COMMUNICATION ESTABLISHMENT METHOD, DEVICE, AND SYSTEM

TECHNICAL FIELD

[0001] The present invention relates to the device field, and in particular, to a communication establishment method, a device, and a system.

BACKGROUND

[0002] Contact information of a user such as a telephone number is personal information of the user in essence, and with technological development and scientific progress, the contact information such as a telephone number further carries increasingly more personal information of a user. In addition, with increasingly frequent contact and the rise of a series of new lifestyles such as online shopping, increasingly more organizations and people need to acquire contact information of users. Acquiring contact information of a user is acquiring personal information of the user, some of which may even be private information. If the personal information is not handled properly, the personal information of the user may be disclosed, which brings troubles to user's life. Particularly, if the personal information falls into the hands of a lawbreaker, benefit of the user is greatly damaged, which causes fear and aversion of the user to technologies, and then affects technological application and progress.

SUMMARY

[0003] Embodiments of the present invention provide a communication establishment method, a device, a server, and a system, which are used to resolve a technical problem in the prior art that benefit of a user is damaged, and technological application and progress are affected because leakage of contact information of the user causes leakage of personal information of the user. Therefore, beneficial effects of protecting the personal information of the user and facilitating technological

application and progress are brought.

[0004] According to a first aspect, a communication establishment method is provided, and the method includes: sending, by a first device, a query message to a server according to a second user identifier, where the query message is used by the server to query at least one communication capability of a user corresponding to the second user identifier; receiving, by the first device, a session menu sent by the server according to the query message, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier; sending, by the first device, a communication establishment message to the server according to the session menu, where the communication establishment message includes information about the selected at least one communication capability; and communicating, by the first device by means of communication established by the server according to the selected at least one communication capability, with the user corresponding to the second user identifier; or establishing, by the first device according to the selected at least one communication capability, communication with the user corresponding to the second user identifier.

[0005] In a first possible implementation manner of the first aspect, the method further includes: sending, by the first device, a registration message to the server, where the registration message includes user identity information and at least one communication number of a user; and receiving, by the first device, a first user identifier generated by the server according to the registration message.

[0006] With reference to the first possible implementation manner of the first aspect, in a second possible implementation manner of the first aspect, the registration message further includes validity period information; or the first device sends validity period information to the server, after the first device receives the first user identifier generated by the server according to the registration message, where the validity period information is used by the server to set a validity period for the first user identifier.

[0007] With reference to the first possible implementation manner of the first aspect or the second possible implementation manner of the first aspect, in a third possible implementation manner of the first aspect, the session menu is used to present at least one communication capability possessed by both the user corresponding to the first user identifier and the user corresponding to the second user identifier.

[0008] According to a second aspect, a communication establishment method is provided, and the method includes: querying, by a server according to a received query message sent by a first device according to a second user identifier, validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier, where the validity period information is used to determine whether the second user identifier falls within a validity period; if the second user identifier falls within the validity period, generating, by the server, a session menu according to the queried at least one communication capability of the user corresponding to the second user identifier, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier; sending, by the server, the session menu to the first device; and establishing, by the server according to a received communication establishment message sent by the first device according to the session menu, communication between the first device and the user corresponding to the second user identifier, where the communication establishment message includes the at least one communication capability selected by the first device.

[0009] In a first possible implementation manner of the second aspect, the method further includes: if the second user identifier falls beyond the validity period, sending, by the server, a reminder message to the first device, where the reminder message is used to remind the first device that the second user identifier falls beyond the validity period; or if the second user identifier falls beyond the validity period, sending, by the server, a request message to the user corresponding to the second user identifier, where the request message is used to request the user corresponding to the second user identifier to allow the server to establish communication between the first device and the user corresponding to the second user identifier.

[0010] With reference to the second aspect or the first possible implementation manner of the second aspect, in a second possible implementation manner of the second aspect, the method further includes: generating, by the server, a first user identifier according to a registration message sent by the first device, where the registration message includes user identity information and at least one communication number of a user; and sending, by the server, the first user identifier to the first device.

[0011] With reference to the second possible implementation manner of the second aspect, in a third possible implementation manner of the second aspect, the

registration message further includes validity period information, and the server sets a validity period for the first user identifier according to the validity period information; or the server receives validity period information sent by the first device, after the server sends the first user identifier to the first device, and the server sets a validity period for the first user identifier according to the validity period information.

[0012] With reference to the second aspect or the first possible implementation manner of the second aspect or the second possible implementation manner of the second aspect or the third possible implementation manner of the second aspect, in a fourth possible implementation manner of the second aspect, the validity period information includes one-time validity, time-span-based validity, or long-term validity.

[0013] With reference to the fourth possible implementation manner of the second aspect or the second possible implementation manner of the second aspect or the third possible implementation manner of the second aspect, in a fifth possible implementation manner of the second aspect, the generating, by the server, a session menu according to the queried at least one communication capability of the user corresponding to the second user identifier specifically includes: generating, by the server, the session menu according to the queried at least one communication capability possessed by both the user corresponding to the second user identifier and the user corresponding to the first user identifier.

[0014] According to a third aspect, a device is provided, and the device includes a query message sending unit, a session menu receiving unit, a communication establishment message sending unit, and a communication establishment unit, where: the query message sending unit is configured to send a query message to a server according to a second user identifier, where the query message is used by the server to query validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier; the session menu receiving unit is configured to receive a session menu sent by the server according to the query message, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier; the communication establishment message sending unit is configured to send a communication establishment message to the server according to the session menu, where the communication establishment message includes the selected at least one communication capability; and the communication establishment unit is configured to

establish, by means of communication established by the server according to the communication establishment message, communication with the user corresponding to the second user identifier, or configured to establish, according to the selected at least one communication capability, communication with the user corresponding to the second user identifier.

[0015] In a first possible implementation manner of the third aspect, the device further includes a registration message sending unit, configured to send a registration message to the server, where the registration message includes user identity information and at least one communication number of a user; and a user identifier receiving unit, configured to receive a first user identifier generated by the server according to the registration message.

[0016] With reference to the first possible implementation manner of the third aspect, in a second possible implementation manner of the third aspect, the registration message sending unit is further configured to send the validity period information; or the device further includes a validity period sending unit, configured to: after the user identifier receiving unit receives the first user identifier, send the validity period information to the server, where the validity period information is used by the server to set a validity period for the first user identifier.

[0017] With reference to the first possible implementation manner of the third aspect or the second possible implementation manner of the third aspect, in a third possible implementation manner of the third aspect, the session menu is used to present at least one communication capability possessed by both the user corresponding to the first user identifier and the user corresponding to the second user identifier.

[0018] According to a fourth aspect, a server is provided, and the server includes a query unit, a session menu generation unit, a session menu sending unit, and a communication establishment unit, where: the query unit is configured to query, according to a received query message sent by a first device according to a second user identifier, validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier, where the validity period information is used to determine whether the second user identifier falls within a validity period; the session menu generation unit is configured to: if the second user identifier falls within the validity period, generate a session menu according to the queried at least one communication capability of the user

corresponding to the second user identifier, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier; the session menu sending unit is configured to send the session menu to the first device; and the communication establishment unit is configured to establish, according to a received communication establishment message sent by the first device according to the session menu, communication between the first device and the user corresponding to the second user identifier, where the communication establishment message includes the at least one communication capability selected by the first device.

[0019] In a first possible implementation manner of the fourth aspect, the server further includes a reminder message sending unit, configured to: if the second user identifier falls beyond the validity period, send a reminder message to the first device, where the reminder message is used to remind the first device that the second user identifier falls beyond the validity period; and/or a request message sending unit, configured to: if the second user identifier falls beyond the validity period, send a request message to the user corresponding to the second user identifier, where the request message is used to request the user corresponding to the second user identifier to allow the server to establish communication between the first device and the user corresponding to the second user identifier.

[0020] With reference to the fourth aspect or the first possible implementation manner of the fourth aspect, in a second possible implementation manner of the second aspect, the server further includes a user identifier generation unit and a user identifier sending unit, where: the user identifier generation unit is configured to generate a first user identifier according to a registration message sent by the first device, where the registration message includes user identity information and at least one communication number of a user; and the user identifier sending unit is configured to send the first user identifier to the first device.

[0021] With reference to the second possible implementation manner of the fourth aspect, in a third possible implementation manner of the fourth aspect, the server further includes validity period information generation unit, configured to set a validity period for the first user identifier according to validity period information sent by the first device.

[0022] With reference to the fourth aspect or the first possible implementation manner of the fourth aspect or the second possible implementation manner of the

fourth aspect or the third possible implementation manner of the fourth aspect, in a fourth possible implementation manner of the fourth aspect, the session menu generation unit is specifically configured to generate the session menu according to the queried at least one communication capability possessed by both the user corresponding to the second user identifier and the user corresponding to the first user identifier.

[0023] According to a fifth aspect, a communication establishment system is provided, and the system includes the device described in the third aspect and the server described in the fourth aspect.

[0024] In the embodiments of the present invention, by using a method in which users complete communication establishment by using user identifiers, the users can smoothly establish communication without leaking personal information, which protects the personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies.

BRIEF DESCRIPTION OF DRAWINGS

[0025] To describe the technical solutions in the embodiments of the present invention or in the prior art more clearly, the following briefly describes the accompanying drawings required for describing the embodiments. Apparently, the accompanying drawings in the following description show some embodiments of the present invention, and a person of ordinary skill in the art may still derive other drawings from these accompanying drawings without creative efforts.

[0026] FIG. 1 is a flowchart of a communication establishment method according to an embodiment of the present invention;

[0027] FIG. 2 is a schematic diagram for displaying a session menu;

[0028] FIG. 3 is a flowchart of another communication establishment method according to an embodiment of the present invention;

[0029] FIG. 4 is a method flowchart of a registration process of a user according to an embodiment of the present invention;

[0030] FIG. 5 is a schematic flowchart of a method for establishing communication between a first user and a second user according to an embodiment of the present invention;

[0031] FIG. 6 is a schematic flowchart of another method for establishing

communication between a first user and a second user according to an embodiment of the present invention;

[0032] FIG. 7 is a schematic structural diagram of a device according to an embodiment of the present invention;

[0033] FIG. 8 is a schematic structural diagram of a server according to an embodiment of the present invention; and

[0034] FIG. 9 is a schematic structural diagram of a communication establishment system according to an embodiment of the present invention.

DESCRIPTION OF EMBODIMENTS

[0035] To make the objectives, technical solutions, and advantages of the embodiments of the present invention clearer, the following clearly and completely describes the technical solutions in the embodiments of the present invention with reference to the accompanying drawings in the embodiments of the present invention. Apparently, the described embodiments are some but not all of the embodiments of the present invention. All other embodiments obtained by a person of ordinary skill in the art based on the embodiments of the present invention without creative efforts shall fall within the protection scope of the present invention.

[0036] The terms used in the embodiments of the present invention are merely for the purpose of illustrating specific embodiments, and are not intended to limit the present invention. The terms "a", "said" and "the" of singular forms used in the embodiments and the appended claims of the present invention are also intended to include plural forms, unless otherwise specified in the context clearly. It should also be understood that, the term "and/or" used herein indicates and includes any or all possible combinations of one or more associated listed items. It should be further understood that the term "include" adopted in the specification specifies presence of features, integers, steps, operations, elements and/or components, with presence or attachment of other features, integers, steps, operations, components, elements, and/or their combinations not excluded.

[0037] It should be understood that although terms "first" and "second" are used in the embodiment of the present invention to describe various types of devices or user identifiers, these devices or user identifiers are not limited by these terms. These terms are merely used to distinguish between devices or user identifiers. For example,

without departing from the scope of the embodiments of the present invention, a first device or user identifier may be referred to as a second device or user identifier, and similarly, a second device or user identifier may be referred to as a first device or user identifier. It should also be understood that each of the first device and the second device may refer to one device or may generally refer to multiple devices possessed by a user.

[0038] In the embodiments of the present invention, the device includes but is not limited to mobile communications devices such as a mobile phone, a personal digital assistant (Personal Digital Assistant, PDA), a tablet computer, and a portable device (such as a portable computer), and also includes non-mobile communications devices such as an automatic teller machine (Automatic Teller Machine, ATM), which are not limited in the embodiments of the present invention.

[0039] A user identifier is used to identify related information of a user and may be equivalent to an alternative representation of the related information of the user. A common user cannot directly acquire, according to a user identifier, related information of a user corresponding to the user identifier, and can establish, only with the help of a person or a third-party device such as a device (it can be an application program on the device) or a server, communication with the user corresponding to the user identifier. This type of communication establishment is established by the application program on the device or the server according to the related information that is of the user and used when the user identifier is registered. In a whole process, the user cannot directly obtain the related information of the user corresponding to the user identifier, that is, the related information of the user corresponding to the user identifier is unavailable to the user. The related information may include but is not limited to user identity information (which is used to identify the user corresponding to the user identifier, where the user identity information may be a name, a nickname, a code, or the like of the user, which is not limited in the present invention), at least one communication number of the user (the communication number may be understood as contact information of the user, which may be, for example, a QQ number, a WeChat number, a Facebook account, a WeChat account, a mobile number, a fixed-line number, or an email address of the user, which is not limited in the embodiments of the present invention), and validity period information (the validity period information is used to identify a time span within which or a case in which the user identifier is valid, and the following description may specifically describe the

validity period information with reference to a specific possible application scenario). It should be understood that the related information of the user corresponding to the user identifier may include more content or less content, which is not limited in the embodiments of the present invention, either.

[0040] In the embodiments of the present invention, the device or the server may acquire, according to the communication number, a communication capability of the user corresponding to the user identifier. For example, if the communication number includes a mobile number of the user, the user corresponding to the user identifier possesses a communication capability of a call and/or a communication capability of an SMS message. If the communication number includes an email address of the user, the user corresponding to the user identifier possesses a capability of receiving and sending an email.

[0041] In the embodiments of the present invention, the user identifier may be an image identifier, an audio identifier, a radio frequency identifier, an electromagnetic identifier, or a digital identifier. For example, when being an image identifier, the user identifier may be a QR code, a bar code, or the like; when being a digital identifier, the user identifier may be a serial number, a license plate number, or the like. It should be understood that any representation form that can identify related information of a user should fall within the protection scope of the embodiments of the present invention.

[0042] In the embodiments of the present invention, a sequence for implementing steps may be arranged flexibly according to an actual requirement, which is not limited in the embodiments of the present invention. Each of the embodiments of the present invention merely describes one possible implementation manner as an example. A person skilled in the art may understand that although methods described in the embodiments of the present invention include multiple operations that occur in specific sequences, these methods may include more operations or fewer operations, these operations may be executed in sequence or executed in parallel, and these sequences are not strict sequences.

Embodiment 1

[0043] FIG. 1 is a flowchart of a communication establishment method according to an embodiment of the present invention.

[0044] As shown in FIG. 1, the communication establishment method may include the following steps:

[0045] S101. A first device sends a query message to a server according to a second user identifier, where the query message is used by the server to query at least one communication capability of a user corresponding to the second user identifier.

[0046] When a first user of the first device expects to establish communication with a second user, the user of the first device uses the first device to send the query message to the server according to the second user identifier. The query message may be received and processed by the server.

[0047] Optionally, by means of processing by the server, validity period information of the second user identifier may be acquired, that is, it may be acquired whether the second user identifier falls within a validity period. If the second user identifier falls within the validity period, the at least one communication capability of the user corresponding to the second user identifier may be further acquired. Optionally, the server may send the queried validity period information to the first device.

[0048] Optionally, before that a first device sends a query message to a server according to a second user identifier, the method further includes: acquiring, by the first device, the second user identifier.

[0049] When expecting to establish communication with the second user, the user of the first device further needs to acquire the second user identifier of the second user at first. The method for acquiring the second user identifier may vary accordingly according to a characteristic of the second user identifier. For example, if the second user identifier is a QR code or a bar code, the second user identifier may be acquired by scanning. The method for acquiring the second user identifier is not limited in this embodiment of the present invention.

[0050] S102. The first device receives a session menu sent by the server according to the query message, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier.

[0051] After the first device sends the query message to the server, the second device receives the session menu sent by the server according to the query message, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier, that is, notify the first user of the first device of a manner in which communication may be established with the

second user. For example, the manner may be establishing telephone communication or establishing SMS message communication or establishing email communication, which is not limited in this embodiment of the present invention. In addition, the session menu may present any quantity of communication capabilities according to setting by a system or the user. The session menu may be shown in FIG. 2. FIG. 2 is a schematic diagram for displaying a session menu. It should be understood that FIG. 2 is merely one possible display manner of the session menu. The session menu may be displayed in more manners, or may have more content or less content, which is not limited in this embodiment of the present invention.

[0052] Optionally, when a message sent by the server to the first device includes the validity period information, if the second user identifier falls within the validity period, the session menu is displayed. That is, the first device determines, according to the received validity period information, whether the second user identifier falls within the validity period, and if the second user identifier falls within the validity period, the session menu is displayed, or if the second user identifier falls beyond the validity period, the session menu is not displayed.

[0053] S103. The first device sends a communication establishment message to the server according to the session menu, where the communication establishment message includes information about the selected at least one communication capability.

[0054] After the first device receives the session menu, the first user of the first device sends the communication establishment message to the server according to the session menu and a status of the first user by using the first device, where the communication establishment message may include information about one or more communication capabilities selected by the first user. If the communication establishment message includes information about multiple communication capabilities, the server may select, according to a priority that is set by the user or a preset priority, one communication capability to establish communication, or may establish multiple types of communication at the same time, which is not limited in this embodiment of the present invention.

[0055] S104. The first device communicates, by means of communication established by the server according to the information about the selected at least one communication capability, with the user corresponding to the second user identifier; or the first device establishes, according to the selected at least one communication

capability, communication with the user corresponding to the second user identifier.

[0056] After the communication establishment message is sent to the server, the first device may wait for the server to establish communication between the first device and the second user, and after the communication is established, the first device may communicate with the second user. Alternatively, the first device may establish communication between the first device and the second user according to the selected communication capability. It may be understood that actually, establishing communication with the second user is technically establishing communication between the first device of the first user and the device of the second user, that is, the users communicate by using the devices. The device of the second user that communicates may be any device that is of the second user and that possesses the selected communication capability, and specifically selecting which device may be set by the user or a device, which is not limited in this embodiment of the present invention. It should also be understood that if the first user, the user of the first device, registers with the server previously, instead of establishing communication only for the first device, the server may establish communication for any device that is of the first user and that possesses the selected communication capability.

[0057] It may be learned according to the foregoing method that in a whole process of establishing communication, each of users does not know a communication number of the other, and the users implement communication establishment by using user identifiers, so that the users can smoothly establish communication without leaking personal information, which protects the personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies.

[0058] Optionally, before step S101 to step S104, the method further includes steps S1001 and S1002.

[0059] S1001. The first device sends a registration message to the server, where the registration message includes user identity information and at least one communication number of a user.

[0060] The first device may send the registration message to the server in advance to complete a registration process.

[0061] Optionally, the registration message in step S1001 further includes validity period information, and the validity period information is used by the server to set a validity period for the first user identifier.

[0062] S1002. The first device receives a first user identifier generated by the server according to the registration message.

[0063] Optionally, after step S1002, the method may further include a step S1003. The first device sends validity period information to the server, where the validity period information is used by the server to set a validity period for the first user identifier.

[0064] Optionally, the validity period information in step S1001 or step S1003 includes one-time validity, time-span-based validity, or long-term validity.

[0065] The one-time validity means that the user identifier can be used only once. After the user identifier is used once, the user identifier becomes invalid, and another user cannot further establish, according to the user identifier, communication with the user corresponding to the user identifier. The time-span-based validity means that the user may set a given period for the user identifier of the user. Within this time period, the user identifier is valid, and beyond this time period, another user cannot further establish, according to the user identifier, communication with the user corresponding to the user identifier. The long-term validity means that the user does not set a validity period for the user identifier of the user, and another user may establish, by using the user identifier, communication with the user corresponding to the user identifier corresponding to the user identifier.

[0066] Optionally, after step S1001 or step S1002 is executed, the session menu in steps S102 and S103 is used to present at least one communication capability possessed by both the user corresponding to the first user identifier and the user corresponding to the second user identifier.

[0067] It may be learned according to the foregoing method that in a whole process of establishing communication, each of users does not know a communication number of the other. The users implement communication establishment by using user identifiers, which protects personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies. In addition, a user may further flexibly set a validity period for a user identifier of the user, so that the user can periodically change the user identifier to further protect personal information of the user, and convenience of using the user identifier is further improved.

[0068] FIG. 3 is a flowchart of another communication establishment method according to an embodiment of the present invention.

[0069] As shown in FIG. 3, the communication establishment method may include the following steps:

[0070] S201. A server queries, according to a received query message sent by a first device according to a second user identifier, validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier, where the validity period information is used to determine whether the second user identifier falls within a validity period.

[0071] According to the received query message, the server queries whether the second user identifier falls within the validity period, and at the same time, may query the at least one communication capability of the user corresponding to the second user identifier; or certainly, the server may first query, according to the received query message, whether the second user identifier falls within the validity period, and if the second user identifier falls within the validity period, the server queries, according to the second user identifier, the at least one communication capability of the user corresponding to the user identifier, which is not limited in this embodiment of the present invention. The at least one communication capability may be a communication capability possessed by the user corresponding to the second user identifier, or may be a communication capability possessed by the user corresponding to the second user identifier and a communication capability possessed by a user of the first device.

[0072] S202. If the second user identifier falls within the validity period, the server generates a session menu according to the queried at least one communication capability of the user corresponding to the second user identifier, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier.

[0073] If a query result is that the second user identifier falls within the validity period, the server generates the session menu. As shown in FIG. 2, FIG. 2 is a schematic diagram for displaying one possible presentation manner of a session menu.

[0074] Optionally, if the second user identifier falls beyond the validity period, the server sends a reminder message to the first device, where the reminder message is used to remind the first device that the second user identifier falls beyond the validity period. The server may send the reminder message to the first device according to the query result, where the reminder message is used to notify the first device that the second user identifier expires and the server cannot establish

communication between the first device and the user corresponding to the second user identifier. The foregoing method can help the user of the first device learn of an establishment status of the communication in a timely manner and make a corresponding action in a timely manner, which improves user experience.

[0075] Optionally, if the second user identifier falls beyond the validity period, the server sends a request message to the user corresponding to the second user identifier, where the request message is used to request the user corresponding to the second user identifier to allow the server to establish communication between the first device and the user corresponding to the second user identifier. If the server discovers that the second user identifier falls beyond the validity period, the server sends a request message to the second user, where the request message may be used to request the user corresponding to the second user identifier to choose whether the second user identifier remains valid. The request message may include some information of a requester (the first device), the user corresponding to the second user identifier determines, according to the information, whether to be willing to communicate with the requester, and if the user corresponding to the second user identifier is willing to communicate with the requester, the second user identifier remains valid.

[0076] S203. The server sends the session menu to the first device.

[0077] The server sends the generated session menu to the first device.

[0078] S204. The server establishes, according to a received communication establishment message sent by the first device according to the session menu, communication between the first device and the user corresponding to the second user identifier, where the communication establishment message includes the at least one communication capability selected by the first device.

[0079] It should also be understood that if the first user, the user of the first device, registers with the server previously, instead of establishing communication only for the first device, the server may establish communication for any device that is of the first user and that possesses the selected communication capability.

[0080] This embodiment of the present invention provides a communication establishment method. In a whole process of establishing communication, each of users does not know a communication number of the other, and the users implement communication establishment by using user identifiers, so that the users can smoothly establish communication without leaking personal information, which protects the personal information of the users, enhances user experience, and further eliminates

fear and aversion of the users to technologies.

[0081] Optionally, before step S201 to step S204, the method further includes steps S2001 and S2002.

[0082] S2001. The server generates a first user identifier according to a registration message sent by the first device, where the registration message includes user identity information and at least one communication number of a user.

[0083] Optionally, the registration message in step S2001 further includes validity period information, and the validity period information is used by the server to set a validity period for the first user identifier.

[0084] S2002. The server sends the first user identifier to the first device.

[0085] Optionally, after step S2002, the method may further include a step S1003. The server receives validity period information sent by the first device, and the server sets a validity period for the first user identifier according to the validity period information.

[0086] Optionally, the validity period information in step S2001 or step S2003 includes one-time validity, time-span-based validity, or long-term validity.

[0087] Optionally, after step S2001 or step S2002 is executed, the session menu generated by the server is used to present at least one communication capability possessed by both the user corresponding to the first user identifier and the user corresponding to the second user identifier.

[0088] This embodiment of the present invention provides a communication establishment method. In a whole process of establishing communication, each of users does not know a communication number of the other. The users implement communication establishment by using user identifiers, which protects personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies. In addition, a user may further flexibly set a validity period for a user identifier of the user, so that the user can periodically change the user identifier to further protect personal information of the user, and convenience of using the user identifier is further improved.

[0089] Optionally, the following describes an embodiment of the present invention by using a method for establishing communication between a first user and a second user as an example. In this embodiment of the present invention, the first user wants to establish communication with the second user; however, the first user does not know a specific communication number of the second user, and can acquire

only a second user identifier of the second user, where the second user identifier is generated by a server with which the second user registers in advance. The following first describes a registration process of the second user, and then describes how the first user and the second user establish communication in this case.

[0090] FIG. 4 is a method flowchart of a registration process of a user according to an embodiment of the present invention. As shown in FIG. 4, a registration process of the second user includes:

[0091] S500. The second user sends a registration instruction to a second device, where the registration instruction is used to instruct the second device to send a registration message to a server.

[0092] S501. The second device sends the registration message to the server, where the registration message includes user identity information and at least one communication number of the user. For example, the user identifier information may be the second user and the communication number may be a mobile number 186XXXXX140. Optionally, in this step, the registration message may include validity period information.

[0093] S502. The server generates a second user identifier according to the registration message. Optionally, the server may further establish an association relationship between the second user identifier and each of the user identifier information and the communication number of the user. Further optionally, if the registration message includes the validity period information, the server may further set a validity period for the second user identifier, where the validity period may be that the second user identifier is permanently valid or may be valid within a time period or may be valid at a moment or may be valid once, which is not limited in this embodiment of the present invention.

[0094] S503. The server sends the user identifier to the second device.

[0095] S504. The second device presents the received second user identifier to the second user. The presentation method may be displaying the second user identifier, or may be presenting the second user identifier to the user in another manner in which the user may be aware of the second user identifier, which is not limited in this embodiment of the present invention.

[0096] Optionally, after step S504, the second user may use the second user identifier. For example, the second user may send the second user identifier to a first user, so that the first user contacts the second user; or may present the second user

identifier on an object, so that a first user can acquire the second user identifier. Specifically, for example, the second user identifier is a QR code. The second user may print the QR code and stick the QR code to a car of the second user. In this case, if the first user wants to contact the second user, the first user may establish, by scanning the QR code, communication with the second user by means of the server. In this process, the second user does not need to disclose a real telephone number of the second user to the first user, which can avoid a risk of information leakage. It should be understood that the foregoing is merely an example of a method for using a user identifier, and this embodiment of the present invention does not impose a limitation on the method for using a user identifier. In addition, it should be understood that the first user may be a user who registers with the server or may be a user who does not register with the server.

[0097] Optionally, if the registration message in step S501 does not include the validity period information, the registration process may further include the following steps: S505. The second user sends an instruction for setting a validity period to the second device. S506. The second device sends the validity period information to the server. S507. The server sets the validity period according to the validity period information. It should be understood that after the validity period is set, the validity period can be modified according to a requirement of the user.

[0098] According to the foregoing registration method, in a subsequent whole process of establishing communication between users, each of the users does not know a communication number of the other. The users implement communication establishment by using user identifiers, which protects personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies. In addition, a user may further flexibly set a validity period for a user identifier of the user, so that the user can periodically change the user identifier to further protect personal information of the user, and convenience of using the user identifier is further improved.

[0099] FIG. 5 is a schematic flowchart of a method for establishing communication between a first user and a second user according to an embodiment of the present invention. The second user completes registration by using a server and receives a second user identifier. The first user may be a user who completes registration by using the server, or may be a user who does not complete registration. As shown in FIG. 5, the method includes:

[0100] S601. The first user sends an instruction for establishing communication with the second user to a first device.

[0101] S602. The first device acquires the second user identifier corresponding to the second user.

[0102] S603. The first device sends a query message to the server according to the second user identifier.

[0103] S604. The server queries, according to the received query message, validity period information of the second user identifier and at least one communication capability of the second user corresponding to the second user identifier.

[0104] S605. If the second user identifier falls within a validity period, the server generates a session menu according to the queried at least one communication capability of the second user corresponding to the second user identifier.

[0105] Optionally, if the first user also registers with the server, and the registration process is shown in FIG. 4, step S605 specifically includes: generating, by the server, the session menu according to the queried at least one communication capability possessed by both the user corresponding to the second user identifier and the user corresponding to the first user identifier.

[0106] Optionally, if the second user identifier falls beyond the validity period, the server sends a reminder message to the first device, where the reminder message is used to remind that the second user identifier expires and the server cannot establish communication between the first device and the second user corresponding to the second user identifier.

[0107] Optionally, when the session menu is being generated, a communication capability of the server may be further considered. The session menu is generated after communication capabilities of all parties are comprehensively considered.

[0108] S606. The server sends the session menu to the first device.

[0109] S607. The first device presents the session menu to the first user.

[0110] S608. The first device receives a communication capability selected by the first user.

[0111] S609. The first device sends a communication establishment message to the server according to the communication capability selected by the first user, where the communication establishment message includes the communication capability selected by the first user.

[0112] S610. The server establishes communication between the first device and the second user according to the communication establishment message.

[0113] For example, the server establishes communication for both parties according to a communication capability that is selected by a user and in a communication establishment message, which may be that the server organizes a session meeting and invites the both parties to participate, or generates a message (a voice message) to remind to forward or push the message to a corresponding user. It should be understood that in the communication established by the server between the first device and the second user, the second user may establish communication with first device by using the second device used when the second user performs registration, or may establish communication with the first device by using any other device that possesses the selected communication capability, which is not limited in this embodiment of the present invention.

[0114] S611. The first user and the second user communicate by using the devices of the first user and the second user.

[0115] In this embodiment of the present invention, communication between a first user and a second user is established by using the foregoing communication method. In a whole process, each of the first user and the second user does not know a communication number of the other, which fully protects privacy of the both parties.

[0116] FIG. 6 is a schematic flowchart of another method for establishing communication between a first user and a second user according to an embodiment of the present invention. In this embodiment of the present invention, the second user of a second device wants to purchase goods by means of e-commerce (such as JD.com, Huawei Vmall, or Amazon), and in a delivery process, expects that the first user (a courier) can contact himself (the second user), but does not expect that the courier knows a communication number of the second user. According to the communication establishment method provided in this embodiment of the present invention, a technical problem that a communication number of a user is protected from being known by another person can be resolved. The method includes the following steps.

[0117] S701. The second device sends a message for purchasing goods to an e-commerce device. The second user sends the message to the e-commerce device by using the second device.

[0118] S702. The e-commerce device sends a registration message to a server according to related information of the second user.

[0119] S703. The server generates, according to the registration message, a second user identifier corresponding to the second user. Optionally, the server may set a validity period for the second user identifier according to the registration message. In this embodiment of the present invention, the validity period may be one-time validity, that is, after the server establishes communication for the second user according to the second user identifier, the second user identifier becomes invalid.

[0120] S704. The server sends the second user identifier to the e-commerce device.

[0121] S705. The e-commerce device presents the second user identifier. In this embodiment of the present invention, the e-commerce device may print the received second user identifier on a consignment note.

[0122] S706. A first device acquires the second user identifier.

[0123] S707. The first device sends a query message to the server according to the second user identifier.

[0124] S708. The server queries whether the second user identifier falls within a validity period.

[0125] S709. If the second user identifier falls within the validity period, send a session menu to the first device.

[0126] S710. The first device presents the session menu.

[0127] S711. The first device sends a communication establishment message to the server according to a selection of the first user, where the message includes a communication capability selected by the first user.

[0128] S712. The server establishes communication between the first device and the second user. For example, the server establishes communication between a courier and the second user, so that the courier completes a delivery process.

[0129] S713. The second device sends a confirmation message to the e-commerce device. For example, after receiving the goods, the second user sends the confirmation message to the e-commerce device. It should be understood that the confirmation message may be sent by the courier to the e-commerce, which is not limited in this embodiment of the present invention.

[0130] S714. The e-commerce device sends an invalidation message to the server. It should be understood that in this embodiment of the present invention, the invalidation message may be directly sent by the second user or the courier to the server.

[0131] S715. The server performs invalidation processing on the second user identifier according to the invalidation message.

[0132] This embodiment of the present invention provides a communication establishment method. In a whole process of establishing communication, each of users does not know a communication number of the other, and after the user picks up and signs, a user identifier of the user is deregistered. The method protects personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies.

Embodiment 2

[0133] FIG. 7 is a schematic structural diagram of a device according to an embodiment of the present invention. As shown in FIG. 7, the device 70 may include a query message sending unit 701, a session menu receiving unit 702, a communication establishment message sending unit 703, and a communication establishment unit 704. The query message sending unit 701 is configured to send a query message to a server according to a second user identifier, where the query message is used by the server to query validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier. The session menu receiving unit 702 is configured to receive a session menu sent by the server according to the query message, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier. The communication establishment message sending unit 703 is configured to send a communication establishment message to the server according to the session menu, where the communication establishment message includes the selected at least one communication capability. The communication establishment unit 704 is configured to establish, by means of communication established by the server according to the communication establishment message, communication with the user corresponding to the second user identifier, or configured to establish, according to the selected at least one communication capability, communication with the user corresponding to the second user identifier.

[0134] The query message sending unit 701, the session menu receiving unit 702, the communication establishment message sending unit 703, and the communication

establishment unit 704 are specifically respectively used to execute the method in steps S101, S102, S103, and S104 in Embodiment 1 of the present invention. For details of the specific method, refer to Embodiment 1 of the present invention, and details are not described herein again.

[0135] This embodiment of the present invention provides a device 70. By using the device 70, in a whole process of establishing communication, each of users does not know a communication number of the other, and the users implement communication establishment by using user identifiers, so that the users can smoothly establish communication without leaking personal information, which protects the personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies.

[0136] Optionally, the device 70 further includes a registration message sending unit 705, configured to send a registration message to the server, where the registration message includes user identity information and at least one communication number of a user; and a user identifier receiving unit 706, configured to receive a first user identifier generated by the server according to the registration message. The registration message sending unit 705 and the user identifier receiving unit 706 are used to execute the method in steps S1001 and S1002 in Embodiment 1 of the present invention. For details of the specific method, refer to Embodiment 1 of the present invention, and details are not described herein again.

[0137] Optionally, the registration message sending unit 705 is further configured to send validity period information; or the device 70 further includes a validity period sending unit 706, configured to: after the user identifier receiving unit receives the first user identifier, send the validity period information to the server, where the validity period information is used by the server to set a validity period for the first user identifier. The validity period sending unit 706 is used to execute the method in step S1003 in Embodiment 1 of the present invention. For details of the specific method, refer to Embodiment 1 of the present invention, and details are not described herein again.

[0138] Optionally, the session menu is used to present at least one communication capability possessed by both the user corresponding to the first user identifier and the user corresponding to the second user identifier.

[0139] A user may further flexibly set a validity period for a user identifier of the user by using the device 70, so that the user can periodically change the user identifier

to further protect personal information of the user, and convenience of using the user identifier is further improved.

[0140] This embodiment of the present invention provides a device. By using the device 70, in a whole process of establishing communication, each of users does not know a communication number of the other. The users implement communication establishment by using user identifiers, which protects personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies. In addition, a user may further flexibly set a validity period for a user identifier of the user by using the device 70, so that the user can periodically change the user identifier to further protect personal information of the user, and convenience of using the user identifier is further improved.

[0141] FIG. 8 is a schematic structural diagram of a server according to an embodiment of the present invention. As shown in FIG. 8, the server 80 includes a query unit 801, a session menu generation unit 802, a session menu sending unit 803, and a communication establishment unit 804. The query unit 801 is configured to query, according to a received query message sent by a first device according to a second user identifier, validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier, where the validity period information is used to determine whether the second user identifier falls within a validity period. The session menu generation unit 802 is configured to: if the second user identifier falls within the validity period, generate a session menu according to the queried at least one communication capability of the user corresponding to the second user identifier, where the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier. The session menu sending unit 803 is configured to send the session menu to the first device. The communication establishment unit 804 is configured to establish, according to a received communication establishment message sent by the first device according to the session menu, communication between the first device and the user corresponding to the second user identifier, where the communication establishment message includes the at least one communication capability selected by the first device.

[0142] The query unit 801, the session menu generation unit 802, the session menu sending unit 803, and the communication establishment unit 804 are specifically respectively used to execute the method in steps S201, S202, S203, and

S204 in Embodiment 1 of the present invention. For details of the specific method, refer to Embodiment 1 of the present invention, and details are not described herein again.

[0143] Optionally, the server 80 further includes a reminder message sending unit 805, configured to: if the second user identifier falls beyond the validity period, send a reminder message to the first device, where the reminder message is used to remind the first device that the second user identifier falls beyond the validity period.

[0144] Optionally, the server 80 may further include a request message sending unit 806, configured to: if the second user identifier falls beyond the validity period, send a request message to the user corresponding to the second user identifier, where the request message is used to request the user corresponding to the second user identifier to allow the server 80 to establish communication between the first device and the user corresponding to the second user identifier.

[0145] This embodiment of the present invention provides a server 80. By using the server 80, in a whole process of establishing communication, each of users does not know a communication number of the other, and the users implement communication establishment by using user identifiers, so that the users can smoothly establish communication without leaking personal information, which protects the personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies.

[0146] Optionally, the server 80 further includes a user identifier generation unit 807 and a user identifier sending unit 808.

[0147] The user identifier generation unit 807 is configured to generate a first user identifier according to a registration message sent by the first device, where the registration message includes user identity information and at least one communication number of a user; and the user identifier sending unit 808 is configured to send the first user identifier to the first device.

[0148] The user identifier generation unit 807 and the user identifier sending unit 808 are respectively used to execute the method in steps S2001 and S2002 in Embodiment 1 of the present invention. For details of the specific method, refer to Embodiment 1 of the present invention, and details are not described herein again.

[0149] Optionally, the server 80 further includes a validity period information generation unit 809, configured to set a validity period for the first user identifier according to validity period information sent by the first device. The validity period

information generation unit 809 is used to execute the method in step S2003 in Embodiment 1 of the present invention. For details of the specific method, refer to Embodiment 1 of the present invention, and details are not described herein again.

[0150] Optionally, the session menu generation unit is specifically configured to generate the session menu according to the queried at least one communication capability possessed by both the user corresponding to the second user identifier and the user corresponding to the first user identifier.

[0151] This embodiment of the present invention provides a server 80. By using the server 80, in a whole process of establishing communication, each of users does not know a communication number of the other. The users implement communication establishment by using user identifiers, which protects personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies. In addition, a user may further flexibly set a validity period for a user identifier of the user, so that the user can periodically change the user identifier to further protect personal information of the user, and convenience of using the user identifier is further improved.

[0152] FIG. 9 is a schematic structural diagram of a communication establishment system according to an embodiment of the present invention. As shown in FIG. 9, the system 90 includes a device 70 and a server 80. The system 90 may execute the method in Embodiment 1 of the present invention. For details, refer to Embodiment 1 of the present invention, and details are not described herein.

[0153] This embodiment of the present invention provides a system 90. By using the system 90, in a whole process of establishing communication, each of users does not know a communication number of the other. The users implement communication establishment by using user identifiers, which protects personal information of the users, enhances user experience, and further eliminates fear and aversion of the users to technologies. In addition, a user may further flexibly set a validity period for a user identifier of the user, so that the user can periodically change the user identifier to further protect personal information of the user, and convenience of using the user identifier is further improved.

[0154] With descriptions of the foregoing embodiments, a person skilled in the art may clearly understand that the embodiments of the present invention may be implemented by hardware, firmware or a combination thereof. When the present invention is implemented by software, the foregoing functions may be stored in a

terminal-readable medium or transmitted as one or more instructions or code in the terminal-readable medium. The terminal-readable medium includes a terminal storage medium and a communications medium, where the available communications medium includes any medium that enables a terminal program to be transmitted from one place to another. The storage medium may be any available medium accessible to a terminal. The following provides an example but does not impose a limitation: The terminal-readable medium may include a RAM, a ROM, an EEPROM, a CD-ROM, or another optical disc storage or a disk storage medium, or another magnetic storage terminal device, or any other medium that can carry or store expected program code in a form of an instruction or a data structure and can be accessed by a terminal. In addition, any connection may be appropriately defined as a terminal-readable medium. For example, if software is transmitted from a website, a server or another remote source by using a coaxial cable, an optical fiber/cable, a twisted pair, a digital subscriber line (DSL) or wireless technologies such as infrared ray, radio and microwave, the coaxial cable, optical fiber/cable, twisted pair, DSL or wireless technologies such as infrared ray, radio and microwave are included in fixation of a medium to which they belong. For example, a disk (Disk) and disc (disc) used by the embodiments of the present invention includes a compact disc CD, a laser disc, an optical disc, a digital versatile disc (DVD), a floppy disk and a Blu-ray disc, where the available disk generally copies data by a magnetic means, and the disc copies data optically by a laser means. The foregoing combination should also be included in the protection scope of the terminal-readable medium.

[0155] In short, the foregoing descriptions are only embodiments of the technical solutions of the present invention, but are not intended to limit the protection scope of the present invention. Any modification, equivalent replacement, or improvement made without departing from the spirit and principle of the present invention shall fall within the protection scope of the present invention.

CLAIMS

1. A communication establishment method, wherein the method comprises:

sending, by a first device, a query message to a server according to a second user identifier, wherein the query message is used by the server to query at least one communication capability of a user corresponding to the second user identifier;

receiving, by the first device, a session menu sent by the server according to the query message, wherein the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier;

sending, by the first device, a communication establishment message to the server according to the session menu, wherein the communication establishment message comprises information about the selected at least one communication capability; and

communicating, by the first device by means of communication established by the server according to the selected at least one communication capability, with the user corresponding to the second user identifier; or

establishing, by the first device according to the selected at least one communication capability, communication with the user corresponding to the second user identifier.

2. The method according to claim 1, wherein the method further comprises:

sending, by the first device, a registration message to the server, wherein the registration message comprises user identity information and at least one communication number of a user; and

receiving, by the first device, a first user identifier generated by the server according to the registration message.

3. The method according to claim 2, wherein

the registration message further comprises validity period information; or

the first device sends validity period information to the server, after the first device receives the first user identifier generated by the server according to the registration message; wherein

the validity period information is used by the server to set a validity period for the first user identifier.

4. The method according to claim 2 or 3, wherein the session menu is used to

present at least one communication capability possessed by both the user corresponding to the first user identifier and the user corresponding to the second user identifier.

5. A communication establishment method, wherein the method comprises:

querying, by a server according to a received query message sent by a first device according to a second user identifier, validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier, wherein the validity period information is used to determine whether the second user identifier falls within a validity period;

if the second user identifier falls within the validity period, generating, by the server, a session menu according to the queried at least one communication capability of the user corresponding to the second user identifier, wherein the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier;

sending, by the server, the session menu to the first device; and

establishing, by the server according to a received communication establishment message sent by the first device according to the session menu, communication between the first device and the user corresponding to the second user identifier, wherein the communication establishment message comprises the at least one communication capability selected by the first device.

6. The method according to claim 5, wherein the method further comprises:

if the second user identifier falls beyond the validity period, sending, by the server, a reminder message to the first device, wherein the reminder message is used to remind the first device that the second user identifier falls beyond the validity period; or

if the second user identifier falls beyond the validity period, sending, by the server, a request message to the user corresponding to the second user identifier, wherein the request message is used to request the user corresponding to the second user identifier to allow the server to establish communication between the first device and the user corresponding to the second user identifier.

7. The method according to claim 5 or 6, wherein the method further comprises:

generating, by the server, a first user identifier according to a registration message sent by the first device, wherein the registration message comprises user identity information and at least one communication number of a user; and

sending, by the server, the first user identifier to the first device.

8. The method according to claim 7, wherein

the registration message further comprises validity period information, and the server sets a validity period for the first user identifier according to the validity period information; or

the server receives validity period information sent by the first device, after the server sends the first user identifier to the first device , and the server sets a validity period for the first user identifier according to the validity period information.

9. The method according to any one of claims 5 to 8, wherein the validity period information comprises one-time validity, time-span-based validity, or long-term validity.

10. The method according to any one of claims 7 to 9, wherein the generating, by the server, a session menu according to the queried at least one communication capability of the user corresponding to the second user identifier specifically comprises:

generating, by the server, the session menu according to the queried at least one communication capability possessed by both the user corresponding to the second user identifier and the user corresponding to the first user identifier.

11. A device, wherein the device comprises a query message sending unit, a session menu receiving unit, a communication establishment message sending unit, and a communication establishment unit; wherein

the query message sending unit is configured to send a query message to a server according to a second user identifier, wherein the query message is used by the server to query validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier;

the session menu receiving unit is configured to receive a session menu sent by the server according to the query message, wherein the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier;

the communication establishment message sending unit is configured to send a communication establishment message to the server according to the session menu, wherein the communication establishment message comprises the selected at least one communication capability; and

the communication establishment unit is configured to establish, by means of

communication established by the server according to the communication establishment message, communication with the user corresponding to the second user identifier, or configured to establish, according to the selected at least one communication capability, communication with the user corresponding to the second user identifier.

12. The device according to claim 11, wherein the device further comprises:

a registration message sending unit, configured to send a registration message to the server, wherein the registration message comprises user identity information and at least one communication number of a user; and

a user identifier receiving unit, configured to receive a first user identifier generated by the server according to the registration message.

13. The method according to claim 12, wherein:

the registration message sending unit is further configured to send the validity period information; or

the device further comprises a validity period sending unit, configured to: after the user identifier receiving unit receives the first user identifier, send the validity period information to the server; wherein

the validity period information is used by the server to set a validity period for the first user identifier.

14. The device according to claim 12 or 13, wherein the session menu is used to present at least one communication capability possessed by both the user corresponding to the first user identifier and the user corresponding to the second user identifier.

15. A server, wherein the server comprises a query unit, a session menu generation unit, a session menu sending unit, and a communication establishment unit; wherein

the query unit is configured to query, according to a received query message sent by a first device according to a second user identifier, validity period information of the second user identifier and at least one communication capability of a user corresponding to the second user identifier, wherein the validity period information is used to determine whether the second user identifier falls within a validity period;

the session menu generation unit is configured to: if the second user identifier falls within the validity period, generate a session menu according to the queried at least one communication capability of the user corresponding to the second user

identifier, wherein the session menu is used to present the at least one communication capability of the user corresponding to the second user identifier;

the session menu sending unit is configured to send the session menu to the first device; and

the communication establishment unit is configured to establish, according to a received communication establishment message sent by the first device according to the session menu, communication between the first device and the user corresponding to the second user identifier, wherein the communication establishment message comprises the at least one communication capability selected by the first device.

16. The server according to claim 15, wherein the server further comprises:

a reminder message sending unit, configured to: if the second user identifier falls beyond the validity period, send a reminder message to the first device, wherein the reminder message is used to remind the first device that the second user identifier falls beyond the validity period; and/or

a request message sending unit, configured to: if the second user identifier falls beyond the validity period, send a request message to the user corresponding to the second user identifier, wherein the request message is used to request the user corresponding to the second user identifier to allow the server to establish communication between the first device and the user corresponding to the second user identifier.

17. The server according to claim 15 or 16, wherein the server further comprises a user identifier generation unit and a user identifier sending unit; wherein

the user identifier generation unit is configured to generate a first user identifier according to a registration message sent by the first device, wherein the registration message comprises user identity information and at least one communication number of a user; and

the user identifier sending unit is configured to send the first user identifier to the first device.

18. The server according to claim 17, wherein the server further comprises validity period information generation unit, configured to set a validity period for the first user identifier according to validity period information sent by the first device.

19. The server according to claim 17 or 18, wherein the session menu generation unit is specifically configured to generate the session menu according to the queried at least one communication capability possessed by both the user corresponding to the

second user identifier and the user corresponding to the first user identifier.

20. A communication establishment system, wherein the system comprises the device according to any one of claims 11 to 14 and the server according to any one of claims 15 to 19.