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(54) **METHOD AND COMMUNICATION SYSTEM FOR IDENTIFYING CALLING/CALLED PARTY**

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(52) **U.S. Cl.** **379/88.19**; 348/14.09; 348/14.12; 348/14.14; 348/222.1; 358/1.15; 358/1.16; 358/407; 379/88.13; 379/142.07; 379/142.17; 455/415; 710/62

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See application file for complete search history.

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(57) **ABSTRACT**

A method and communication system is provided to identify a calling/called party when the call is being set up but before the call is answered. In the method, a first terminal and a second terminal are respectively provided with opposing terminal's image data before the call is answered. The image data of the first and second terminals can be registered in a media server disposed between the first and second terminals, and the image data can be transmitted between the first terminal and the media server and between the second terminal and the media server in accordance with an SIP protocol.

14 Claims, 3 Drawing Sheets

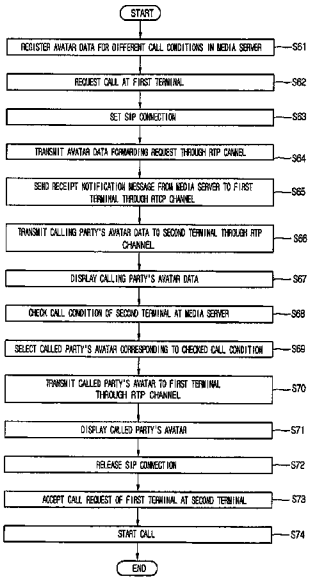

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Fig.1

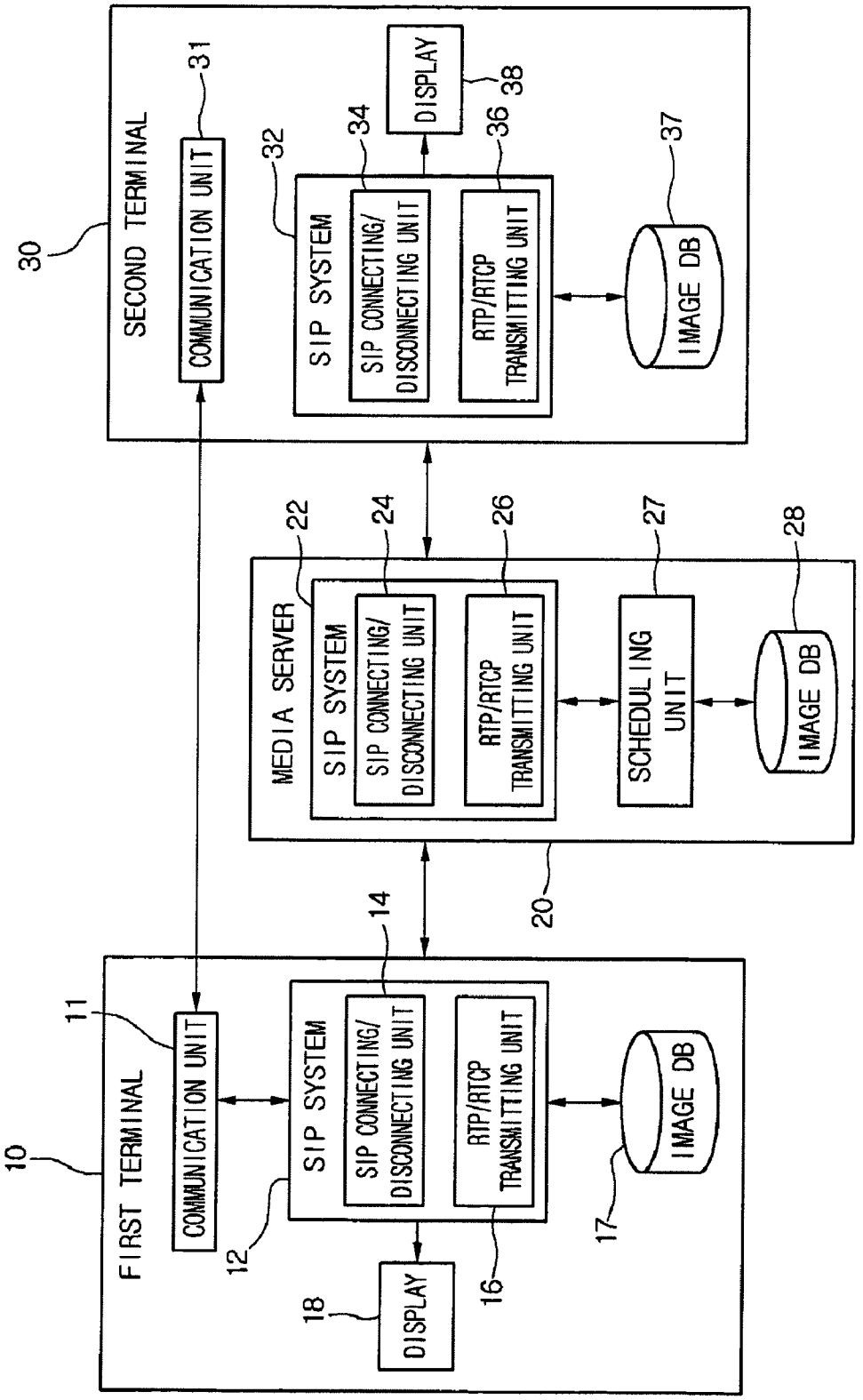

SECOND TERMINAL
30
COMMUNICATION UNIT
31
SIP SYSTEM
32
SIP CONNECTING/ DISCONNECTING UNIT
34
RTP/RTCP TRANSMITTING UNIT
36
DISPLAY
38
IMAGE DB
37
MEDIA SERVER
22
SIP SYSTEM
SIP CONNECTING/ DISCONNECTING UNIT
24
RTP/RTCP TRANSMITTING UNIT
26
SCHEDULING UNIT
27
IMAGE DB
28
20
FIRST TERMINAL
10
COMMUNICATION UNIT
11
SIP SYSTEM
12
SIP CONNECTING/ DISCONNECTING UNIT
14
RTP/RTCP TRANSMITTING UNIT
16
DISPLAY
18
IMAGE DB
17

Fig.2

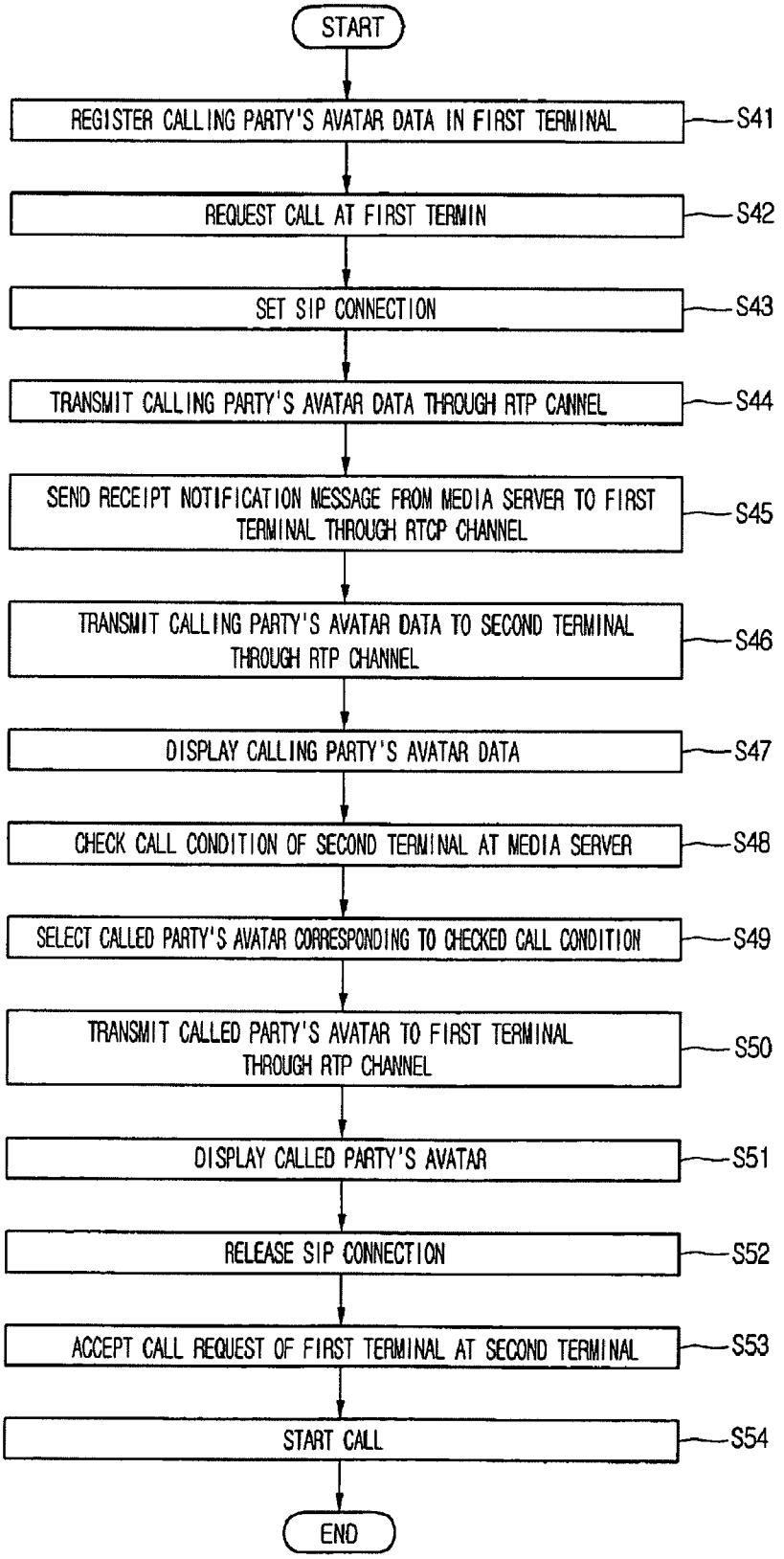
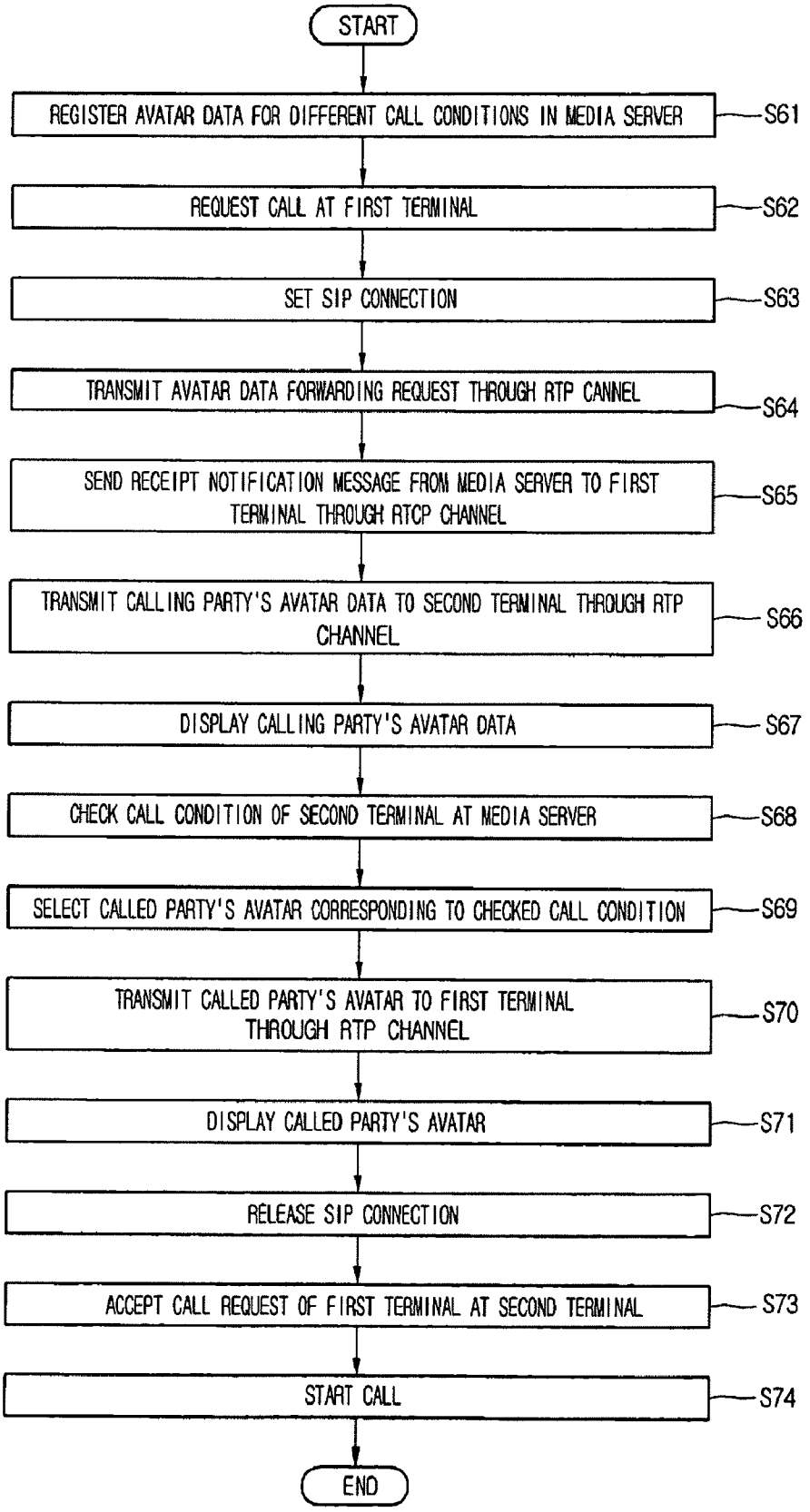

START
REGISTER CALLING PARTY'S AVATAR DATA IN FIRST TERMINAL
S41
REQUEST CALL AT FIRST TERMIN
S42
SET SIP CONNECTION
S43
TRANSMIT CALLING PARTY'S AVATAR DATA THROUGH RTP CANNEL
S44
SEND RECEIPT NOTIFICATION MESSAGE FROM MEDIA SERVER TO FIRST TERMINAL THROUGH RTCP CHANNEL
S45
TRANSMIT CALLING PARTY'S AVATAR DATA TO SECOND TERMINAL THROUGH RTP CHANNEL
S46
DISPLAY CALLING PARTY'S AVATAR DATA
S47
CHECK CALL CONDITION OF SECOND TERMINAL AT MEDIA SERVER
S48
SELECT CALLED PARTY'S AVATAR CORRESPONDING TO CHECKED CALL CONDITION
S49
TRANSMIT CALLED PARTY'S AVATAR TO FIRST TERMINAL THROUGH RTP CHANNEL
S50
DISPLAY CALLED PARTY'S AVATAR
S51
RELEASE SIP CONNECTION
S52
ACCEPT CALL REQUEST OF FIRST TERMINAL AT SECOND TERMINAL
S53
START CALL
S54
END

Fig.3


START
REGISTER AVATAR DATA FOR DIFFERENT CALL CONDITIONS IN MEDIA SERVER
S61
REQUEST CALL AT FIRST TERMINAL
S62
SET SIP CONNECTION
S63
TRANSMIT AVATAR DATA FORWARDING REQUEST THROUGH RTP CANNEL
S64
SEND RECEIPT NOTIFICATION MESSAGE FROM MEDIA SERVER TO FIRST TERMINAL THROUGH RTCP CHANNEL
S65
TRANSMIT CALLING PARTY'S AVATAR DATA TO SECOND TERMINAL THROUGH RTP CHANNEL
S66
DISPLAY CALLING PARTY'S AVATAR DATA
S67
CHECK CALL CONDITION OF SECOND TERMINAL AT MEDIA SERVER
S68
SELECT CALLED PARTY'S AVATAR CORRESPONDING TO CHECKED CALL CONDITION
S69
TRANSMIT CALLED PARTY'S AVATAR TO FIRST TERMINAL THROUGH RTP CHANNEL
S70
DISPLAY CALLED PARTY'S AVATAR
S71
RELEASE SIP CONNECTION
S72
ACCEPT CALL REQUEST OF FIRST TERMINAL AT SECOND TERMINAL
S73
START CALL
S74
END

METHOD AND COMMUNICATION SYSTEM FOR IDENTIFYING CALLING/CALLED PARTY

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

This application is a Reissue Application of U.S. Pat. No. 7,499,528B2 issued on Mar. 3, 2009 which is incorporated by reference and which claims foreign priority benefits of Korean Patent Application No. 10-2004-0013939 filed Mar. 2, 2004 in Republic of Korea. Notice: More than one reissue application has been filed for the reissue of U.S. Pat. No. 7,499,528B2. The U.S. reissue applications are application Ser. No. 12/859,175 filed Aug. 18, 2010, application Ser. No. 12/859,201 filed Aug. 18, 2010, application Ser. No. 12/859,207 filed Aug. 18, 2010, application Ser. No. 12/859,216 filed Aug. 18, 2010, application Ser. No. 12/859,225 filed Aug. 18, 2010, and application Ser. No. 13/020,319 filed Feb. 3, 2011.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a communication system, and more particularly, to a method and communication system for identifying a calling/called party (sender/caller or recipient) before calling or answering.

2. Description of the Related Art

Various methods of identifying the calling/called party are being introduced.

There is a well-known method of transmitting the caller's phone number to the recipient's terminal during the ringing signal or when the call is being set up but before the call is answered, such that the recipient can see the caller's phone number on the terminal display. However, if the recipient does not know the phone number, the recipient cannot identify the caller.

In another method, caller's name, avatar/image as well as the caller's phone number, which are previously stored in the recipient's terminal, are displayed on the terminal display. However, the recipient cannot also identify the caller with this method when the caller's name and avatar/image are not stored in the recipient terminal.

SUMMARY OF THE INVENTION

Accordingly, the present invention is directed to a method and communication system for identifying a calling/called party that substantially obviates one or more problems due to limitations and disadvantages of the related art.

An object of the present invention is to provide a method and communication system for identifying a calling/called party, in which image data of a calling party can be transmitted to a called party without adding additional software and hardware, thereby decreasing manufacturing and operating costs.

Additional advantages, objects, and features of the invention will be set forth in part in the description which follows and in part will become apparent to those having ordinary skill in the art upon examination of the following or may be learned from practice of the invention. The objectives and other advantages of the invention may be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

To achieve these objects and other advantages and in accordance with the purpose of the invention, as embodied and broadly described herein, a method of identifying a calling/called party includes the steps of: registering image data of a calling party in a first terminal; transmitting the image data and a call request of the first terminal to a second terminal via a media server; and displaying the image data of the calling party on the second terminal.

In another aspect of the present invention, there is provided a method of identifying a calling/called party, including the steps of: registering image data of calling party and called party in a media server in accordance with a call condition; transmitting a call request and an image data forwarding request of a first terminal to the media server; transmitting the registered image data of the calling party from the media server to a second terminal in response to the image data forwarding request; and displaying the image data of the calling party on the second terminal.

In a further another aspect of the present invention, there is provided a communication system for identifying a calling/called party, including: a first terminal having a communication unit for requesting a call, an SIP system for transmitting image data of a calling party and receiving image data of a called party, a display for displaying the image data of the called party, and an image database for registering the image data of the calling party; a media server having an SIP system for transmitting the image data of the calling party received from the first terminal to the called party and transmitting the image data of the called party to the first terminal, an image database for registering the image data of the called party in accordance with a call condition, and means for selecting one of the image data of the called party corresponding to the call condition; and a second terminal having a communication unit for responding to the call requested from the first terminal to open a communication channel with the first terminal, an SIP system for receiving the image data of the calling party from the first terminal, and a display for displaying the image data of the calling party.

In a still further another aspect of the present invention, there is provided a communication system for identifying a calling/called party, including: a first terminal having a communication unit for requesting a call, an SIP system for transmitting an image data forwarding request of a calling party and receiving image data of a called party, and a display for displaying the image data of the called party; a media server having an SIP system for transmitting the image data of the calling party to the called party in response to the image data forwarding request and transmitting the image data of the called party to the first terminal, an image database for registering the image data in accordance with a call condition, and means for selecting one of the image data of the called party corresponding to the call condition; and a second terminal having a communication unit for responding to the call requested from the first terminal to open a communication channel with the first terminal, an SIP system for receiving the image data of the calling party from the first terminal, and a display for displaying the image data of the calling party.

It is to be understood that both the foregoing general description and the following detailed description of the present invention are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are included to provide a further understanding of the invention and are incor-

porated in and constitute a part of this application, illustrate embodiment(s) of the invention and together with the description serve to explain the principle of the invention. In the drawings:

FIG. **1** is a block diaphragm of a communication system according to a preferred embodiment the present invention;

FIG. **2** is a flowchart showing a method of transmitting an avatar data registered in a terminal according to a preferred embodiment of the present invention; and

FIG. **3** is a flowchart showing a method of transmitting an avatar data registered in a media server according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

FIG. **1** is a block diaphragm of a communication system according to a preferred embodiment the present invention;

Referring to FIG. **1**, an communication system includes: a first and second terminals **10** and **30** for making a call and answering the call; and a media server **20** for transmitting image data of the calling party to the called party, transmitting image data of the called party to the calling party, and storing the image data.

The image data can be any kind of picture or character, such as an avatar, a still picture, a moving picture, and a text so long as the calling party and called party can be identified with the image data. The avatar is an image of a person used to represent somebody, and it is available from the Internet. The still picture and moving picture can be stored using a camera of a terminal. The text can be used to identify the calling party or the called party instead of the avatar or the pictures. For example, the text may include personal information such as physical and characteristic information.

Both the first terminal **10** and the second terminal **30** are capable of making and answering a call. Therefore, the first terminal **10** may be a calling terminal and the second terminal **30** answering terminal, and vice versa.

In the embodiments of the present invention, the first terminal **10** is illustrated as a calling terminal and the second terminal **30** is illustrated as an answering terminal.

The elements of the first terminal **10** and the second terminal are similar. That is, the first and second terminals **10** and **30** may include communication units **11** and **31**, session initiation protocol (SIP) systems **12** and **32**, image databases **17** and **37**, and displays **18** and **38**, respectively.

Each of the communication units **11** and **31** is capable of requesting a call and accepting a call request. For example, when the calling party requests a call with the communication unit **11** of the first terminal **10**, the communication unit **31** of the second terminal **30** receives the requested call and generates a ringing signal or activates a vibration mechanism for the called party. If the called party accepts the requested call, the communication unit **31** sends a call-accepting message to the communication unit **11** to open a communication channel between the first terminal **10** and second terminal **30**. That is, the communication units **11** and **31** are provided to request a call, accept the call, and open/close the communication channel.

A base station, a mobile switching center, and other stations (not shown in FIG. **1**) may be located between the communication unit **11** and the communication unit **31** for the communication therebetween. The call requested at the communication unit **11** may be transmitted to the communication unit **31** via the base station, the mobile switching center, and other stations. Also, the call-accepting message at the communication unit **31** may be transmitted to the communication unit **11** via the base station, the mobile switching center, and other stations.

The SIP systems **12** and **32** set and release SIP channel connections. Also, the SIP systems **12** and **32** send data to the other locations and receive receipt notification messages from the other locations. For this purpose, the SIP systems **12** and **32** may include SIP connection setup/release units **14** and **34**, and real time transport protocol/real time control protocol (RTP/RTCP) transmitting units **16** and **36**, respectively.

The SIP connection setup/release units **14** and **34** are provided to set SIP channel connections between the first terminal **10** and the media server **20** and between the second terminal **30** and the media server **20** before opening RTP/RTCP channels therebetween. That is, the RTP/RTCP channels are opened after the SIP channel connections are set. Therefore, the first terminal **10** can transmit RTP data (e.g., avatar data of the calling party) to the media server **20**, and the second terminal **30** can receive the avatar data of the calling party from the media server **20**. Also, the first terminal **10** can receive a receipt notification message (e.g., a BYE message) from the media server **20** after transmitting the avatar data of the calling party to the media server **20**, and the media server **20** can receive a receipt notification message from the second terminal **30** after transmitting the avatar data of the calling party to the second terminal **30**.

After this communication operation, the SIP connection setup/release units **14** and **34** release the SIP channel connections.

Preferably, the SIP systems **12** and **32** operate in association with the communication units **11** and **31**. That is, the SIP system **12** operates when the communication unit **11** sends the call request to the communication unit **31**. Also, the SIP system **32** operates to receive the avatar data of the calling party from the media server **20** when the communication unit **31** receives the call request.

The SIP system **12** operates at the same time when the communication unit **11** sends the call request. Foremost, the SIP connection setup/release unit **14** of the SIP system **12** sets the SIP channel connection to connect the first terminal **10** with the media server **20**.

Then, the RTP/RTCP transmitting unit **16** transmits the avatar data according to the following ways:

In one way, the avatar data registered in the first terminal **10** are transmitted to the second terminal **30** through the media server **20** in accordance with the RTP protocol.

In another way, the avatar data of the calling party are previously registered in the media server **20**, and the media server **20** transmits the avatar data to the called party in accordance with the RTP protocol when requested to send the avatar data to the called party.

The former will now be more fully described and the latter will be described later in association with the media server **20**.

The avatar data may be registered in the image database **17** of the first terminal **10**. It will be apparent to those of skill in the art that the avatar data include still picture data, moving picture data, text data, etc., as well as the avatar data. Meanwhile, the image database **37** of the second terminal **30** is not necessary in this way because the avatar data of the called party are already registered in the media server **20**.

Further, another avatar data of another called party may be registered in the image database **17** if the first terminal **10** have requested a call at least one time to the another called party.

The RTP/RTCP transmitting unit **16** reads the avatar data of the calling party from the image database **17** and transmits the avatar data to the media server **20** through the RTP channel. The media server **20** transmits the received avatar data to the second terminal **30** for displaying the avatar data on the display **38** of the second terminal **30**.

Herein, the media server **20** sends a receipt notification message (e.g., a BYE message) to the first terminal **10** through the RTCP channel the time when the media server **20** receives the avatar data of the calling party from the first terminal **10**. Therefore, the first terminal **10** can be informed that the avatar data are successfully transmitted to the media server **20**.

When the avatar data of the calling party are displayed on the display **38** of the second terminal **30**, the display **18** of the first terminal **10** displays the avatar data of the called party received from the media server **20**.

The display of avatar data of the called party on the display **18** of the first terminal **10** will be more fully described later when the overall operation of the communication system of the present invention is described.

The second terminal **30** has the similar configuration to the first terminal **10**. Since the second terminal **30** is illustrated as an answering terminal, the avatar data of the calling party are displayed on the display **38** of the second terminal **30**.

In case the second terminal **30** is a calling terminal, an avatar data registered in the image database **37** of the second terminal **30** may be transmitted to the first terminal **10** to display the avatar data on the display **18**.

The media server **20** may include an SIP system **22**, a scheduling unit **27**, and an image database **28**.

In case the avatar data of the calling party are registered in the first terminal **10**, the avatar data of the calling party may not be registered in the image database **28** of the media server **20**. In this case, the avatar data of the calling party may be transmitted from the first terminal **10** to the second terminal **30** via the media server **20**. The media server **20** may temporarily store the avatar data of the calling party during transmission of the avatar data of the calling party, and the temporarily stored avatar data may be deleted or not deleted after the transmission.

The SIP system **22** of the media server **20** is compatible with the SIP systems **12** and **32** of the first and second terminals **10** and **30**. The SIP system **22** may include an SIP connection setup/release unit **24** and an RTP/RTCP transmitting unit **26** to correspond with the SIP systems **12** and **32**.

When the SIP connection setup/release unit **14** sends an SIP channel connection request to the media server **20**, the media server **20** accepts the request and sets the SIP channel connection with the first terminal **10**. Through the SIP channel, the first terminal **10** can send the avatar data of the calling party (RTP data) to the media server **20**, and the media server **20** can send the receipt notification message (e.g., a BYE message) to the first terminal **10** in response to the received avatar data.

The scheduling unit **27** and the image database **28** may be provided to register the avatar data of the calling/called party.

The calling and called parties can register different avatar data for different call conditions.

For example, the called party can register different avatar data in the image database **28** for different call conditions, such as when ready to receive a call, receiving another call, has the terminal **30** powered off, and incapable of receiving a call (e.g., when in a theater, a meeting, or a bathroom).

The scheduling unit **27** checks the call condition of the called party and selects one of the avatar data corresponding to the checked call condition. Also, other data such as identifiers, phone numbers, as well as the avatar data can be registered in the image database **28** for both the calling and called parties.

In this manner, the avatar data are registered and set according to the call condition. Therefore, when the first terminal **10** sends a call request and an avatar data forwarding request, the media server **20** searches the avatar data of the image database **28** according to the identifier or phone number of the calling party to find an avatar corresponding to the calling party and sends the avatar to the second terminal **30**, such that the avatar of the calling party can be displayed on the display **38** of the second terminal **30**.

Further, the media server **20** checks the call condition of the second terminal **30**, selects an avatar corresponding to the call condition form the image database **28**, and sends the avatar to the first terminal **10** for displaying on the display **18**.

Hereinafter, a method of identifying a calling/called party will now be described. There are two ways of transmitting the avatar data: one way is to transmit the avatar data that are registered in the terminal **10** or terminal **30**, and another way is to transmit the avatar data that are previously registered in the media server **20**.

FIG. **2** is a flowchart showing a method of transmitting an avatar data registered in a terminal according to a preferred embodiment of the present invention; and

Referring to FIGS. **1** and **2**, avatar data of the calling party are registered in the image database **17** of the first terminal **10** in operation S**41**. Herein, the avatar data of the calling party are not registered in the media server **20**. The avatar data may include still picture data, moving picture data, text data, as well as avatar data. The avatar data are image data representing a person and it is available from the Internet. Also, the still picture and moving picture data may be picture data of the calling party taken with a camera such as a built-in camera of the terminal **10**. Information about the calling party may be contained in the text data to represent the calling party. The calling party can register one of the avatar data, the still picture data, the moving picture data, the text data, and a combination thereof.

In operation S**42**, the first terminal **10** of the calling party transmits a call request to the second terminal **30** of the called party. The way of the call request is well known in the art.

In operation S**43**, the SIP channel connection is set between the first terminal **10** and the media server **20**. After the SIP channel is set, data and control signals can be transmitted between the first terminal **10** and the media server **20**.

In operation S**44**, the first terminal **10** transmits the avatar data of the calling party from the image database **17** to the media server **20** through the RTP channel in the form of packet.

In operation S**45**, the media server **20** sends a receipt notification message (e.g., a BYE message) to the first terminal **10** through the RTCP channel when the media server **20** receives the avatar data of the calling party.

In operation S**46**, the media server **20** transmits the received avatar data of the calling party to the second terminal **30** through the RTP channel between the media server **20** and the second terminal **30**. After the avatar data of the calling party are transmitted to the second terminal **30**, the avatar data may be deleted from the media server **20**. The RTP and RTCP channels are opened between the media server **20** and the second terminal **30** before the avatar data of the calling party are transmitted to the second terminal **30**. The called party can open the RTP and RTCP channels by manipulating the second terminal **30**, for example, pressing an "ON" button.

In operation S**47**, the second terminal **30** displays the received avatar data of the calling party. Therefore, the called

party of the second terminal **30** can exactly identify the calling party through the displaying avatar data. The second terminal **30** may register the received avatar data of the calling party in the image database **37** to display the registered avatar data instead of repeatedly receiving the avatar data from the first terminal **10** when the first terminal **10** requests a call again.

In operation S**48**, the media server **20** asks the second terminal **30** for a call condition through the RTCP channel, and correspondingly the second terminal **30** sends its call condition to the media server **20** through the RTCP channel, such that the media server **20** can check the call condition of the second terminal **30**.

When the calling party makes a call to the called party, the called party may be in various situations such as when ready to receive a call, receiving another call, being on duty, and incapable of receiving a call. Also, the second terminal **30** of the called party may be power-off or incapable of receiving a call. The term "call condition(s)" is used to denote such situations and conditions. That is, when the media server **20** asks the second terminal **30** for the call condition, the second terminal **30** may inform the media server **20** of its call condition among such situations and conditions. The call condition checking operation is well known to those of skill in the art.

In operation S**49**, the media server **20** selects an avatar of avatar data of the called party corresponding to the checked call condition from the image database **28**. For this operation, the called party can register avatar data having different avatars, pictures and texts in image database **28** of the media server **20** for different call conditions. Also, since the calling party of the first terminal **10** can be a called party, the calling party of the first terminal **10** can register his/her avatar data in the image database **28** for different call conditions.

In operation S**50**, the media server **20** transmits the selected avatar of the called party to the first terminal **10** through the RTP channel.

In operation S**51**, the first terminal **10** displays the received avatar of the called party. The first terminal **10** may register the received avatar of the called party in its image database **17** for later usage, for the same purpose as is described in operation S**47**.

In operation S**52**, the SIP channel connection between the **10** and the media server **20** is released.

Therefore, each of the calling party and the called party can see the avatar of the opposing party when making and answering a call, thereby exactly identifying the opposing party.

If the second terminal **30** accepts the call request of the first terminal **10** in operation S**53**, communication channel between the first and second terminals **10** and **30** is open for the communication therebetween in operation S**54**.

After the communication between the terminals **10** and **30**, the communication channel is closed as is well known in the art.

FIG. **3** is a flowchart showing a method of transmitting an avatar data previously registered in a media server according to a preferred embodiment of the present invention.

Referring to FIGS. **1** and **3**, avatar data for different call conditions are registered in the media server **20** in operation S**61**. Both the called party and the calling party can register their avatar data for their different call conditions, and the avatar data may be registered together with identifiers and phone numbers.

The terminals **10** and **30** do not store opposing party's avatar data. But the terminals **10** and **30** may store the opposing party's avatar data after a call (described later).

The avatar data may include still picture data, moving picture data, text data, etc., as well as avatar data.

The avatar data may be registered in the media server with the first terminal **10**, the second terminal **30**, a personal computer (PC), or other devices.

In operation S**62**, the calling party of the first terminal **10** requests a call to the media server **20**. The operation of the call request is well known in the art.

In operation S**63**, the SIP channel connection is set between the first terminal **10** and the media server **20** in response to the call request. After the SIP channel is set, data and control signals can be transmitted between the first terminal **10** and the media server **20**.

In operation S**64**, the first terminal **10** transmits an avatar data forwarding request to the media server **20** through the RTP channel. Since the avatar data of the calling party are already registered in the media server **20**, the first terminal **10** can request the media server **20** to send the avatar data of the calling party to the second terminal **30** by transmitting the avatar data forwarding request.

In operation S**65**, the media server **20** sends a receipt notification message (e.g., a BYE message) to the first terminal **10** through the RTCP channel when the media server **20** receives the avatar data forwarding request. That is, the media server **20** sends the receipt notification message to inform the first terminal **10** that the avatar data forwarding request is successfully received. Therefore, the first terminal **10** can check that its avatar data forwarding request is successfully transmitted to the media server **20**.

In operation S**66**, the media server **20** transmits the avatar data of the calling party from the image database **28** to the second terminal **30** through the RTP channel in response to the avatar data forwarding request. The second terminal **30** may request to open the RTP and RTCP channels between the media server **20** and the second terminal **30** before the avatar data of the calling party are transmitted to the second terminal **30**. That is, the called party can open the RTP and RTCP channels by manipulating the second terminal **30**, for example, pressing an "ON" button.

In operation S**67**, the second terminal **30** displays the received avatar data of the calling party. Therefore, the called party of the second terminal **30** can exactly identify the calling party through the displaying avatar data. The second terminal **30** may register the received avatar data of the calling party in the image database **37** to display them instead of repeatedly receiving the avatar data from the media server **20** when the first terminal **10** requests a call again.

In operation S**68**, the media server **20** asks the second terminal **30** for a call condition through the RTCP channel, and correspondingly the second terminal **30** sends its call condition to the media server **20** through the RTCP channel, such that the media server **20** can check the call condition of the second terminal **30**.

The term "call condition" denotes the same meaning as described above.

In operation S**69**, the media server **20** selects an avatar of the avatar data of the called party corresponding to the checked call condition from the image database **28**. Since the avatar data having different avatars, pictures and texts that are previously registered in image database **28** of the media server **20** for different call conditions, the media server **20** can easily select the avatar corresponding to the call condition.

In operation S**70**, the media server **20** transmits the selected avatar of the called party to the first terminal **10** through the RTP channel.

In operation S**71**, the first terminal **10** displays the received avatar of the called party. The first terminal **10** may register

the received avatar of the called party in its image database **17** for later usage, for the same purpose as is described in operation S**67**.

In operation S**72**, the SIP channel connection between the **10** and the media server **20** is released.

Therefore, each of the calling party and the called party can see the avatar of the opposing party when making and answering a call, thereby exactly identifying the opposing party.

If the second terminal **30** accepts the call request of the first terminal **10** in operation S**73**, communication channel between the first and second terminals **10** and **30** is open for the communication therebetween in operation S**74**.

After the communication between the terminals **10** and **30**, the communication channel is closed as is well known in the art.

As described above, the calling party and called party easily identify the opposing party using the SIP protocol, such that the called party can selectively answer the call depending on the calling party, and the calling party can be informed promptly when dialing a wrong number.

Further, in case the calling party does not register the avatar data in the media server, the calling party can utilize the avatar data of his/her terminal to transmit the avatar to the called party when making a call.

Furthermore, when the called party receives a call at least one time from the calling party, the called party can register the avatar data of the calling party in the terminal for later usage, such that the terminal of the called party can display the registered avatar data instead of repeatedly receiving the avatar data when the same calling party called. In the same way, when the calling party requests a call to the called party, the calling party can register the avatar data received from the called party for later usage instead of repeatedly receiving the avatar data of the called party.

The method and communication system of the present invention provides an easy way of identifying the calling/called party by utilizing the well known SIP protocol without adding additional software and hardware.

It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention. Thus, it is intended that the present invention covers the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

[1. A method of identifying a calling party and call conditions of a called party, comprising the steps of:

registering image data of a calling party in at least one a first terminal or a media server;

transmitting the image data and a call request of the first terminal to a second terminal via the media server;

displaying the image data of the calling party on the second terminal;

transmitting image data of the called party previously registered in the media server to the first terminal when at least one of the image data or the call request is transmitted to the media server, wherein the image data of the called party include different images for different call conditions; and

displaying the image data of the called party on the first terminal.**]**

[2. The method according to claim **1**,

wherein the media server checks the different call condition of the called party, selects an image corresponding to the different call condition from an image database of the media server, and sends the image to the calling party for displaying on a display of the calling party.**]**

[3. The method according to claim **2**, wherein the different call conditions include ready to receive a call, receiving another call, terminal powered off, or incapable of receiving a call.**]**

[4. The method according to claim **1**, wherein the step of transmitting the image data of the called party to the first terminal includes the steps of:

the media server requesting a call condition of the second terminal;

sending the call condition of the second terminal to the media server;

selecting an image corresponding to the call condition from the image data registered in the media server; and

transmitting the selected image to the first terminal.**]**

[5. The method according to claim **1**, wherein the image data of the called party transmitted to the first terminal is registered in the first terminal.**]**

[6. The method according to claim **1**, wherein the image data of the calling party transmitted to the second terminal is registered in the second terminal.**]**

[7. The method according to claim **1**, wherein the image data of the calling party are selected from the group consisting of avatar data, still picture data, moving picture data, text data, and combinations thereof.**]**

[8. The method according to claim **1**, wherein the image data of the calling party and the image data corresponding to the different call conditions of the called party are transmitted through RTP (real time transport protocol) channels after SIP (session initiation protocol) channel connections are set between the first terminal and the media server and between the media server and the second terminal.**]**

[9. A method of identifying another party, comprising the steps of:

registering image data of a calling party and different image data corresponding to call conditions of a called party in a media server;

transmitting a call request and an image data forwarding request of a first terminal to the media server;

transmitting the registered image data of the calling party from the media server to a second terminal in response to the image data forwarding request; and

displaying the image data of the calling party on the second terminal.**]**

[10. The method according to claim **9**, further comprising the steps of:

when the image data forwarding request of the first terminal is transmitted to the media server, transmitting the image data corresponding to the call conditions of the called party from the media server to the first terminal; and

displaying the image data of the called party on the first terminal.**]**

[11. The method according to claim **10**, wherein the step of transmitting the image data corresponding to th call conditions of the called party to the first terminal includes the steps of:

the media server requesting a call condition of the second terminal;

sending the call condition of the second terminal to the media server;

selecting an image corresponding to the call condition from the media server; and

transmitting the selected image to the first terminal.**]**

[12. The method according to claim **10**, wherein the image data of the called party transmitted to the first terminal is registered in the first terminal.**]**

[13. The method according to claim 9 wherein the image data of the calling party transmitted to the second terminal is registered in the second terminal.]

[14. The method according to claim 9, wherein the image data of the calling party are selected from the group consisting of avatar data, still picture data, moving picture data, text data, and combinations thereof.]

[15. The method according to claim 9, wherein the image data of the calling party and the image data corresponding to the call conditions of the called party are transmitted through RTP channels after SIP channel connections are set between the first terminal and the media server and between the media server and the second terminal.]

[16. A communication system for identifying another party, comprising:

a first terminal having a communication unit for requesting a call, an SIP system for transmitting image data of a calling party and receiving image data corresponding to a call condition of a called party, a display for displaying the image data of the called party, and an image database for registering the image data of the calling party;

a media server having an SIP system for transmitting the image data of the calling party received from the first terminal to the called party and transmitting the image data corresponding to the call condition of the called party to the first terminal, an image database for registering the image data of the called party in accordance with the call condition, and means for selecting one of the image data of the called party corresponding to the call condition; and

a second terminal having a communication unit for responding to the call requested from the first terminal to open a communication channel with the first terminal, an SIP system for receiving the image data of the calling party from the first terminal, and a display for displaying the image data of the calling party.]

[17. The communication system according to claim 16, wherein the image data corresponding to different call conditions of the called party are registered in the image database of the media server through the second terminal or other communication means.]

[18. The communication system according to claim 16, wherein the image data of the calling party and the image data corresponding to the call condition of the called party are transmitted through an RTP channel.]

[19. A communication system for identifying another party, comprising:

a first terminal having a communication unit for requesting a call, an SIP system for transmitting an image data forwarding request of a calling party and receiving image data corresponding to a call condition of a called party, and a display for displaying the image data of the called party;

a media server having an SIP system for transmitting the image data of the calling party to the called party in response to the image data forwarding request and transmitting the image data corresponding to a call condition of the called party to the first terminal, an image database for registering the image data in accordance with the call condition, and means for selecting one of the image data of the called party corresponding to the call condition; and

a second terminal having a communication unit for responding to the call requested from the first terminal to open a communication channel with the first terminal, an SIP system for receiving the image data of the calling party from the first terminal, and a display for displaying the image data of the calling party.]

[20. The communication system according to claim 19, wherein the registered image data in the image database include the image data of the calling party and the image data corresponding to different call conditions of the called party.]

[21. The communication system according to claim 19, wherein the image data are registered in the image database through the first terminal, the second terminal, or other communication means.]

[22. The communication system according to claim 19, wherein the image data of the calling party and the image data corresponding to the call condition of the called party are transmitted through an RTP channel.]

[23. A method of identifying call conditions of a called party, comprising the steps of:

transmitting a call request of the first terminal to a second terminal via a media server;

transmitting image data of the called party to the first terminal, wherein the image data of the called party include different images for different call conditions; and

displaying the image data of the called party on the first terminal.]

[24. A method of identifying another party, comprising the steps of:

registering different image data corresponding to call conditions of a second terminal;

transmitting a call request of a first terminal to the second terminal;

transmitting the registered image data corresponding to the call condition of the second terminal; and

displaying the image data received from the second terminal on the first terminal.]

[25. A communication system for identifying another party, comprising:

a first terminal having a communication unit for requesting a call, an SIP system for receiving image data corresponding to a call condition of a called party, and a display for displaying the image data of the called party;

a media server having an SIP system for transmitting the image data corresponding to the call condition of the called party to the first terminal, an image database for registering the image data of the called party in accordance with the call condition, and means for selecting one of the image data of the called party corresponding to the call condition; and

a second terminal having a communication unit for responding to the call requested from the first terminal to open a communication channel with the first terminal.]

26. A media server for transmitting image data identifying a call condition of a called terminal, the media server comprising:

a communication unit;

a database; and

a controller cooperating with the communication unit and the database to:

register image data of the called terminal in the database of the media server, the image data of the called terminal identifying a call condition of the called terminal; and

transmit the registered image data of the called terminal to the calling terminal after determining that a call request from the calling terminal to the called terminal is generated,

wherein the transmitting process is performed before the call request is accepted by the called terminal,

wherein the image data of the called terminal include different images for different call conditions, and the image data of the called terminal include at least one of avatar data, still picture data, moving picture data, text data, or a combination thereof.

27. The media server of claim 26, wherein the different call conditions include ready to receive a call, receiving another call, terminal powered off, or incapable of receiving a call.

28. The media server of claim 26, wherein the controller transmits the registered image data of the called terminal by:

checking a call condition of the called terminal;

selecting an image corresponding to the call condition from the registered image data; and

transmitting the selected image as the registered image data of the called terminal to the calling terminal.

29. The media server of claim 26, the controller further configured to:

receive image data of the calling terminal identifying the calling terminal; and

transmit the received image data of the calling terminal to the called terminal with the call request.

30. A method for transmitting image data identifying a call condition of a called terminal, the method comprising:

registering, by a media server, image data of the called terminal in an image database of the media server, the image data of the called terminal identifying a call condition of the called terminal; and

transmitting, by the media server, the registered image data of the called terminal to the calling terminal after determining that a call request from the calling terminal to the called terminal is generated,

wherein the transmitting process is performed before the call request is accepted by the called terminal,

wherein the image data of the called terminal include different images for different call conditions, and the image data of the called terminal include at least one of avatar data, still picture data, moving picture data, text data, or a combination thereof.

31. The method of claim 30, wherein the different call conditions include ready to receive a call, receiving another call, terminal powered off, or incapable of receiving a call.

32. The method of claim 30, wherein the step of transmitting, by the media server, the registered image data of the called terminal to the calling terminal includes:

checking a call condition of the called terminal;

selecting an image corresponding to the call condition from the registered image data; and

transmitting the selected image to the calling terminal.

33. The method of claim 30, further comprising:

receiving, by the media server, image data of the calling terminal identifying the calling terminal; and

transmitting, by the media server, the received image data of the calling terminal to the called terminal with the call request.

34. A media server for transmitting image data identifying a calling terminal, the media server comprising:

a communication unit;

a database; and

a controller cooperating with the communication unit and the database to:

register image data of the calling terminal in the database; and

transmit the registered image data of the calling terminal to the called terminal after determining that a call request from the calling terminal to the called terminal is generated,

wherein the transmitting process is performed before the call request is accepted by the called terminal,

wherein the image data of the calling terminal include at least one of avatar data, still picture data, moving picture data, text data, or a combination thereof.

35. The media server of claim 34, the controller further configured to:

register different image data corresponding to call conditions of the called terminal in the database;

select an image data corresponding to a call condition of the called terminal among the registered different image data; and

transmit the selected image data to the calling terminal.

36. The media server of claim 34, wherein the call conditions include ready to receive a call, receiving another call, terminal powered off, or incapable of receiving a call.

37. A method for transmitting image data identifying a calling terminal, the method comprising:

registering, by a media server, image data of the calling terminal in an image database of the media server; and

transmitting, by the media server, the registered image data of the calling terminal to the called terminal after determining that a call request from the calling terminal to the called terminal is generated,

wherein the transmitting process is performed before the call request is accepted by the called terminal,

wherein the image data of the calling terminal include at least one of avatar data, still picture data, moving picture data, text data, or a combination thereof.

38. The method of claim 37, further comprising:

registering different image data corresponding to call conditions of the called terminal in the database;

selecting, by the media server, an image data corresponding to a call condition of the called terminal among the registered different image data; and

transmitting, by the media server, the selected image data to the calling terminal.

39. The method of claim 37, wherein the call conditions include ready to receive a call, receiving another call, terminal powered off, or incapable of receiving a call.

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