of the wireless device; receiving the transmitted message at the computer platform of the wireless device; displaying the transmitted message on the graphic display of the wireless device; attempting to communicate from the wireless device to a second application download server across the wireless network; transmitting a second message to the  
15 computer platform of the wireless device across the wireless network; receiving the second message at the computer platform of the wireless device; and displaying the second transmitted message on the graphic display of the wireless device.

[0003f] According to yet a further embodiment of the present invention, there is provided a method for providing a message on the graphic display of a wireless device, the  
20 wireless device including a computer platform and selectively communicating to an application download server across a wireless network, the application download selectively downloading data to the wireless device, the method comprising: attempting to communicate from the wireless device to the application download server across the wireless network; transmitting a message to the wireless device across the wireless network, the message for  
25 display on the graphic display of the wireless device; receiving the transmitted message at the computer platform of the wireless device; displaying the transmitted message on the graphic display of the wireless device; interacting, from the wireless device, with a file structure on the application download server; attempting to change interaction with a file on the

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application download server; transmitting a second message to the computer platform of the wireless device across the wireless network; receiving the second message at the computer platform of the wireless device; and displaying the second transmitted message on the graphic display of the wireless device.

5 [0003g] According to still a further embodiment of the present invention, there is provided a wireless device including a computer platform and a graphic display thereon, the wireless device in selective communication to one or more application download servers across a wireless network, each application download server selectively downloading data to the wireless device, and upon the wireless device attempting to communicate with at least one  
10 application download server across the wireless network, the computer platform of the wireless device receiving a message transmitted across the wireless network, and the wireless device displaying the transmitted message on the graphic display thereof; wherein the wireless device interacts with a file structure on the at least one application download server, and upon the wireless device attempting to change interaction with a file on the at least one application  
15 download server, the wireless device receiving at the computer platform thereof a transmitted second message and displaying the second transmitted message on the graphic display of the wireless device.

[0003h] According to another aspect of the present invention, there is provided a wireless device, comprising: a graphical display; a wireless communications unit; and a  
20 computer platform coupled to and for controlling said graphical display and said wireless communications unit, said computer platform operable to: attempt to communicate with a first server of a wireless network, said first server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for  
25 execution on the wireless device; and cause said graphical display to display a message received from said wireless communications unit, said message being separate from the data and being received in response to the attempted communication with the first server; responsive to said display of said message, receiving an indication that the user of the wireless

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device is interested in said message; and exiting the attempt to access the data based on the received indication.

[0003i] According to still another aspect of the present invention, there is provided a wireless device, comprising: a graphical display means; a wireless communications means;  
5 and a computer means coupled to and for controlling said graphical display means and said wireless communications means, said computer means operable to: attempt to communicate with a first server of a wireless network, said first server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for  
10 execution on the wireless device; and cause said graphical display to display a message received from said wireless communications unit, said message being separate from the data and being received in response to the attempted communication with the first server; responsive to said displaying of said message, receiving an indication that the user of the wireless device is interested in said message; and exiting the attempt to access the data based  
15 on the received indication.

[0003j] According to yet another aspect of the present invention, there is provided a server, comprising: a file system; a wireless communications unit for communicating on a wireless network; and a processing unit, coupled to and controlling said file system and said wireless communications unit, the processing unit operable to: cause said wireless  
20 communications unit to detect a wireless device attempting to communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device; cause said wireless communications unit to send a message  
25 to said wireless device responsive to detecting the attempted communication with the target server, said message being separate from the data; and cause said wireless communications unit to exit an interaction with the wireless device associated with the wireless device's attempt to access the data based upon an indication that the user of the wireless device is interested in said message.

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- [0003k] According to a further aspect of the present invention, there is provided a server, comprising: a file system means; a wireless communications means for communicating on a wireless network; and a processing means, coupled to and controlling said file system means and said wireless communications means, the processing means
- 5 operable to: cause said wireless communications means to detect a wireless device attempting to communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device; cause said wireless
- 10 communications means to send a message to said wireless device responsive to detecting the attempted communication with the target server, said message being separate from the data; and cause said wireless communications means to exit an interaction with the wireless device associated with the wireless device's attempt to access the data based upon an indication that the user of the wireless device is interested in said message.
- 15 [0003l] According to yet a further aspect of the present invention, there is provided a method of operating a wireless device, comprising: attempting to communicate with a first server of a wireless network, said first server operable to download information to data wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for
- 20 execution on the wireless device; responsive to said attempted communication, receiving a message separate from the data; and displaying said message on a graphical display of said wireless device; responsive to said displaying of said message, receiving an indication that the user of the wireless device is interested in said message; and exiting the attempt to access the data based on the received indication.
- 25 [0003m] According to still a further aspect of the present invention, there is provided a method for operating a server on a wireless network, comprising: detecting a wireless device attempting to communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that

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corresponds to one or more applications configured for execution on the wireless device; responsive to said detecting, sending a message separate from the data to said wireless device; and exiting an interaction with the wireless device associated with the wireless device's attempt to access the data based upon an indication that the user of the wireless device is  
5 interested in said message.

[0003n] According to another aspect of the present invention, there is provided a non-transitory computer-readable medium comprising instructions stored thereon, which when executed by a computer, causes said computer to perform operations, the instructions comprising: at least one instruction for attempting to communicate with a first server of a  
10 wireless network, said first server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device; at least one instruction for receiving, responsive to said attempting to communicate, a message separate from the data; and at least one instruction for displaying  
15 said message on a graphical display of said wireless device; at least one instruction for receiving, responsive to said displaying of said message, an indication that the user of the wireless device is interested in said message; and at least one instruction for exiting the attempt to access the data based on the received indication.

[0003o] According to still another aspect of the present invention, there is provided a  
20 non-transitory computer-readable medium comprising instructions stored thereon, which when executed by a computer, causes said computer to perform operations, the instructions comprising: at least one instruction for detecting a wireless device attempting to communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user  
25 of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device; responsive to said detecting, at least one instruction for sending a message separate from the data to said wireless device; and exiting an interaction with the wireless device associated with the wireless device's attempt to access

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the data based upon an indication that the user of the wireless device is interested in said message.

[0004] One embodiment includes providing a message on the graphic display of a wireless device including attempting to communicate from the wireless device to an application download server across the wireless network, transmitting a message to the wireless device across the wireless network where the message is for display on the graphic display of the wireless device, receiving the transmitted message at the computer platform of the wireless device, and displaying the transmitted message on the graphic display of the wireless device. If the wireless device is part of a predefined group, the method further includes the steps of, upon the wireless device attempting to communicate with the application download server across the wireless network, identifying the group that the wireless device is part of, transmitting a group-specific message to the computer platform of the wireless device, receiving the group-specific message at the computer platform of the wireless device, and displaying the group-specific message on the graphic display of the wireless device.

[0005] Transmitting a message to the wireless device across the wireless network can be transmitting a message from the same application download server initially contacted to the wireless device, or alternately, the message is transmitted from another server on the wireless network to the wireless device.

[0006] Another embodiment includes providing messages to the wireless device at other times instead of the initial application download server contact attempt. If the wireless device attempts to a second application download server across the wireless network, the method can include transmitting a second message to the computer platform of the wireless device across the wireless network, receiving the second message at the computer platform of the wireless device, and displaying the second transmitted message on the graphic display of the wireless device. When the wireless device is navigating the data structure, such as a file table, within an application download server, the method can further includes interacting, from the wireless device, with a file structure on the application download server, attempting

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to change interaction with a file on the application download server, transmitting a second message to the computer platform of the wireless device across the wireless network, receiving the second message at the computer platform of the wireless device, and displaying the second transmitted message on the graphic display of the wireless device. And if the message includes a hyperlink to a different application download server on the network, then the method can include attempting to communicate from the wireless device to a second application download server across the wireless network through activation of the hyperlink in the message.

[0007] It is therefore an object of some embodiments to provide a message that is displayable to the user of a wireless device while the wireless device is connecting to an application download server. Further, in some embodiments, the transmission and execution of the message does not substantially lengthen the connection time or hinder access of the wireless device to the downloadable applications resident on the application download server. In these embodiments, messages such as advertisements can be displayed to the user of a wireless device while the wireless device is otherwise idle while connection to an application download server is made.

[0008] Other objects, advantages, and features of some embodiments of the present invention will become apparent after review of the hereinafter set forth Brief Description of the Drawings, Detailed Description of the Invention, and the Claims.

## 20 BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Fig. 1 is a representative diagram of a wireless network and the computer hardware and wireless devices that can be used within the inventive messaging system.

[0010] Fig. 2 is a block diagram of the hardware components of the wireless network providing communication between different wireless devices, the application download server, a separate messaging server, and their respective databases.

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[0011] Fig. 3 is a perspective view of the graphic display of a cellular telephone displaying a message while connecting to an application download server in an exemplary embodiment of the present invention.

[0012] Fig. 4 is a flowchart illustrating the process executing on the wireless device  
5 computer platform to attempt to connect to an application download server, and receive and display a message to the user in an exemplary embodiment of the present invention.

[0013] Fig. 5 is a flowchart illustrating the process executing on an application  
download server receiving a connection attempt from a wireless device, transmitting an  
appropriate message to the wireless device, and selectively providing other messages to the  
10 wireless device as the user of the wireless device navigates the data structure of the  
application download server in an exemplary embodiment of the present invention.

## **DETAILED DESCRIPTION OF THE INVENTION**

### ***Introduction***

[0014] Systems and methods are anticipated that provide for the downloading of  
15 software applications to a wireless device. Software applications can come pre-loaded at the  
time a wireless device is manufactured, or the user may later request that additional programs  
be downloaded over cellular telecommunication carrier networks, where the programs are  
executable on the wireless device. As a result, users of wireless

devices can customize their wireless devices with programs, such as games, printed media, stock updates, news, or any other type of information or program available for download from application download servers through the wireless network.

[0015] In one scenario, if the user of the wireless device desires to download and use a software application using a wireless network, the user will typically either call a service provider or contact the service provider through other means, such as through an Internet access, and the service provider will either transmit the application to the wireless device across the wireless network or allow the user access a network site where the application is downloadable or accessible. To connect to the application download server, the wireless device bridges a communication connection to the wireless network, such as a cellular network, and then attempts to contact an application download server where the desired software application is resident. Once the wireless device contacts the application download server, an initial contact is made and the application download server determines what applications are available to the wireless device and sends the appropriate information, such as a menu, for display on the wireless device so the user can learn of the available applications.

[0016] The period between the wireless device's initial contact of the application download server and menu/option display on the wireless device can be significant, lasting several seconds. During the wait period, the graphic display of the wireless device displays either nothing at all until the application download server menu is displayable, or a simple resident message such as "connecting" can be shown to the user.

[0017] Accordingly, the present invention provides systems and methods whereby a message, such as an advertisement, can be transmitted and/or displayed to the user of a wireless device while the wireless device is connecting to an application download server. Further, the data comprising the message may be sufficiently compact that the overall connection time is not substantially lengthened.

[0018] Systems and methods consistent with the present invention provide a message on the display of a wireless device while the wireless device is connecting to an application download server across a wireless network. When the wireless device attempts to communicate with an application download server across the wireless network, a targeted message, such as an advertisement, is transmitted across the wireless network to the computer platform of the wireless device and displayed to the user of the wireless

device. The message can be transmitted to the wireless device from the same application download server that the wireless device computer platform is attempting to connect to or navigate, or the message can be transmitted to the wireless device from another server on the wireless network. The message can include graphics, text, multimedia components, or hyperlinks, all of which are displayable and interactive on the graphic display of the wireless device.

[0019] The system particularly includes one or more wireless devices where each wireless device has a computer platform and a graphic display, and the graphic display is operated by the resident driver of the computer platform which can be hardware, firmware, or software. Examples of the wireless device include cellular telephones, text pagers, personal digital assistants (PDAs), or other computer platforms with a wireless link to selectively communicate with a wireless network. The system also includes one or more application download servers that are on the wireless network and each application download server is selectively in communication with the one or more wireless devices and selectively downloading data thereto, such as software applications, graphics, and text.

[0020] The wireless devices will attempt to connect with a specific application download server when so instructed by the user, and there is typically a connect wait-period while the application server determines, among other things, what applications can be provided to the wireless device and what the capabilities of the wireless device are. The wireless device typically gains access to a menu or file structure of the application download server wherein the user of the wireless device can navigate within the data structure of the application download server. Other servers can also be present on the network that are not specifically for application download, such as a messaging-only server that transmits messages to wireless devices.

[0021] Thus, in the present invention, when a wireless device attempts to communicate with at least one application download server across the wireless network, a message is transmitted to the computer platform of the wireless device across the wireless network for display to the user during the connection wait-period. The message is able to utilize an otherwise idle period of the wireless device to provide advertisements and other information to the user prior to providing full access of the application download server. The message should compact such that its transmission time in a data stream and

execution time on the wireless device are minimal so as not to cause a delay in the overall application download server access time.

[0022] For more targeted messaging, as is desirable in advertising, each wireless device can be part of a predefined group, based upon age, location, income, or other preferences listed by the owner of the wireless device. When a wireless device that is part of a predefined group attempts to communicate with the application download server across the wireless network, the application download server will identify the group that the wireless device is part of, and a group-specific message is transmitted to the computer platform of the wireless device. As with any message defined herein, the group-specific message can be transmitted to the wireless device from the same application download server that the wireless device attempted to contact or can be transmitted from another server on the network.

[0023] Additionally, the message can be comprised of several different components sent from several different servers, and the components are assembled at the wireless device at the time of display. As an example, a graphics component can be sent from the application download server, an audio file can be sent from a first server, and a hyperlink can be provided from another server. The computer platform of the wireless device will then appropriately assemble the components into a message for display.

[0024] Messages can also be transmitted for display at the wireless device beyond the initial attempt to contact the application download server. A second message can be sent upon a wireless device attempting to communicate with a second application download server across the wireless network. And if the wireless device interacts with a file structure on the application download server, a message can be transmitted and displayed on the wireless device when the wireless device attempts to change interaction with a file or otherwise navigates within the data structure of the application download server.

#### *Exemplary Embodiments of the Present Invention*

[0025] With reference to the figures in which like numerals represent like elements throughout, Fig. 1 illustrates a system 10 for providing subscribed software applications to one or more wireless devices, such as cellular telephone 12, in communication across a wireless network 14 with at least one application download server 16 that selectively downloads software applications or other data to the wireless devices across a wireless

communication portal or other data access to the wireless network 14. As shown here, the wireless device can be a cellular telephone 12, with a graphics display 13, a personal digital assistant 18 with PDA screen 19, a pager 20 with a graphics display 21, which is shown here as a two-way text pager, or even a separate computer platform 22 that has a wireless communication portal and a display 23, and may otherwise have a wired connection 24 to a network or the Internet. The system 10 can thus be performed on any form of remote computer module including a wireless communication portal, including without limitation, wireless modems, PCMCIA cards, access terminals, personal computers, access terminals, telephones without a display or keypad, or any combination or sub-combination thereof.

[0026] The application download server 16 is shown here on a local server-side network 26 with other computer elements in communication with the wireless network 14, such as a stored application database 28 that contains software applications that are downloadable to be executable on the wireless devices 12,18,20,22. There is also shown a stand-alone messaging server 32 and with stored message database 30 that transmits messages to the wireless devices for display thereon as herein described. However, messaging server 32 and message database 30 are not necessary as all server-side functions can be performed on one server, such as application download server 16. Further, any computer server-side computer platform can provide separate services and processes to the wireless devices 12,18,20,22 across the wireless network 14.

[0027] Fig. 2 is a block diagram that more fully illustrates the components of the wireless network 14 and interrelation of the elements of the system 10. The wireless network 14 is merely exemplary and can include any system whereby remote modules, such as wireless devices 12,18,20,22, communicate over-the-air between and among each other and/or between and among components of a wireless network 14, including, without limitation, wireless network carriers and/or servers. The application download server 16 and the stored application database 28, messaging server 32, and stored messages database 30, may be present on the cellular data network with other components that are needed to provide cellular telecommunication services. The application download server 16 and/or messaging server 32 communicate with a carrier network 40, through a data link, such as the Internet, a secure LAN, WAN, or other network. The carrier network 40 controls messages (generally being data packets) sent to a messaging service controller ("MSC") 42. The carrier network 40 communicates

with the MSC 42 by a network, the Internet and/or POTS (“plain ordinary telephone system”). Typically, the network or Internet connection between the carrier network 40 and the MSC 42 transfers data, and the POTS transfers voice information. The MSC 42 is connected to multiple base stations (“BTS”) 44. In a similar manner to the carrier network, the MSC 42 is typically connected to the BTS 44 by both the network and/or Internet for data transfer and POTS for voice information. The BTS 44 ultimately broadcasts messages wirelessly to the wireless devices, such as cellular telephone 12, by short messaging service (“SMS”), or other over-the-air methods known in the art.

[0028] The wireless device, such as cellular telephone 12, has a computer platform 50 that can receive and execute software applications transmitted from the application download server 16. The computer platform 50 includes, among other components, a display driver 52 that drives the graphics display 13 and renders images on the graphics display 13 based upon graphics data received at the computer platform 50. The computer platform 50 also includes an application-specific integrated circuit (“ASIC”) 54, or other processor, microprocessor, logic circuit, or other data processing device. The ASIC 52 is typically installed at the time of manufacture of the wireless device. The ASIC 52 or other processor executes the application programming interface (“API”) layer 56 that interfaces with any resident programs in the memory 58 of the wireless device. The memory can be comprised of read-only or random-access memory (RAM and ROM), EPROM, EEPROM, flash cards, or any memory common to computer platforms. The computer platform 50 also includes a local database 60 that can hold the software applications not actively used in memory 58, such as the software applications downloaded from the application download server 16. The local database 60 is typically comprised of one or more flash memory cells, but can be any secondary or tertiary storage device as known in the art, such as magnetic media, EPROM, EEPROM, optical media, tape, or soft or hard disk.

[0029] The wireless device, such as cellular telephone 12, can download many types of applications, such as games and stock monitors, or simply data such as news and sports-related data. The downloaded data can be immediately displayed on the display 13 or stored in the local database 60 when not in use. The software applications can be treated as a regular software application resident on the wireless device 12,18,20,22, and the user can selectively upload stored resident applications from the local database 60 to

memory 58 for execution on the API 56. The user of the wireless device 12,18,20,22 can also selectively delete a software application from the local database 60.

[0030] Fig. 3 illustrates the message 15 displayed upon the graphic display 13 of the cellular telephone 12 when the wireless device 12,18,20,22 attempts to connect to a server, such as application download server 16 in an exemplary embodiment of the present invention. In the connection wait-period that can last several seconds, the system 10 allows a message 15 to be sent for display on the wireless device 12,18,20,22 to the user while the wireless device is otherwise idle awaiting data to navigate the application download server 16. When the wireless device attempts to contact the application download server, a connection screen or communication of connection status may be displayed on the graphic display 13,19,21,23 of the wireless device 12,18,20,22, and the connection screen may be generated by the wireless device resident operating system or a resident application.

[0031] In one embodiment, the system 10, during the connection attempt, transmits a message 15 to the computer platform 50 of the wireless device 12,18,20,22 such that the message can be displayed on the graphic display 13,19,21,23 to the user during the connection wait-period. Here, the message 15 is shown as an automobile advertisement and graphic display 13 also informs the end-user that the connection to the application download server 16 is proceeding. The message can include text, graphics, multimedia, or other network objects such as hyperlinks and applets. While the message can include many types of data, it is preferred that the message be compact and maximally utilize the wireless device resources for display and execution so the message transmission does not interfere with the overall connection to the application download server 16. After the wireless device 12,18,20,22 displays the message 15 during the connection wait-period, the message is preferably supplanted by a display of an options menu or like access screen so that the user has access to the data structure of the application download server 16. Typically, a file menu is displayed on the wireless device 12,18,20,22 such that the user can navigate through various file layers on the application download server 16 and selectively choose to download an available application.

[0032] The message 15 can be transmitted to the wireless device 12,18,20,22 from the specific application download server 16 that the wireless device attempted to initially contact. Alternately, the message can be transmitted to the wireless device 12,18,20,22 from a messaging server 32 across the wireless network 14, and the messaging server

32. With a messaging server 32, the overhead in transmitting the message can be shifted away from the application download server 16 which has significant resources devoted in the attempt to bridge a connection with the wireless device 12,18,20,22.

[0033] Moreover, the use of multiple servers on the wireless network 14 allows the wireless device 12,18,20,22 to receive and display messages comprised of several different components sent from several different servers. The message components can be sent separately and are assembled at the wireless device 12,18,20,22 at the time of display. As an example, a graphics component can be sent from the application download server 16, an executable audio file can be sent from the messaging server 32, and a hyperlink can be provided from another server. The computer platform 50 of the wireless device 12,18,20,22 will then appropriately integrate and assemble the components into a single message for display, execute the message applications, or queue the message components or separate messages for sequential display. The software components can be simple data representing text, graphics, audio files, or full applets separately executable on the computer platform 50 of the wireless device 12,18,20,22.

[0034] The system 10 can also transmit messages at times other than the initial connection attempt from the wireless device 12,18,20,22 to the application download server 16, such as when the wireless device attempts to connect to a second server, as occurs when the user of the wireless device activates a hyperlink within a displayed message. Further, the system 10 could also send a message to the wireless device 12,18,20,22 when the wireless device changes file interaction while navigating the data structure of the application download server 16 (typically a file structure such as in Windows™, UNIX™, and LINUX™). Messages can thus be sent to the wireless device 12,18,20,22 either in addition to the first message at the initial connection attempt, or at a predetermined interaction interval such as server access change or a file interaction change.

[0035] The messages can be targeted to the wireless device user based upon many criteria, including a specific group that the user (or registered owner of the wireless device) belongs to, the application download server 16 desired to be connected to, or the specific file which the user desires to access. The owner of the wireless device can register with a specific group known to the system 10, examples being teenagers, golf enthusiasts, business owners, and the like. When the wireless device 12,18,20,22

initially attempts to contact the application download server 16, the system 10 can have a specific message targeted to the wireless device as a member of the predefined group. Group membership can be identified automatically in the initial electronic handshake between the wireless device 12,18,20,22 and the application download server 16, or the system 10 can prompt the end-user of the wireless device 12,18,20,22 from the application download server 16 or a separate server such as messaging server 32, to designate a specific group, and then once the end-user inputs group identification data, the data can be received from the prompting server (i.e. at the application download server 16 or messaging server 32, or both). In such embodiment, the end-user of the wireless device actually can determine the group so the targeted messaging is more likely to be received by a member of its intended group demographic. And other messages can be targeted based upon the subject matter or context of the message-triggering event, such as the subject matter on a second application download server desired to be accessed, or nature of the file on the application download server 16 desired to be navigated.

[0036] In operation of the system 10 as is shown in the flowchart of Fig. 4, the wireless device, such as cellular telephone 12, first attempts to bridge a connection to the wireless network 14, shown by step 70, and once a communication to the wireless network 14 is made, the wireless device attempts to connect to the application download server 16 to access downloadable software applications or data therefrom, as shown at step 72. A decision is then made as to whether a message has been received from the system 10, as shown at decision 74. If a message has not been received at decision 74, then the wireless device simply waits for the full interactive connection to be made with the application download server 16 and displays the application download server 16 interactive screen on the graphic display 13 of the wireless device (such as cellular telephone 12), as shown at step 84. If a message has been sent at decision 74 then the message is displayed on the graphic display 13 of the wireless device 12, as shown at step 76.

[0037] If the message is embodied with a hyperlink, the wireless device 12 can make a decision as to whether the user has activated the hyperlink, as shown at decision 78. If the user has activated the hyperlink, then the current interaction session is exited and the wireless device redirects its connection attempt at the linked site, as shown at step 80, and then the wireless device attempts to contact the linked application download server,

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and returns to step 72. If the user has not activated a link at decision 78, a decision is then made as to whether the application download server 16 interaction has been achieved by the wireless device, as shown at decision 82. If the interaction has not been achieved, then the message is continued displayed on the graphics display 13  
5 of the wireless device 12, as the process returns to step 76. If the application download server 16 interaction has been achieved at decision 82, an application download server 16 interactive screen is displayed on the graphic display 13 of the wireless device 12, as shown at step 84, or otherwise the state of interactivity with the application download server 16 provided by the specific system 10 is entered.

10 [0038] The flowchart of Fig. 5 illustrates the parallel process on the application download server 16 that occurs in response to the connection attempt from the wireless device 12 as shown in Fig. 4. The application download server 16 initially receives the communication attempt from the wireless device (such as cellular  
15 telephone 12), as shown at step 90, and then a decision is made as to whether the wireless device is able to display a message, as shown at decision 92. The decision can be made based upon data exchanged directly with the wireless device, the wireless network 14, or based upon stored data on the capability of the wireless device. If the wireless device 12 cannot display a message at decision 92, then at  
20 step 94 the application download server 16 transmits the data necessary to effect and interconnection between the wireless device 12 and the application download server 16 such that the wireless device 12 can have access to the downloadable applications. If the wireless device is able to display a transmitted message at decision 92, then a decision is made as to whether the wireless device 12 is part of a predefined group or demographic, as shown at decision 96.

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- [0039] If the wireless device 12 is not part of a predefined group at decision 96, then a general message is transmitted to the wireless device, such as a general advertisement, as shown at step 98. The transmission of the general message can occur from the application download server 16 or from a messaging server 32.
- 5 Otherwise, if the wireless device is a part of a predefined group at decision 96, then a group-specific message is sent to the wireless device 12, as shown at step 100, from either the application download server 16 or a group-specific messaging server 32. After either the general message at step 98 or the group-specific message at step 100 has been sent to the wireless device 12, at step 102 the application download
- 10 server 16 transmits the downloadable application interconnection data to the wireless device 12 such that the

wireless device 12 can have navigable access to the applications of the application download server 16.

[0040] If the system 10 is embodied to send messages to the wireless device 12,18,20,22 upon changing file access in navigating the data structure of the application download server 16, then once the full interaction is achieved, the application download server 16 determines if the user has changed file access, as shown at decision 104. If the user has not changed file access, then the process repeats the decision at 104 while the user is navigating the application download server 16. If the user has changed file access at decision 104, then a message is transmitted to the wireless device 12,18,20,22 while the file access changes, as shown at step 106; and the application download server 16 again determines if the user has changed file access at decision 104. The message transmitted at step 106 can be sent from the application download server 16 or from a separate messaging server 32 to the wireless device.

[0041] The system 10 thus includes a method for providing a message on the graphic display 13,19,21,23 of a wireless device 12,18,20,22, having the steps of attempting to communicate from the wireless device 12,18,20,22 to the application download server 16 across the wireless network 14, such as would occur if the user activates a hyperlink within a message transmitted at the original connection attempt, transmitting a message to the wireless device 12,18,20,22 across the wireless network 14 where the message for display on the graphic display 13,19,21,23 of the wireless device 12,18,20,22, receiving the transmitted message at the computer platform 50 of the wireless device 12,18,20,22, and displaying the transmitted message on the graphic display 13,19,21,23 of the wireless device 12,18,20,22. And if the wireless device 12,18,20,22 is part of a predefined group, the method further includes identifying the group that the wireless device is part of when the wireless device 12,18,20,22 attempts to communicate with the application download server 16 across the wireless network 14, transmitting a group-specific message to the computer platform 50 of the wireless device, receiving the group-specific message at the computer platform 50 of the wireless device 12,18,20,22, and displaying the group-specific message on the graphic display 13,19,21,23 of the wireless device 12,18,20,22.

[0042] The method can also include sending messages to the wireless device 12,18,20,22 instead of the initial connection attempt, or the message can be secondary to the message transmitted at the initial connection attempt. The method can thus include

attempting to connect from the wireless device 12,18,20,22 to a second application download server 16 across the wireless network 14, transmitting a second message to the computer platform 50 of the wireless device 12,18,20,22 across the wireless network 14, receiving the second message at the computer platform 50 of the wireless device 12,18,20,22, and displaying the second transmitted message on the graphic display 13,19,21,23 of the wireless device 12,18,20,22. And if the wireless device 12,18,20,22 can navigate the data structure or file structure of the application download server 16, then the method can include interacting, from the wireless device 12,18,20,22, with a file structure on the application download server 16, attempting to change interaction with a file on the application download server 16, transmitting a second message to the computer platform 50 of the wireless device 12,18,20,22 across the wireless network 14 (either from application download server 16 or messaging server 32), receiving the second message at the computer platform 50 of the wireless device 12,18,20,22, and displaying the second transmitted message on the graphic display 13,19,21,23 of the wireless device 12,18,20,22.

[0043] In view of the method being executable on the computer platform of a wireless device 12,18,20,22, the present invention includes a program resident in a computer readable medium, where the program directs a wireless device having a computer platform to perform the method. The computer readable medium can be the memory 58 of the computer platform 50 of the cellular telephone 12, or other wireless device, or can be in a local database, such as local database 60 of the cellular telephone 12. Further, the computer readable medium can be in a secondary storage media that is loadable onto a wireless device computer platform, such as a magnetic disk or tape, optical disk, hard disk, flash memory, or other storage media as is known in the art.

[0044] The present invention may be implemented, for example, by operating portion(s) of the wireless network 14 to execute a sequence of machine-readable instructions, such as wireless platform 50, the application download server 16, and messaging server 32. The instructions can reside in various types of signal-bearing or data storage primary, secondary, or tertiary media. The media may comprise, for example, RAM (not shown) accessible by, or residing within, the components of the wireless network 14. Whether contained in RAM, a diskette, or other secondary storage media, the instructions may be stored on a variety of machine-readable data storage media, such as DASD storage (e.g., a conventional "hard drive" or a RAID array), magnetic tape, electronic read-only

memory (e.g., ROM, EPROM, or EEPROM), flash memory cards, an optical storage device (e.g. CD-ROM, WORM, DVD, digital optical tape), paper "punch" cards, or other suitable data storage media including digital and analog transmission media.

[0045] While the foregoing disclosure shows illustrative embodiments of the invention, it should be noted that various changes and modifications could be made herein without departing from the scope of the invention as defined by the appended claims. Furthermore, although elements of the invention may be described or claimed in the singular, the plural is contemplated unless limitation to the singular is explicitly stated.

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CLAIMS:

1. A wireless device, comprising:  
  
a graphical display;  
  
a wireless communications unit; and  
  
5 a computer platform coupled to and for controlling said graphical display and said wireless communications unit, said computer platform operable to:  
  
attempt to communicate with a first server of a wireless network, said first server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that  
10 corresponds to one or more applications configured for execution on the wireless device; and  
  
cause said graphical display to display a message received from said wireless communications unit, said message being separate from the data and being received in response to the attempted communication with the first server;  
  
responsive to said display of said message, receiving an indication that the user  
15 of the wireless device is interested in said message; and  
  
exiting the attempt to access the data based on the received indication.
2. The wireless device of claim 1, wherein said message is received from said first server.
3. The wireless device of claim 1, wherein said message is received from a  
20 second server on said wireless network.
4. The wireless device of claim 1, wherein said message is comprised of a plurality of components, at least one of said components being received from a second server on said wireless network.

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5. The wireless device of claim 1, wherein said computer platform is further operable to:

identify a group associated with said wireless device, wherein said message is a group message intended for a specified group of wireless devices, and further wherein said graphical display displays said message only when said specified group corresponds to said group associated with said wireless device.

6. The wireless device of claim 1, wherein said computer platform is further operable to interact with a file system on said first server.

7. The wireless device of claim 6, wherein said interaction with said file system comprises accessing a new file on said file system.

8. The wireless device of claim 7, wherein said interaction with said file system comprises accessing a new directory on said file system.

9. A wireless device, comprising:

a graphical display means;

a wireless communications means; and

a computer means coupled to and for controlling said graphical display means and said wireless communications means, said computer means operable to:

attempt to communicate with a first server of a wireless network, said first server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device; and

cause said graphical display to display a message received from said wireless communications unit, said message being separate from the data and being received in response to the attempted communication with the first server;

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responsive to said displaying of said message, receiving an indication that the user of the wireless device is interested in said message; and

exiting the attempt to access the data based on the received indication.

10. The wireless device of claim 9, wherein said message is received from said  
5 first server.

11. The wireless device of claim 9, wherein said message is received from a second server on said wireless network.

12. The wireless device of claim 9, wherein said message is comprised of a plurality of components, at least one of said components being received from a second server  
10 on said wireless network.

13. A server, comprising:

a file system;

a wireless communications unit for communicating on a wireless network; and

a processing unit, coupled to and controlling said file system and said wireless  
15 communications unit, the processing unit operable to:

cause said wireless communications unit to detect a wireless device attempting to communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or  
20 more applications configured for execution on the wireless device;

cause said wireless communications unit to send a message to said wireless device responsive to detecting the attempted communication with the target server, said message being separate from the data; and

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cause said wireless communications unit to exit an interaction with the wireless device associated with the wireless device's attempt to access the data based upon an indication that the user of the wireless device is interested in said message.

14. The server of claim 13, wherein the target server is the server.

5 15. The server of claim 13, wherein the target server is a second server of said wireless network.

16. The server of claim 13, wherein said message is one component of a compound message.

10 17. The server of claim 13, wherein the wireless device is a member of a group and said message is a group message associated with said group of said wireless device.

18. The server of claim 13, the processing unit further being operable to send the message to said wireless device only when a given interaction between said wireless device and said file system changes.

19. A server, comprising:

15 a file system means;

a wireless communications means for communicating on a wireless network;

and

a processing means, coupled to and controlling said file system means and said wireless communications means, the processing means operable to:

20 cause said wireless communications means to detect a wireless device attempting to communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device;

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cause said wireless communications means to send a message to said wireless device responsive to detecting the attempted communication with the target server, said message being separate from the data; and

5 cause said wireless communications means to exit an interaction with the wireless device associated with the wireless device's attempt to access the data based upon an indication that the user of the wireless device is interested in said message.

20. The server of claim 19, wherein the target server is the server.

21. The server of claim 19, wherein the target server is a second server of said wireless network.

10 22. The server of claim 19, wherein said message is one component of a compound message.

23. A method of operating a wireless device, comprising:

15 attempting to communicate with a first server of a wireless network, said first server operable to download information to data wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device;

responsive to said attempted communication, receiving a message separate from the data; and

displaying said message on a graphical display of said wireless device;

20 responsive to said displaying of said message, receiving an indication that the user of the wireless device is interested in said message; and

exiting the attempt to access the data based on the received indication.

24. The method of claim 23, wherein said message is received from said first server.

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25. The method of claim 23, wherein said message is received from a second server of said wireless network.
26. The method of claim 23, wherein said message is a component of a compound message, said compound message being separate from the data.
- 5 27. The method of claim 23, wherein said attempted communication is for changing an interaction between the wireless device and a file system of said first server.
28. The method of claim 23, wherein said wireless device is a member of a group and said message is a group message associated with said group.
29. A method for operating a server on a wireless network, comprising:
- 10 detecting a wireless device attempting to communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device;
- 15 responsive to said detecting, sending a message separate from the data to said wireless device; and
- exiting an interaction with the wireless device associated with the wireless device's attempt to access the data based upon an indication that the user of the wireless device is interested in said message.
- 20 30. The method of claim 29, wherein the wireless device is a member of a group and the message is a group message associated with said group.
31. A non-transitory computer-readable medium comprising instructions stored thereon, which when executed by a computer, causes said computer to perform operations, the instructions comprising:

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at least one instruction for attempting to communicate with a first server of a wireless network, said first server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device;

at least one instruction for receiving, responsive to said attempting to communicate, a message separate from the data; and

at least one instruction for displaying said message on a graphical display of said wireless device;

at least one instruction for receiving, responsive to said displaying of said message, an indication that the user of the wireless device is interested in said message; and

at least one instruction for exiting the attempt to access the data based on the received indication.

32. The non-transitory computer-readable medium of claim 31, wherein said message is received from said first server.

33. The non-transitory computer-readable medium of claim 31, wherein said message is received from a second server of said wireless network.

34. The non-transitory computer-readable medium of claim 31, wherein said message is a component of a compound message, said compound message being separate from the data.

35. The non-transitory computer-readable medium of claim 31, wherein said wireless device is a member of a group and said message is a group message associated with said group.

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36. A non-transitory computer-readable medium comprising instructions stored thereon, which when executed by a computer, causes said computer to perform operations, the instructions comprising:

at least one instruction for detecting a wireless device attempting to  
5 communicate with a target server on said wireless network, the target server operable to download information to said wireless device, wherein the attempted communication is related to a user of the wireless device attempting to access data that corresponds to one or more applications configured for execution on the wireless device;

responsive to said detecting, at least one instruction for sending a message  
10 separate from the data to said wireless device; and

exiting an interaction with the wireless device associated with the wireless device's attempt to access the data based upon an indication that the user of the wireless device is interested in said message.

37. The non-transitory computer-readable medium of claim 36, wherein the  
15 wireless device is a member of a group and the message is a group message associated with said group.

38. The method of claim 23, wherein the message corresponds to a targeted advertisement.

39. The method of claim 38, wherein the receiving step receives the targeted  
20 advertisement at the wireless device based on at least one of device or user-specific information associated with the wireless device, or event-information associated with a manner in which the wireless device is attempting to communicate with the target server.

40. The method of claim 39, wherein the wireless device or user-specific information corresponds to a demographic associated with the wireless device.

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41. The method of claim 23, wherein the message corresponds to a non-targeted advertisement.

42. The method of claim 29, wherein the message corresponds to a targeted advertisement.

5 43. The method of claim 42, wherein the sending sends the targeted advertisement to the wireless device based on at least one of device or user-specific information associated with the wireless device, or event-information associated with a manner in which the wireless device is attempting to communicate with the target server.

10 44. The method of claim 43, wherein the wireless device or user-specific information corresponds to a demographic associated with the wireless device.

45. The method of claim 29, wherein the message corresponds to a non-targeted advertisement.

46. The method of claim 29, further comprising:  
determining whether the wireless device is capable of displaying the message.

15 47. The method of claim 46,  
wherein the message corresponds to a graphic advertisement, and  
wherein the determining determines whether the wireless device is capable of displaying the graphic advertisement.

20 48. The method of claim 23,  
wherein the message includes a link to a second server, and  
wherein a selection of the link by a user of the wireless device prompts the wireless device to cancel communication with the first server and to attempt communication with the second server.

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49. The method of claim 48, wherein receipt of the message and the selection of the link occur before the wireless device is fully connected to the first server, such that the selection of the link by the user results in a cancellation of a non-completed connection attempt with the first server.

5 50. The method of claim 23, wherein the attempted communication with the first server corresponds to an attempt by the wireless device to establish a connection with the first server.

51. The method of claim 23, wherein the attempted communication with the first server corresponds to the wireless device's navigation or access within a file structure of the  
10 first server that occurs after the wireless device is fully connected to the first server.

52. The method of claim 23, wherein the message corresponds to a non-selected or unsolicited message that is not explicitly requested by the wireless device in association with the attempted communication.

53. The method of claim 23, further comprising:  
15 contacting a given server associated with said message based on the received indication.

54. The method of claim 23,  
wherein the message corresponds to a non-selected or unsolicited message that is not explicitly requested by the wireless device in association with the attempted  
20 communication;

wherein the message includes a link to a second server, and

wherein a selection of the link by a user of the wireless device prompts the wireless device to cancel communication with the first server and to attempt communication with the second server.

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55. The method of claim 29, wherein the exiting occurs before the target server has begun providing the data to the wireless device.

56. The method of claim 55,

5 wherein the detecting corresponds to a user of the wireless device interacting with a menu of executable applications that are available for download to the wireless device, and

wherein the exiting occurs before the user indicates a selection from the menu for at least one application to be downloaded.

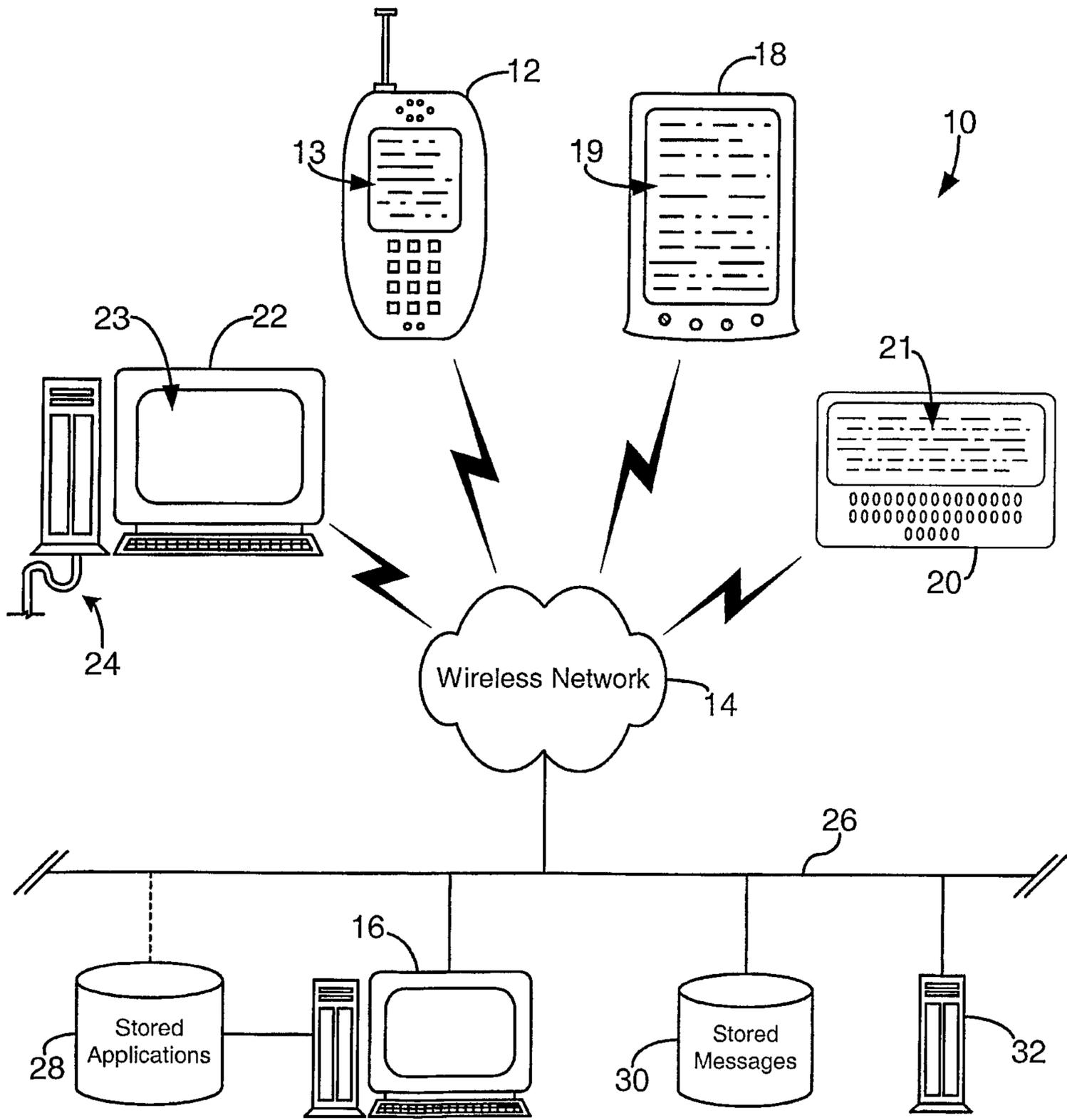


Fig. 1

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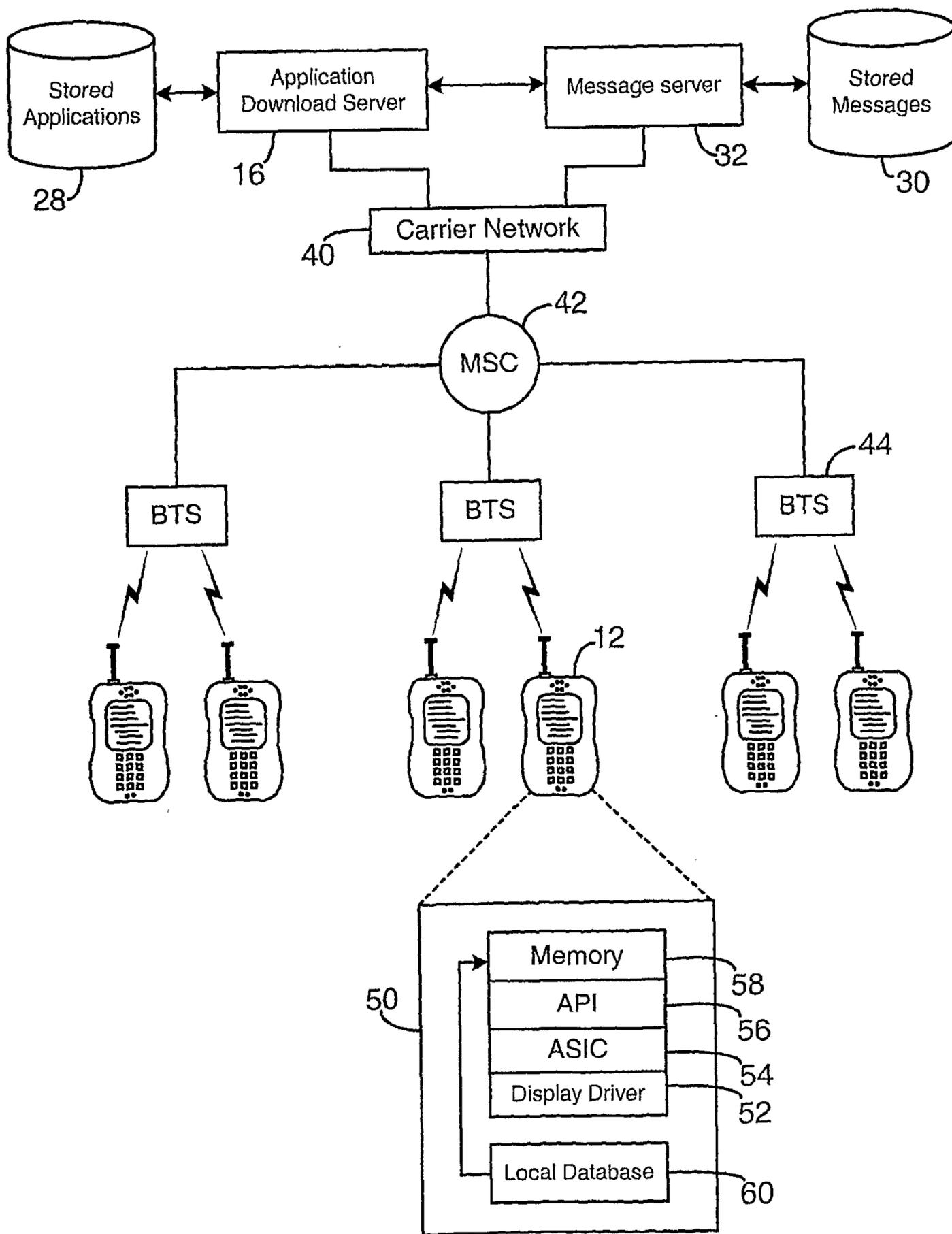


Fig. 2

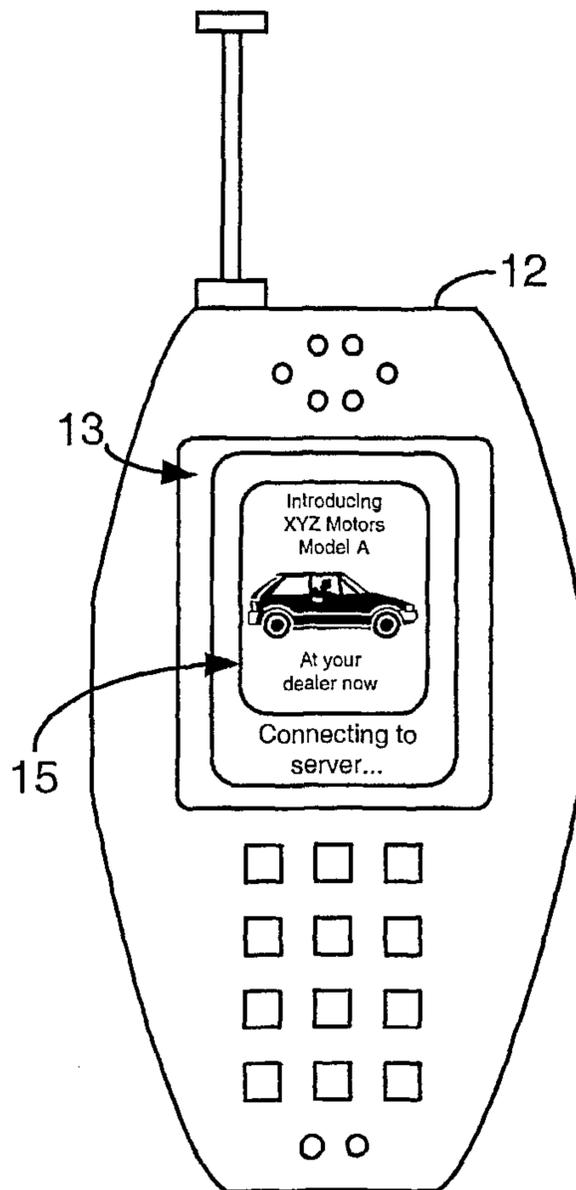


Fig. 3

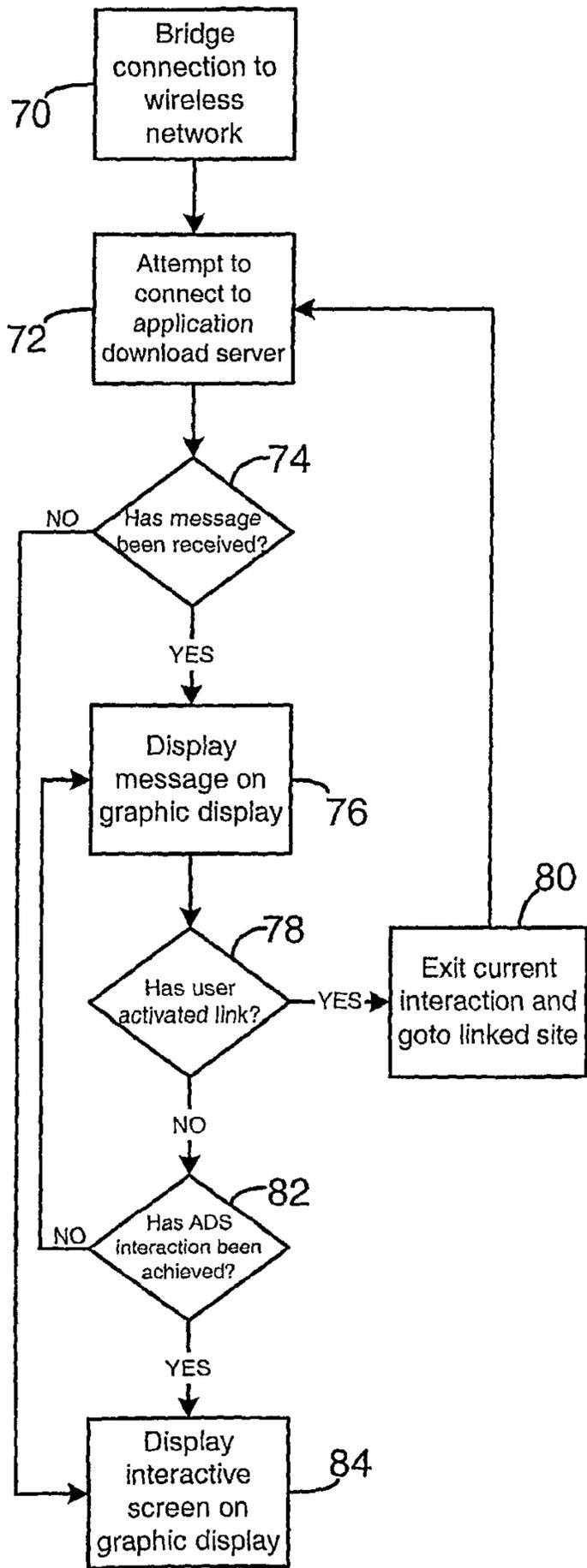


Fig. 4

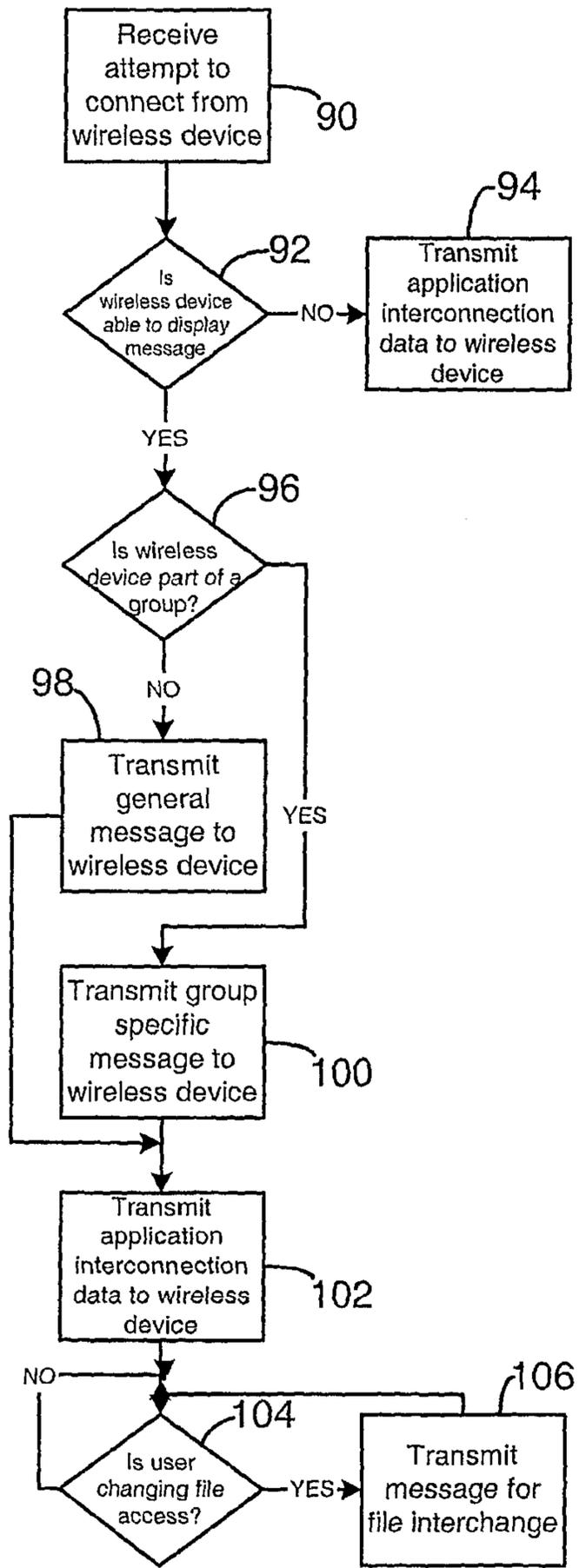


Fig. 5

