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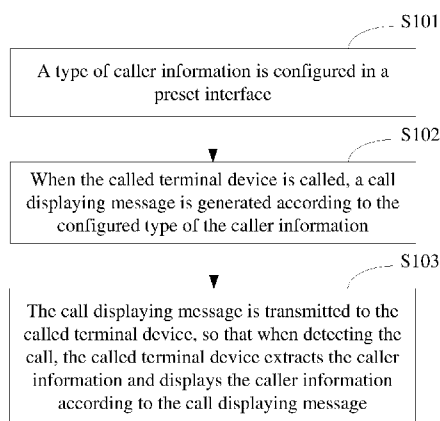


FIG. 1

(57) Abstract: The present invention discloses a method for displaying caller information is provided. In the method, a calling terminal device configures a type of caller information in a preset interface. The calling terminal device generates a call displaying message according to the configured type of the caller information when calling a called terminal device. And the calling terminal device transmits the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information. In the method, the configured caller information may reflect a real-time condition of the caller and the calling terminal device in several aspects so that amount of the caller information can be increased and a called party can conveniently know a real-time status of the caller and the calling terminal device.

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METHOD AND APPARATUS FOR DISPLAYING CALLER INFORMATION

Field of the Invention

The present invention relates to a communication technology field, and more particularly, to a method and apparatus for displaying caller information of a terminal device.

Background of the Invention

When a calling terminal device calls a called terminal device, information about the calling terminal device is usually displayed in the called terminal device in real time. The displayed information of the calling terminal device includes a user identifier, a number, a number attribution, an operator of the number attribution and so on. Thus, a called user of the called terminal device can know information related with a caller, and can determine status of the caller. Call efficiency between the calling terminal device and the called terminal device can be improved.

Summary of the Invention

A method for displaying caller information of a terminal device is provided according to an embodiment of the present invention, so as to improve information amount included in the caller information displayed in a called terminal device.

A method for displaying caller information includes:

20 configuring, by a calling terminal device, a type of caller information in a preset interface;

generating, by the calling terminal device, a call displaying message according to the configured type of the caller information when calling a called terminal device;

25 transmitting, by the calling terminal device, the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information.

A method for displaying caller information includes:

receiving, by a called terminal device, a call displaying message transmitted from a calling terminal device, wherein the call displaying message is generated according to a type of caller information configured in a preset interface;

5 extracting, by the called terminal device, the caller information according to the call displaying message; and

displaying, by the called terminal device, the extracted caller information.

An apparatus for displaying caller information includes:

a configuration module, to configure a type of caller information in a preset interface;

10 a generation module, to generate a call displaying message according to the configured type of the caller information when calling a called terminal device;

a transmitting module, to transmit the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information.

15 An apparatus for displaying caller information includes:

a receiving module, to receive a call displaying message transmitted from a calling terminal device, wherein the call displaying message is generated according to a type of caller information configured in a preset interface;

20 an extracting module, to extract the caller information according to the call displaying message; and

a displaying module, to display the extracted caller information.

In embodiments of the present invention, before calling a called terminal device, a calling terminal device may configure caller information to be displayed in the called terminal device in a call process. The configured caller information may reflect
25 a real-time condition of the caller and the calling terminal device in several aspects so that amount of the caller information can be increased and a called party can conveniently know a real-time status of the caller and the calling terminal device. Furthermore, content of the caller information to be displayed in the called terminal device can be selected and configured by the caller so as to improve flexible
30 configuration of the content of caller information.

Brief Description of Drawings

FIG. 1 is a flowchart illustrating a method for displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 2 is a schematic diagram illustrating a preset interface of a method displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 3 is a flowchart illustrating a process at block S102 of a method for displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 4 is another flowchart illustrating a method for displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 5 is a schematic diagram illustrating a calling displaying interface of a method for displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 6 is a schematic diagram illustrating a structure of an apparatus for displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 7 is a schematic diagram illustrating a structure of an apparatus for displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 8 is a schematic diagram illustrating a structure of an apparatus for displaying caller information of a terminal device according to an embodiment of the present invention;

FIG. 9 is a schematic diagram illustrating a structure of a terminal device according to an embodiment of the present invention;

FIG. 10 is a schematic diagram illustrating a structure of a memory of an apparatus for determining software performance;

FIG. 11 is a schematic diagram illustrating a structure of a memory of an apparatus for determining software performance.

Detailed Description of the Invention

In order to make the object, technical solution and merits of the present invention clearer, the present invention will be illustrated in detail hereinafter with reference to the accompanying drawings and specific examples. The present invention can be understood according to detail embodiments, but cannot be limited the present invention.

At present, information displayed in a call process is less, and only includes information obtained through analyzing a number of the calling terminal device. A real-time condition of the caller cannot be represented in the caller information.

In an embodiment of the present invention, before calling a called terminal device, a calling terminal device may configure caller information to be displayed in the called terminal device in a call process. The configured caller information may reflect a real-time condition of the caller and the calling terminal device in several aspects so that amount of the caller information can be increased and a called party can conveniently know a real-time status of the caller and the calling terminal device.

A method for displaying caller information of a terminal device is provided according to an embodiment of the present invention. The method may be implemented based on a communication application running on an operating system of the terminal device. The terminal device may include, but not be limited to, a mobile terminal device with a communication function and a function of accessing an internet, e.g., a phone, a tablet PC, a pocket PC. The operating system of the terminal device may further include, but not be limited to, an operating system of a smart mobile terminal device e.g., Android, IOS, Symbian, and Windows Mobile. The terminal device may further be a terminal device with the communication function and the function of accessing the internet, e.g., a computer. Accordingly, the operating system of the terminal device may include, but not be limited to, an operating system, e.g., Windows, Linux. The communication application in the terminal device may be an application developed based on the operating system. By use of the communication application, communication related function such as a calling function, a function of transmitting a short message and a contact function may be implemented though a mobile communication network or the internet. Comparing with communication functions coming with the operating system, the function of the communication

application is plentiful and can be customized. The communication application may be a contact application or a Voice over Internet Protocol (VoIP) application, which is not limited herein.

FIG. 1 is a flowchart illustrating a method for displaying caller information of a terminal device according to an embodiment of the present invention. In the embodiment, the method is performed by a calling terminal device. The method includes procedures as follows.

At block S101, the calling terminal configures a type of caller information in a preset interface.

In an example, before the calling terminal device performs an instruction for calling a called terminal device, the preset interface pops up in the calling terminal device. FIG. 2 is a schematic diagram illustrating a preset interface according to an embodiment of the present invention. In the preset interface, the type of the caller information to be displayed in the preset interface is represented. The type of the caller information to be displayed in the preset interface includes, but not limited to, user status information of the caller (e.g., caller's mood), a geographic location of the calling terminal device, a weather condition of the geographic location of the calling terminal device and a record of calls between the calling terminal device and the called terminal device.

In an example, by detecting an instruction inputted by a user, the calling terminal device may determine at least one type of the caller information to be displayed in the called terminal device in the calling process. The user may input the instruction by selecting at least one option in a checkbox in a preset interface (e.g., select an option "display weather of my geographical location" and an option "display my geographical location" as shown in FIG. 2 at the same time) or by selecting a preset option in several preset options (e.g., selecting a mood option in several mood options illustrated in the preset interface).

In an example, in the preset interface, several preset options are provided in the preset interface to be selected by the caller through the calling terminal device. Thus, the caller does not need to input characters of the caller information so as to fast generate the caller information and not to impact call efficiency between the calling terminal device and the called terminal device. Furthermore, a customized option may

be provided in the preset interface to satisfy a requirement of the caller that designated caller information is displayed in the called terminal device.

In an example, a default configuration is set in the preset interface to configure a default option. When the preset interface is called to be displayed, at least one default type of the caller information of the caller is selected. The caller may modify a selection result in the preset interface according to a requirement of the caller. In particular, the caller may unselect a default type of the caller information, or may select a type of the caller information not default. When there is not a specific requirement for the caller, the caller information to be displayed in the called terminal device may be directly determined according to the default configuration so as to improve efficiency of generating the caller information.

At block S102, when the called terminal device is called, the calling terminal device generates a call displaying message according to the configured type of the caller information.

In the embodiment, when the calling terminal device performs an instruction for calling the called terminal device, the calling terminal device generates the call displaying message according to the type of the caller information configured at block S101.

According to different types of the caller information, information sources of the caller information may be different. Each type of the caller information displayed in the preset interface may correspond to an information source. In an example, when the caller information reflects real-time information of the calling terminal device or the caller, e.g., a geographical location of the calling terminal device or mood of the caller, the information source of the above caller information is the calling terminal device. As shown in FIG. 3, there are procedures as follows at block S102.

At block S301, the calling terminal device obtains the caller information corresponding to the type of the caller information.

At block S302, the calling terminal device generates the call displaying message including the obtained caller information.

According to different types of the caller information, ways of obtaining the caller information from the calling terminal device may be different. The calling

terminal device may set up a data interface with another application or a background service in local so as to obtain the caller information.

In an example of the present invention, when the type of the caller information includes information based on a Location Based Service (LBS), the geographical location of the calling terminal device may be obtained. According to the geographical location of the calling terminal device, information based on the LBS is obtained.

In an example, when the type of the caller information is a weather condition of the geographical location of the calling terminal device, the geographical location information (e.g., a geographic coordinate or a geodetic coordinate) of the calling terminal device through a wireless communication network of a mobile operator (e.g., a Global System of Mobile communication (GSM), a Wideband Code Division Multiple Access (WCDMA)) or an external positioning mode (e.g., Global Positioning System (GPS)). The weather condition related with geographical location information of the calling terminal device is obtained by a Geographic Information system (GIS) platform.

In another example, when the type of the caller information includes the user status information, a process of obtaining the caller information of the type of caller information includes: obtaining the user status information inputted by user in the calling terminal device.

In an example, an input way includes selecting, by the caller, a preset status information option in the preset interface. For example, the caller selects a mood option in several preset mood options in the preset interface, e.g., "happy", "tense", "urgent". The selected mood option is as the user status information to be displayed in the called terminal device. In another example, an input way includes inputting by the caller, characters in the calling terminal device. For example, when the caller selects a custom option in the preset interface as shown in FIG. 2, a dialog box in which the characters is inputted pops up. The caller may input information of current mood of the caller. Thus, the way can satisfy a requirement that designated caller information is displayed for the called terminal device. For example, when the caller has an emergent event and wants the called party to answer the call at once, the caller may input an abstract of the event for communication in the dialog box, so that the called

party may know a call motivation of the caller through the called terminal device before answering the call. Thus, it is avoided that the communication is delayed since the called party is temporarily inconvenient to answer the call, and communication efficiency is improved.

5 At block S103, the calling terminal device transmits the call displaying message to the called terminal device, so that when detecting the call, the called terminal device extracts the caller information and displays the caller information according to the call displaying message.

10 In an example, since the method above is implemented based on a communication application in the terminal device, a client running on the calling terminal device transmits the generated call displaying message to a client running on the called terminal device via a service side of the communication application. Thus, it is implemented to transmit the call displaying message. And the called terminal device can extract and display the caller information in a calling process. Since the
15 method above is implemented based on the communication application running on the terminal device, an option of the type of the caller information can be displayed in the preset interface in a graph way. The caller information can be eventually displayed in the called terminal device in a graph way. For example, the caller may select a mood option represented through a smiley graph in the preset interface. Accordingly, the
20 smiley graph is displayed in the called terminal device to represent mood of the caller.

 In another example, for a mobile terminal device, when the information resource of the type of the caller information is the calling mobile terminal device, the generated call displaying message may be represented in a format of a Short Messaging Service (SMS). The call displaying message including the obtained caller
25 information is transmitted to the called mobile terminal device through an operator channel. According to the caller information obtained by the calling mobile terminal device, all the caller information is added into a short message. In particular, the short message may be generated through a preset format. For example, the type of the caller information is placed in double quotes. Characters behind the double quotes are the
30 caller information corresponding to the type of the caller information in double quotes. For example, when the generated short message includes “mood” happy, the type of the caller information obtained in the short message is real-time mood of the caller. The caller information corresponding to the type real-time mood of the caller is

“happy”. The generated short message is transmitted to the called mobile terminal device via the operator channel in a normal short message transmitting manner. A transmission number is a preset fixed number (e.g., a number which is set in a service side of the communication application and is used to transmit the short message).

5 When receiving a call from the calling mobile terminal device, the called mobile terminal device may automatically detect whether the short message from the preset fixed number is received through a data interface in a background of a short message application. If it is detected that the short message from the preset fixed number is received, the caller information is extracted according to a preset format, and is
10 displayed the extracted the caller information in a calling process.

It should be noted that, when the configured information resource of the type of the caller information is the called mobile terminal device, the call displaying message may also be transmitted in the short message.

In another example, the information resource of the type of the caller information
15 is the called terminal device. In particular, the caller information is from the called terminal device. A process at block S102 includes: generating the call displaying message including the type of the caller information.

For example, when the type of the caller information designated by the calling terminal device is a call record between the calling terminal device and the called
20 terminal device, since the call record is stored in the called terminal device, the call record may be directly extracted from the called terminal device, so as to avoid transmission of the caller information between the calling terminal device and the called terminal device and to improve communication efficiency.

In an example, the calling terminal device transmits to the called terminal device
25 the call displaying message including the type of the caller information. The called terminal device obtains the caller information in local according to the type of the caller information in the calling process. Thus, the caller information will not be transmitted between the calling terminal device and the called terminal device, and the communication efficiency is improved.

30 FIG. 4 is a flowchart illustrating a method for displaying caller information in a terminal device according to an embodiment of the present invention. In the

embodiment, the method includes procedures as follows which are performed by a called terminal device.

At block S401, when detecting a call from a calling terminal device, the called terminal device receives a call displaying message transmitted from the calling terminal device, wherein the calling displaying message is generated by the calling terminal device according to a type of the caller information set in a preset interface.

At block S402, the called terminal device extracts the caller information according to the call displaying message.

At block S403, the called terminal device displays the extracted caller information.

As illustrated in the above embodiment in which the method is performed by the calling terminal device, the called terminal device may directly receive the call displaying message based on a client of a communication application same with the calling terminal device. When detecting a call from the calling terminal device, the called terminal device displays a calling displaying interface as shown in FIG. 5. In the calling interface, the caller information obtained by the calling terminal device is displayed, such as a number attribution of the calling terminal (e.g., “a number attribution: Beijing” in FIG. 5), a geographical location of the calling terminal device (e.g., “a call address: a Tianfu square in Chengdu” in FIG. 5), weather of the geographical location of the calling terminal device (e.g., “local weather: cloudy 20°C in FIG. 5”), mood of the calling terminal device (e.g., “mood of Xiao Wang: urgent” in FIG. 5).

In an example of the present invention, a format of the call displaying message may be a short message. In the condition, when detecting the call from the calling terminal device, the called terminal automatically detects that the called terminal device receives a short message from a preset fixed number in a background of a communication application, and extracts and displays the caller information. For example, the called terminal device detects the short message from the preset fixed number, and the content of the short message includes “Mood” happy. The called terminal device obtains that the type of the caller information to be displayed is real-time mood of the caller, and the real-mood of the caller is “happy”.

In another example, when the call displaying message includes the type of the caller information, the called terminal device extracts the type of the caller information from the call displaying message, obtains the caller information in local according to the type of the caller information and displays the caller information.

5 For example, the called terminal device detects that the call displaying message includes the type of the caller information “a call record”, and the information resource of the caller information is the called terminal device. The called terminal device calls a related call record such as the number of recent calls with the calling terminal device, call time and so on, and displays the called call record in the calling
10 displaying interface (e.g., “call one time in a recent month in FIG. 5”).

In an example of the present invention, before calling the called terminal device, the calling terminal device may configure the caller information to be displayed in the called terminal device so as to reflect a real-time condition of the calling terminal device and a caller in several aspects, to increase amount of information included in
15 the caller information. Thus, the called party can conveniently know a real-time condition of the calling terminal device and the caller.

FIG. 6 is a schematic diagram illustrating a structure of an apparatus for displaying caller information of a terminal device according to an embodiment of the present invention. The apparatus may be in a terminal device, and may apply to
20 implement methods for displaying caller information respectively as illustrated in FIG. 1-3 and FIG. 4-5. In order to make description clear, only modules related with the embodiment are illustrated.

As shown in FIG. 6, in a calling terminal device, the apparatus includes the following modules.

25 A configuration module 61 is to configure a type of caller information in a preset interface.

A generation module 62 is to generate a call displaying message according to the configured type of the caller information when calling a called terminal device.

30 A transmitting module 63 is to transmit the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information.

In an example, an information resource of the type of the caller information comprises the calling terminal device. The generation module 62 includes the following sub-modules.

5 A first obtaining sub-module is to obtain the caller information corresponding to the type;

A generation sub-module is to generate the call displaying message including the obtained caller information.

10 In an example, the type of the caller information comprises information based on a Location Based Service (LBS). The obtaining sub-module includes the following sub-units.

A geographical location obtaining sub-unit is to obtain a geographical location of the calling terminal device.

A LSB information obtaining sub-unit is to obtain the information based on the LBS according to the geographical location of the calling terminal device.

15 In an example, the type of the caller information comprises user status information. The obtaining sub-module is to obtain the user status information inputted by a user into the calling terminal device.

In an example, a format of the caller information comprises a short message.

20 In an example, an information resource of the type of the caller information comprises the called terminal device. The generation module 62 is to generate the call displaying message comprising the type of the caller information.

In a called terminal device, the apparatus includes the following modules.

25 A receiving module 64 is to receive a call displaying message transmitted from a calling terminal device, wherein the call displaying message is generated according to a type of caller information configured in a preset interface.

An extracting module 65 is to extract the caller information according to the call displaying message.

A displaying module 66 is to display the extracted caller information.

In an example, a format of the caller information comprises a short message.

30 In an example, the extracting module 65 includes the following sub-modules.

An extracting sub-module is to extract the type of the caller information from the call displaying message.

A second obtaining sub-module is to obtain the caller information according to the type.

5 FIG. 7 is a schematic diagram illustrating a structure of an apparatus for displaying caller information of a terminal device according to an embodiment of the present invention. The apparatus may be in a terminal device, and may apply to implement methods for displaying caller information respectively as illustrated in FIG. 1-3. In order to make description clear, only modules related with the embodiment are
10 illustrated. As shown in FIG. 7, the apparatus includes the following modules.

A configuration module 71 is to configure a type of caller information in a preset interface.

A generation module 72 is to generate a call displaying message according to the configured type of the caller information when calling a called terminal device.

15 A transmitting module 73 is to transmit the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information.

In an example, an information resource of the type of the caller information comprises the calling terminal device. The generation module 72 includes the
20 following sub-modules.

An obtaining sub-module is to obtain the caller information corresponding to the type;

A generation sub-module is to generate the call displaying message including the obtained caller information.

25 In an example, the type of the caller information comprises information based on a Location Based Service (LBS). The obtaining sub-module includes the following sub-units.

A geographical location obtaining sub-unit is to obtain a geographical location of the calling terminal device.

A LSB information obtaining sub-unit is to obtain the information based on the LBS according to the geographical location of the calling terminal device.

In an example, the type of the caller information comprises user status information. The obtaining sub-module is to obtain the user status information
5 inputted by a user into the calling terminal device.

In an example, a format of the caller information comprises a short message.

In an example, an information resource of the type of the caller information comprises the called terminal device. The generation module 62 is to generate the call displaying message comprising the type of the caller information.

10 FIG. 8 is a schematic diagram illustrating a structure of an apparatus for displaying caller information of a terminal device according to an embodiment of the present invention. The apparatus may be in a terminal device, and may apply to implement methods for displaying caller information respectively as illustrated in FIG. 4-5. In order to make description clear, only modules related with the embodiment are
15 illustrated. The apparatus includes the following modules.

A receiving module 71 is to receive a call displaying message transmitted from a calling terminal device, wherein the call displaying message is generated according to a type of caller information configured in a preset interface.

An extracting module 72 is to extract the caller information according to the call
20 displaying message.

A displaying module 73 is to display the extracted caller information.

In an example, a format of the caller information comprises a short message.

In an example, the extracting module 72 includes the following sub-modules.

An extracting sub-module is to extract the type of the caller information from the
25 call displaying message.

An obtaining sub-module is to obtain the caller information according to the type.

The methods and modules or units described herein may be implemented by hardware, machine-readable instructions or a combination of hardware and machine-readable instructions. Machine-readable instructions used in the examples disclosed
30 herein may be stored in storage medium readable by multiple processors, such as hard

drive, CD-ROM, DVD, compact disk, floppy disk, magnetic tape drive, RAM, ROM or other proper storage device. Or, at least part of the machine-readable instructions may be substituted by specific-purpose hardware, such as custom integrated circuits, gate array, FPGA, PLD and specific-purpose computers and so on.

5 FIG. 9 is a schematic diagram illustrating a structure of a phone corresponding to a terminal device according to an embodiment of the present invention. As shown in FIG. 9, the phone at least includes a memory 720 and a processor 780. In an example, the phone may further include a Radio Frequency (RF) circuit 710, an inputting unit 730, a displaying unit 740, a sensor 750, an audio circuit 760, a wireless module 770,
10 a power 790 etc. The skilled in the art can know that the phone is not limited by a structure of the phone as shown in FIG. 9, which can include more components than components in the structure in FIG. 9, can include less components than components in the structure in FIG. 9, can combine some components in FIG. 9 or can have different arrangement of components from that of components in the structure in FIG.
15 9.

Each of components of the phone in FIG. 9 is illustrated as follows.

The RF circuit 710 is to transmit and receive a signal in a processing of transmitting and receiving information or a call process. In particular, the RF circuit 710 is further to transmit downlink information received from a base station to the
20 processor 780. In addition, the RF circuit 710 is to transmit uplink data to the base station. The RF circuit 710 includes, but is not limited to, an antenna, at least one amplifier, a transceiver, a coupler, a low noise amplifier (LNA), a diplexer etc. The RF circuit communicates with a network and another communication device through wireless communication. Any of the following communication standards or protocols
25 may be used in the wireless communication: Global System of Mobile communication (GSM), General Packet Radio Service (GPRS), Code Division Multiple Access (CDMA, Wideband Code Division Multiple Access (WCDMA), Long Term Evolution (LTE), Email, Short Messaging Service (SMS) etc.

The memory 720 is used to store software program and modules. The processor
30 780 executes the software program and the modules stored in the memory 720 to perform function applications and data processing in the phone. The memory 720 may include a storage area storing the program and a storage area storing data. The storage

area storing the program may store an operating system, application program corresponding to at least one function (e.g., a function of playing sound, a function of playing a video). The storage area storing the data may be to store data created when the phone is used (e.g., audio data, contact data). In addition, the memory 720 may
5 include high-speed random access memory, may further include non-volatile memory, such as at least one disk storage device, at least one flash memory device, or other volatile solid-state memory devices.

The inputting unit 730 may be to receive an inputted number or inputted character information, and generate a key signal input related with control of a
10 function and user configuration. In particular, the inputting unit 730 may include a touch panel 731 and another inputting device 732. The touch panel 731 is also called a touch screen, may be to collect a touch operation performed on or near the phone by a user (e.g., the user perform an operation in any suitable object or an accessory on or near the touch panel 731), and drive a corresponding connection device according to
15 preset program. In an example, the touch panel 731 may include a touch detection apparatus and a touch controller. The touch detection apparatus is to detect a touch position, detect a signal generated by the touch operation, and transmit the signal to the touch controller. The touch controller is to receive touch information from the touch detection apparatus, convert the touch information to a coordinate of a touch
20 point, transmit the coordinate of the touch point to the processor 780, and receive a command from the processor 780 and execute the command. In addition, the touch panel 731 is implemented by a resistive, capacitive, infrared or surface acoustic wave component. Except the touch panel 731, the inputting unit 730 may further include another inputting device 732. Another inputting device 732 may include, but be not
25 limited to, at least one of a physical keyboard, a function key (such as a volume control key, a key switch, etc.), a trackball, a mouse, an operating lever.

The displaying unit 740 may be to display information inputted by the user or information provided to the user and a menu of the phone. The displaying unit 740 may include a displaying panel 741. In an example, the displaying panel 741 is
30 configured in a manner of Liquid Crystal Display (LCD), Organic Light-Emitting Diode (OLED). Furthermore, the touch panel 731 may cover the displaying panel 741. When detecting the touch operation on or near the touch panel 731, the touch panel 731 transmits the touch operation to the processor 780 to determine a type of a touch

event. Afterwards, the processor 780 provides a corresponding video output in the displaying panel 741. Although the touch panel 731 and the displaying panel 741 are as two independent components to implement an inputting function and an outputting function, in some examples, the touch panel 731 and the displaying panel 741 may be
5 integrated to implement the inputting function and the outputting function.

The phone 700 may further include at least one sensor 750, e.g., a light sensor, a motion sensor and another sensor. In particular, the light sensor may include an ambient light sensor and a proximity sensor. The ambient light sensor adjusts brightness of the displaying panel 741 according to the brightness of the ambient light.
10 The proximity sensor may close the displaying panel 741 and/or backlit when the phone moves to an ear. As one kind of the motion sensor, an accelerometer sensor can detect a value of acceleration in all directions (typically three-axis), may detect a value and a direction of gravity in stationary, identify an application of a phone posture (such as switch between a horizontal screen and vertical screen, a related
15 game, magnetometer posture calibration), identify a vibration recognition related function (such as a pedometer, a percussion). Another sensor such as a gyroscope, a barometer, a hygrometer, a thermometer, an infrared sensor may be configured in the phone, which is not described repeatedly herein.

The audio circuit 760, speaker 761 and a microphone 762 may provide an audio
20 interface between the user and the phone. The audio circuit 760 may transmit an electric signal transformed from received audio data to the speaker 761. The speaker 761 transforms the electric signal to a sound signal and inputs the sound signal. The microphone 762 transforms the collected sound signal to the electric signal. The audio circuit 760 receives the electric signal and transforms the electric signal to the audio
25 data, and output the audio data to the processor 780 to be processed. After the audio data is processed by the processor 780, the audio data is transmitted to another phone via the RF circuit 710, or is outputted the memory 720 for further processing.

The wireless module is based on a short-range wireless transmission technology. The phone may transmit and receive an Email, browse a webpage and access
30 streaming media through the wireless module 770 for the user to provide an access to a wireless broadband internet. In FIG. 9, the wireless module 770 is illustrated. It can be known that the wireless module 770 is not an essential component for constituting

the phone, and may be omitted within the scope not changing the nature of the present invention.

The processor 780 is a control center of the phone. The processor 780 is to connect all components of the phone via various interfaces and circuits, call the software program and/or module stored in the memory 720, call data stored in the memory 720 to execute various functions and data processing of the phone so as to perform overall monitoring. In an example, the processor 780 may include at least one processing unit. In an example, the processor 780 may include an application processor and a modem processor. The application processor processes an operation system, a user interface and application program. The modem processor processes wireless communication. It can be known that the modem processor may not be integrated in the processor 780.

The phone 700 may further include a power 790 (e.g., a battery) supplying power for each component. In an example, the power may connect with the processor 780 through a power management system, so that, e.g., a function, e.g., a charging management function, a discharging management function, a power management function, can be implemented through the power management system.

The phone 700 may further include a camera, a bluetooth module, which is not illustrated in FIG. 9.

FIG. 10 is a schematic diagram illustrating a structure of a memory of an apparatus for determining software performance. According to an embodiment of the present invention, a processor in FIG. 9 executes instructions stored in a memory 910. The instructions include a configuration instruction 911, a generation instruction 912, and a transmitting instruction 913.

The configuration instruction 911 is to configure a type of caller information in a preset interface.

The generation instruction 912 is to generate a call displaying message according to the configured type of the caller information when calling a called terminal device.

The transmitting instruction 913 is to transmit the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information.

In an example, an information resource of the type of the caller information comprises the calling terminal device. The generation instruction 910 includes an obtaining instruction and a message generating instruction.

5 The obtaining instruction is to obtain the caller information corresponding to the type.

The message generating instruction is to generate the call displaying message including the obtained caller information.

10 In an example, the type of the caller information comprises information based on a Location Based Service (LBS). The obtaining instruction is to obtain a geographical location of the calling terminal device, obtain the information based on the LBS according to the geographical location of the calling terminal device.

In an example, the type of the caller information comprises user status information. The obtaining instruction is to obtain the user status information inputted by a user into the calling terminal device.

15 In an example, a format of the caller information comprises a short message.

In an example, an information resource of the type of the caller information comprises the called terminal device. The generation instruction 912 is to generate the call displaying message comprising the type of the caller information.

20 FIG. 11 is a schematic diagram illustrating a structure of a memory of an apparatus for determining software performance. According to an embodiment of the present invention, a processor in FIG. 9 executes instructions stored in a memory 1010. The instructions include a receiving instruction 1011, an extracting instruction 1012, and a displaying instruction 1013.

25 The receiving instruction 1011 is to receive a call displaying message transmitted from a calling terminal device, wherein the call displaying message is generated according to a type of caller information configured in a preset interface.

The extracting instruction 1012 is to extract the caller information according to the call displaying message; and

The displaying instruction 1013 is to display the extracted caller information.

30 In an example, a format of the caller information comprises a short message.

In an example, the extracting instruction 1012 is to extract the type of the caller information from the call displaying message, obtain the caller information according to the type.

5 In an embodiment of the present invention, before calling a called terminal device, a calling terminal device may configure caller information to be displayed in the called terminal device in a call process. The configured caller information may reflect a real-time condition of the caller and the calling terminal device in several aspects so that amount of the caller information can be increased and a called party can conveniently know a real-time status of the caller and the calling terminal device.

10 The foregoing is only preferred examples of the present invention and is not used to limit the protection scope of the present invention. Any modification, equivalent substitution and improvement without departing from the spirit and principle of the present invention are within the protection scope of the present invention.

Claims

1. A method for displaying caller information, comprising:

configuring, by a calling terminal device, a type of caller information in a preset interface;

5 generating, by the calling terminal device, a call displaying message according to the configured type of the caller information when calling a called terminal device;

transmitting, by the calling terminal device, the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information.

10 2. The method of claim 1, wherein an information resource of the type of the caller information comprises the calling terminal device,

the process of generating the call displaying message according to the configured type of the caller information comprises:

15 obtaining, by the calling terminal device, the caller information corresponding to the type;

generating, by the calling terminal device, the call displaying message including the obtained caller information.

3. The method of claim 2, wherein the type of the caller information comprises information based on a Location Based Service (LBS),

20 the process of obtaining the caller information corresponding to the type comprises:

obtaining, by the calling terminal device, a geographical location of the calling terminal device;

25 obtaining, by the calling terminal device, the information based on the LBS according to the geographical location of the calling terminal device.

4. The method of claim 2, wherein the type of the caller information comprises user status information,

the process of obtaining the caller information corresponding to the type comprises:

obtaining, by the calling terminal device, the user status information inputted by a user into the calling terminal device.

5. The method of any of claims 2-4, wherein a format of the caller information comprises a short message.

5 6. The method of claim 1, wherein an information resource of the type of the caller information comprises the called terminal device,

the process of generating the call displaying message according to the configured type of the caller information comprises:

10 generating, by the calling terminal device, the call displaying message comprising the type of the caller information.

7. A method for displaying caller information, comprising:

receiving, by a called terminal device, a call displaying message transmitted from a calling terminal device, wherein the call displaying message is generated according to a type of caller information configured in a preset interface;

15 extracting, by the called terminal device, the caller information according to the call displaying message; and

displaying, by the called terminal device, the extracted caller information.

8. The method of claim 7, wherein a format of the caller information comprises a short message.

20 9. The method of claim 7, wherein an information resource of the type of the caller information comprises the called terminal device,

the process of extracting the caller information according to the call displaying message comprises:

25 extracting, by the called terminal device, the type of the caller information from the call displaying message;

obtaining, by the called terminal device, the caller information according to the type.

10. An apparatus for displaying caller information, comprising:

a configuration module, to configure a type of caller information in a preset interface;

a generation module, to generate a call displaying message according to the configured type of the caller information when calling a called terminal device;

5 a transmitting module, to transmit the call displaying message to the called terminal device, so that the called terminal extracts calling information according to the call displaying message and displays the caller information.

10 11. The apparatus of claim 10, wherein an information resource of the type of the caller information comprises the calling terminal device, the generation module comprises:

an obtaining sub-module, to obtain the caller information corresponding to the type;

a generation sub-module, to generate the call displaying message including the obtained caller information.

15 12. The apparatus of claim 11, wherein the type of the caller information comprises information based on a Location Based Service (LBS), the obtaining sub-module comprises:

a geographical location obtaining sub-unit, to obtain a geographical location of the calling terminal device;

20 a LSB information obtaining sub-unit, to obtain the information based on the LBS according to the geographical location of the calling terminal device.

13. The apparatus of claim 11, wherein the type of the caller information comprises user status information,

25 the obtaining sub-module is to obtain the user status information inputted by a user into the calling terminal device.

14. The apparatus of any of claims 11-13, wherein a format of the caller information comprises a short message.

15. The apparatus of claim 10, wherein an information resource of the type of the caller information comprises the called terminal device,

the generation module is to generate the call displaying message comprising the type of the caller information.

16. An apparatus for displaying caller information, comprising:

5 a receiving module, to receive a call displaying message transmitted from a calling terminal device, wherein the call displaying message is generated according to a type of caller information configured in a preset interface;

an extracting module, to extract the caller information according to the call displaying message; and

a displaying module, to display the extracted caller information.

10 17. The apparatus of claim 16, wherein a format of the caller information comprises a short message.

18. The apparatus of claim 16, wherein an information resource of the type of the caller information comprises the called terminal device, the extracting module comprises:

15 an extracting sub-module, to extract the type of the caller information from the call displaying message;

an obtaining sub-module, to obtain the caller information according to the type.

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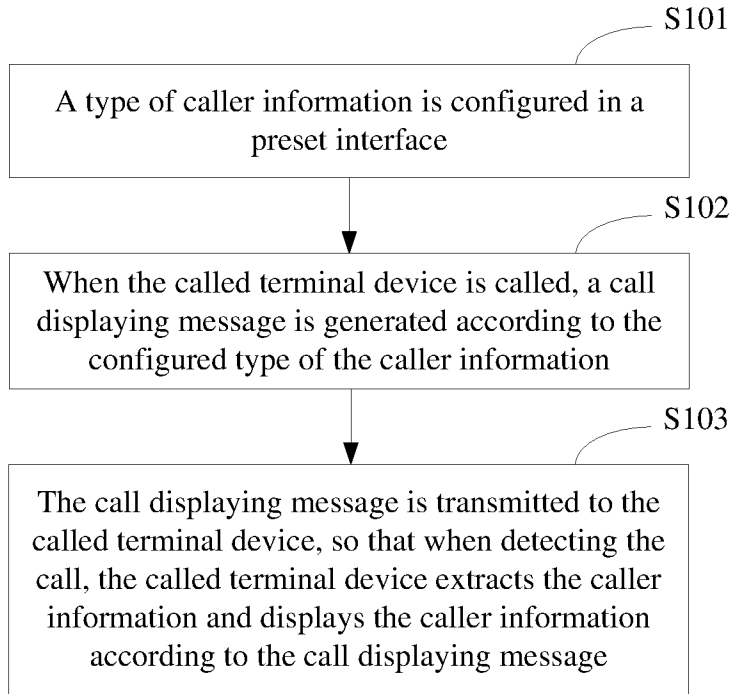


FIG. 1

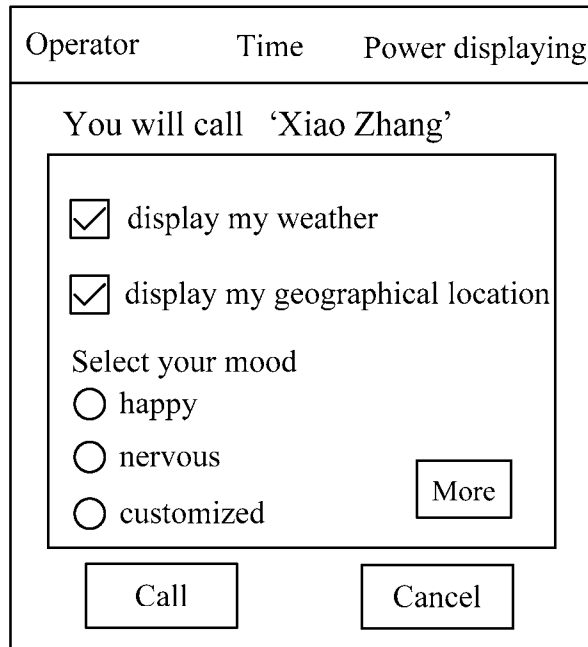


FIG. 2

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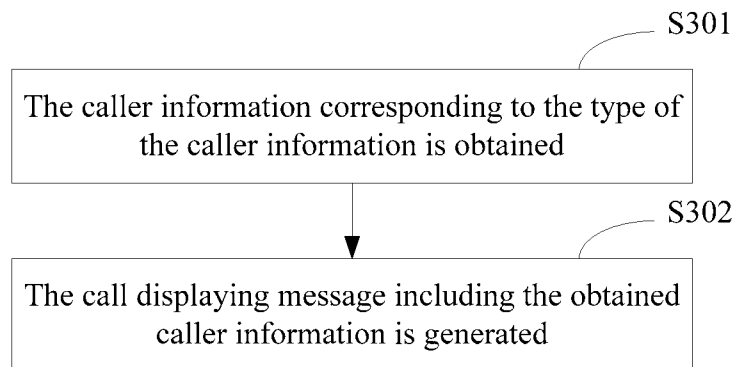


FIG. 3

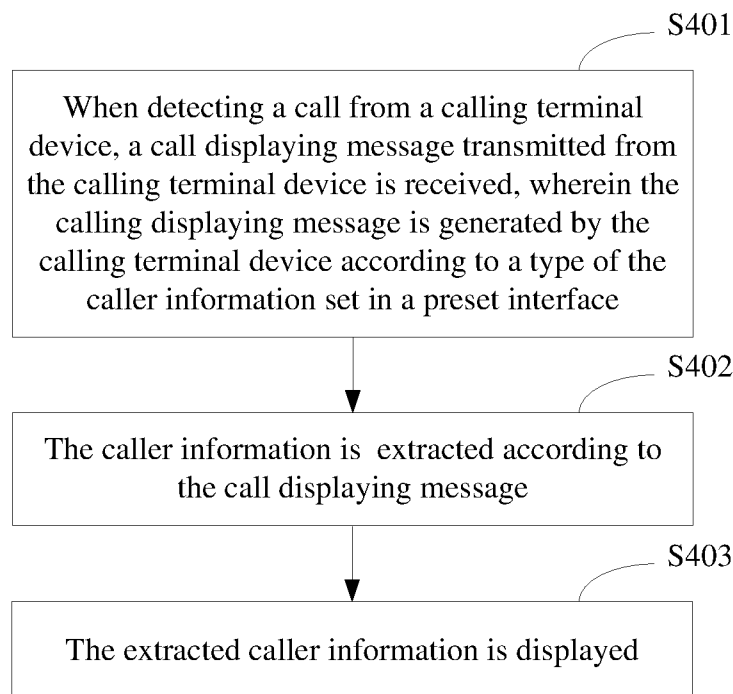


FIG. 4

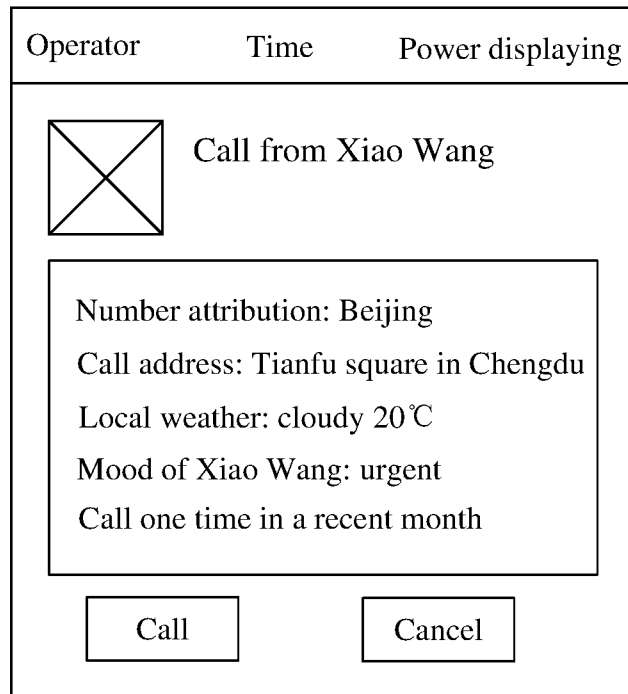


FIG. 5

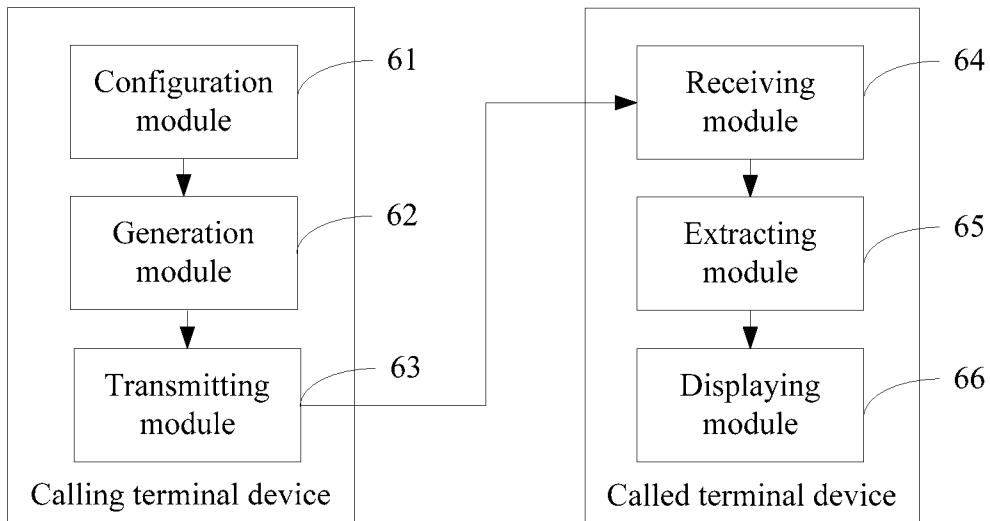


FIG. 6

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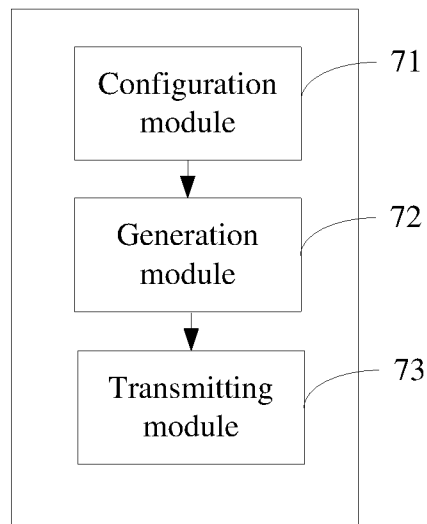


FIG. 7

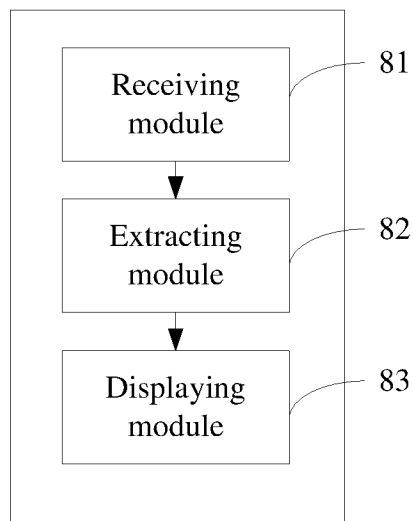


FIG. 8

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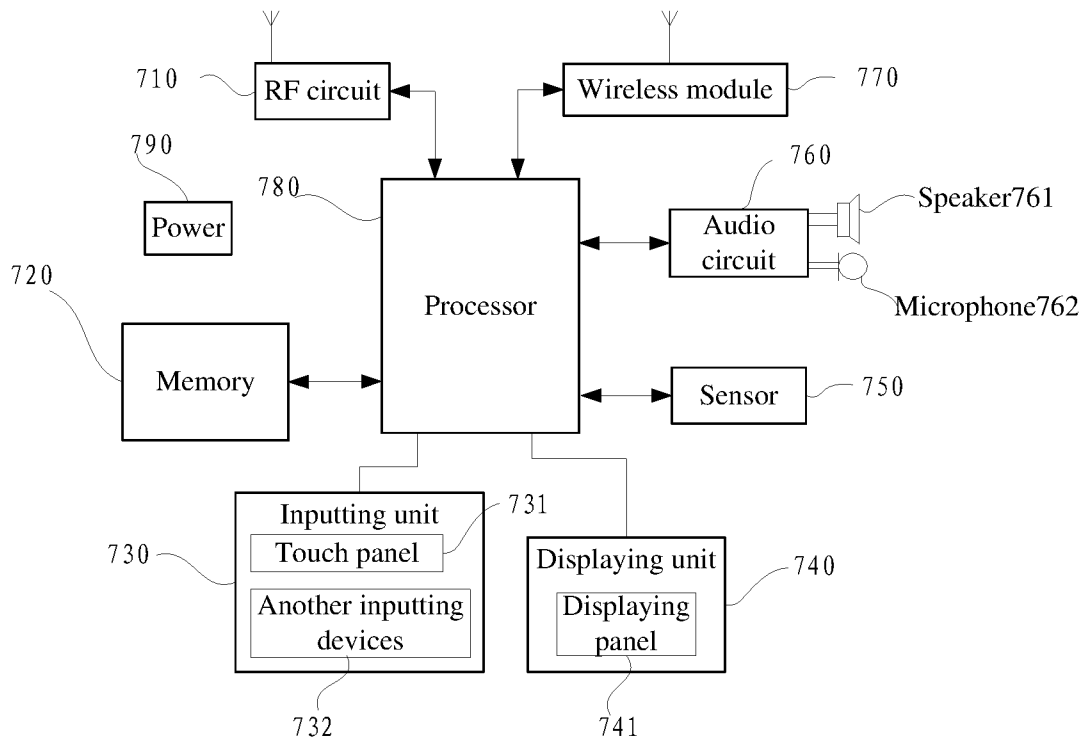


FIG. 9

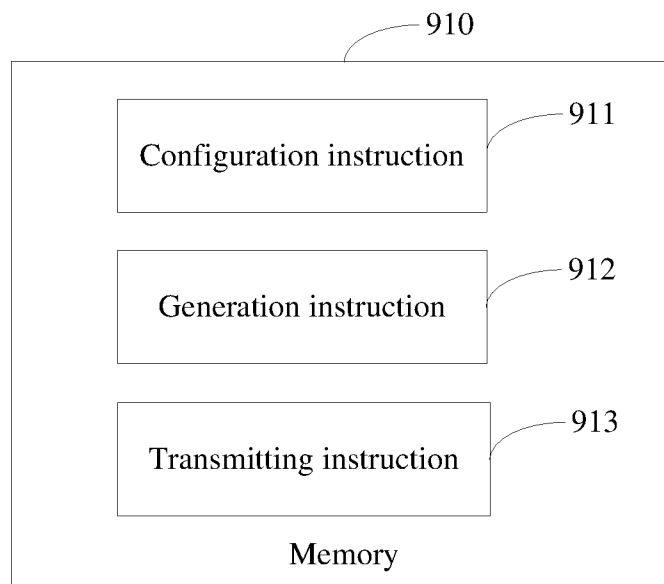


FIG. 10

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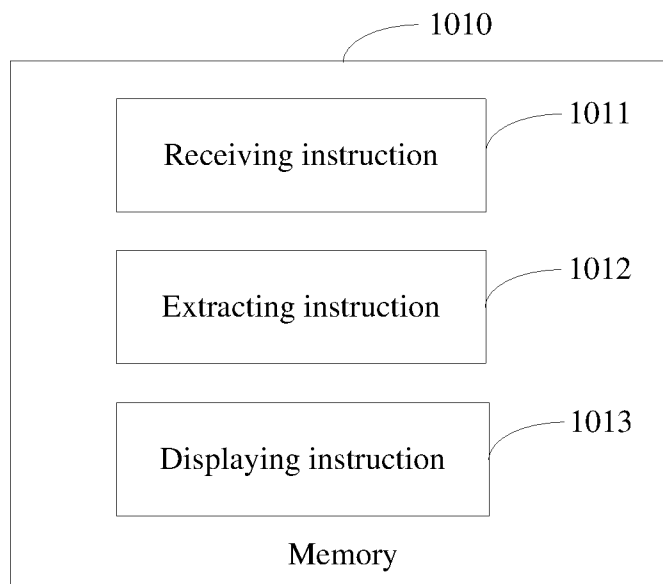


FIG. 11

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2014/081860

A. CLASSIFICATION OF SUBJECT MATTER

H04M 1/57(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04M; H04W

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC, CNPAT, CNKI: caller,called,information,status,location,configur+,preset+,display+,LBS,type,shrot,message, SMS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
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| X | CN 102348279 A (ALCATEL-LUCENT SHANGHAI BELL CO., LTD.) 08 February 2012 (2012-02-08) abstract, description, paragraphs [0038] to [0094], figures 2 to 6 | 1-18 |
| A | CN 101340729 A (HUAWEI TECHNOLOGIES CO., LTD.) 07 January 2009 (2009-01-07) The whole document | 1-18 |

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

| | |
|---|--|
| “A” document defining the general state of the art which is not considered to be of particular relevance | “T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
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| “P” document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search

20 September 2014

Date of mailing of the international search report

10 October 2014

Name and mailing address of the ISA/

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Telephone No. (86-10)62413341

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2014/081860

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| CN | 101340729 | A | 07 January 2009 | Non e | | | |