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(54) **SYSTEM AND METHOD FOR PRESENTING CALLER IDENTIFICATION LOGS**

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(57) **ABSTRACT**

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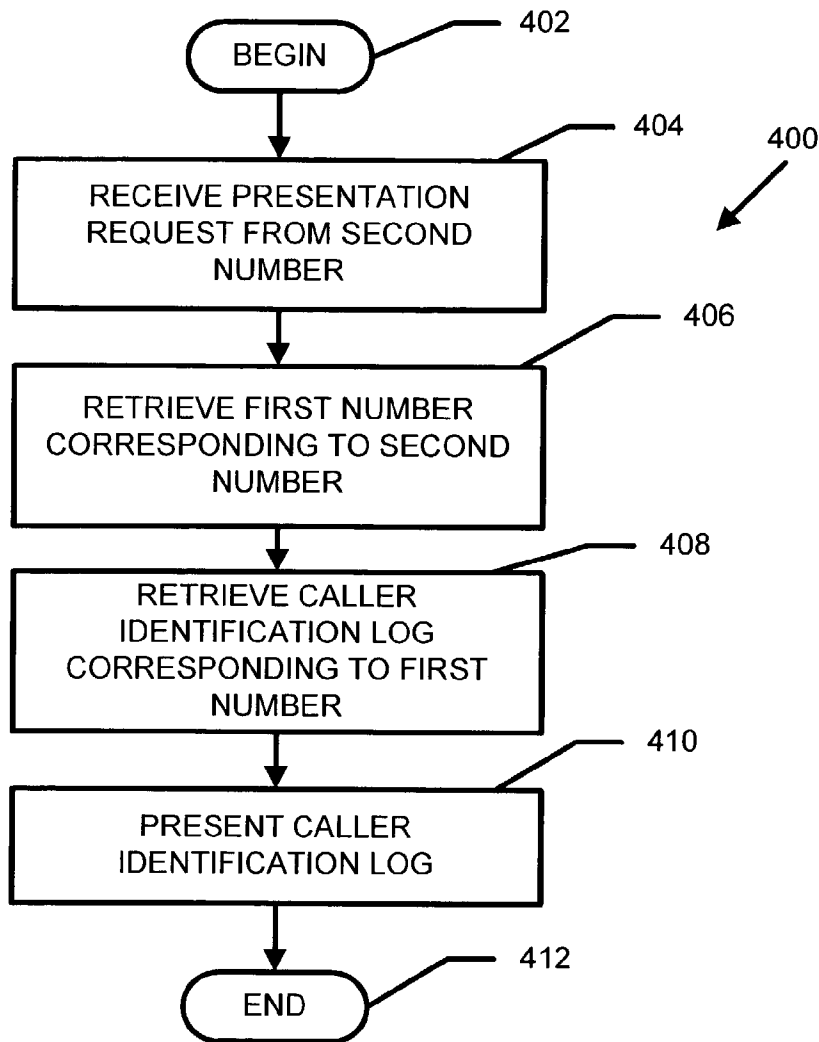
The present invention is a method and system for presenting caller identification logs. In particular, the present invention provides a method and system for presenting caller identification logs to a user while the user is at a remote location. The method of the present invention comprises the steps of receiving an indication of a call to a first number, writing information for the call to a call log for the first number in a call log database, receiving a presentation request from a second number, and presenting the call log for the first number in response to the presentation request. The indication of the call may be generated in response to an incoming call or an outgoing call. Furthermore, the first number and the second number may be either a wired or wireless number.

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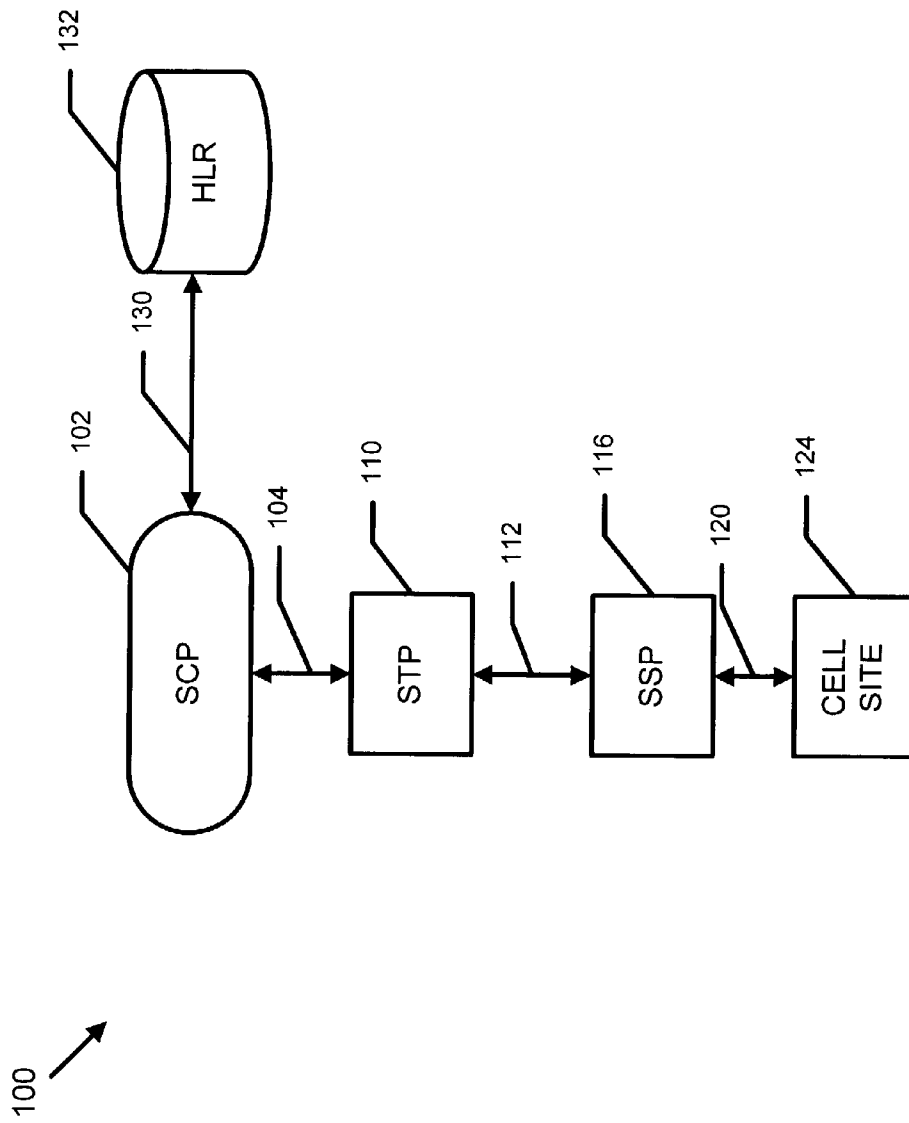


Fig. 1

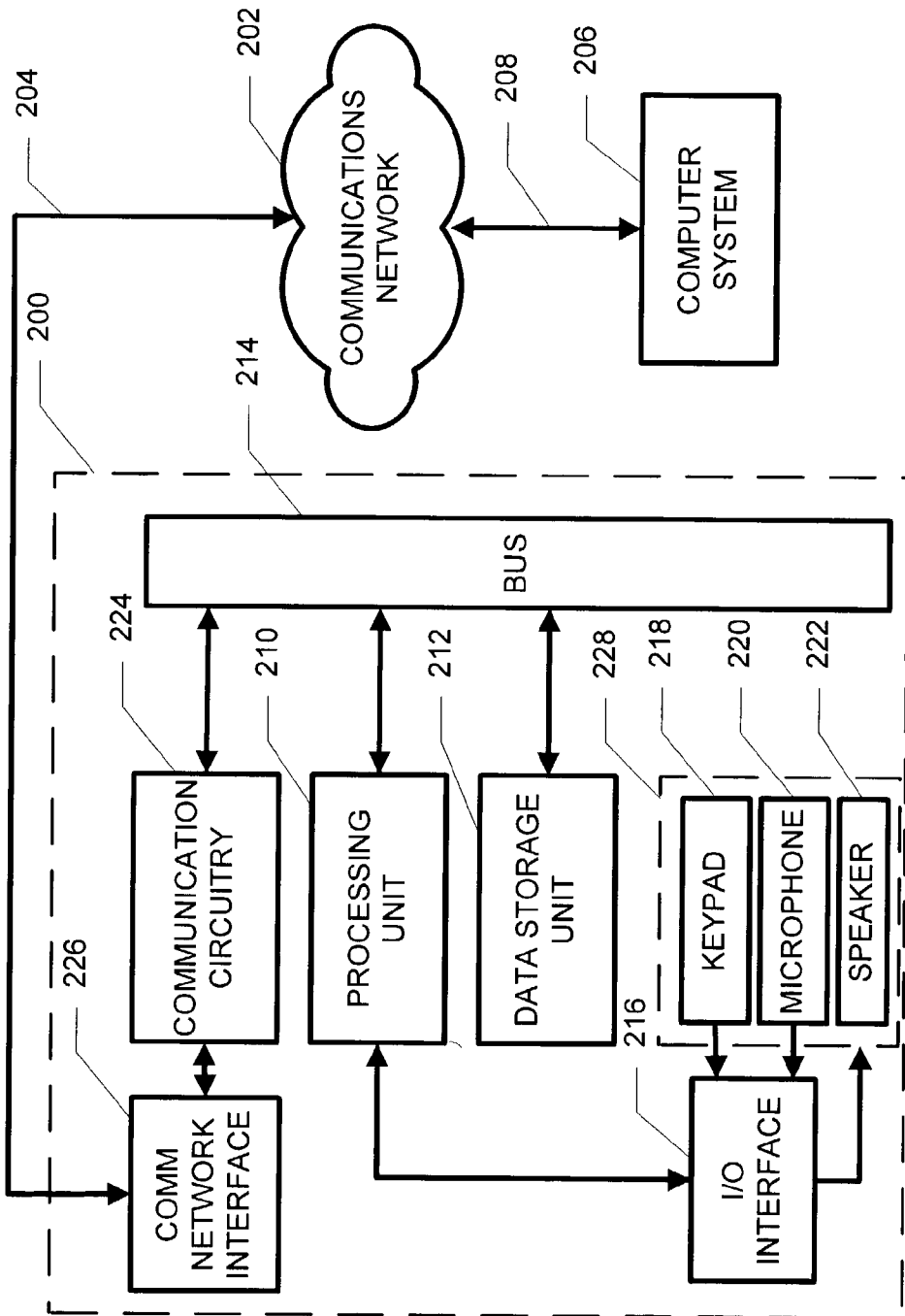


Fig. 2

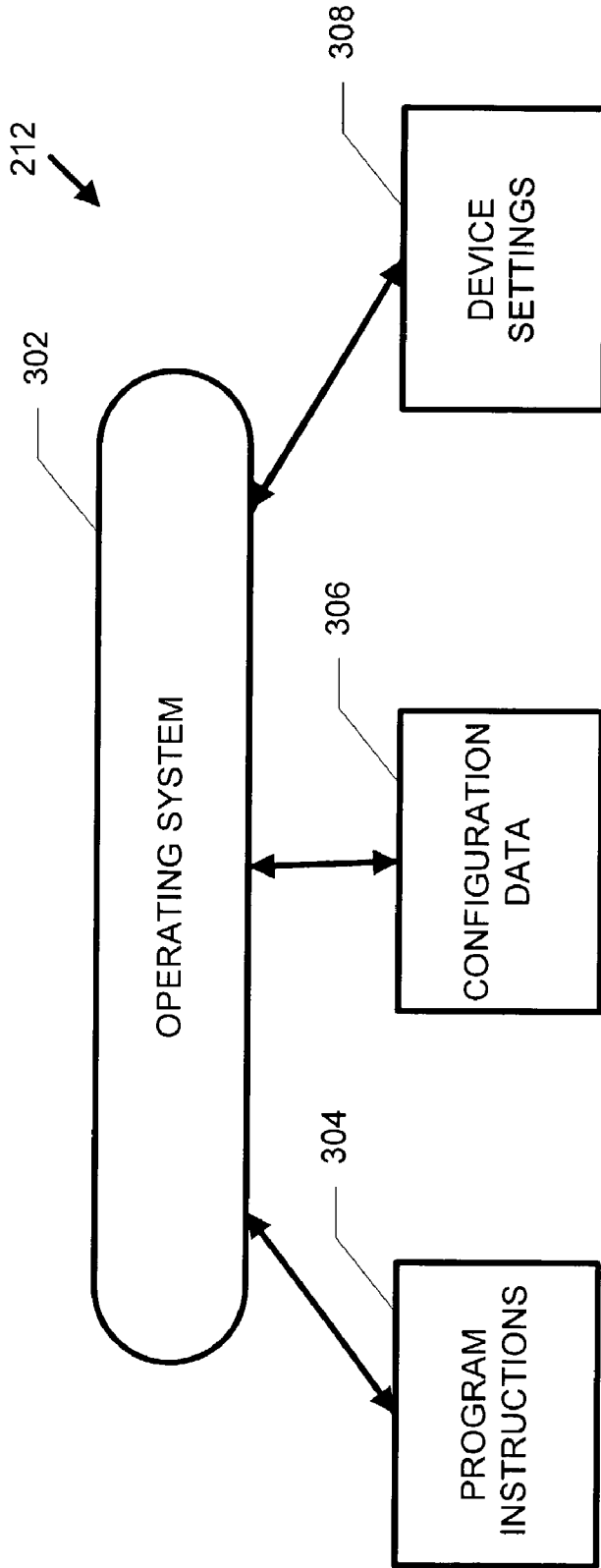


Fig. 3

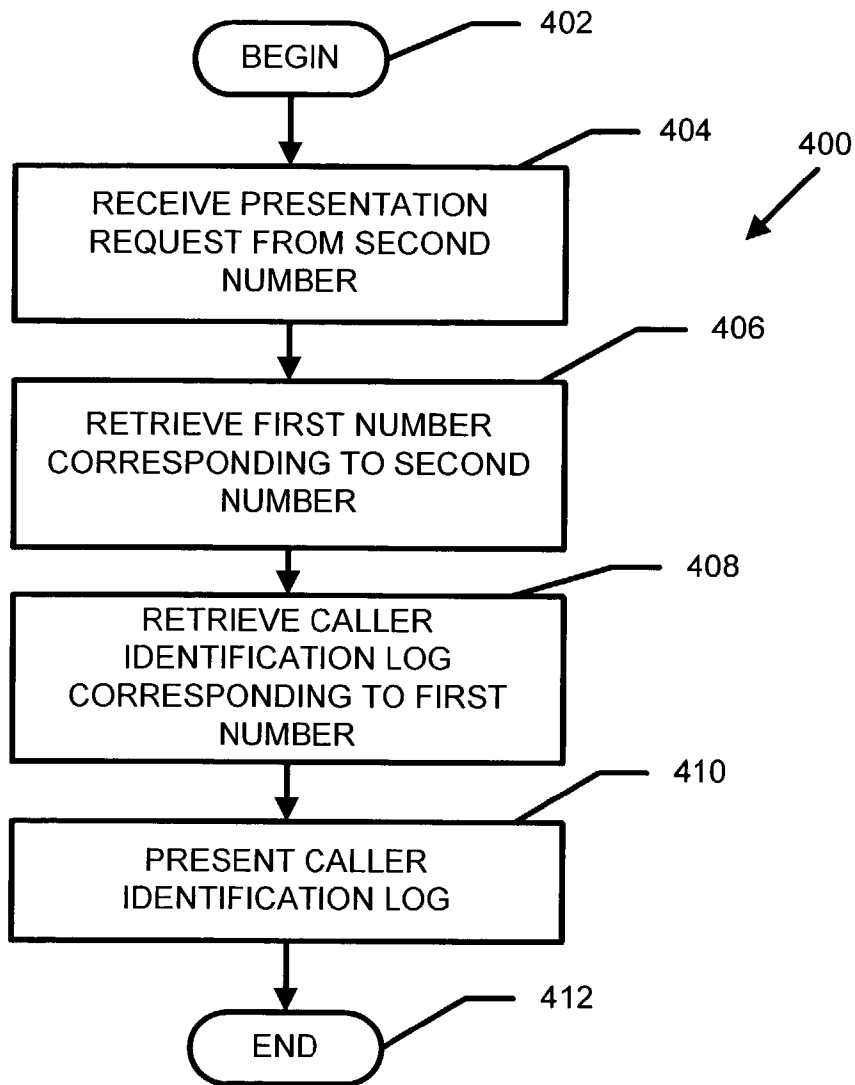


Fig. 4

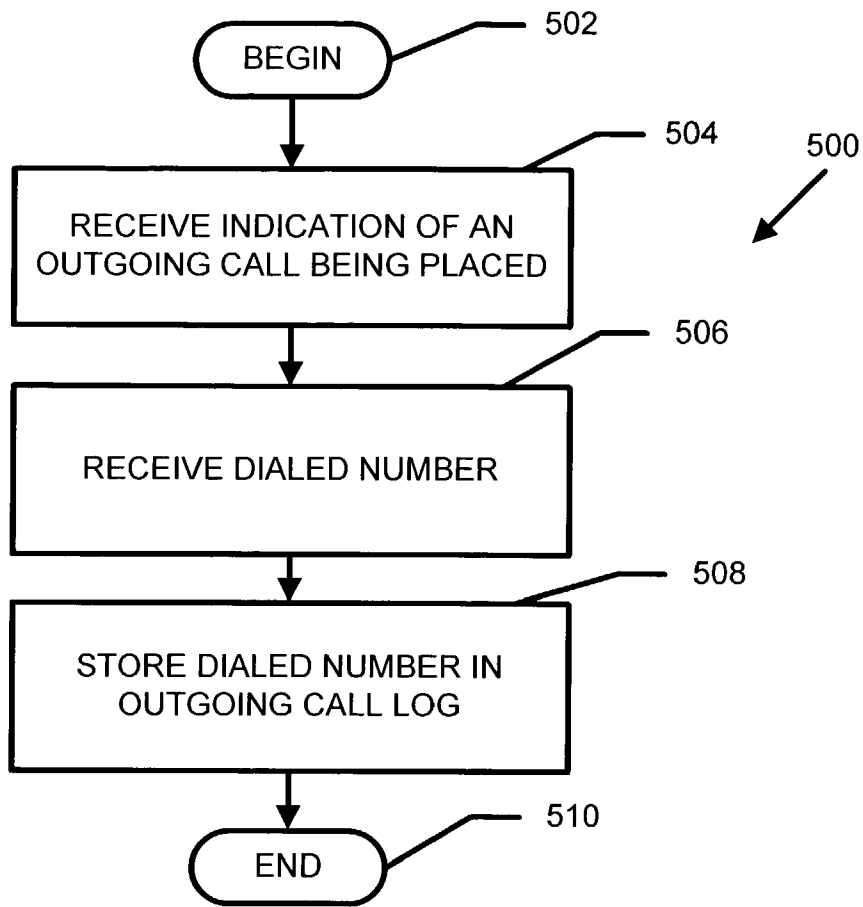


Fig. 5

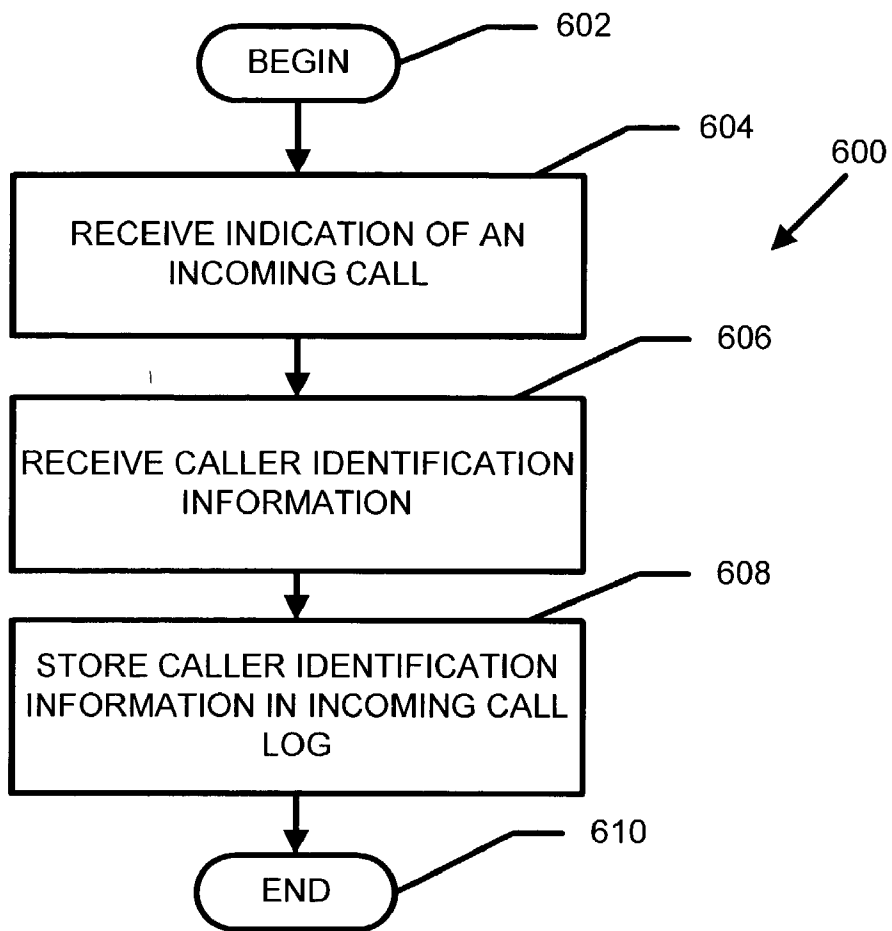


Fig. 6

SYSTEM AND METHOD FOR PRESENTING CALLER IDENTIFICATION LOGS

FIELD OF THE APPLICATION

[0001] The present invention generally relates to the field of telecommunications, and particularly relates to a system and method for providing a user remote access to caller identification logs for a first number while the user is at a second number.

BACKGROUND OF THE INVENTION

[0002] Caller identification, a feature that allows a user to view the identification of incoming callers, has become an incredibly popular telecommunications feature. Caller identification services are generally available from most local telephone companies. Through the use of a communication device equipped for caller identification (either integrated or through an adjunct unit), the service allows users to see the identity of the calling party before answering a call. The information for each incoming call, typically the name and number of the calling party, is stored in a call log associated with the communication device.

[0003] This service adds tremendous utility to many users, for a user may view callers who have called the user's telephone line, hereinafter referred to as the "first" number, by scrolling through the caller identification log for the first number. This task is typically done via a caller identification display on a communication device coupled to a first number or a dedicated caller identification device associated with the first number.

[0004] Many times, however, a user may wonder if anyone has called the first number while the user is at a remote location, hereinafter referred to as the "second number". While some callers may leave messages, other callers may not leave a message or may hang up before a voice mail service or answering machine answers the call. The caller identification service is valuable in this situation because the user may see who has called regardless of whether the caller left a message.

[0005] Currently, a user can only view the caller identification log for a first number by scrolling through the caller identification log via a communication device associated with the first number or dedicated caller identification device coupled to the second number. Thus, there is no way for a user to view the caller identification log of incoming calls for a first number while the user is at a remote location, i.e., a second number.

[0006] Another situation may involve a user wanting to know if any calls have been placed from a first number while the user is at a second number. This request may be desirable, in the event children are left unattended in the home, if the user is curious if any calls have been placed from the home landline telephone. Currently, there is not a mechanism to allow a user to determine if any calls have been placed from a first number while the user is at a second number, and furthermore, to determine to which number any outgoing calls were made.

[0007] Furthermore, many times a user may want to know, via a mobile device coupled to the second number while the user is driving a vehicle, if any calls have been placed to or from a first number. In this situation, a request to view the

caller identification log for the first number should be capable of being easily and quickly entered into the mobile device, i.e. second number.

[0008] Therefore, there is a need for a convenient way for a user to remotely access caller identification logs for a first number. There is also a need for the user to remotely access caller identification information for incoming calls to the first number and outgoing calls from the first number. Furthermore, there is a need for an implementation of this feature in such a way that the user may indicate such a request easily and without a large amount of keystrokes.

SUMMARY OF THE INVENTION

[0009] Generally stated, the present invention overcomes the aforementioned drawbacks in the prior art by providing a system and method for presenting caller identification logs to a user. In particular, the present invention provides system and method for presenting caller identification logs for a first number to a user at a second number upon receipt of a presentation request from a communication device associated with the second number.

[0010] The method of the present invention comprises the steps of receiving an indication of a call to or from a first number; storing information for the call to a call log for the first number; receiving a presentation request from a communication device associated with a second number; and presenting information in the call log for the first number in response to the presentation request associated with the second number. The indication of the call may be generated in response to an incoming call or an outgoing call. Furthermore, the first number and the second number may be either a wired or wireless number.

[0011] The system of the present invention comprises a connection with first number, a connection with a second number, a memory including a caller identification log database, and a processing unit. The processing unit includes a program module containing instructions operative to: receive an indication of a call to or from a first number; store information for the call to a call log for the first number; receive a presentation request from a communication device associated with a second number; and present information in the call log in response to the presentation request associated with the second number.

[0012] Therefore, it is an object of the present invention to provide a method for presenting caller identification logs for a first number to a communication device coupled to a second number upon receipt of a presentation request from the communication device coupled to the second number.

[0013] It is another object of the present invention to provide a system for presenting caller identification logs for a first number to a communication device coupled to a second number upon receipt of a presentation request from the communication device coupled to the second number.

[0014] That the present invention overcomes the drawbacks present in the prior art and accomplishes the objects of the present invention set forth herein will become apparent from the detailed description of the present invention to follow.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Preferred and alternative embodiments will now be described with reference to the attached figures wherein like reference numerals indicate similar or identical features or functions and wherein:

[0016] FIG. 1 is an exemplary signaling network environment for the present invention utilized if the first or second number is a wireless number.

[0017] FIG. 2 is a block diagram representation illustrating an exemplary system for the present invention.

[0018] FIG. 3 is a block diagram representation of the data storage unit of the communication device in accordance with the present invention.

[0019] FIG. 4 a flow diagram illustrating the method of the present invention from the perspective of the system.

[0020] FIG. 5 is a flow diagram illustrating the method of constructing the caller identification log for outgoing calls in accordance with the present invention.

[0021] FIG. 6 is a flow diagram illustrating the method of constructing the caller identification log for incoming calls in accordance with the present invention.

DETAILED DESCRIPTION

[0022] Reference will now be made in detail to the present invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts. Generally stated, the present invention provides a system and method for presenting caller identification logs for a first number to a remote communication device coupled to a second number. More specifically, the present invention provides a convenient way for a user to remotely access caller identification logs for a first number from a communication device coupled to a second number after entering a presentation request into the communication device coupled to the second number.

[0023] FIG. 1 is an exemplary signaling network environment for the present invention utilized if the first or second number is a wireless number. Signaling network 100 comprises the signaling control point 102 ("SCP"). SCP 102 is coupled to Home Location Register 132 ("HLR") via bi-directional communication links 130. One or more signaling transfer points ("STP") 110 are coupled to SCP 102 via bi-directional communication links 104. STPs 110 are also coupled to one or more signaling switch points (SSPs) 116 via bi-directional communication links 112. SSPs 116 are digital telephone switches for distributing calls to one or more cell sites 124. Calls are distributed to one or more cell sites 124 from SSPs 116 via bi-directional communications links 120.

[0024] FIG. 2 is a block diagram representation illustrating an exemplary system in accordance with the present invention. The communication device 200 places and receives calls with communications network 202, in addition to any other communications, via a bi-directional communications link 204. Computer system 206 may also communicate with communication device 200 through communications network 202, and is coupled to communications network 202 via a bi-directional communications link 208.

[0025] Communication device 200 may be any device capable of receiving and transmitting data. This communication device 200 may be either a wireless device, such as a cellular telephone, or a wired device. Communication device 200 contains a processing unit 210 that is communicatively coupled to the other components of the communication device via a bus 214. Additionally, communication device 200 may be communicatively coupled to a client device (not shown), such as a personal data assistant, or may even reside within a client device.

[0026] Communication device 200 includes an I/O interface 216, which may reside on the same microprocessing chip as the processing unit 210. However, I/O interface 216 may also reside on an external unit. I/O interface 216 connects the processing unit 210 to a user interface 228. In the case of a wireless device such as a cellular telephone, user interface 228 comprises keypad input 218, microphone input 220, and speaker output 222. The I/O interface 216 may include an analog-to-digital converter for converting an analog microphone signal to a digital signal for use by the processing unit 210. I/O interface 216 may also include a digital-to-analog converter to convert digital information from the processing unit 210 to the speaker 222, such as voice data.

[0027] Communication device 200 comprises a data storage unit 212, which is discussed in greater detail in FIG. 3. Data storage unit 212 may comprise any type of memory, including but not limited to RAM, EPROM, or EEPROM memory, and may store either volatile or non-volatile memory. In accordance with the present invention, the data storage unit 212 for a communication device 200 coupled to the first number may comprise a database for storing caller identification information for incoming calls and/or outgoing calls. The processing unit 210 and the data storage unit 212 may communicate via a system bus 214. Alternatively, the processing unit 210 and the data storage unit 212 may be included on the same microprocessing chip.

[0028] The processing unit 210 transmits and receives digital signals that are to be communicated outside the communication device 200 via the communication circuitry 224, which is coupled to a communication network interface 226. If communication device 200 is a typical wireless device, the communication network interface 226 is an antenna, which communicates signals through airwaves to telecommunications network 202 via a bi-directional communication link 204. The bi-directional communications link 204 is established when a call is placed to or from the communication device 200. Alternatively, if the communication device 200 is a wired device, the communication circuitry 224 is coupled to a communications network interface 226 that communicates signals via a wired communication link 204 to communications network 202.

[0029] Communications network 202 includes various components to enable communication between two or more communication devices. These components include, but are not limited to, wired connections, wireless connections, switches, and other devices for establishing communication in the network. Communications network 202 is also communicatively coupled to a computer system 206 via a bi-directional communication link 208. The computer system 206 may be any computer system interacting with the

communications network, including but not limited to, an instant messaging client or a server for a wireless services carrier.

[0030] FIG. 3 is a block diagram representation of the data storage unit of the communication device in accordance with the first and second embodiments of the present invention. Data storage unit 212 comprises an operating system 302, which contains instructions for operating the communication device 200. The program instructions unit 304 includes instructions for the processing unit to execute the method of the present invention, such as storage of caller identification information for incoming calls and the numbers dialed for outgoing calls, in addition to any other instructions. The configuration data unit 306 is also included in the data storage unit 212, and contains configuration information regarding the assortment of components that make up the system of the present invention.

[0031] The data storage unit 212 further comprises a device settings unit 308. The device settings unit 308 contains various parameters indicating the settings of the communication device 200, in addition to any other data. Other device settings which may be stored in the device settings unit 308 include, but are not limited to, ring type, touch tone type, or appearance of the user interface 228.

[0032] FIG. 4 is a flow diagram illustrating the method of the present invention from the perspective of the system. Method 400 begins at step 402 and proceeds to the receipt of a presentation request from the second number at step 404. Preferably, the presentation request in accordance with the present invention is a star code entered by a user into a communication device coupled to the second number. However, the presentation request may be any form of indication capable of being communicated from a communications device to a communications network, including but not limited to, a voice command, the actuation of a dedicated button on the body of a communication device, or entry of another key sequence into the keypad of a communication device at the second number.

[0033] After the receipt of the presentation request at step 404, the system retrieves the first number corresponding to the second number 406. The first number may be retrieved from a database located in any location accessible to the communication device coupled to the second number, including but not limited to, HLR 132 in the case of a wireless device. Furthermore, more than one number may be associated and stored with each first or second number.

[0034] One possibility may be that the second number does not have a corresponding first number, i.e., the user has not set up the service implementing the present invention. In this situation, the user may be prompted to enter the first number, in addition to any other necessary information such as billing information or a pin number required to access the user's account.

[0035] After retrieving the first number corresponding to the second number at step 406, the system retrieves the caller identification log corresponding to the first number at step 408. The caller identification log may comprise one or more numbers corresponding to outgoing communications from the first number or the one or more numbers corresponding to incoming communications to the first number. The construction of the caller identification logs for outgo-

ing calls and incoming calls is discussed in greater detail in the explanation of FIGS. 5 and 6.

[0036] After retrieving the caller identification log corresponding to the first number at step 408, the system presents the caller identification log to a communication device coupled to the second number at step 410. The method of presentation may vary according to system configuration or user preferences, and includes but is not limited to: converting the caller identification log to a sound file via text-to-speech technology and playing the file over communications network 202 to the communication device coupled to the second number; creating a SMS message containing the contents of the caller identification log and communicating the SMS message to the communication device at the second number; or creating an email comprising the contents of the caller identification log and communicating the email to the communication device coupled to the second number. After presenting the caller identification log to the communication device coupled to the second number at step 410, method 400 concludes at step 412.

[0037] FIG. 5 is a flow diagram illustrating the method of constructing the caller identification log for outgoing calls in accordance with the present invention from the perspective of the system. Method 500 begins at step 502 and proceeds to the receipt of an indication that an outgoing call has been placed. This indication may be a trigger that is fired within the communication device to indicate the receipt of dialed numbers via the keypad 218 of communication device 200, or may be the result any mechanism capable of communicating the initiation of an outgoing call from the second number to the system.

[0038] At step 506, the system receives the dialed number. The number may be received by receiving the series of key presses entered by a user via keypad 218. The number may also be retrieved by the user from memory, such as an address book entry.

[0039] At step 508, the dialed number is stored in the outgoing call log for the first number. The outgoing call log may be stored within communications network 202, or may be stored in any location accessible to a communication device coupled to the first number. This location for the memory may include, but is not limited to, a memory within the communication device coupled to the first number or a memory communicatively coupled to the communication device coupled to the first number.

[0040] After the dialed number is stored in the outgoing call log for the first number, method 500 then concludes at step 510. Method 500 occurs for each outgoing call from the first number. Besides the identity of the number dialed for each outgoing call, the outgoing call log may contain any other information such as the time and date the call was placed from the communication device.

[0041] FIG. 6 is a flow diagram illustrating the method of constructing the caller identification log for incoming calls in accordance with the present invention. Method 600 begins at step 602 and proceeds to the receipt of an incoming call indication at step 604. The receipt of the incoming call indication may be, but is not limited to, a trigger that is fired within the communications network 202 and communicated to the communication device coupled to the first number, or an indication that is generated within the communication device coupled to the first number upon receipt of an incoming call.

[0042] At step 606, the system receives the caller identification information for the incoming call. Caller identification information for an incoming call is typically communicated from the communications network 202 to a communication device coupled to a telephone number in between the first and second rings generated from the incoming call. When this caller identification information is received, the caller identification information is stored in the incoming call log for the first number at step 608. This incoming call log may be stored within communications network 202, or may be stored in any location accessible to a communication device coupled to the first number. This location for the memory may include, but is not limited to, a memory within the communication device coupled to the first number or a memory communicatively coupled to the communication device coupled to the first number.

[0043] After the caller identification information for the incoming call is stored in the incoming call log for the first number, method 600 concludes at step 610. Method 600 occurs for each incoming call to the first number. Besides the identity of the number received, the incoming call log may contain any other information, such as the time and date the call was received.

[0044] Other embodiments of this invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, and within the scope and spirit of the invention as indicated in the description and the following claims.

I hereby claim:

1. A method for presenting a call log, said method comprising:

receiving an indication of a call to a first number;

storing information for the call to a call log for the first number;

receiving a presentation request from a communication device associated with a second number; and

presenting information in the call log for the first number in response to the presentation request.

2. The method of claim 1, wherein said receiving an indication of a call to a first number comprises receiving an indication of an incoming call to the first number.

3. The method of claim 2, wherein said receiving an indication of an incoming call to a first number comprises receiving an indication of an incoming call to a mobile telephone.

4. The method of claim 3, wherein said receiving a presentation request from a communication device comprises receiving a key sequence entered into a landline telephone.

5. The method of claim 4, wherein said receiving a presentation request from a communication device comprises receiving a star code entered into a landline telephone.

6. The method of claim 2, wherein receiving an indication of an incoming call to a first number comprises receiving an indication of an incoming call to a landline telephone.

7. The method of claim 6, wherein receiving a presentation request from a communication device comprises receiving a key sequence entered into a mobile telephone.

8. The method of claim 7, wherein receiving a key sequence entered into a mobile telephone comprises receiving a star code entered into a mobile telephone.

9. The method of claim 1, wherein said receiving an indication of a call to a first number comprises receiving an indication of an outgoing call from the first number.

10. The method of claim 9, wherein said receiving an indication of an outgoing call comprises receiving an indication of an outgoing call from a mobile telephone.

11. The method of claim 10, wherein receiving a presentation request comprises receiving a key sequence entered into a landline telephone.

12. The method of claim 11, wherein said receiving a key sequence entered into a landline telephone comprises receiving a star code entered into the landline telephone.

13. The method of claim 9, wherein said receiving an indication of an outgoing call comprises receiving an indication of an outgoing call from a landline telephone.

14. The method of claim 13, wherein said receiving a presentation request comprises receiving a key sequence entered into a landline telephone.

15. The method of claim 14, wherein said receiving a key sequence entered into a landline telephone comprises receiving a star code entered into the landline telephone.

16. The method of claim 1, wherein said presenting the call log comprises compiling the call log into a short message and sending the short message to the device generating the presentation request.

17. The method of claim 1, wherein said presenting the call log comprises converting the content of the call log to an audio file, and playing the audio file.

18. A computer readable medium containing instructions to execute the method of claim 1.

19. A system for presenting a call log for a first number based at least in part on a call log presentation request from a second number, said system comprising:

a communication link to a first number;

a communication link to a second number;

a memory, said memory comprising a caller identification log database; and

a processing unit, said processing unit comprising a program module containing instructions operative to:

receiving an indication of a call to a first number;

writing information for the call to a call log for the first number in a call log database;

receiving a presentation request from a second number; and

presenting the call log in response to the presentation request from the second number.

20. The system of claim 19, wherein said first number is a wired number.

21. The system of claim 19, wherein said first number is a wireless number.

22. The system of claim 19, wherein said second number is a wired number.

23. The system of claim 19, wherein said second number is a wireless number.

24. The system of claim 19, wherein said memory is located within a communication device coupled to said second number.

25. The system of claim 19, wherein said memory is coupled to a communication device coupled to said second number.

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