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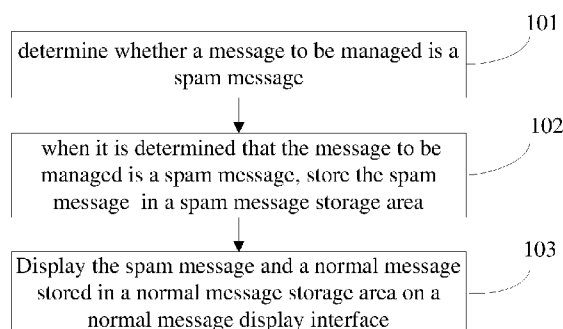


Figure 1

(57) **Abstract:** A method and device for managing a spam message may include: determining whether a message to be managed is a spam message; when determining that the message to be managed is a spam message, storing the spam message in a spam message storage area; and displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.



## METHOD AND DEVICE FOR MANAGING SPAM MESSAGE

[0001] This application claims the benefit of Chinese Patent Application No. 201310632712.0, filed on November 29, 2013, the disclosure of which is incorporated herein in its entirety by reference.

### FIELD

[0002] The present disclosure relates to terminal technologies, and more particularly, to a method and device for managing spam messages.

### BACKGROUND

[0003] With the development of mobile communication technology and the enhancement of mobile penetration, messaging by mobile phone become the new way for people to communicate due to the advantages, such as convenient and efficient. However, accompanying with the rapid development of mobile phone message service, such as short messaging service (SMS) and multimedia messaging service (MMS), there are some potential security problems. For example, many unscrupulous individuals send lots of advertisements, false information, and so on, using mobile phone message service. The advertisements and false information are spam messages. Because the spam messages have brought great trouble to user's life, in order to provide a healthy good communication environment, various applications for intercepting spam messages were developed, however, how to manage the intercepted spam messages becomes the next problem to be solved.

[0004] In conventional technology of management of spam messages, by setting spam message filtering rules, spam messages are separated from non-spam messages, and are put into a deep interface, and displayed on the deep interface. However, since the filtered spam messages are placed in the deep interface for display, and the deep interface is relatively hidden, it is not convenient for users to view and manage the spam messages, as a result, the conventional spam message management method is not convenient.

## SUMMARY

[0005] According to embodiments of the present disclosure, a method and device for managing a spam message is provided to improve the convenience of spam message management.

[0006] The method for managing a spam message provided by an embodiment of the present disclosure includes: determining whether a message to be managed is a spam message; when determining that the message to be managed is a spam message, storing the spam message in a spam message storage area; and displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface.

[0007] The device for managing a spam message provided by an embodiment of the present disclosure includes: a determination module, configured to determine whether a message to be managed is a spam message; a first storage module, configured to, when it is determined that the message to be managed is a spam message, store the spam message in a spam message storage area; and a display module, configured to display the spam message and a normal message stored in a normal message storage area on a normal message display interface.

[0008] In the present disclosure, after a message to be managed is determined as a spam message, the spam message is stored in a spam message storage area, and the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0009] In order to make technical solutions of embodiments of the present disclosure clearer, accompanying drawings to be used in description of the embodiments will be simply introduced hereinafter. Obviously, the accompanying drawings to be described hereinafter are only some examples of the present invention. Those skilled in the art may obtain other drawings according to these accompanying drawings without creative labor.

**[0010]** Figure 1 is a flow diagram illustrating a method for managing a spam message according to multiple embodiments of the present disclosure.

**[0011]** Figure 2 is a flow diagram illustrating a method for managing a spam message according to an embodiment of the present disclosure.

**[0012]** Figure 3a is a schematic diagram illustrating a spam message identifier according to an example of the present disclosure.

**[0013]** Figure 3b is a schematic diagram illustrating a spam message identifier according to another example of the present disclosure.

**[0014]** Figure 4a is a schematic diagram illustrating a message display interface according to an example of the present disclosure.

**[0015]** Figure 4b is a schematic diagram illustrating a message display interface according to another example of the present disclosure.

**[0016]** Figure 5 is a schematic diagram illustrating a device for managing a spam message according to multiple embodiments of the present disclosure.

**[0017]** Figure 6 is a schematic diagram illustrating a device for managing a spam message according to an embodiment of the present disclosure.

**[0018]** Figure 7 is a schematic diagram illustrating a device for managing a spam message according to another embodiment of the present disclosure.

**[0019]** Figure 8 is a schematic diagram illustrating a determination module according to an embodiment of the present disclosure.

**[0020]** Figure 9 is a schematic diagram illustrating a device for managing a spam message according to yet another embodiment of the present disclosure.

**[0021]** Figure 10 is a schematic diagram illustrating a device for managing a spam message according to yet another embodiment of the present disclosure.

[0022] Figure 11 is a schematic diagram illustrating a device for managing a spam message according to yet another embodiment of the present disclosure.

[0023] Figure 12 is a schematic diagram illustrating a terminal according to multiple embodiments of the present disclosure.

### DETAILED DESCRIPTION

[0024] Reference will now be made in detail to embodiments, which are illustrated in the accompanying drawings. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present disclosure. Also, the figures are illustrations of an embodiment, in which modules or procedures shown in the figures are not necessarily essential for implementing the present disclosure. In other instances, well-known methods, procedures, components, and circuits have not been described in detail so as not to unnecessarily obscure aspects of the embodiments. As used herein, the term “includes” means includes but not limited to, the term “including” means including but not limited to. The term “based on” means based at least in part on. In addition, the terms “a” and “an” are intended to denote at least one of a particular element.

[0025] With the development of mobile communication technology, more and more people perform information transmission by sending and receiving messages with a terminal. However, accompanying with the rapid development of terminal message service, many unscrupulous individuals send lots of advertisements, false information, and so on, using the terminal message service. The advertisements and false information are spam messages that a computer user has not asked for and does not want to read. Because the spam messages have brought great trouble to user's life, even endanger social stability, embodiments of the present disclosure provide a method for managing spam messages. To facilitate description, other messages except the spam messages are called normal messages in the present disclosure.

[0026] Figure 1 is a flow diagram illustrating a method for managing a spam message according to multiple embodiments of the present disclosure. As shown in figure 1, the method may include the following operations.

**[0027]** In block 101, it is determined whether a message to be managed, such as a text message or a multimedia message, is a spam message.

**[0028]** In block 102, when it is determined that the message to be managed is a spam message, the spam message is stored in a spam message storage area.

**[0029]** In block 103, the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface.

**[0030]** In an embodiment, when the message to be managed is a new message, before it is determined whether the message to be managed is a spam message, the method may further include: a new message, such as a text message or a multimedia message, sent by a message server is received, and the new message is taken as a message to be managed.

**[0031]** In another embodiment, when the message to be managed is a normal message stored in the normal message storage area, after the spam message is stored in the spam message storage area, the method may further include: the message to be managed is deleted from the normal message storage area.

**[0032]** In another embodiment, the process of determining whether the message to be managed is a spam message may include the following.

**[0033]** The number for sending the message to be managed is matched with at least one preset spam message number; when the number for sending the message to be managed matches with a preset spam message number, it is determined that the message to be managed is a spam message.

**[0034]** In another embodiment, before it is determined whether the message to be managed is a spam message, the method may further include: at least one spam message number is preset and stored.

**[0035]** In another embodiment, before the spam message and a normal message stored in a normal message storage area are displayed on the normal message display interface, the method may further include the following.

**[0036]** The spam message and other spam messages stored in the spam message storage area are combined into a spam message list entry, and the spam message list entry is added into a normal message list where normal message(s) stored in the normal message storage area are located.

**[0037]** Thus, the spam message and a normal message stored in a normal message storage area are displayed on the normal message display interface may include: the normal message list in which the spam message list entry is added is displayed on the normal message display interface, and a spam message identifier corresponding to the spam message list entry is also displayed on the normal message display interface to identify the spam message list entry. The spam message identifier may be a symbol to mark the spam message list entry distinguished from the normal message. Figure 3a and figure 3b respectively illustrate a spam message identifier according to an example of the present disclosure.

**[0038]** In another embodiment, the spam message and a normal message stored in a normal message storage area are displayed on the normal message display interface may further include the following.

**[0039]** A release instruction of a spam message is obtained, the spam message is deleted from the spam message storage area, and the spam message is taken as a normal message and stored in the normal message storage area.

**[0040]** In the method provided by embodiments of the present disclosure, after a determination is made that a message to be managed is a spam message, the spam message is stored in a spam message storage area, and the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.

**[0041]** Figure 2 is a flow diagram illustrating a method for managing a spam message according to an embodiment of the present disclosure. As shown in figure 2, the method may include the following operations.

**[0042]** In block 201, it is determined whether a message to be managed is a spam message.

**[0043]** In the block, the message to be managed includes but is not limited to: a normal message stored in the normal message storage area, a new message received in real time, and so on. When the message to be managed is a normal message stored in the normal message storage area, the normal message may be directly obtained from the normal message storage area, and then whether the normal message is a spam message may be determined. When the message to be managed is a new message, before it is determined that whether the new message is a spam message, the method may include and not be limited to: a new message sent by a message server is received, and the new message sent by the message server is taken as a message to be managed, and then a determination is made that whether the new message is a spam message.

**[0044]** Furthermore, it is taken as an embodiment that the message to be managed is a new message, the process of determining whether the message to be managed is a spam message may include the following.

**[0045]** The number for sending the message to be managed is matched with at least one preset spam message number; when the number for sending the message to be managed matches with a preset spam message number, it is determined that the message to be managed is a spam message.

**[0046]** For example, suppose the preset spam message numbers are 123456 and 345678; received new messages are message 1, message 2 and message 3, and the number for sending message 1 is 123456, the number for sending message 2 is 234567, and the number for sending message 3 is 345678. When the numbers for sending the new messages are matched with the present spam message numbers, since the number for sending message 1 is 123456, and 123456 matches with the preset spam message number 123456, it is determined that the new message 1 is a spam message; since the number for sending message 2 is 234567, and 234567 does not match with any one of the preset spam message numbers, it is determined that the new message 2 is not a spam message, namely the new message 2 is a normal message; since the number for sending message 3 is 345678, and 345678 matches with the preset spam message number 345678, it is determined that the new message 3 is a spam message.



**[0047]** It can be known from above mentioned that the preset spam message numbers are an important basis for determining whether the number for sending the message to be managed matches with a preset spam message number, thus before the number for sending the message to be managed is matched with at least one preset spam message number, the embodiment may further include: at least one spam message number is preset.

**[0048]** The manner for presetting at least one spam message number is not limited by the embodiment, for example, includes but is not limited to the followings. A setup interface is provided, and a user may set a number which is a spam message number to the user as a spam message number through the setup interface. A spam message management device may obtain the spam message number set by the user by detecting the setup operation performed by the user on the setup interface, and set the spam message number according to obtained spam message number.

**[0049]** Furthermore, since the spam message numbers preset in the block will be used in subsequent management of spam messages, the method provided by the embodiment, after the at least one spam message number is preset, may further include: the at least one preset spam message number is stored. The manner for storing at least one preset spam message number is not limited by the embodiment, for example, includes but is not limited to the followings. The at least one preset spam message number is stored in a corresponding memory, flash, or other storage medium.

**[0050]** When the message to be managed is a normal message stored in the normal message storage area, since the message to be managed is a normal message, in order to achieve the operation of setting a normal message as a spam message in subsequent management, the method provided by the embodiment may configure a spam message setup option for every normal message. When wanting to set a normal message as a spam message, the user may perform a selection operation on the normal message. When detecting the selection operation performed on the normal message by the user, the spam message management device may display a spam message setup option on the display interface of the normal message; and when detecting that the user selects the spam message setup option, for example, the user may perform an action “check” on the spam message setup option, the spam message management device may determine that the selected normal message is a spam message.

**[0051]** It should be noted that, the at least one spam message number may not be preset every time the method for managing a spam message is executed. The at least one spam message number may be preset when the method for managing a spam message is executed for the first time, and when the method for managing a spam message is executed again, the at least one spam message number first preset may be directly used. Certainly, when it is needed to update the at least one preset spam message number, the step for setting at least one spam message number may be executed again. The number of performing the step for setting at least one spam message number is not limited by the embodiment.

**[0052]** In block 202, when a determination is made that the message to be managed is a spam message, the spam message is stored in a spam message storage area.

**[0053]** To facilitate the management of spam messages, in the method provided by the embodiment, spam messages and normal messages may be respectively stored in different storage areas of a terminal. For example, the spam messages may be stored in a spam message storage area, and the normal messages may be stored in a normal message storage area. Therefore, after it is determined in block 201 that the message to be managed is a spam message, the message to be managed may be stored in the spam message storage area in block 202.

**[0054]** The specific positions of the spam message storage area and the normal message storage area is not limited in the embodiment, as long as the spam message storage area and the normal message storage area may be distinguished.

**[0055]** It should be noted that, when it is determined that a normal message stored in the normal message storage area is a spam message, since the normal message is stored in the normal message storage area before being determined as a spam message, in order to avoid that the normal message determined as a spam message is even taken as a normal message besides as a spam message, the method provided by the embodiment may further includes the following. The normal message determined as a spam message in the normal message storage area is deleted from the normal message storage area.

**[0056]** In block 203, the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface.

**[0057]** To facilitate viewing and managing spam messages, in the method provided by the embodiment, after the spam message is stored in the spam message storage area, the spam message may be displayed on a normal message display interface, so that the spam message and normal messages stored in the normal message storage area may be displayed on the normal message display interface, thus the management of spam messages is convenient. Specifically, all spam messages stored in the spam message storage area may be added in a normal message list where normal message(s) stored in the normal message storage area is(are) located in an order of receipt time of the spam messages, as shown in figure 4a. Each spam message may be displayed in the normal message list as a spam message list entry. The message list entry is a display item on the normal message display interface. The normal message display interface also needs to display a normal message list entry besides the spam message list entry. Either the spam message list entry or the normal message list entry, each message list entry may include all messages sent with the same one number. When it is detected that one message list entry is selected, all messages included in the selected message list entry may be displayed. The display manner may be a conventional message display manner or other display manner, which is not limited by the embodiment.

**[0058]** In another embodiment, because multiple spam messages may be stored in the spam message storage area, when all these spam messages are directly displayed in the normal message list, it is inconvenient to perform classified management on the messages. Therefore, before the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface, the message to be managed and other spam messages stored in the spam message storage area may be combined into a spam message list entry.

**[0059]** When a spam message is displayed on the normal message display interface, in order to distinguish the spam message from a normal message, the method provided by the embodiment may further include some pre-processing operations before the spam message is displayed on the normal message display interface. Specifically, the pre-processing operations may include but be not limited to the following processes.

**[0060]** The spam message and other spam messages stored in the spam message storage area are combined into a spam message list entry, and the spam message list entry is added into a

normal message list where normal message(s) stored in the normal message storage area are located.

**[0061]** After above mentioned pre-processing operations, the step for displaying the spam message and a normal message stored in a normal message storage area on the normal message display interface may include but be not limited to the followings.

**[0062]** The normal message list in which the spam message list entry is added is displayed on the normal message display interface.

**[0063]** Specifically, since the normal message list also includes a normal message list entry as well as the spam message list entry, and each message list entry includes at least one message, and either a spam message or a normal message includes the receipt time thereof, the message list entries may be sorted according to the receipt time of a latest message included in each message list entry, and the message list entries may be displayed in a sorted order. In addition, because the spam messages are useless for the user, the spam message list entry may be displayed in the last of the normal message list.

**[0064]** To facilitate understanding, above mentioned process will be described with reference to a specific embodiment hereinafter.

**[0065]** As shown in figure 4b, the message list entries displayed on the normal message list include message list entry named as “normal message one”, message list entry named as “normal message two”, message list entry named as “normal message three” and message list entry named as “spam message four”. The message list entry named as “spam message four” may be determined as a spam message list entry according to the name of each message list entry. The receipt time of a latest message included in the message list entry named as “normal message one” is 10:00, the receipt time of a latest message included in the message list entry named as “normal message two” is 9:00, and the receipt time of a latest message included in the message list entry named as “normal message three” is 8:00. When the normal message list entries are displayed in a sorted order according to the receipt time of latest messages included in the message list entries, the message list entry named as “normal message one” is displayed at the top of the normal message list, the message list entry named as “normal message two” is displayed below the message list entry named as “normal

message one”, the message list entry named as “normal message three” is displayed below the message list entry named as “normal message two”. The message list entry named as “spam message four” is displayed at the last of the entire list. The message list entry named as “spam message four” may include all spam messages.

**[0066]** In another embodiment, in order to facilitate a user to distinguish a spam message and a normal message, a spam message identifier corresponding to a spam message list entry may be further displayed. When the spam message identifier is displayed, a spam message identifier corresponding to a spam message list entry may be displayed on the normal message list in which the spam message list entry is added. The spam message identifier corresponding to the spam message list entry is not limited by the embodiment. For example, the spam message list entry may be marked as a spam message, or marked with a symbol, such as, an asterisk or a pound sign.

**[0067]** In block 204, a release instruction of a spam message is obtained, the spam message is deleted from the spam message storage area, and the spam message is taken as a normal message and stored in the normal message storage area.

**[0068]** Block 204 is optional. Since when a spam message is determined according to a spam message number preset by the user, and over time, the message which is originally taken as a spam message may no longer be the spam message for the user, it is necessary to change the message from spam message to normal message. Specifically, when the message is to be changed from spam message to normal message, it is necessary to obtain a release instruction of the spam message first, and delete the message which is changed from spam message to normal message from the spam message storage area according to the release instruction, and store the message in the normal message storage area.

**[0069]** The method for obtaining the release instruction of a spam message is not limited by the embodiment, for example, includes but is not limited to: a release option corresponding to the spam message is provided, when the release option is selected by the user, a terminal obtain a release instruction of the spam message according to the selection operation of the user. Besides, the release operation may be further performed on the preset spam message number, so as to change the preset spam message number to normal message number. The method for changing the preset spam message number to normal message number is also not

limited by the embodiment. When a preset spam message number is changed to a normal message number, a released normal message number is obtained. Messages sent based on the released normal message number before being released are spam messages, when the released normal message number after being released is received, spam messages sent based on the released normal message number before being released are changed to be normal messages, and messages sent based on the released normal message number after being released are normal messages.

**[0070]** In the method provided by embodiments of the present disclosure, after a message to be managed is determined as a spam message, the spam message is stored in a spam message storage area, and the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.

**[0071]** Figure 5 is a schematic diagram illustrating a device for managing a spam message according to multiple embodiments of the present disclosure. As shown in figure 5, the device includes a determination module 501, a first storage module 502 and a display module 503.

**[0072]** The determination module 501 is configured to determine whether a message to be managed is a spam message.

**[0073]** The first storage module 502 is configured to, when it is determined that the message to be managed is a spam message, store the spam message in a spam message storage area.

**[0074]** The display module 503 is configured to display the spam message and a normal message stored in a normal message storage area on a normal message display interface.

**[0075]** Figure 6 is a schematic diagram illustrating a device for managing a spam message according to an embodiment of the present disclosure. As shown in figure 6, based on the device shown in figure 5, the device further includes a receiving module 504, configured to receive a new message sent by a message server, and take the new message as a message to be managed.

[0076] Figure 7 is a schematic diagram illustrating a device for managing a spam message according to another embodiment of the present disclosure. As shown in figure 7, based on the device shown in figure 6, the device further includes a first deletion module 505, configured to delete the message to be managed from the normal message storage area.

[0077] Figure 8 is a schematic diagram illustrating a determination module according to an embodiment of the present disclosure. As shown in figure 8, the determination module 501 includes a match unit 5011, a determination unit 5012.

[0078] The match unit 5011 is configured to match the number for sending the message to be managed with at least one preset spam message number.

[0079] The determination unit 5012 is configured to, when the number for sending the message to be managed matches with a preset spam message number, determine that the message to be managed is a spam message.

[0080] Figure 9 is a schematic diagram illustrating a device for managing a spam message according to yet another embodiment of the present disclosure. As shown in figure 9, based on the device shown in figure 7, the device further includes a setting module 506 and a second storage module 507.

[0081] The setting module 506 is configured to preset at least one spam message number.

[0082] The second storage module 507 is configured to store the at least one spam message number.

[0083] Figure 10 is a schematic diagram illustrating a device for managing a spam message according to yet another embodiment of the present disclosure. As shown in figure 10, based on the device shown in figure 9, the device further includes a preprocessing module 508, configured to combine the spam message and other spam messages stored in the spam message storage area into a spam message list entry, and add the spam message list entry into a normal message list where normal message(s) stored in the normal message storage area are located.

[0084] The display module 503 is configured to display the normal message list in which the spam message list entry is added on the normal message display interface, and display a spam

message identifier corresponding to the spam message list entry on the normal message display interface.

**[0085]** Figure 11 is a schematic diagram illustrating a device for managing a spam message according to yet another embodiment of the present disclosure. As shown in figure 11, based on the device shown in figure 10, the device further includes an obtaining module 509, a second deletion module 510 and a third storage module 511.

**[0086]** The obtaining module 509 is configured to obtain a release instruction of a spam message.

**[0087]** The second deletion module 510 is configured to delete the spam message from the spam message storage area.

**[0088]** The third storage module 511 is configured to, according to the release instruction, take the spam message as a normal message and store the normal message in the normal message storage area.

**[0089]** In the device provided by embodiments of the present disclosure, after a message to be managed is determined as a spam message, the spam message is stored in a spam message storage area, and the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.

**[0090]** Figure 12 is a schematic diagram illustrating a terminal according to multiple embodiments of the present disclosure. The terminal may be used to implement the method for managing a spam message provided by embodiments of the present disclosure. The terminal may achieve the device for managing a spam message provided by embodiments of the present disclosure.

**[0091]** The terminal may include a memory 120 including at least one computer readable storage medium and a processor 180 including at least one processing core. The memory 120 may be configured to store software program and modules. The processor 180 may execute



the software program and modules stored in the memory 120 to implement various spam message managing function applications and data processing. The memory 120 may include a program storage area and a data storage area. The program storage area may store operating system, application program required for at least one function (such as spam message managing program), and so on. The data storage area may store data created according to the usage of the terminal 1200. In addition, the memory 120 may include a high speed random access memory. The memory 120 may further include a nonvolatile memory, such as at least one disk storage, flash memory, or other solid-state storage. Correspondingly, the memory 120 may further include a memory controller, so that the processor 180 may access the memory 120. The terminal 1200 may be a mobile phone, a server, a computer, or the like.

**[0092]** In some application, the terminal may further include a Radio Frequency (RF) circuit 110, a input unit 130, a display unit 140, a sensor 150, an audio circuit 160 and a Wireless Fidelity (WiFi) module 170, and power source 190. Those skilled in the art may understand that structure of the terminal of the present disclosure is not limited to the terminal structure shown in figure 12. A terminal may include more or less components than that shown in figure 12, or include a combination of some components shown in figure 12, or include different components from that shown in figure 12.

**[0093]** The RF circuit 110 may be configured to receive and send a signal during the process of receiving and sending information or during the communication process. Especially, after receiving downlink information from a NodeB, the RF circuit 110 transfers the downlink information to at least one processor 180 for processing. Besides, the RF circuit 110 sends uplink data to the NodeB. In general, the RF circuit 110 includes but is not limited to antenna, at least one amplifier, tuner, at least one oscillator, Subscriber Identity Module (SIM) card, transceiver, coupler, Low Noise Amplifier (LNA), duplexer, and so on. In addition, the RF circuit 110 may further communicate with other devices via wireless communication or network. The wireless communication may adopt any communication standard or protocol, including but not limited to 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), E-mail, Short Messaging Service (SMS), or the like.

**[0094]** The input unit 130 may be configured to receive inputted number or character information, and generate a keyboard, mouse, operating lever, optical or trackball signal input related to user settings and function control. Specifically, the input unit 130 may include a touch sensitive surface 131 and other input devices 132. The touch sensitive surface 131 is also called touch-sensitive display or touchpad, and is capable of collecting a touch operation on or near the touch sensitive surface 131 (such as, a touch operation on or near the touch sensitive surface 131 performed by the user with a finger, stylus or other suitable material or attachment), and driving corresponding connected device according to preset program. Optionally, the touch sensitive surface 131 may include a touch detection device and a touch controller. The touch detection device is configured to detect a touch position of the user, detect a touch signal generated based on the touch operation, and send the touch signal to the touch controller. The touch controller is configured to receive the touch signal from the touch detection device, convert the touch signal to a touch point coordinate, send the touch point coordinate to the processor 180, and receive a command sent by the processor 180 and execute the command. In addition, the touch sensitive surface 131 may be achieved by adopting resistive, capacitive, infrared or surface acoustic wave touch material. Besides the touch sensitive surface 131, the input unit 130 may further include other input devices 132. Specifically, other input devices 132 include but are not limited to one or more of a physical keyboard, a function key (such as a volume key, a switch button, and so on), trackball, mouse, operating lever, and so on.

**[0095]** The display unit 140 may be configured to display information inputted by the user or information provided to the user, and various graphical user interfaces of the terminal 1200. The graphical user interfaces may be constituted by graphic, text, icon, video and any combination thereof. The display unit 140 may include a display panel 141. Optionally, the display panel 141 may be configured with a Liquid Crystal Display (LCD), an Organic Light-Emitting Diode (OLED), or the like. Furthermore, the touch sensitive surface 131 may cover the display panel 141. When detecting a touch operation on or near the touch sensitive surface 131, the touch sensitive surface 131 may transfer a touch signal to the processor 180 for determining a type of the touch event. Subsequently, the processor 180 may provide corresponding visual output on the display panel 141 according the type of the touch event. Although in figure 12, the touch sensitive surface 131 and the display panel 141 are two independent components to respectively achieve the input and output function, in some

embodiments, the touch sensitive surface 131 and the display panel 141 may be integrated to achieve the input and output function.

**[0096]** The terminal 1200 may further include at least one sensor 150, such as a light sensor, a motion sensor, or other sensors. Specifically, the light sensor may be an ambient light sensor or a proximity sensor. The ambient light sensor may adjust the brightness of the display panel 141 according to the shading value of ambient light. The proximity sensor may close the display panel 141 and/or backlight when the terminal 1200 moves to the ear of the user. As a kind of motion sensor, a gravity acceleration sensor may detect the magnitude of this acceleration on every direction (generally includes directions of three axes), and detect direction and magnitude of gravity when being static. The gravity acceleration sensor may be configured to identify an application of mobile phone posture (such as the screen switch between portrait and landscape orientation, relevant game, or calibration of a magnetometer), relevant functions of vibration identification (such as a pedometer, tapping), and so on. The terminal 1200 may further includes a gyroscope, a barometer, a hygrometer, a thermometer, an infrared sensor, and other sensors, no further descriptions will be given hereinafter.

**[0097]** The audio circuit 160, a loudspeaker 161 and a microphone 162 may provide an audio interface between the user and the terminal 1200. The audio circuit 160 may transfer electrical signals converted from received audio data to the loudspeaker 161. The loudspeaker 161 may convert the electrical signals to sound signals, and output the sound signals. The microphone 162 may convert collected sound signals to electrical signals, and the audio circuit 160 may receive the electrical signals, convert the electrical signals into audio data, and output the audio data to the processor 180 or the memory 120 for subsequent processing. When the audio data is outputted to the processor 180, after the audio data is processed by the processor 180, the audio data may be sent to another terminal via the RF circuit 110. The audio circuit 160 may further include a headset jack for providing communication between a peripheral headphone and the terminal 1200.

**[0098]** WiFi is a short-range wireless communication technology. The terminal 1200 may, via the WiFi module 170, help the user to receive and send an E-mail, browse a web, access streaming media, and the like. The terminal 1200, via the WiFi module 170, provides wireless broadband Internet access. Although the WiFi module 170 is shown in figure 12, it

may be understood that, the WiFi module 170 is not a necessary component of the terminal 1200, and may be omitted as required without changing the scope of the present disclosure.

**[0099]** The processor 180 is a control center of the terminal 1200, and is connected with every components of the mobile phone via various interfaces and line, performs various functions of the terminal and processes data by running or executing the software program and/or modules stored in the memory 120 and by calling data stored in the memory 120, so as to perform overall monitoring on the mobile phone. Optionally, the processor 180 may include at least one processing core. Preferably, the processor 180 may integrate an application processor and a modem processor. The application processor mainly processes the operating system, a user interface and an application program. The modem processor mainly processes wireless communication. In may be understood that, above mentioned modem processor may not be integrated in the processor 180.

**[00100]** The terminal 1200 may further include a power source 190 (such as battery) providing power for every component. Preferably, the power source 190 may be logically connected with the processor 180 via a power management system, so that functions including the charging and discharging management and power management may be achieved via the power management system. The power source 190 may include at least one Direct Current (DC) power or Alternating Current (AC) power, a rechargeable battery system, a power failure detection circuit, a power converter or inverter, a power status indicator, and so on.

**[00101]** Although not shown in figure 12, the terminal 1200 may further include a camera, a Bluetooth module, and so on, no further descriptions will be provided hereinafter. In a first embodiment, the display unit of the terminal 1200 is a touchscreen display. The terminal 1200 further includes a memory, and at least one program. The at least one program is stored in the memory, and may be executed by at least one processor. The at least one program includes instructions for performing the following operations.

**[00102]** Determining whether a message to be managed is a spam message.

**[00103]** When determining that the message to be managed is a spam message, storing the spam message in a spam message storage area.

**[00104]** Displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface.

**[00105]** Based on above mentioned first embodiment, in a second embodiment, the memory in the terminal may further include instructions for: when the message to be managed is a new message, before determining whether the message to be managed is a spam message, receiving a new message sent by a message server, and taking the new message as a message to be managed.

**[00106]** Based on above mentioned first embodiment or second embodiment, in a third embodiment, the memory in the terminal may further include instructions for: when the message to be managed is a normal message stored in the normal message storage area, after storing the spam message in the spam message storage area, deleting the message to be managed from the normal message storage area.

**[00107]** Based on any one of the first to the third embodiments, in a fourth embodiment, the instructions in the memory is further for: matching the number for sending the message to be managed with at least one preset spam message number, when the number for sending the message to be managed matches with a preset spam message number, determining that the message to be managed is a spam message.

**[00108]** Based on any one of the first to the fourth embodiments, in a fifth embodiment, the memory in the terminal may further include instructions for: before determining whether the message to be managed is a spam message, presetting and storing at least one spam message number.

**[00109]** Based on any one of the first to the fifth embodiments, in a sixth embodiment, the instructions in the memory is further for: combining the spam message and other spam messages stored in the spam message storage area into a spam message list entry, and adding the spam message list entry into a normal message list where normal message(s) stored in the normal message storage area are located; displaying the normal message list in which the spam message list entry is added on the normal message display interface, and displaying a spam message identifier corresponding to the spam message list entry on the normal message display interface.

**[00110]** Based on any one of the first to the sixth embodiments, in a seventh embodiment, the memory in the terminal may further include instructions for: after displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface, obtaining a release instruction of a spam message, deleting the spam message from the spam message storage area, according to the release instruction, taking the spam message as a normal message and storing the normal message in the normal message storage area.

**[00111]** In the terminal provided by embodiments of the present disclosure, after a message to be managed is determined as a spam message, the spam message is stored in a spam message storage area, and the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.

**[00112]** Embodiments of the present disclosure also provide a computer readable storage medium, the computer readable storage medium may be computer readable storage medium included in the memory mentioned above, or may be separate and not configured in the terminal. The computer readable storage medium stores at least one program, and the at least one program may be executed by at least one processor to implement a method for managing a spam message. In a first embodiment, the method includes the following operations.

**[00113]** Determining whether a message to be managed is a spam message.

**[00114]** When determining that the message to be managed is a spam message, storing the spam message in a spam message storage area.

**[00115]** Displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface.

**[00116]** Based on above mentioned first embodiment, in a second embodiment, when the message to be managed is a new message, before determining whether the message to be

managed is a spam message, the method further includes: receiving a new message sent by a message server, and taking the new message as a message to be managed.

**[00117]** Based on above mentioned first embodiment or second embodiment, in a third embodiment, when the message to be managed is a normal message stored in the normal message storage area, after storing the spam message in the spam message storage area, the method further includes: deleting the message to be managed from the normal message storage area.

**[00118]** Based on any one of the first to the third embodiments, in a fourth embodiment, determining whether a message to be managed is a spam message includes: matching the number for sending the message to be managed with at least one preset spam message number, when the number for sending the message to be managed matches with a preset spam message number, determining that the message to be managed is a spam message.

**[00119]** Based on any one of the first to the fourth embodiments, in a fifth embodiment, before determining whether the message to be managed is a spam message, the method further includes: presetting and storing at least one spam message number.

**[00120]** Based on any one of the first to the fifth embodiments, in a sixth embodiment, before displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface, the method further includes: combining the spam message and other spam messages stored in the spam message storage area into a spam message list entry, and adding the spam message list entry into a normal message list where normal message(s) stored in the normal message storage area are located; displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface includes: displaying the normal message list in which the spam message list entry is added on the normal message display interface, and displaying a spam message identifier corresponding to the spam message list entry on the normal message display interface to identify the spam message list entry. The spam message identifier may be a symbol to mark the spam message list entry distinguished from the normal message.

**[00121]** Based on any one of the first to the sixth embodiments, in a seventh embodiment, after displaying the spam message and a normal message stored in a normal message storage

area on a normal message display interface, the method further includes: obtaining a release instruction of a spam message, deleting the spam message from the spam message storage area, according to the release instruction, taking the spam message as a normal message and storing the normal message in the normal message storage area.

**[00122]** In the computer readable storage medium provided by embodiments of the present disclosure, after a message to be managed is determined as a spam message, the spam message is stored in a spam message storage area, and the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.

**[00123]** Embodiments of the present disclosure also provide a graphic user interface. The graphic user interface is applied to the terminal for managing a spam message. The terminal includes a touchscreen display, a memory and at least one processor for executing at least one program. The graphic user interface is configured to determine whether a message to be managed is a spam message; when determining that the message to be managed is a spam message, store the spam message in a spam message storage area; and display the spam message and a normal message stored in a normal message storage area on a normal message display interface.

**[00124]** In the graphic user interface provided by embodiments of the present disclosure, after a message to be managed is determined as a spam message, the spam message is stored in a spam message storage area, and the spam message and a normal message stored in a normal message storage area are displayed on a normal message display interface. Since it is not necessary to display the spam message on the deep interface, and the spam message may be displayed on the normal message display interface, the spam message management may be achieved on the normal message display interface, thus the management is convenient and efficient.

**[00125]** It should be noted that, in above embodiments, the modules and units included in the device for managing a spam message are divided according to function logic, and not



limited to above division, as long as the corresponding functions may be achieved. The modules and units in the device may be distributed in the device of the embodiments according to embodiment descriptions, or may change correspondingly to locate in one or more devices different from the embodiments. The modules and units in above embodiments may be merged into one module, or may be divided into multiple sub-modules furthermore. In addition, names of the units are only used to easily distinguish from each other, and not intended to limit the scope of the present disclosure.

**[00126]** Above mentioned embodiments of device for managing a spam message and embodiments of method for managing a spam message belong to the same idea, the specific implementation may refer to the embodiments of the method, and no further descriptions will be provided hereinafter.

**[00127]** The above embodiments may be implemented by hardware, software, firmware, or a combination thereof. For example the various methods, processes and functional modules described herein may be implemented by a processor (the term processor is to be interpreted broadly to include a CPU, processing unit/module, ASIC, logic module, or programmable gate array, etc.). The processes, methods and functional modules may all be performed by a single processor or split between several processors. The processes, methods and functional modules are implemented as machine readable instructions executable by one or more processors, hardware logic circuitry of the one or more processors or a combination thereof. The modules, if mentioned in the aforesaid embodiments, may be combined into one module or further divided into a plurality of sub-modules. Further, the embodiments disclosed herein may be implemented in the form of a software product. The computer software product is stored in a non-transitory storage medium and comprises a plurality of instructions for making an electronic device implement the method recited in the embodiments of the present disclosure. The non-transitory storage medium includes a hard disk, a floppy disk, a magnetic disk, a compact disk (e.g., CD-ROM, CD-R, CD-RW, DVD-ROM, DVD-RAM, DVD-RW and DVD+RW), a tape, a Flash card, ROM, and so on. Optionally, it is possible to download the program codes from a server computer via a communication network.

**[00128]** The foregoing description, for purpose of explanation, has been described with reference to specific embodiments. However, the illustrative discussions above are not

intended to be exhaustive or to limit the present disclosure to the precise forms disclosed. Many modifications and variations are possible in view of the above teachings. The embodiments were chosen and described in order to best explain the principles of the present disclosure and its practical applications, to thereby enable others skilled in the art to best utilize the present disclosure and various embodiments with various modifications as are suited to the particular use contemplated.

## CLAIMS

**WHAT IS CLAIMED IS:**

1. A processor-implemented method for managing a spam message, comprising:  
determining whether a message to be managed is a spam message;  
when determining that the message to be managed is a spam message, storing the  
spam message in a spam message storage area; and  
combining the spam message and other spam messages stored in the spam message  
storage area into a spam message list entry;  
adding the spam message list entry into a normal message list where a normal  
message stored in the normal message storage area are located;  
displaying the normal message list in which the spam message list entry is added on a  
normal message display interface, and displaying a spam message identifier on  
the normal message display interface to identify the spam message list entry.
2. The method according to claim 1, wherein the message to be managed is a new  
message;  
wherein, before determining whether the message to be managed is a spam message,  
the method comprises:  
receiving a new message sent by a message server, and taking the new message as a  
message to be managed.
3. The method according to claim 1, wherein the message to be managed is a normal  
message stored in the normal message storage area;  
wherein, after storing the spam message in the spam message storage area, the method  
comprises:  
deleting the message to be managed from the normal message storage area.
4. The method according to claim 1, wherein, determining whether the message to be  
managed is a spam message, comprises:  
matching a number for sending the message to be managed with at least one preset  
spam message number; and

when the number for sending the message to be managed matches with a preset spam message number, determining that the message to be managed is a spam message.

5. The method according to claim 1 or 4, wherein, before determining whether the message to be managed is a spam message, the method comprises:

presetting and storing at least one spam message number.

6. The method according to claim 1, wherein the spam message identifier is a symbol to mark the spam message list entry distinguished from the normal message.

7. The method according to claim 1, wherein, after displaying the spam message and a normal message stored in a normal message storage area on a normal message display interface, the method comprises:

obtaining a release instruction of a spam message, deleting the spam message from the spam message storage area, and according to the release instruction, taking the spam message as a normal message and storing the normal message in the normal message storage area.

8. A processor-implemented device for managing a spam message, comprising:

a determination module, configured to determine whether a message to be managed is a spam message;

a first storage module, configured to, when it is determined that the message to be managed is a spam message, store the spam message in a spam message storage area;

a preprocessing module, configured to, combine the spam message and other spam messages stored in the spam message storage area into a spam message list entry, and add the spam message list entry into a normal message list where normal message(s) stored in the normal message storage area are located; and

a display module, configured to display the normal message list in which the spam message list entry is added on a normal message display interface, and display a spam message identifier on the normal message display interface to identify the spam message list entry.

9. The device according to claim 8, wherein the message to be managed is a new message; wherein the device further comprises:

a receiving module, configured to receive a new message sent by a message server, and take the new message as a message to be managed.

10. The device according to claim 8, wherein the message to be managed is a normal message stored in the normal message storage area; wherein the device further comprises:

a first deletion module, configured to delete the message to be managed from the normal message storage area.

11. The device according to claim 8, wherein the determination module comprises:

a match unit, configured to match a number for sending the message to be managed with at least one preset spam message number; and

a determination unit, configured to, when the number for sending the message to be managed matches with a preset spam message number, determine that the message to be managed is a spam message.

12. The device according to claim 8 or 11, further comprising:

a setting module, configured to preset at least one spam message number; and

a second storage module, configured to store the at least one spam message number.

13. The device according to claim 8, further comprising:

an obtaining module, configured to obtain a release instruction of a spam message;

a second deletion module, configured to delete the spam message from the spam message storage area; and

a third storage module, configured to, according to the release instruction, take the spam message as a normal message and store the normal message in the normal message storage area.

14. The device according to claim 8, further comprising: a memory and a processor in communication with the memory;

the memory stores the modules of the device which may be executed by the processor to implement the operations of the modules of the device.

15. A non-transitory computer readable storage medium, storing a computer program, which, when executed by a processor, will cause the processor to perform the method according to claim 1.

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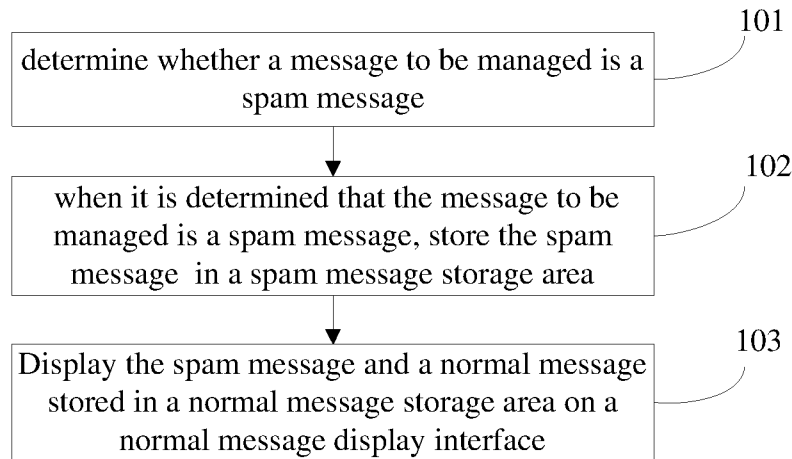


Figure 1

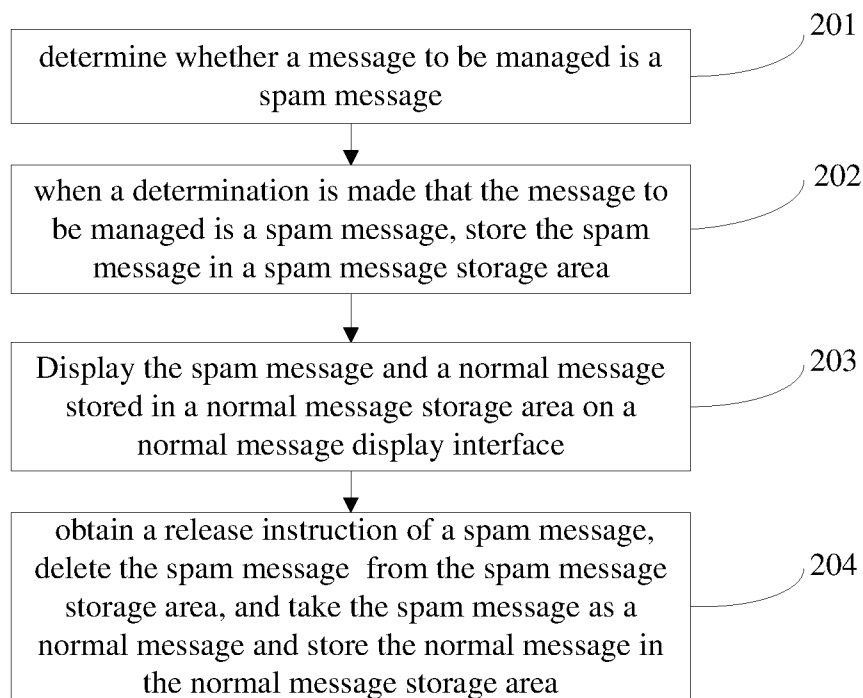


Figure 2

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Figure 3a



Figure 3b



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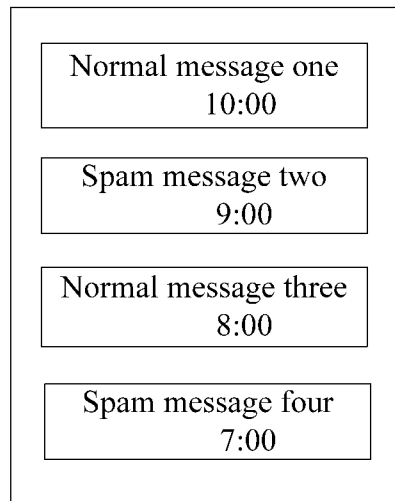


Figure 4a

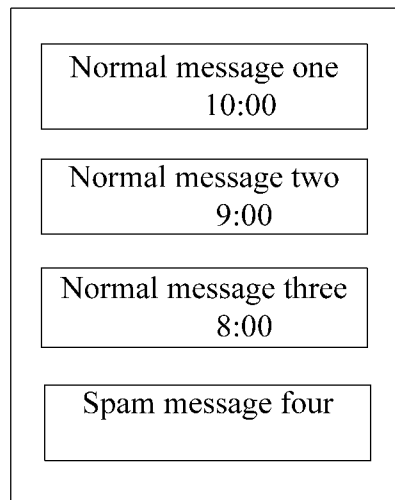


Figure 4b

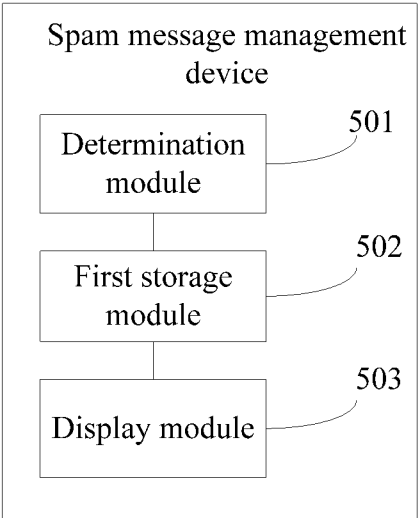


Figure 5

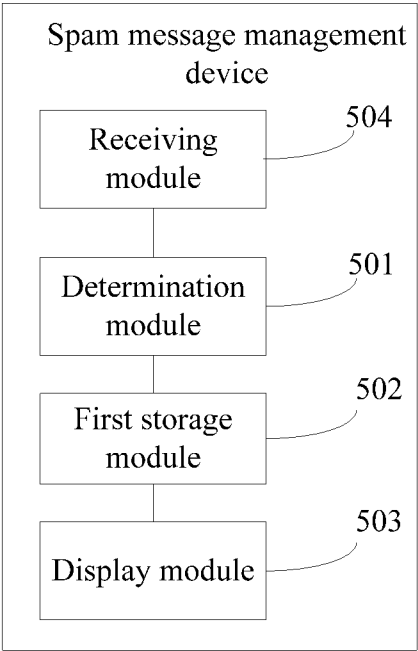


Figure 6

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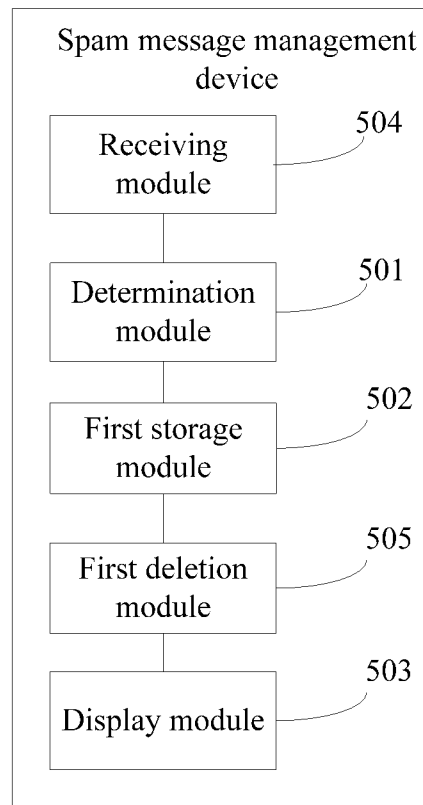


Figure 7

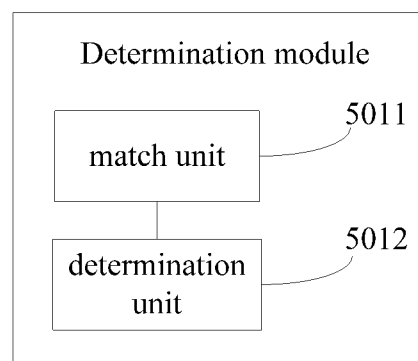


Figure 8

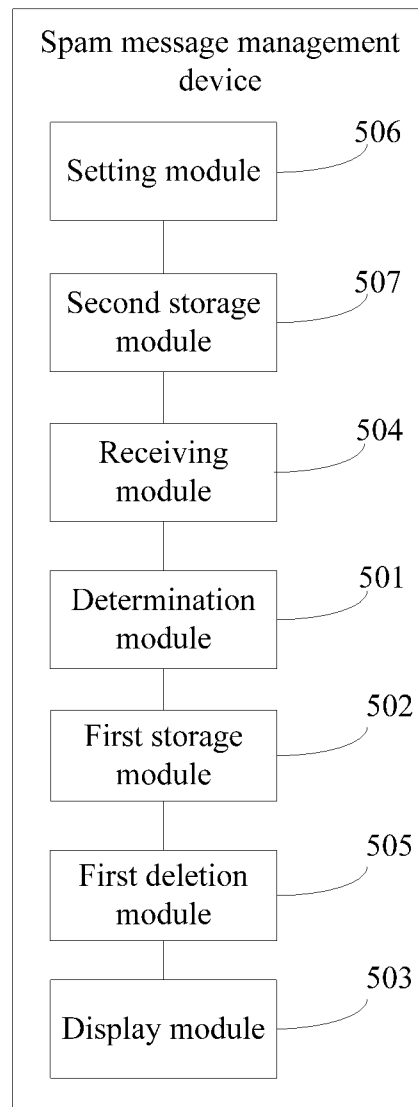


Figure 9

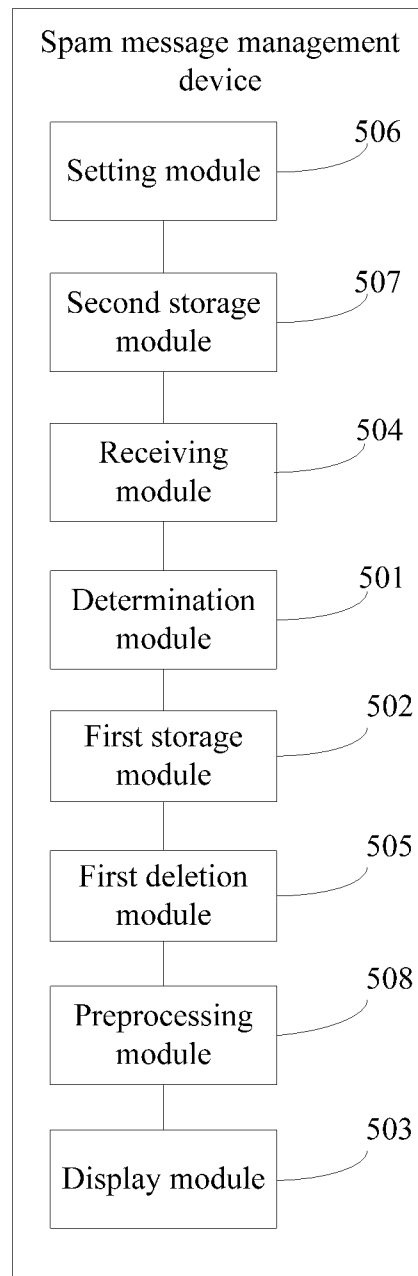


Figure 10

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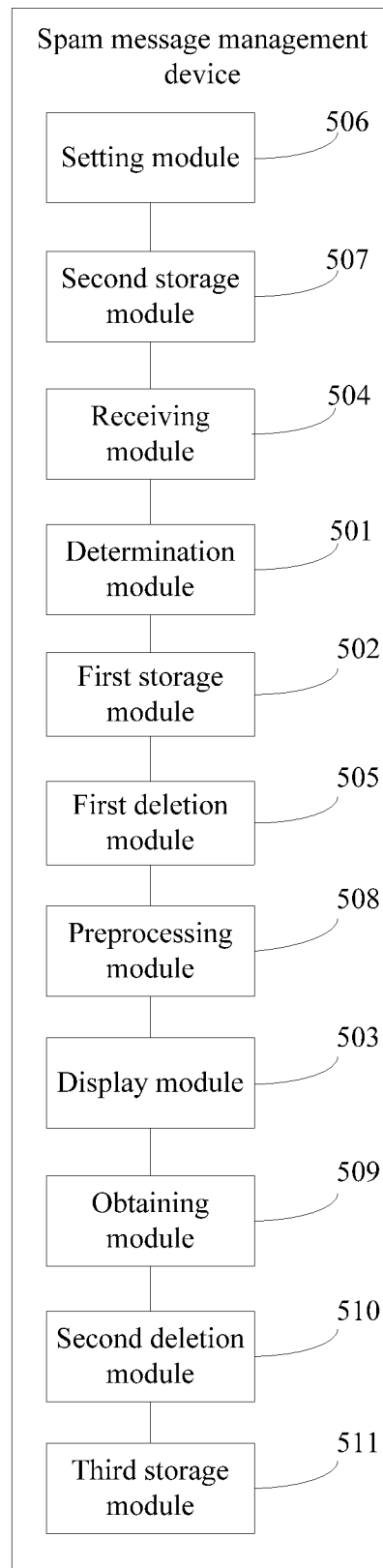


Figure 11

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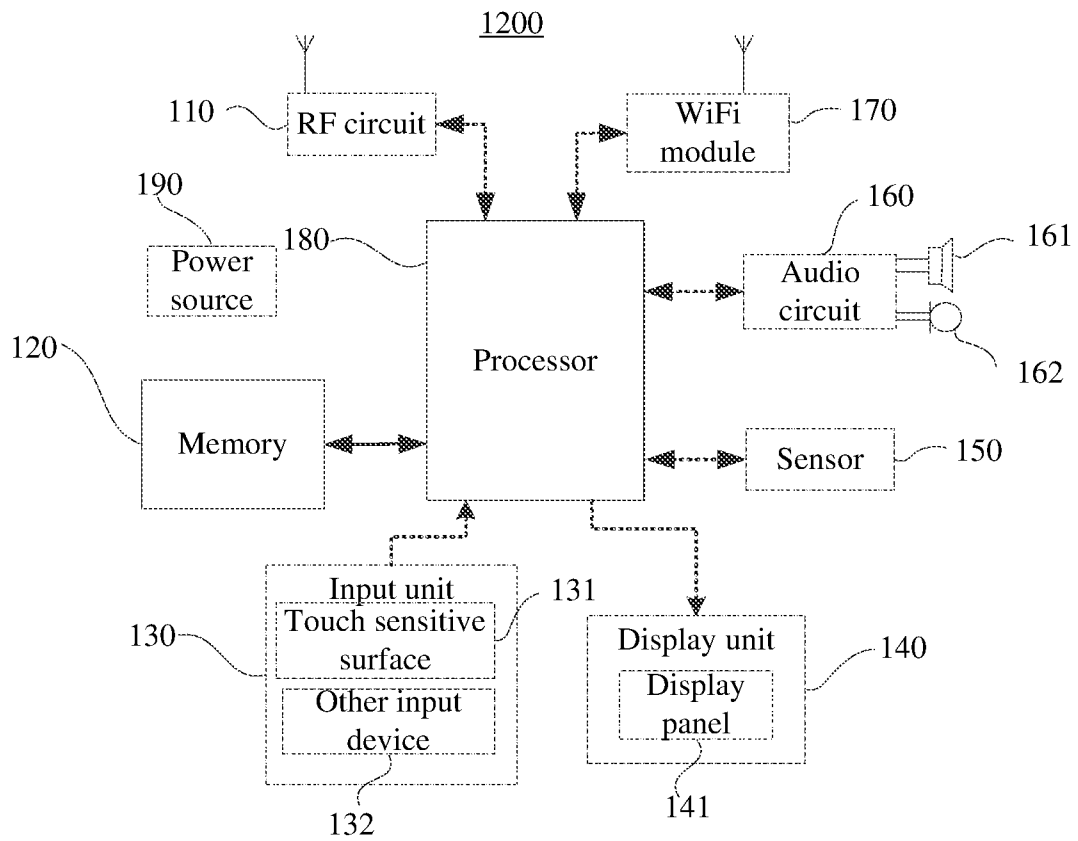


Figure 12

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2014/090556

**A. CLASSIFICATION OF SUBJECT MATTER**

H04W 4/14(2009.01)i; H04M 1/725(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; H04Q; G06F

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)

CNABS, CNTXT, CNKI, VEN: spam, junk, advertisement, message, SMS, combin+, unite, list, entry, manag+, display+, label, identif+

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                | Relevant to claim No. |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| A         | CN 102624647 A (BEIJING BAIDU NETCOM SCI & TEC) 01 August 2012 (2012-08-01)<br>description, paragraphs [0024]-[0044] and figure 4 | 1-15                  |
| A         | US 2005288042 A1 (INVENTEC APPLIANCES CORP) 29 December 2005 (2005-12-29)<br>the whole document                                   | 1-15                  |
| A         | CN 102456022 A (TENCENT TECH SHENZHEN CO LTD) 16 May 2012 (2012-05-16)<br>the whole document                                      | 1-15                  |



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

“E” earlier application or patent but published on or after the international filing date

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“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“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

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

04 February 2015

Date of mailing of the international search report

15 February 2015

Name and mailing address of the ISA/CN

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**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

International application No.

**PCT/CN2014/090556**

| Patent document<br>cited in search report |            |    | Publication date<br>(day/month/year) | Patent family member(s) |           |   | Publication date<br>(day/month/year) |
|-------------------------------------------|------------|----|--------------------------------------|-------------------------|-----------|---|--------------------------------------|
| CN                                        | 102624647  | A  | 01 August 2012                       | None                    |           |   |                                      |
| US                                        | 2005288042 | A1 | 29 December 2005                     | CN                      | 1622661   | A | 01 June 2005                         |
|                                           |            |    |                                      | CN                      | 1282384   | C | 25 October 2006                      |
| CN                                        | 102456022  | A  | 16 May 2012                          | CN                      | 102456022 | B | 10 December 2014                     |