

Mobile Information Retrieval Over Wireless Network

Field of Invention

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The present invention relates generally to a system for mobile retrieval of information over a wireless or mobile network.

Background of Invention

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Currently, there are already various systems that enable information to be retrieved over a network. Many of these systems allow a user to scan a bar code or other coded image using a reader or other image capture device attached to a computer, decode the image data using software installed on the computer, then send the decoded image data over a computer network to a server where the information to be retrieved is stored in a database of other information. The server then sends the retrieved information back to the computer, which then displays it on a monitor.

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In alternative systems, the information is not stored on the first server. The server only holds a list of web links or URLs (Uniform Resource Locator) associated with the decoded image data. Once the server identifies the correct URL it is sent back to the computer. The computer then uses the URL to access associated information over the Internet.

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Increasingly so and across many different applications, it is desirable to use a similar information retrieval system with mobile devices. This provides the user with mobility while accessing information stored on a remote server, and effectively takes away the bulkiness of a computer.



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Summary of the Invention

The present invention provides a system for retrieving information over a wireless or mobile network, more specifically by using a camera-enabled mobile device to scan a coded image, send the decoded data of the image over a mobile network, the decoded data then providing access on a remote server of the information to be retrieved.

Another embodiment of the present invention is a system for retrieving information over a secured channel within a wireless network comprising:

1) an information verifying means comprising generating a plurality of coded images and associating each of said coded images to a unique information packet; and

2) an information accessing means comprising:

- a) loading an application onto a mobile device, said application able to at least partially control functioning of a camera and any connectivity ports located on the said mobile device, and said application having the capability to decode predefined coded images into predefined serial numbers assigned to those coded images;
- b) capturing an image of a coded image or other predefined coded image using the camera on said mobile device;
- c) decoding the predefined coded image into a predefined serial number which has been assigned to and is specific to the said predefined coded image;
- d) transmitting serial number information from said mobile device to a server over a wireless network;
- e) accessing, on the server, information associated to the predefined serial number;
- f) transmitting the accessed information in (e) from the server to the said mobile device; and
- g) displaying the said accessed information on the said mobile device.

In yet another embodiment, the present invention is a method of accessing information stored on a remote server by using a camera enabled mobile

device to capture an image of a coded image, decode the coded image into a serial number specific to the coded image using software installed on the mobile device, transmitting the serial number over a wireless network to a remote server, retrieving information stored on said server, said information
5 associated with said serial number, transmitting retrieved information from said server to said mobile device.

Detailed Description of Preferred Embodiments

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In one embodiment, the present invention is a system for mobile retrieval of information over a wireless or mobile network. Information to be retrieved is stored in packets or files in a remotely located server. Each packet of information is assigned a specific serial number, and the serial number is
15 encoded into a coded image or other coded image. A camera enabled mobile device is used to capture the image or coded image, then proceeds to decode the image or coded image into the serial number using an application pre-installed on the mobile device. The mobile device then transmits the serial number over a wireless network to the server where the information to be
20 retrieved is stored. The server then processes the serial number and retrieves the information packet previously associated with this serial number from an internal database. The destination server then returns the retrieved information to the requesting mobile handheld device, which then displays the information to a user.

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In another embodiment, the present invention provides a system for retrieving information over a wireless or mobile network, more specifically by using a camera-enabled mobile device to scan a bar code or other image, send the decoded data of the image over a mobile network, the decoded data then
30 providing access on a remote server of the information to be retrieved and incorporates an authentication process. This involves a session information being transmitted together with the serial number which session information is

verified by the server as being authentic to the user transmitting the serial number.

5 In yet another embodiment, the present invention is a system for mobile retrieval of information over a wireless or mobile network. Information to be retrieved is stored in packets or files in a remotely located server. Each packet of information is assigned a specific serial number, and the serial number is encoded into a coded image. A camera enabled mobile device establishes a secure encrypted channel with the server, is used to capture the
10 coded image, then proceeds to decode the coded image into the serial number using an application pre-installed on the mobile device. The application on the mobile device then transmits the serial number using the secured channel to the server where the information to be retrieved is stored. The server then processes the serial number and retrieves the information
15 packet previously associated with this serial number from an internal database. The destination server then returns the retrieved information to the requesting mobile handheld device, which then displays the information to a user.

20 A further embodiment of the present invention is a method for providing and performing identity and information authentication and verification which ultimately utilizes a mobile handheld device over a secured wireless connection comprising the steps of: generating unique coded images or identifying images which are consistently decipherable and decodable based
25 on predefined algorithms and the application of the same to identity documents or uniquely identifiable parts/documents/products; associating the generated coded images to said information defined above; utilizing a mobile handheld device preinstalled with a specific application, program or software which controls the handheld device's camera and data connectivity ports;
30 establishing a session between the mobile device and a predefined server on a computer network using the mobile data connection resident on the mobile handset device; at time of usage, the user uses the application which controls the handheld device's camera to capture an image of the unique coded image

which is then processed and decoded into a unique serial number (which could comprise alpha numeric characters or any other form of characters); utilizing the secure encrypted channel to send this unique serial number and other session details to a predefined server on a computer network using the mobile data connection resident on the mobile handset device; verification by the destination server of the session information; information requested is presented in a fixed pre-defined format and with specific information fields always presented by the preinstalled application on the mobile handheld device.

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It will be understood that the above description does not limit the invention to the above given details. It will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

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Claims

1. A means of verifying information over a wireless network by utilizing a generalizing process, said generalizing process comprising the steps of:
 - a. generating a plurality of coded images; and
 - b. associating each of said coded images to a specific information packet.
2. A means of verifying information over a wireless network by utilizing a generalizing process according to claim 1 wherein the coded image is either one of a one-dimensional barcode, two-dimensional barcode, or a combination of one- and two-dimensional barcode.
3. A means of verifying information over a wireless network by utilizing a generalizing process according to claim 1 wherein the information packet can be any digital representation of a document, audio recording, video recording or other information packet.
4. A means of verifying information over a wireless network by utilizing a generalizing process according to claim 1 wherein the said association of the coded image to the unique information packet is done by assigning a unique serial number ID to each of said coded images and corresponding information packet, said unique serial number identifying and thus associating both the coded image and corresponding information packet.
5. A means of verifying information over a wireless network by utilizing a generalizing process according to claim 1 to 4 further comprising an identity authentication step or authenticity verification process for said information packets.

6. A means of accessing information over a wireless network by utilizing a deployment process, said deployment process comprising the steps of:
- 5 a. loading an application onto a mobile device, said application able to at least partially control functioning of a camera and any connectivity ports located on the said mobile device, and said application having the capability to decode predefined coded images into predefined serial numbers assigned to those coded images;
 - 10 b. capturing an image of a barcode or other predefined coded image using the camera on said mobile device;
 - c. decoding the predefined coded image into a predefined serial number which has been assigned to and is specific to the said predefined coded image;
 - 15 d. transmitting serial number information from said mobile device to a server over a wireless network;
 - e. retrieving, on the server, information associated to the predefined serial number;
 - f. transmitting the retrieved information in (e) from the server to
20 the said mobile device;
 - g. displaying the said accessed information on the said mobile device.
7. A means of accessing information over a wireless network by utilizing
25 a deployment process according to claim 6 further comprising the step of authenticating the user of the mobile device via a secured login mechanism and creating a secure encrypted channel within a wireless network for the transmittal of information.
- 30 8. A means of accessing information over a wireless network by utilizing a deployment process according to claim 6 and 7 wherein the transmission of the serial number from the said mobile device to the

server further includes session information, said session information comprises information describing the identity of the said mobile device.

5 9. A means of accessing information over a wireless network by utilizing a deployment process according to claim 8 wherein the session information further includes other information such as the time the message is sent.

10 10. A means of accessing information over a secured channel within a wireless network by utilizing a deployment process according to claim 6, 7 and 8 wherein the server, upon receiving said predefined serial number from said mobile device and before accessing information associated to the said predefined serial number, verifies the authenticity of the information received.

15 11. A means of accessing information over a wireless network by utilizing a deployment process according to claim 8 and 10 wherein the verification of the information is done using the said session information.

20 12. A system for accessing information over a secured channel within a wireless network comprising:

25 a. an information verifying means comprising generating a plurality of coded images and associating each of said coded images to a unique information packet; and

30 b. an information accessing means comprising:
i. loading an application onto a mobile device, said application able to at least partially control functioning of a camera and any connectivity ports located on the said mobile device, and said application having the capability to decode predefined coded images into predefined serial numbers assigned to those coded images;

- ii. capturing an image of a barcode or other predefined coded image using the camera on said mobile device;
 - iii. decoding the predefined coded image into a predefined serial number which has been assigned to and is specific to the said predefined coded image;
 - iv. transmitting serial number information from said mobile device to a server over a wireless network;
 - v. accessing, on the server, information associated to the predefined serial number;
 - vi. transmitting the accessed information in (e) from the server to the said mobile device; and
 - vii. displaying the said accessed information on the said mobile device.
13. A system for accessing information over a secured channel within a wireless network according to claim 12 wherein the said application is able to authenticate and allow access only to users who have a correct username and password or PIN.
14. A system for accessing information over a secured channel within a wireless network according to claim 12 wherein the transmission of the serial number from the said mobile device to the server further includes session information, said session information comprising a description of the identity of the said mobile device.
15. A system for accessing information over a secured channel within a wireless network according to claim 14 wherein the session information further includes other information such as the time the message is sent.
16. A system for accessing information over a secured channel within a wireless network according to claims 12 and 14 wherein the server, upon receiving said predefined serial number from said mobile device

and before accessing information associated to the said predefined serial number, verifies the authenticity of the information received.

5 17.A system for accessing information over a secured channel within a wireless network according to claims 14 and 16 wherein the verification of the information is done on the said session information.

10 18.A system for accessing information over a secured channel within a wireless network according to any of claims 12 to 17 wherein the mobile device is camera enabled, said mobile device able to transmit and receive within at least one of any mobile or wireless networks.

19.A method of accessing information stored on a remote server comprising the steps of:

- 15 a. using a camera enabled mobile device to capture an image of a barcode;
- b. decoding the barcode into a serial number specific to the barcode using software installed on the mobile device;
- 20 c. transmitting the serial number over a wireless network to a remote server;
- d. retrieving information stored on said server, said information associated with said serial number;
- e. transmitting retrieved information from said server to said mobile device.

25 20.A method of accessing information stored on a remote server according to claim 19 further comprising the said mobile device displaying said retrieved information.

30 21.A method of accessing information stored on a remote server according to claim 19 wherein the said transmission of serial number from mobile device to server is accompanied by session information,

said session information comprising a description of a user's identification.