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SONG

(54) **DEVICE AND METHOD FOR TRANSFERRING CALL**

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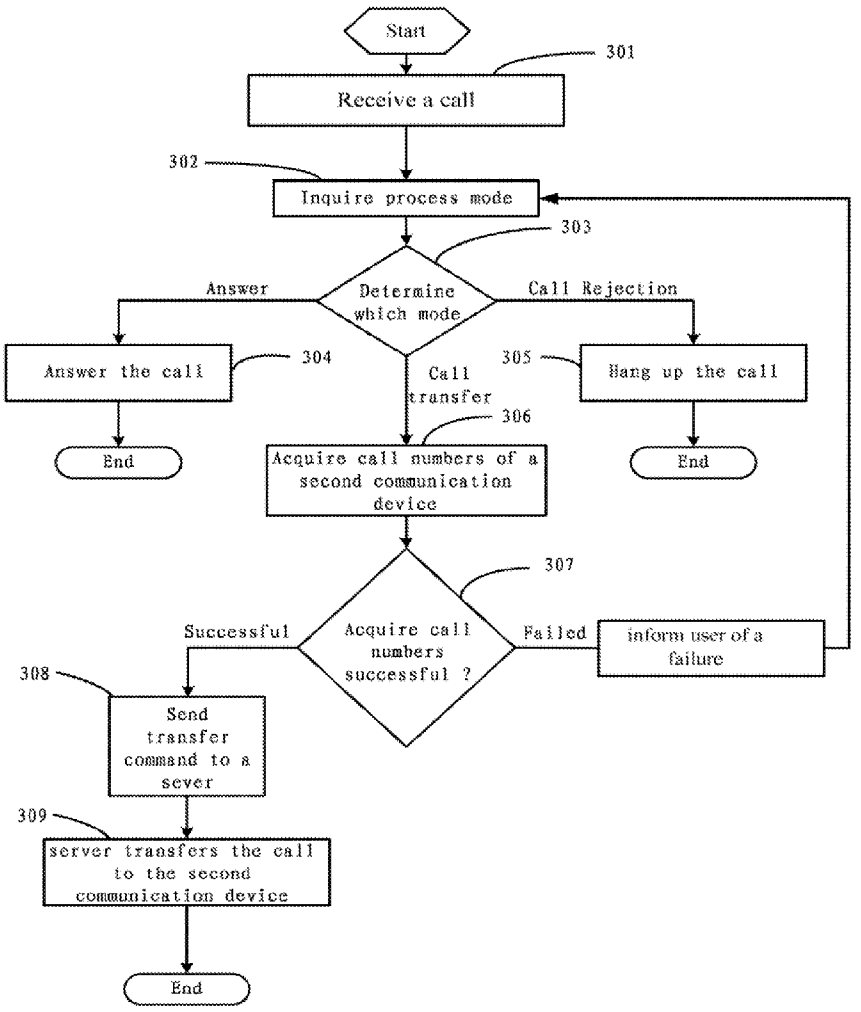
(57) **ABSTRACT**

A method for transferring an incoming call from a first communication device to a second communication device inquires as to a preselected process mode. The process mode can include a call answering mode, a call rejection mode, and a call transferring mode. Under the call transferring mode, the first communication device acquires contact numbers of the second communication device through a short distance communication unit. Then the first communication device sends the acquired contact numbers or a transfer command included the acquired information to a server and the server transfers the incoming call from the first communication device to the second communication device.



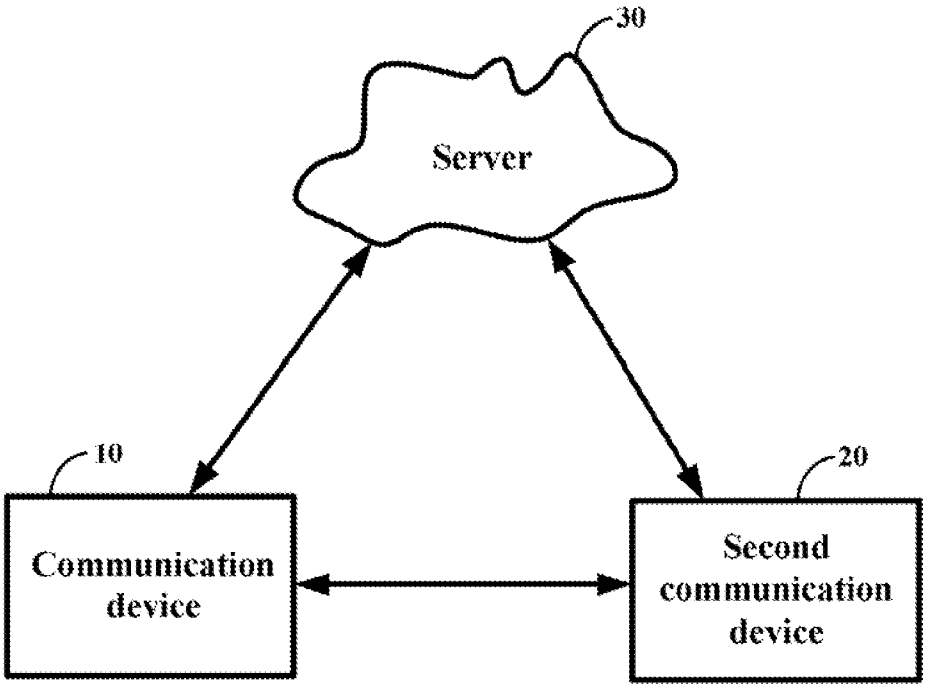

30
Server
10
20
Communication device
Second communication device

FIG. 1

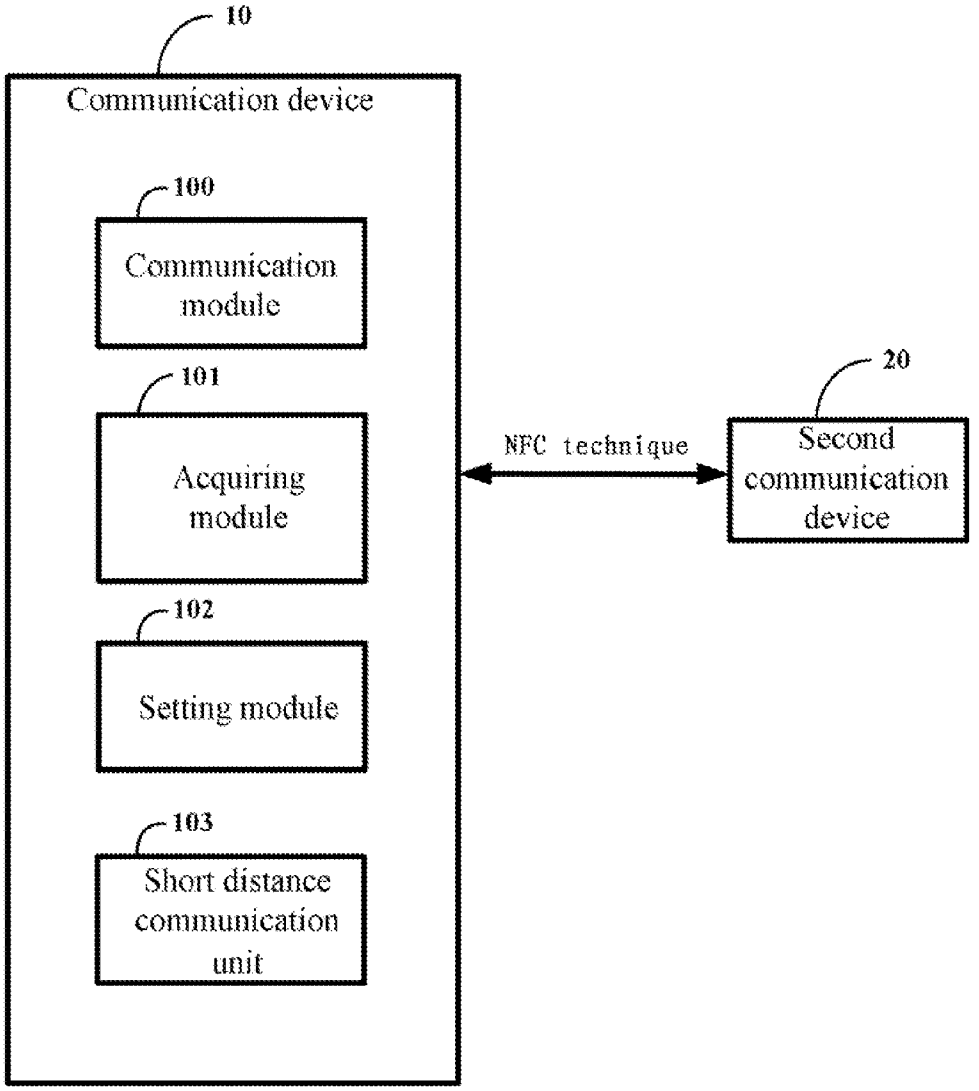

10
Communication device
100
Communication module
101
Acquiring module
102
Setting module
103
Short distance communication unit
NFC technique
20
Second communication device

FIG. 2

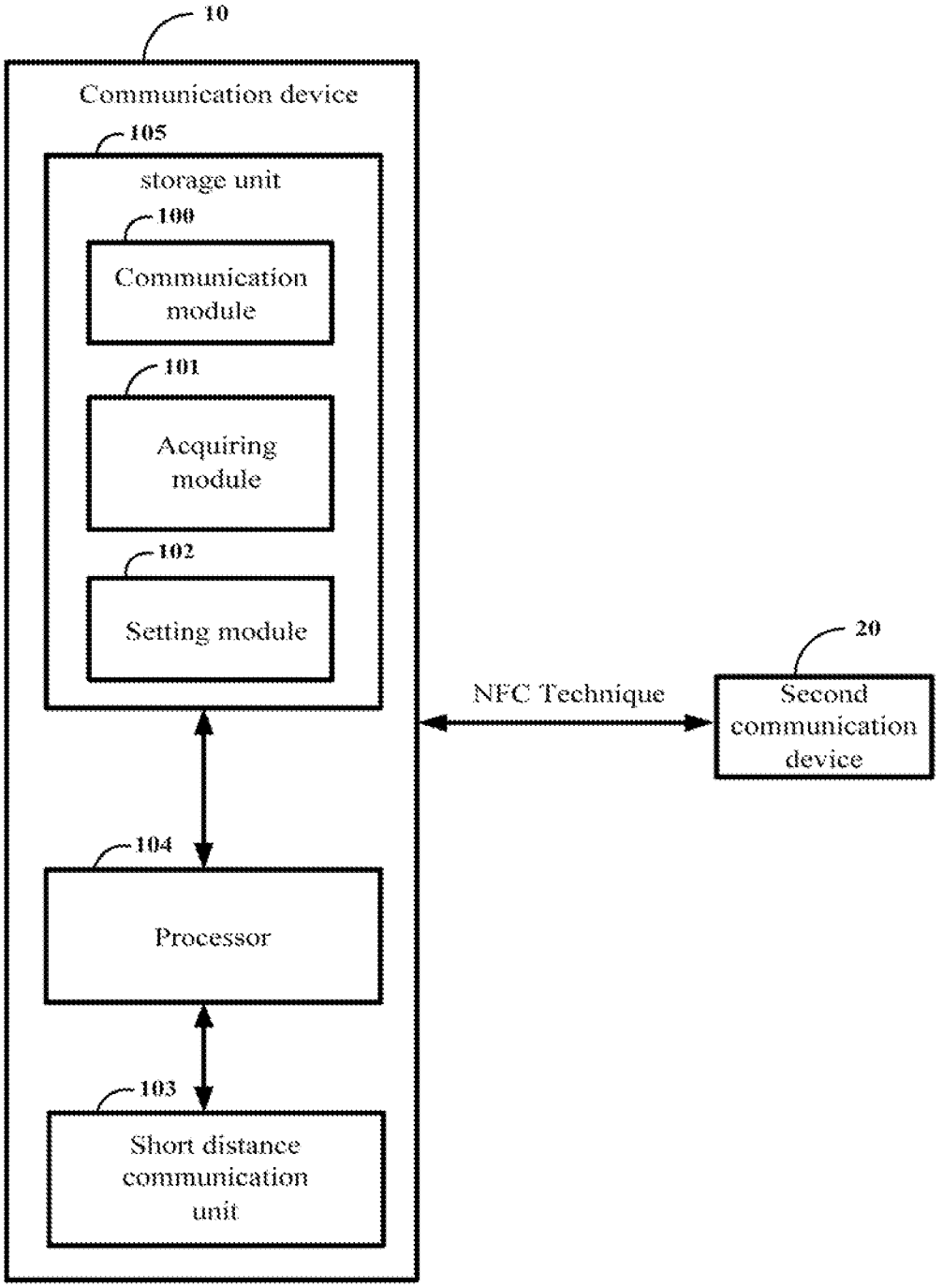

10
Communication device
105
storage unit
100
Communication module
101
Acquiring module
102
Setting module
104
Processor
103
Short distance communication unit
NFC Technique
20
Second communication device

FIG. 3

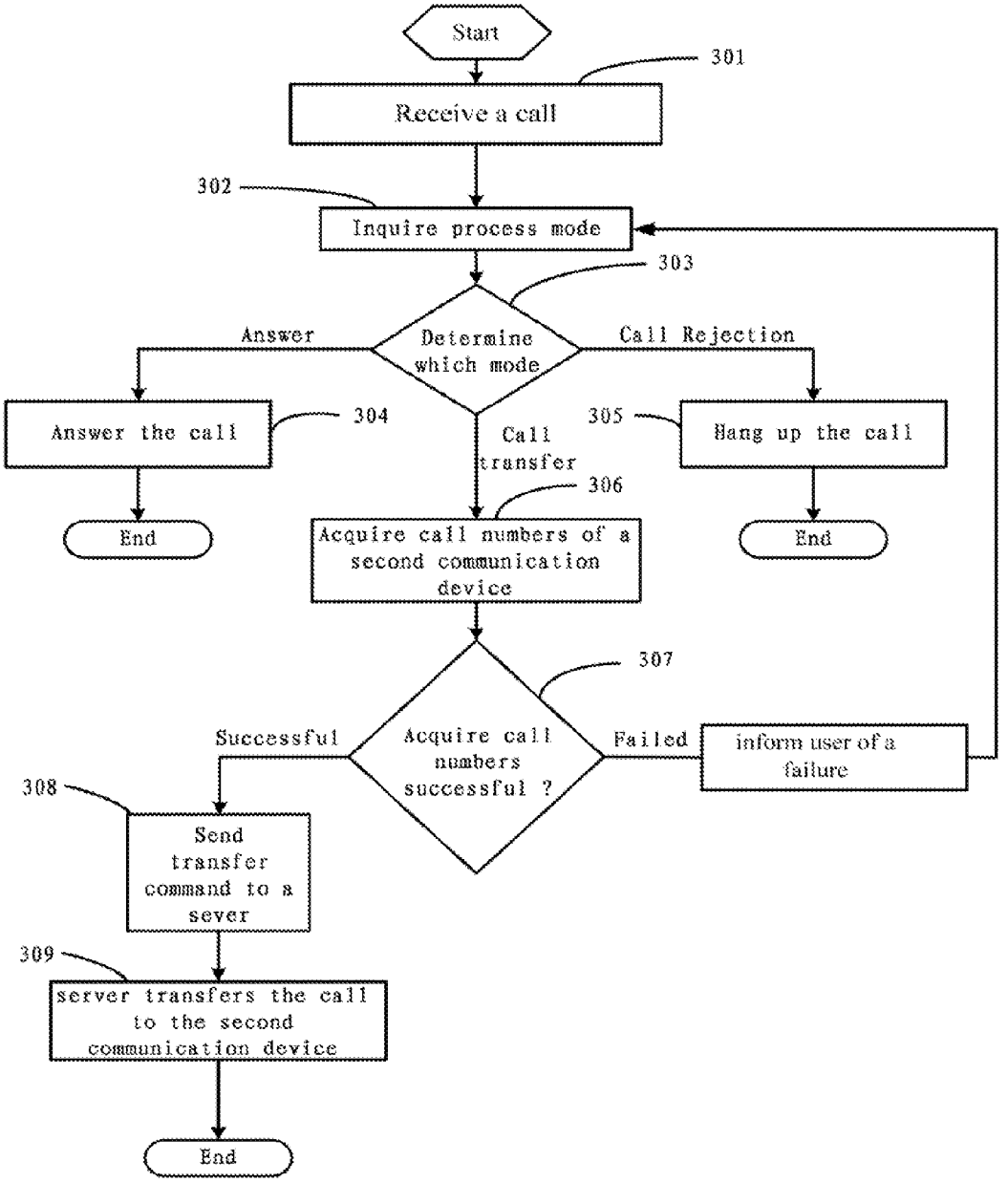

Start
301
Receive a call
302
Inquire process mode
303
Determine which mode
Answer
Call Rejection
Call transfer
Answer the call
304
End
305
Hang up the call
End
306
Acquire call numbers of a second communication device
307
Acquire call numbers successful ?
Successful
Failed
inform user of a failure
308
Send transfer command to a sever
309
server transfers the call to the second communication device
End

FIG. 4

DEVICE AND METHOD FOR TRANSFERRING CALL

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Chinese Patent Application No. 201410545326.2 filed on Oct. 15, 2014, the contents of which are incorporated by reference herein.

FIELD

[0002] The subject matter herein generally relates to communications technology.

BACKGROUND

[0003] When a user cannot pick up a phone call, a call transferring is usually used. However, before using the call transferring function, users have to preset a transferring numbers or have to set a transferring command in a complicated menu. Users have to know the transferring numbers before calls are incoming.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Implementations of the present technology will now be described, by way of example only, with reference to the attached figures, wherein:

[0005] FIG. **1** illustrates a block diagram of elements for an embodiment for transferring a call.

[0006] FIG. **2** illustrates a block diagram of a first embodiment of a communication device and a second communication device included in the elements of FIG. **1**.

[0007] FIG. **3** illustrates a block diagram of a second embodiment of a communication device and a second communication device included in the elements of FIG. **1**.

[0008] FIG. **4** illustrates a flowchart of an embodiment of a method for transferring a call.

DETAILED DESCRIPTION

[0009] It will be appreciated that for simplicity and clarity of illustration, where appropriate, reference numerals have been repeated among the different figures to indicate corresponding or analogous elements. In addition, numerous specific details are set forth in order to provide a thorough understanding of the embodiments described herein. However, it will be understood by those of ordinary skill in the art that the embodiments described herein can be practiced without these specific details. In other instances, methods, procedures, and components have not been described in detail so as not to obscure the related relevant feature being described. Also, the description is not to be considered as limiting the scope of the embodiments described herein. The drawings are not necessarily to scale and the proportions of certain parts may be exaggerated to better illustrate details and features of the present disclosure.

[0010] References to "an" or "one" embodiment in this disclosure are not necessarily to the same embodiment, and such references mean "at least one."

[0011] In general, the word "module" as used hereinafter, refers to logic embodied in computing or firmware, or to a collection of software instructions, written in a programming language, such as, Java, C, or assembly. One or more software instructions in the modules may be embedded in firmware, such as in an erasable programmable read only memory (EPROM). The modules described herein may be implemented as either software and/or computing modules and may be stored in any type of non-transitory computer-readable medium or other storage device. Some non-limiting examples of non-transitory computer-readable media include CDs, DVDs, BLU-RAY, flash memory, and hard disk drives. The term "comprising", when utilized, means "including, but not necessarily limited to"; it specifically indicates open-ended inclusion or membership in a so-described combination, group, series and the like.

[0012] FIG. **1** illustrates a block diagram of elements for an embodiment for transferring a call. In the embodiment, when a communication device **10** needs to transfer a call, the communication device **10** communicates with a second communication device **20** to acquire information including transferring numbers. Then the communication device **10** sends the acquired information to a server **30**. Thus the server **30** can transfer the call to the second communication device **20**. The communication device **10** and the second communication device **20** can be mobile phones, telephones, or other communication devices. In at least one embodiment, the communication device **10** is a mobile phone. The second communication device **20** is a telephone.

[0013] FIG. **2** illustrates a first embodiment of a communication device **10** and a second communication device **20** for transferring a call. The communication device **10** communicates with the second communication device **20** using a Near Field Communication (NFC) technology or Radio Frequency Identification (RFID) technology.

[0014] In at least one embodiment, the communication module **100** is configured to receive an incoming call and inquire a process mode input by a user. The process mode includes a call answering mode, a call rejection mode, and a call transferring mode. The communication device **10** includes a communication module **100**, an acquiring module **101**, a setting module **102**, and a short distance communication unit **103**.

[0015] The acquiring module **101** is configured to acquire information of the second communication device **20** through the short distance communication unit **103**. In at least one embodiment, the acquiring information includes transferring numbers or contact numbers of the second communication device **20**.

[0016] The setting module **102** is configured to send the acquired information to the server **30** according to the selected process mode. Thus the server **30** can transfer the incoming call to the second communication device **20**.

[0017] In at least one embodiment, the short distance communication unit **103** is able to communicate with other devices through a Near Field Communication (NFC) technology. In other embodiments, the short distance communication unit **103** is able to communicate with other devices through other communication technologies, such as a Radio Frequency Identification (RFID) technology.

[0018] When the communication device **10** receives an incoming call, the communication device **10** acquires the contact numbers of the second communication device **20** through the acquiring module **101**. Then the communication device **10** sends the acquired contact numbers, or a command including the acquired contact numbers, to the server **30**. When the server **30** receives the acquired contact numbers or the command, the server **30** transfers the incoming call to the second communication device **20**. The second communication device **20** can thus pick up the incoming call. In at least

one embodiment, the contact numbers can be the number of a Subscriber Identity Module (SIM) card or the number of a landline telephone.

[0019] In at least one embodiment, the contact numbers of the communication device **20** are stored in an NFC tap. Thus the acquiring module **101** can easily acquire the contact numbers through the short distance communication unit **103**. In other embodiments, the contact numbers can be stored in other NFC devices or in other RFID devices.

[0020] FIG. **3** illustrates a block diagram of a second embodiment of a communication device **10** and a second communication device **20** for transferring a call. In the second embodiment, the communication device **10** includes the communication module **100**, the acquiring module **101**, the setting module **102**, and the short distance communication unit **103** mentioned in the first embodiment. The difference between the first embodiment and the second embodiment is that the communication device **10** in the second embodiment further includes a processor **104** and storage unit **105**. The function modules (the communication module **100**, the acquiring module **101**, and the setting module **102**) can include computerized code in the form of one or more programs that are stored in the storage unit **105**, and executed by the processor **104** to provide functions of the function modules. The storage unit **105** can be a dedicated memory, such as an EPROM, or a flash memory.

[0021] FIG. **4** illustrates a flowchart of an embodiment of a method for transferring a call.

[0022] Referring to FIG. **4**, a flowchart is presented in accordance with an example embodiment of a method for transferring a call. The method is provided by way of example, as there are a variety of ways to carry out the method. The method described below can be carried out using the configurations illustrated in FIGS. **1-3**, for example, and various elements of these figures are referenced in explaining the method. Each block shown in FIG. **4** represents one or more processes, methods, or subroutines, carried out in the exemplary method. Additionally, the illustrated order of blocks is by example only and the order of the blocks can change. The method can begin at block **301**.

[0023] At block **301**, the communication module **100** warns a user about an incoming call by screen display or ringing or vibration. Thus, the user will be aware of the call.

[0024] At block **302**, the communication module **100** inquires a process mode preselected by the user. The process mode can include a call answering mode, a call rejection mode, and a call transferring mode. When the user has selected a particular process mode, the setting module **102** in the communication device **10** continues to process block **303**.

[0025] At block **303**, the setting module **102** determines which process mode the user has selected. If the user has selected the call answering mode, the communication module **100** continues to apply block **304**. If the user has selected the call rejection mode, the communication module **100** continues to apply block **305**. If the user has selected the call transferring mode, the communication module **100** continues to apply block **306**.

[0026] At block **304**, the communication module **100** picks up the call and the user answers the call using the communication device **10**.

[0027] At block **305**, the communication module **100** hangs up the call.

[0028] At block **306**, the acquiring module **101** in the communication device **10** acquires information of the second communication device **20** through the short distance communication unit **103**. The acquiring module **101** then continues to block **307** of the process.

[0029] At block **307**, the acquiring module **101** determines whether the information acquiring is successful. If the information acquiring is successful, the acquiring module **101** sends the information to the setting module **102**. The setting module **102** processes block **308**. If the information acquiring is failed, the acquiring module **101** informs the user of a failure by screen display or ringing or vibration. The user may then select another process mode.

[0030] At block **308** and block **309**, the setting module **102** sends a transfer command including the acquired information to the server **30**. When the server **30** receives the transfer command, the server **30** transfers the call to the second communication device **20**. The user may answer the call using the second communication device **20**.

[0031] In the embodiments, when users need to transfer an incoming call, the need to know or find the contact numbers of other communication devices does not apply and a transfer of the incoming call becomes automatic.

[0032] The embodiments shown and described above are only examples. Many details are often found in the art such as the other features of a device and method for transferring a call. Therefore, many such details are neither shown nor described. Even though numerous characteristics and advantages of the present technology have been set forth in the foregoing description, together with details of the structure and function of the present disclosure, the disclosure is illustrative only, and changes may be made in the detail, especially in matters of shape, size, and arrangement of the parts within the principles of the present disclosure, up to and including the full extent established by the broad general meaning of the terms used in the claims. It will therefore be appreciated that the embodiments described above may be modified within the scope of the claims.

What is claimed is:

1. A first communication device for transferring an incoming call to a second communication device, the first communication device comprising:

at least one processor;

a storage unit; and

one or more programs that are stored in the storage unit and executed by the at least one processor, the one or more programs comprising instructions for:

receiving the incoming call;

inquiring a process mode, wherein the process mode comprises a call answering mode, a call rejection mode and a call transferring mode;

acquiring contact numbers of the second communication device through a short distance communication unit when the call transferring mode is chosen; and

sending a transferring command with the contact numbers to a server, so that the server transfers the incoming call to the second communication device.

2. The first communication device as claimed in claim **1**, wherein the short distance communication unit is a unit using a technology of Near Field Communication (NFC) or Radio Frequency Identification (RFID).

3. The first communication device as claimed in claim 1, wherein the one or more programs further comprise instructions for:

picking up the incoming call when the call answering mode is chosen; and

hanging up the incoming call when the call rejection mode is chosen.

4. The first communication device as claimed in claim 1, wherein the one or more programs further comprise instructions for informing a user of a failed contact numbers acquiring by ways of displaying in a screen or ringing or vibration when acquiring contact numbers is failed.

5. The first communication device as claimed in claim 1, wherein the first communication device is a mobile phone, and the second communication device is a telephone.

6. A method for transferring an incoming call from a first communication device to a second communication device, the method comprising:

receiving the incoming call;

inquiring a process mode, wherein the process mode comprises a call answering mode, a call rejection mode and a call transferring mode;

acquiring contact numbers of the second communication device through a short distance communication unit when the call transferring mode is chosen; and

sending a transferring command with the contact numbers to a server, so that the server transfers the incoming call to the second communication device.

7. The method as claimed in claim 6, wherein the short distance communication unit is a unit using a technology of Near Field Communication (NFC) or Radio Frequency Identification (RFID).

8. The method as claimed in claim 6, wherein the method further comprises:

picking up the call when the call answering mode is chosen; and

hanging up the call when the call rejection mode is chosen.

9. The method as claimed in claim 6, wherein the method further comprises:

informing a user of a failed contact numbers acquiring by ways of displaying in a screen or ringing or vibration when acquiring contact numbers is failed.

10. The method as claimed in claim 6, wherein the first communication device is a mobile phone, and the second communication device is a telephone.

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