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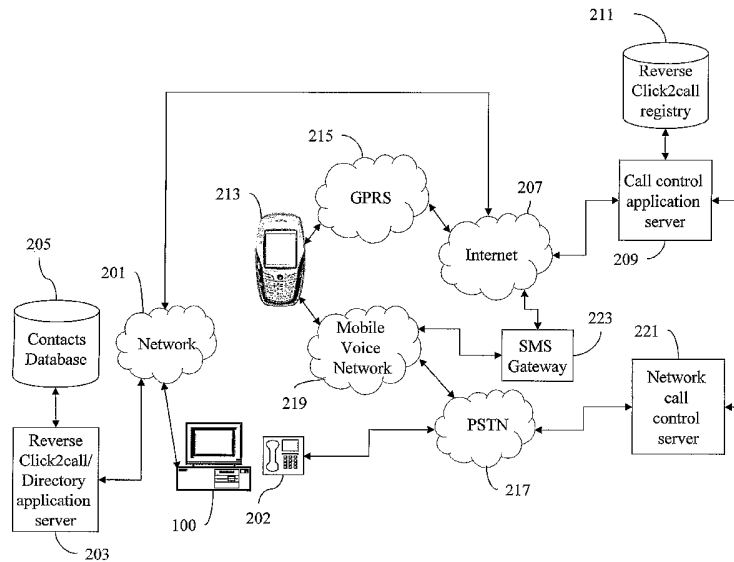
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- (71) Applicant (for all designated States except US): **BRITISH TELECOMMUNICATIONS PUBLIC LIMITED COMPANY** [GB/GB]; 81 Newgate Street, London, Greater London EC1A 7AJ (GB).

- (74) Agent: **GALAUN, David, Benjamin**; PP: C5A, BT Centre, 81 Newgate Street, London, Greater London EC1A 7AJ (GB).
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- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **RINGLAND, Simon, Patrick, Alexander** [GB/GB]; 10 Red House Walk, Levington, Ipswich, Suffolk IP10 0LY (GB). **SCAHILL, Francis, James** [GB/GB]; Leather Bottle Cottage, Little Blakenham, Ipswich, Suffolk IP8 4NG (GB).

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(54) Title: CALLBACK SYSTEM FOR MOBILE TERMINALS



(57) Abstract: A method of establishing a communications session in a communications system is disclosed. The communications system comprises a user terminal (100, 202), a mobile terminal (213) associated with a contact and session initiation means (209). The method comprises: identifying said contact using said user terminal (100, 202); transmitting contact data identifying said contact and user data associated with said user terminal (100, 202) from said user terminal (100, 202) to said session initiation means (209); in dependence on said contact data, transmitting a request from said session initiation means (209) to said mobile terminal (213), said request comprising said user data and requesting that said mobile terminal (213) establishes said communications session with said user terminal (100, 202) in dependence on said user data.

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CALLBACK SYSTEM FOR MOBILE TERMINALS

This invention relates to a method of establishing a communications session in a communication system. In particular, it relates to a method of establishing a telephone
5 call.

When a telephone call is made from a first telecommunications network (e.g. a fixed telecommunications network) to a second telecommunications network (e.g. a mobile telecommunications network), the first network operator charges the second network
10 operator a fee to complete the telephone call; known as a termination charge. Since the termination charge levied by mobile network operators is higher than that levied by fixed network operators, the cost of a telephone call from a fixed network to a mobile network is higher than the cost of a telephone call from a mobile network to a fixed network. For many corporations, the cost of their office based workforce making telephone calls out to
15 colleagues using mobile telephones (i.e. fixed network to mobile network telephone calls) is significant and cost reductions could be achieved if the direction of these calls could be reversed and therefore billed as mobile network to fixed network calls.

According to a first aspect of the present invention there is provided a method of
20 establishing a communications session in a communications system, said communications system comprising a user terminal, a mobile terminal associated with a contact and session initiation means, said method comprising:

identifying said contact using said user terminal;

responsive to identifying said contact, transmitting contact data identifying said
25 contact and user data associated with said user terminal from said user terminal to said session initiation means;

in dependence on and responsive to reception of said contact data, transmitting a request from said session initiation means to said mobile terminal, said request comprising said user data and requesting that said mobile terminal establishes said
30 communications session with said user terminal in dependence on said user data.

According to a second aspect of the present invention there is provided communication session initiation apparatus for establishing a communications session in a communications system, said communications system comprising a user terminal and a
35 mobile terminal associated with a contact, said apparatus comprising:

data receiving means arranged in operation to receive from said user terminal, contact data identifying said contact and user data associated with said user terminal;

request transmission means arranged in operation to transmit a request to said mobile terminal in dependence on and responsive to reception of said contact data, said
5 request comprising said user data and requesting that said mobile terminal establishes said communications session with said user terminal in dependence on said user data.

By identifying a contact using a user terminal; and responsive to identifying said contact, transmitting contact data identifying the contact and user data associated with the user
10 terminal from the user terminal to session initiation means; and, in dependence on and responsive to reception of the contact data, transmitting a request from the session initiation means to a mobile terminal associated with the contact, the request comprising the user data and requesting that the mobile terminal establishes a communications
15 session with the user terminal in dependence on the user data, a communications session between a user terminal and a mobile terminal can be initiated on the user terminal but established by the mobile terminal. The direction of the communications session for billing purposes is therefore from the mobile terminal to the user terminal despite the fact that the session was initiated from the user terminal. The cost of the communications session is likely to be less than if the direction of the session was from the user terminal to
20 the mobile terminal.

Preferably, billing for the established communications session is applied to an account associated with the mobile terminal.

25 In preferred embodiments, the user terminal comprises a user computer and a user telephone associated with the user computer, and the user data comprises a telephone number associated with the user telephone. In such embodiments, the method preferably further comprises the antecedent step of associating the user computer with the user telephone by storing, in a user registration database, a mapping between computer
30 identification data identifying the user computer and telephone identification data identifying the user telephone. Thus a telephone can be associated with a computer and then the computer can be used to initiate telephone calls.

Preferably, the user data comprises the telephone identification data. Alternatively, the user registration database is accessible by the session initiation means and the user data comprises the computer identification data.

5 In alternative embodiments, the user terminal comprises a user telephone, the communication session comprises a telephone call and the user data comprises a telephone number associated with said user telephone. For example, the user telephone could comprise a fixed line, corded or analogue or digital cordless telephone or a mobile telephone.

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In preferred embodiments, the contact data identifying the contact is stored in a contacts database accessible by the user terminal.

15 Preferably, the method further comprises storing said contact data in a contact registration database accessible by said session initiation means. In this way, a record of registered contacts can be created and stored in the network, which can be used to restrict access to a service operating in accordance with this method to contacts registered to use the service.

20 In alternative embodiments, the communication session comprises a multimedia communications session (e.g. a video call).

In preferred embodiments the mobile terminal comprises a mobile telephone. In other embodiments it comprises, for example, a personal digital assistant suitably enabled to
25 access a communications network. In such embodiments, the contact data identifying said contact comprises the telephone number associated with the mobile telephone.

30 Preferably, the request further comprises a security token to be verified by the mobile terminal before responding to the request. Thus it is possible to stop someone sending spurious call setup requests to the mobile terminal.

Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, wherein like reference numbers refer to like parts, and in which:

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Figure 1 is an illustration of a general purpose computer system;

Figure 2 is an illustration of a communications system according to an embodiment of the present invention;

Figure 3 is an illustration of the Reverse Click2call application server of the
5 communications system of figure 2;

Figure 4 is an illustration of the call control application server of the communications system of figure 2;

Figure 5 is an illustration of the mobile telephone handset of the communications system of figure 2;

10 Figure 6 is a sequence diagram illustrating the establishment of a communications session in accordance with an embodiment of the present invention;

With reference to figure 1, a general purpose computer system 100, which is generally known in the art, comprises a desk-top tower base unit 101 within which is contained a
15 computer processing unit, mother board, hard disk drive or drives, system memory and an optical disk drive 102 which is capable of reading from and/or writing to a removable optical disk such as a CD, CD-R, CD-RW, DVD, or the like. Furthermore, the base unit 101 also houses a magnetic floppy disk drive 104 capable of accepting and reading from and/or writing to magnetic floppy disks. The base chassis unit 101 also has provided on
20 the back thereof numerous input and output ports for peripherals such as a monitor 106 used to provide a visual display to the user. A user may input data and commands to the computer system via a keyboard 108, or a pointing device such as a mouse 110.

It will be appreciated that figure 1 illustrates an exemplary computer system only, and that
25 other configurations of computer systems are possible which can be used with the present invention. In particular, the base unit 101 may be in a tower configuration, or alternatively the computer system may be portable in that it is embodied in a lap-top, note-book or handheld configuration.

30 Also housed within the base unit 101 is a network interface in the form of a network card or the like arranged to allow the computer system to communicate with other computer systems over a network. The network may be a local area network (LAN), wide area network (WAN), local wireless network, or the like. The network interface allows the computer system to form logical connections over the network with other computer
35 systems such as servers, routers, or peer-level computers, for the exchange of programs

or data. With respect to the network interface, it should also be understood that the computer system may equally be provided with a modem attached to a serial or parallel port interface, and which is arranged to form logical connections from the computer system to other computers via the public switched telephone network (PSTN).

5

Where the computer system is used in a network environment, it should further be understood that the application programs, other programs, and other data which may be stored locally in the computer system may also be stored, either alternatively or additionally, on remote computers, and accessed by the computer system by logical
10 connections formed over network.

All of the hard disk drive, optical disks used with the optical drive, or floppy disks used with the floppy disk provide non-volatile storage of computer readable instructions, data files, program modules, and other data for the computer system. Although these three specific
15 types of computer readable storage media have been described here, it will be understood by the intended reader that other types of computer readable media which can store data may be used, and in particular magnetic cassettes, flash memory cards, tape storage drives, digital versatile disks, or the like.

20 Each of the computer readable storage media such as the hard disk drive, or any floppy disks or optical disks, may store a variety of programs, program modules, or data. In particular, the hard disk drive in the embodiment particularly stores application programs, application program data, other programs required by the computer system or the user, a computer system operating system such as Microsoft® Windows®, Linux™, Unix™, or the
25 like, as well as other user data. The hard disk drive provides non volatile storage of the aforementioned programs and data such that the programs and data can be permanently stored without power.

With reference the figure 2, computer system 100 forms part of a communications system
30 and is connected to network 201. In the present embodiment, network 201 comprises a company's LAN (intranet). The computer system 100 is equipped with an address book application client (not shown). A telephone 202 is associated with computer system 100 in a manner described in more detail below. Telephone 202 is connected to a public switched telephone network (PSTN) 217. It will be clear to those skilled in the art that a

plurality of computer systems similar to computer system 100 will also be connected to network 201 and will each be associated with a telephone similar to telephone 202.

The network 201 of the communications system is further connected to the internet 207,
5 to which is connected to a call control application server 209, which is described in more detail in relation to figure 4. The call control application server 209 comprises a Java 2 Enterprise Edition (J2EE) application server 401 on which the call control J2EE application 403 resides. Call control application server is itself connected to Reverse Click2call registry 211, which comprises Extensible Markup Language (XML) datafiles.
10 The role and population of Reverse Click2call registry 211 and the role of the call control application server 209 will be described in more detail later.

The communications system further comprises a mobile telephone handset 213 (such as the Nokia 6600), which is carried by an employee of the company, and which can connect
15 to the internet 207 via a General Packet Radio Service (GPRS) network 215. Mobile handset 213 can also connect to a PSTN 217 via a mobile voice network 219 (such as those provided in the United Kingdom by Vodafone™, Orange, O₂, T-Mobile and 3).

With reference to figure 5, mobile telephone handset 213 comprises a Reverse Click2call
20 application client 501 that a user of handset 213 can download (e.g. over the GPRS network 215). In the present embodiment this application is a Java application (e.g. J2ME (Java 2 Mobile Edition) or personal Java) although it could also comprise a Symbian OS application or a SIM (subscriber identity module) card based application. It will be clear to those skilled in the art that each employee of the company could carry a mobile handset
25 similar to mobile handset 213.

The communications system of figure 2 further comprises a network call control server 221 such as the Marconi Intelligent Networks platform, which provides third party call control functionality as specified by the standard Parlay Application Programming
30 Interface (API). (Third party call control refers to the ability of one entity to create a telephone call in which communication is actually between other parties.) The network call control server 221 is connected to call control application server 209 and PSTN 217.

The communications system also comprises an SMS (short message service) gateway
35 223 such as that provided by (aq) limited, Leeds, UK trading as sms2email. SMS

gateway 223 is connected to internet 207 and mobile voice network 219 and is a means for call control application server 209 to send an SMS message to mobile handset 213 via the internet 207 and the SMS centre (not shown) of mobile voice network 219.

5 Also connected to network 201 of the communications system of figure 2 is Reverse Click2call/Directory application server 203, which is described in more detail with respect to figure 3. The Reverse Click2call/Directory application server 203 comprises a Java 2 Enterprise Edition (J2EE) application server 301 on which the Reverse Click2call J2EE application 303 resides. It also comprises a registered users database 305, which
10 comprises Extensible Markup Language (XML) datafiles loaded by the Reverse Click2call/Directory application server 203. Reverse Click2call/Directory application server 203 is further connected to a contacts database 205 (which comprises Extensible Markup Language (XML) datafiles) and further comprises an HTML (hypertext markup language) directory application 307 that converts the contacts database 205 into an HTML
15 view that can be displayed on monitor 106 using the computer's address book application client. In the present embodiment, the contacts database 205 comprises a corporate contact directory that lists contact details (including telephone numbers and mobile telephone numbers) of employees of the company. The role and population of contacts database 205 and registered users database 305, and the role of the Reverse
20 Click2call/Directory application server 203 will be described in more detail later.

"ClickDial Web-Enabled CTI", Brockbank, R. et al, British Telecommunications Engineering, Volume 18, Part 1, April 1999 and the Applicant's United States patent number 6,594,357, the details of both of which are hereby incorporated by reference,
25 describe functionality whereby, in response to the user completing a registration process, an on-screen button is provided next to telephone numbers in a directory application. A user can interact with the directory application using a keyboard and mouse and can initiate the placing of a telephone call between themselves and a selected contact (using a telephone that has been associated with the computer during the registration process) by
30 clicking on the button next to the name/number of the selected contact. In the present embodiment, on-screen buttons similar to those described above (called Click2call buttons in the present embodiment) are provided next to the telephone numbers of employees in directory application 307.

When a user clicks on a Click2call button next to the telephone number of a selected contact, directory application 307 of Reverse Click2call/Directory application server 203 translates that action as a request to set up a communications session between the user and the selected contact and a request is passed from Reverse Click2call/Directory application server 203 to call control application server 209. The Reverse Click2call/Directory application server 203 and call control application server 209 exchange messages over network 201 and internet 207, using HTTP request/response pairs, which are described in the chapter entitled "HTTP Transactions" in *HTTP Pocket Reference*, Wong, C., May 2000, ISBN 1-56592-862-8.

10

The process of establishing a communications session in accordance with an embodiment of the present invention will now be described in relation to figure 6.

In an user initial registration stage (not shown), the user of computer system 100 and telephone 202 follows a registration process as described in the documents "*ClickDial Web-Enabled CTI*" and US 6,594,357 that were cited above. This results in the computer system 100 being assigned a unique ID, which in the present embodiment comprises a cookie (a packet of information sent by a server to a web browser and then sent back by the browser each time it accesses the server) that is supplied by Reverse Click2call/Directory application server 203 and stored by computer system 100. The unique ID is also stored in registered users database 305 of Reverse Click2call/Directory application server 203 and is mapped to the telephone number associated with telephone 202.

25 In an initial employee registration stage (also not shown), an employee downloads the Reverse Click2call application client 501 to mobile handset 213 in a manner as described above. The first time that the Reverse Click2call application client 501 is run, it connects to call control application server 209 via GPRS network 215 in order to register the mobile handset 213 as being enabled to use the Reverse Click2call service. Further ways of effecting registration of mobile handset 213 will be apparent to someone skilled in the art. The effect of registration is that a record is created in the Reverse Click2call registry 211 which stores details of mobile handset 213. The details of mobile handset 213 that may be stored are the International Mobile Station Equipment Identity (IMEI) number (a number unique to every mobile handset), the International Mobile Subscriber Identity (IMSI) number (a number unique to the SIM card inside the mobile handset 101 and the

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Mobile Station Integrated Services Digital Network (MSISDN) number (the phone number of mobile handset/SIM card) or a combination thereof.

The Reverse Click2call application client 501 is configured to automatically start-up when
5 mobile handset 213 is switched on (achieved by modifying the application settings within
the mobile phone application manager utility). As mentioned above, in preferred
embodiments, the Reverse Click2call application client 501 comprises a J2ME (Java 2
Platform, Micro Edition) application and communicates with call control application server
209 over GPRS network 215 and internet 207, using HTTP request/response pairs. After
10 start-up, Reverse Click2call application client 501 connects to call control application
server 209 (step 601) in order to register itself as being 'on-line', i.e. available to receive
call setup requests. From this point on, it polls the call control application server 209
using an HTTP GET request to determine whether there are any call setup requests
waiting. If there are no outstanding call setup requests, then the call control application
15 server 209 waits for the polling timeout to expire before responding with an empty
response message. When the Reverse Click2call application client 501 receives an
empty response message, it repeats the request. The polling request is set to have a long
timeout period but polling is carried out often enough to hold open a GPRS session. In
the present embodiment, the preferred polling timeout is set to 5 minutes.

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When the user of computer system 100 wishes to contact an employee, they access the
computer's address book application client (603) in order to look up the employee (605)
and click on the relevant Click2call button next to the telephone number of the selected
employee (607).

25

As mentioned above, when a user clicks on a Click2call button next to the telephone
number of a selected employee, the directory application 307 of Reverse
Click2call/Directory application server 203 translates that action as a request to set up a
communications session between the user and the selected employee. A cookie (the
30 unique ID) is passed from computer system 100 to Reverse Click2call/Directory
application server 203, which can consult registered users database 305 to obtain the
telephone number associated with the user's telephone 202. Then, an HTTP request
message is transmitted from Reverse Click2call/Directory application server 203 to call
control application server 209 (609). The parameters of the HTTP request message
35 include the telephone number associated with the mobile handset 213 of the selected

employee (obtained from contacts database 205) and the telephone number associated with the user's telephone 202 (obtained, as described above, from the registered users database 305).

5 Call control application server 209 receives the HTTP call setup request message and then consults the Reverse Click2call registry 211 to check whether the telephone number associated with the mobile handset 213 (received as a parameter in the request message) is registered to use the Reverse Click2call service (611). It also checks whether Reverse Click2call application client 501 is 'on-line'. If it is registered and 'on-line', call control
10 application server 209 responds to latest HTTP request message from Reverse Click2call application client 501. The response message takes the form of an HTTP response, sent from call control application server 209 to Reverse Click2call application client 501, including the telephone number associated with the user's telephone 202 as one of its parameters (613).

15

Upon receiving the request from call control application server 209, Reverse Click2call application client 501 provides the employee with a visual and/or aural indication that somebody (in this case, the user) is trying to contact them via the Reverse Click2call service (615). The employee may then choose to accept or refuse the call, preferably by
20 using on-screen menus and key presses on mobile handset 213. If the employee chooses to accept the call (617), Reverse Click2call application client 501 then initiates a telephone call back to the user (619) using the mobile Java MIDlet.platformRequest() method. The platformRequest() method takes a string URL as its input argument, which in the present embodiment takes the form "tel:123456". This is interpreted by the
25 platformRequest() method as an instruction to place a telephone call to the number specified, which in the present embodiment will be the telephone number associated with the user's telephone 202, as received from call control application server 209.

A telephone call is therefore placed from mobile handset 213 to telephone 202 (621) over
30 mobile voice network 219 and PSTN 217. A visual and/or aural indication is given to the user (623) that this reverse telephone call has been placed (e.g. telephone 202 begins to ring) and the user answers the telephone call (625) (e.g. by picking up the handset of telephone 202). A telephone call is thus set up between the user and the employee (627). This telephone call was initiated by the user (in steps 603 to 607) but it was placed by
35 mobile handset 213. From the point of view of the telephone network (and the

telecommunications company providing telephony services to the user), a telephone call placed from the mobile handset 213 using the platformRequest() method is indistinguishable from one placed from the mobile handset 213 by the employee and hence the account associated with the mobile handset 213 will be billed for the call. An office based user can therefore use the Reverse Click2call service to establish a telephone call between themselves and a mobile employee such that the direction of the telephone call, for billing purposes, is from mobile voice network 219 to PSTN 217.

In an alternative embodiment, during installation a JAD (application descriptor file) and JAR (archive file) are downloaded to mobile handset 213. The JAR file contains the compiled Java byte code. The JAD file contains the application client configuration and installation information such as the vendor name, security settings and Push Registry details. (The Push Registry is an API within the Mobile Information Device Profile (MIDP) 2.0 (a profile implemented by J2ME) that enables MIDlets (API applications written for MIDP) to set themselves up to be launched automatically, without user initiation. It is part of the Generic Connection Framework (GCF) and is encapsulated within a single class: *javax.microedition.io.PushRegistry*.) In preferred embodiments, setting the parameters

*MIDlet-Push-1: sms://:50000, com.bt.ReverseClick2call, **

in the JAD file instructs the application manager of mobile handset 213 to launch the ReverseClick2call application client 501 if an SMS message is received on SMS port 50000. Thus registration of mobile handset 213 also binds the Reverse Click2call application client 501 to a particular SMS port number and this port number is notified to the call control application server 209 and stored in the Reverse Click2call registry 211, mapped to the details of mobile handset 213.

25

In this embodiment, if, upon consulting the Reverse Click2call registry 211, call control application server 209 finds that mobile handset 213 is registered to use the Reverse Click2call service, call control application server 209 sends an HTTP request message to SMS gateway via internet 207. Included in the parameters of the request message are the account details for the SMS gateway (e.g. username and password, which the owner of call control application server 209 will have obtained in advance), the telephone number associated with mobile handset 213, the SMS port number of mobile handset 213 registered for use with the Reverse Click2call service, the telephone number associated with the user's telephone 202 and optionally, a security token (e.g. a digital certificate) that will be used to validate the origin of the SMS message when received by the mobile

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handset 213. (It will be remembered that the registered port number is stored in Reverse Click2call registry 211 mapped to the details of mobile handset 213.) The SMS gateway 223 receives the request message, generates an SMS message (containing the registered SMS port number of mobile handset 213, the telephone number associated with the user's telephone 202 and the optional security token) and sends it to mobile handset 213 via the mobile voice network 219.

Receipt of the SMS message by mobile handset 213 on the registered SMS port automatically launches the Reverse Click2call application client 501 as described above.

10 Once the application has been launched (which, optionally, may involve an on-screen dialogue with the employee to confirm that launch of the Reverse Click2call application client 501 is acceptable), the contents of the SMS message are passed to the Reverse Click2call application client 501, which can read and process the SMS data. If a security token was included in the SMS message, this is initially checked to ensure that the call setup request originated at a valid server. Reverse Click2call application client 501 then provides the employee with a visual and/or aural indication that somebody (in this case, the user) is trying to contact them via the Reverse Click2call service. The employee may then choose to accept or refuse the call and if they choose to accept it, the Reverse Click2call application client 501 then initiates a telephone call back to the user using the mobile Java method MIDlet.platformRequest("te:123456") as described above.

20

In either of the above described embodiments, if the employee does not accept the telephone call setup request within a predetermined time limit or actively refuses/rejects/ignores it (using key presses, for example), then the Reverse Click2call application client 501 sends a message back to call control application server 209 (via the established link over GPRS network 215) to indicate that the call setup request cannot be completed. In preferred embodiments, call control application server 209 then sends a message to network call control server 221 instructing it to set up a call between the user's telephone 202 and the voicemail account associated with the employee's mobile handset 213, using its third party call control functionality as described above. During this call setup, the user can optionally be informed that the employee is unavailable and that they are being connected to voicemail rather than directly to the employee. For billing purposes, the direction of this telephone call is from the PSTN 217 to the mobile voice network 219.

Similarly, if the user selects an employee who has not registered their mobile handset 213 with the Reverse Click2call service, this will become apparent when call control application sever 209 checks the Reverse Click2call registry 211. In this case, call control application server 209 sends a message to network call control server 221 instructing it to
5 set up a call between the user's telephone 202 and the employee's mobile handset 213, using its third party call control functionality as described above. During this call setup, the user can optionally be informed that the employee is not registered with the Reverse Click2call service and that they are being connected to the employee directly rather than via a Reverse Click2call call. For billing purposes, the direction of this telephone call is
10 from the PSTN 217 to the mobile voice network 219.

It will be apparent from the foregoing description that many modifications or variations may be made to the above described embodiments without departing from the invention. Such modifications and variations include:

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Although in the above described embodiments, registered users database 305 was described as being part of Reverse Click2call/Directory application server 203, in alternative embodiments, it could be part of the call control application server 209. In such embodiments, the unique ID of computer system 100 would be sent as a parameter
20 in the HTTP request message as transmitted from Reverse Click2call/Directory application server 203 to call control application server 209. The telephone number associated with the user's telephone 202 can then be looked up by consulting the registered users database.

25 Although the above embodiments were described in relation to a business/corporate environment, the invention is equally applicable to other environments (e.g. a home/private/consumer environment.) In such embodiments, network 201 might be replaced by a modem (e.g. an ADSL modem) or a wireless access point. Also, contacts database 205 may be internal to computer system 100 and the Reverse
30 Click2call/Directory application server 203 may be accessible by computer system 100 via internet 207 (which may require the user to log in to the Reverse Click2call/Directory application server 203 using a username and password rather than relying on a persistent cookie, as in some of the above embodiments). The computer system 100 may be loaded with a telephony software package, such as BT Communicator available from British
35 Telecommunications plc. In these embodiments, the Reverse Click2call service

registration procedure might also be slightly different since the user will be entering their own home/private telephone number and may need to provide additional authentication information, such as a telephone network account number.

- 5 In the above described embodiments, the computer system 100 was used to request call setup. In alternative embodiments, the computer system could be replaced by a telephone (fixed or mobile) enabled with appropriate client software, which would allow a user of the telephone to identify the contact they wished to call using the telephone and which would then send the call setup request to the call control application server 209.
- 10 The user could identify the contact they wished to call using a contacts database internal to the telephone (e.g. a contacts list/address book) or by using the telephone to access a contacts database external to the telephone (e.g. using a mobile telephone to access an HTML or WAP page via a GPRS network).
- 15 It is also possible to combine this invention with the invention described in the Applicant's co-pending European patent application, entitled "Establishing Communications Sessions" and filed on 11th March 2005. In such a combination, a user would use a mobile communications terminal to identify a contact that they wished to call and then a communications session would be established between a communications terminal used
- 20 by the contact and another communications terminal associated with the user. The direction of this communications session for billing purposes would be from the contact's communications terminal to the user's communications terminal.

Although in the above described embodiments a mobile telephone handset was

25 described, in alternative embodiments it could be replaced by other forms of mobile communications terminal, such as a GSM/GPRS enabled personal digital assistant like the Treo™ 650 available from PalmOne™, Inc., USA.

Moreover, although in the above described embodiments the communication sessions

30 that were established were voice telephone calls, in alternative embodiments the communication sessions could comprise multimedia communication sessions such as video calls.

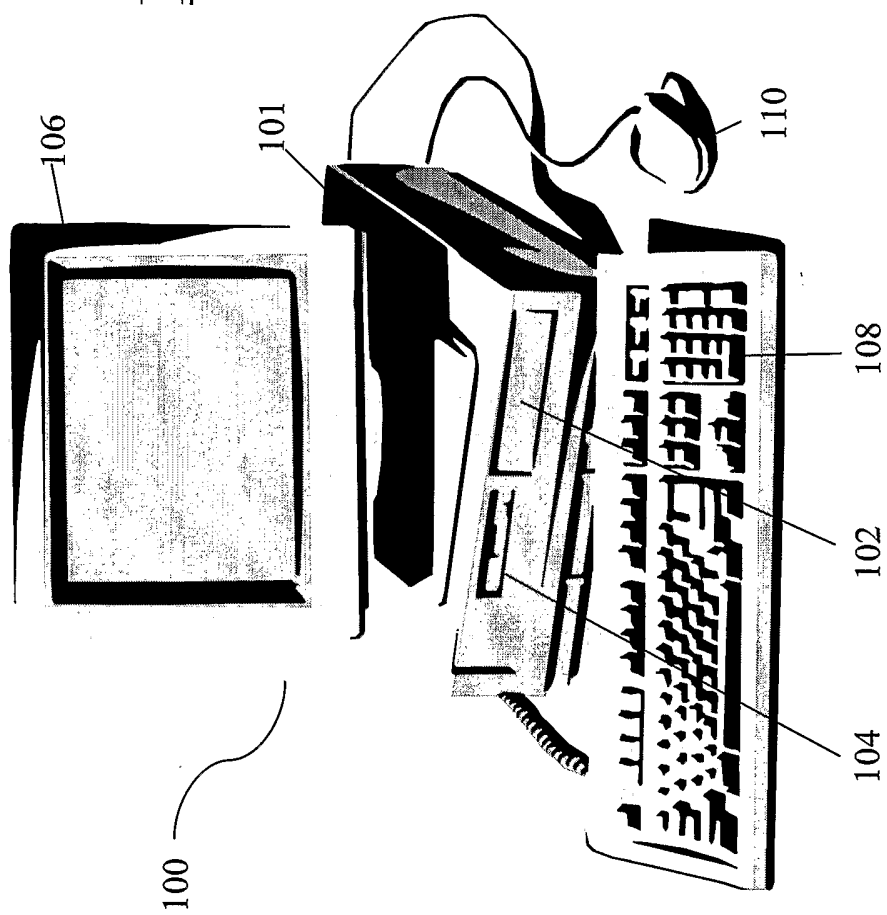
Although in the above embodiments telephone 202 was described as being connected to PSTN 217, in alternative embodiments it might be connected to a private branch exchange (PBX) that has access to a PSTN.

CLAIMS

1. A method of establishing a communications session in a communications system, said communications system comprising a user terminal, a mobile terminal associated
5 with a contact and session initiation means, said method comprising:
identifying said contact using said user terminal;
responsive to identifying said contact, transmitting contact data identifying said
contact and user data associated with said user terminal from said user terminal to said
session initiation means;
10 in dependence on and responsive to reception of said contact data, transmitting a
request from said session initiation means to said mobile terminal, said request
comprising said user data and requesting that said mobile terminal establishes said
communications session with said user terminal in dependence on said user data.
- 15 2. A method according to claim 1, wherein said user terminal comprises a user
computer and a user telephone associated with said user computer, and wherein said
user data comprises a telephone number associated with said user telephone.
3. A method according to claim 2, further comprising the antecedent step of
20 associating said user computer with said user telephone by storing, in a user registration
database, a mapping between computer identification data identifying said user computer
and telephone identification data identifying said user telephone.
4. A method according to claim 3, wherein said user data comprises said telephone
25 identification data.
5. A method according to claim 3, wherein said user registration database is
accessible by said session initiation means and said user data comprises said computer
identification data.
30
6. A method according to claim 1, wherein said user terminal comprises a user
telephone, said communication session comprises a telephone call and said user data
comprises a telephone number associated with said user telephone.

7. A method according to any preceding claim, wherein said contact data is stored in a contacts database accessible by the user terminal.
8. A method according to any preceding claim, further comprises storing said
5 contact data in a contact registration database accessible by said session initiation means.
9. A method according to any preceding claim, wherein said request further comprises a security token to be verified by said mobile terminal before responding to said
10 request.
10. Communication session initiation apparatus for establishing a communications session in a communications system, said communications system comprising a user terminal and a mobile terminal associated with a contact, said apparatus comprising:
15 data receiving means arranged in operation to receive from said user terminal, contact data identifying said contact and user data associated with said user terminal;
request transmission means arranged in operation to transmit a request to said mobile terminal in dependence on and responsive to reception of said contact data, said request comprising said user data and requesting that said mobile terminal establishes
20 said communications session with said user terminal in dependence on said user data.

Figure 1



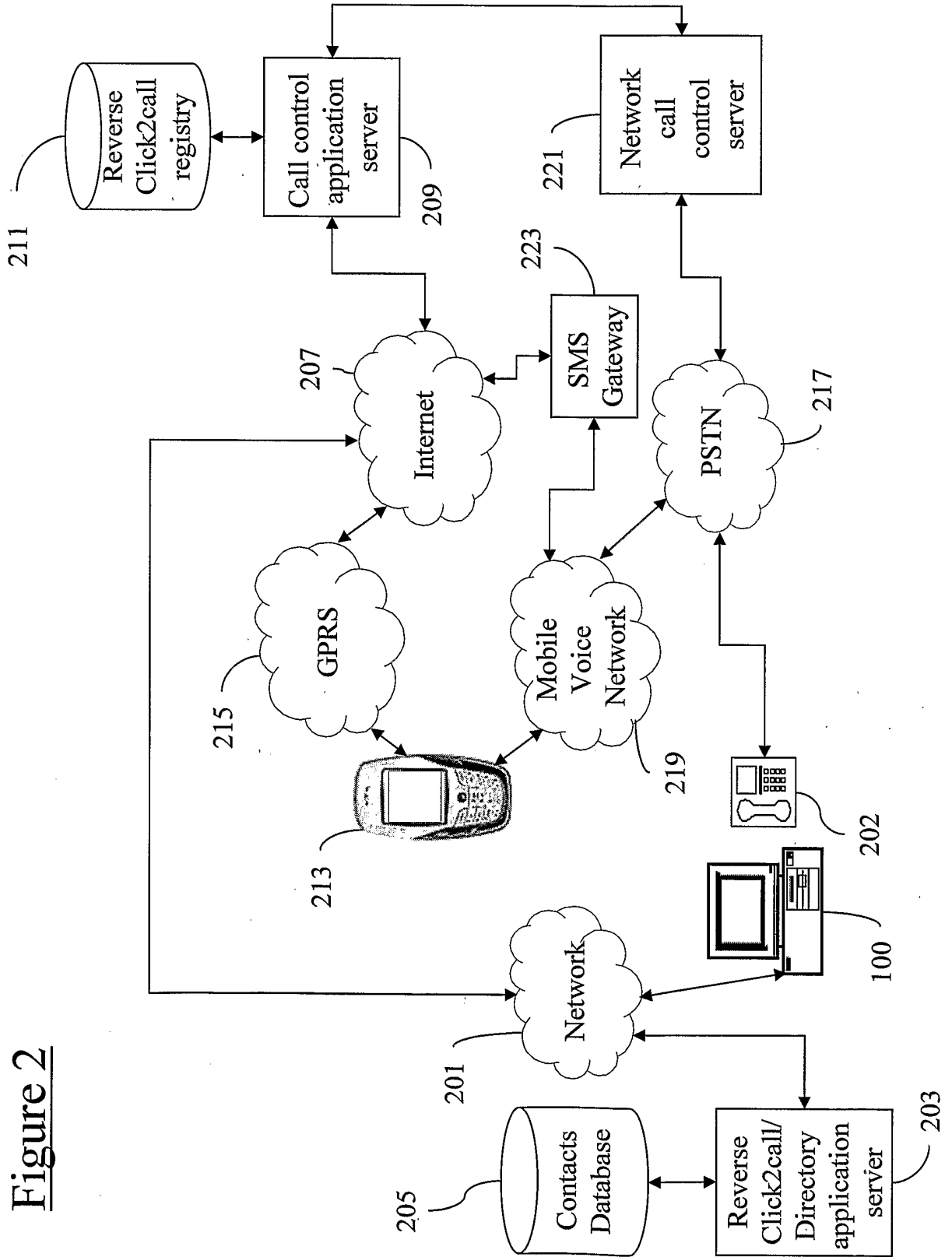


Figure 2

Figure 3

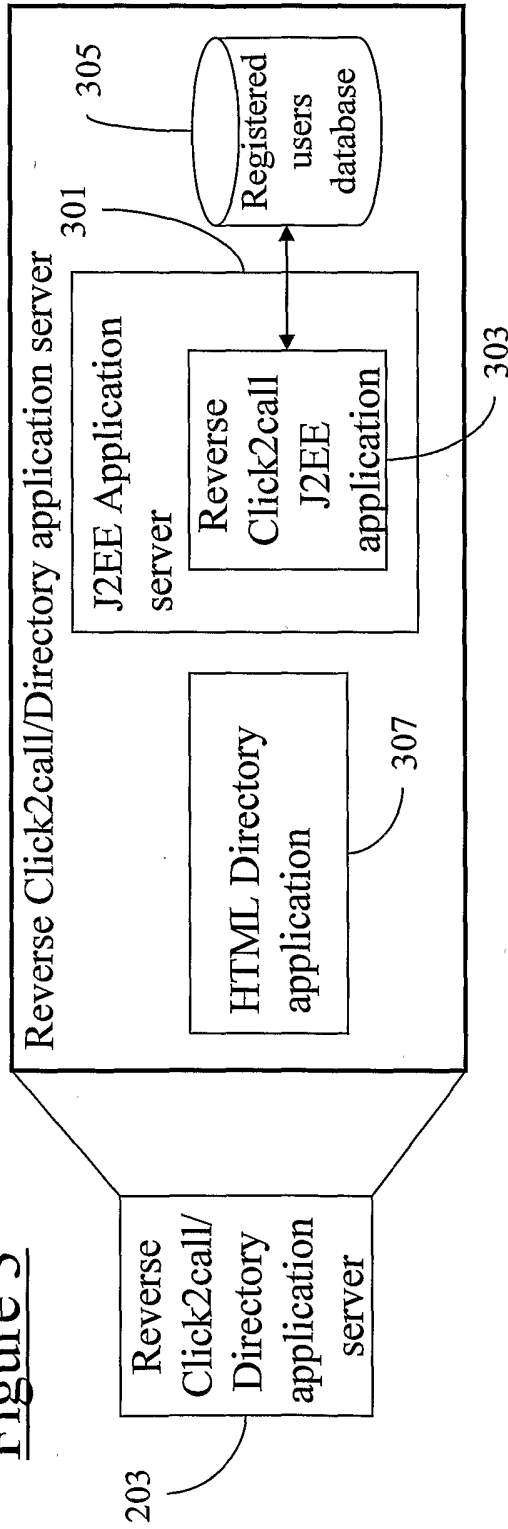


Figure 4

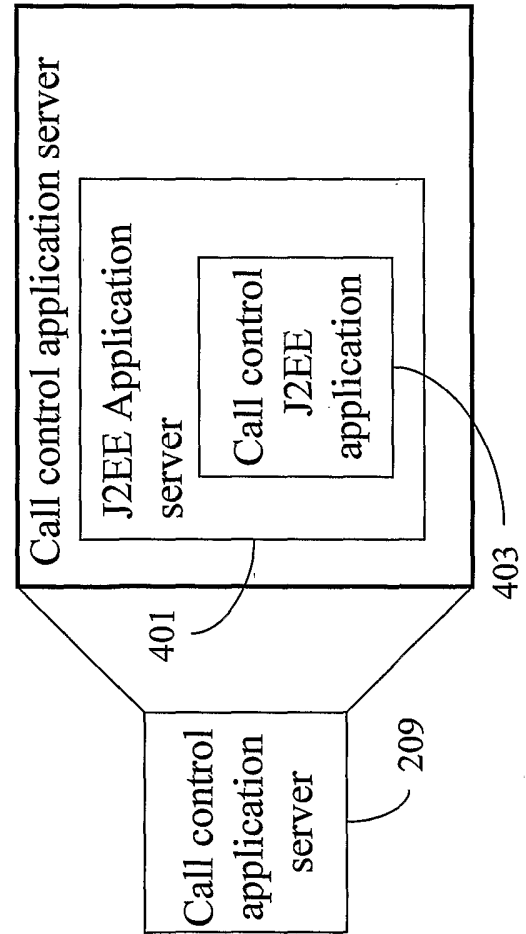
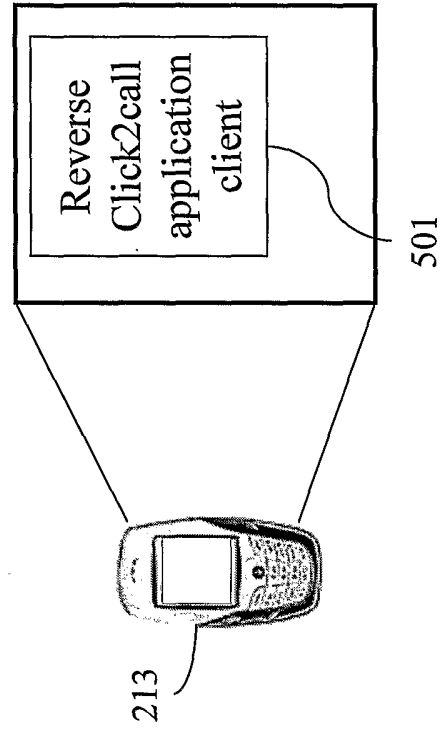


Figure 5



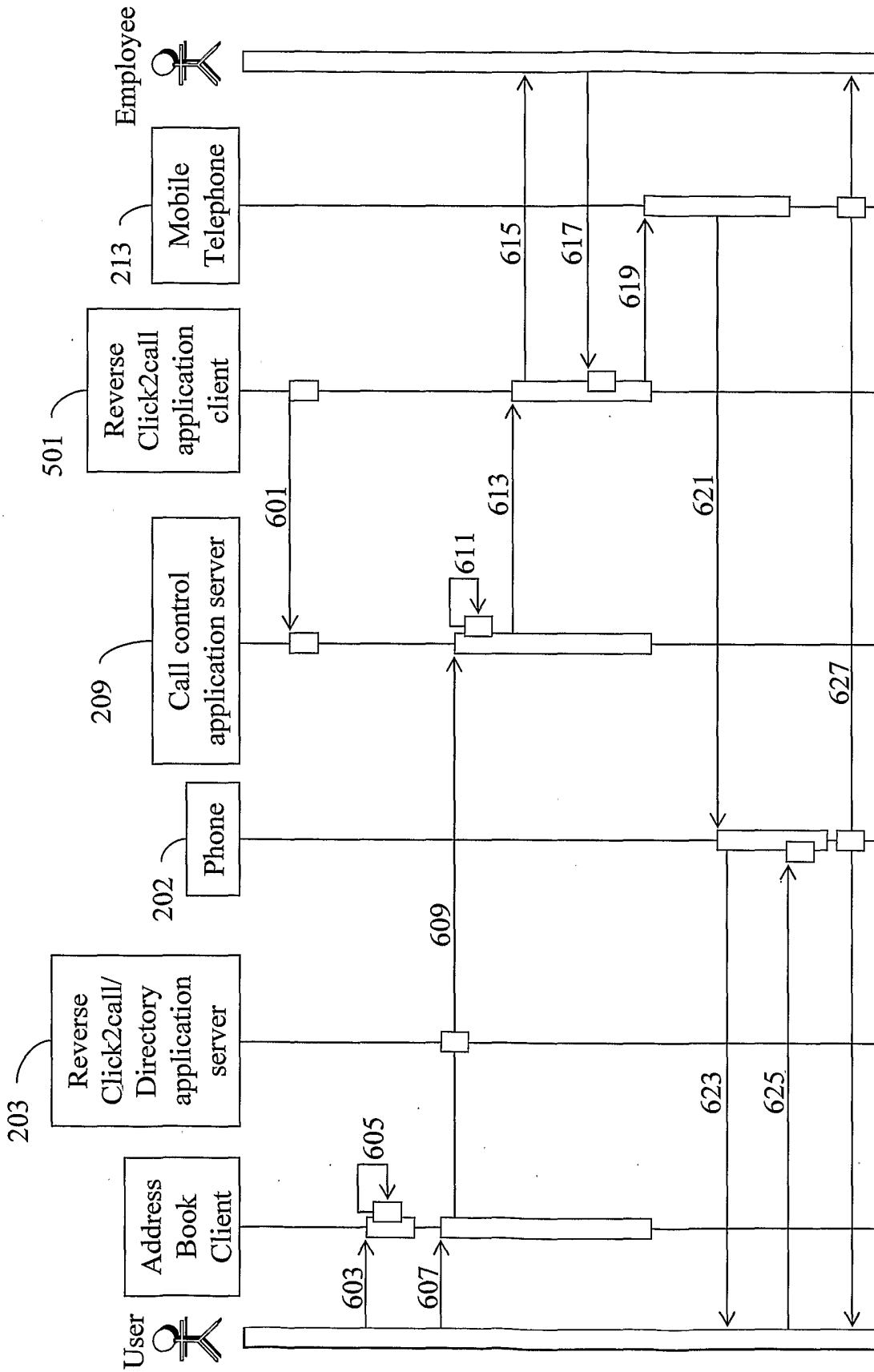


Figure 6

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2006/000708

A. CLASSIFICATION OF SUBJECT MATTER H04M15/00 H04L29/06		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) H04M H04L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 192 050 B1 (STOVALL GREGORY T) 20 February 2001 (2001-02-20) abstract column 1, line 57 - column 3, line 67 -----	1-10
X	US 6 594 357 B1 (EMERSON DEREK J ET AL) 15 July 2003 (2003-07-15) cited in the application column 6, lines 54-65 column 9, line 9 - column 10, line 45 -----	1-10
A	WO 02/13496 A (NOKIA MOBILE PHONES LTD; DEEDS, DOUGLAS) 14 February 2002 (2002-02-14) abstract page 1 page 2, line 33 - page 3, line 17 page 5, line 33 - page 7, line 35 -----	1-10
-/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family	
Date of the actual completion of the international search <p style="text-align: center;">30 March 2006</p>	Date of mailing of the international search report <p style="text-align: center;">07/04/2006</p>	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer <p style="text-align: center;">Englund, T</p>	

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2006/000708

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 088 436 A (MASHINSKY ET AL) 11 July 2000 (2000-07-11) abstract column 1, lines 13-25 column 4, lines 16-21 column 5, lines 25-45 column 5, line 58 - column 6, line 8 column 7, line 1 - column 9, line 15 -----	1-10
X	GB 2 342 536 A (* ORANGE PERSONAL COMMUNICATIONS SERVICES LIMITED) 12 April 2000 (2000-04-12) abstract pages 1-4,8-17 -----	1-10
X	US 2004/110489 A1 (MURRI PAOLO ET AL) 10 June 2004 (2004-06-10) abstract paragraphs [0013] - [0019] -----	1-10
X	EP 0 802 663 A (NEC CORPORATION) 22 October 1997 (1997-10-22) abstract column 1, lines 3-16 -----	1-10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/GB2006/000708

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6192050	B1	20-02-2001	AU 8390698 A 22-03-1999
			CA 2302338 A1 11-03-1999
			EP 1021906 A1 26-07-2000
			WO 9912326 A1 11-03-1999
US 6594357	B1	15-07-2003	WO 9951015 A1 07-10-1999
WO 0213496	A	14-02-2002	AU 8117701 A 18-02-2002
US 6088436	A	11-07-2000	NONE
GB 2342536	A	12-04-2000	AU 6214899 A 01-05-2000
			EP 1118240 A1 25-07-2001
			WO 0022863 A1 20-04-2000
US 2004110489	A1	10-06-2004	BR 0116110 A 23-12-2003
			CN 1483295 A 17-03-2004
			CZ 20031741 A3 14-01-2004
			EE 200300302 A 15-10-2003
			EP 1352537 A1 15-10-2003
			HR 20030486 A2 30-06-2005
			HU 0303051 A2 29-12-2003
			WO 02052881 A1 04-07-2002
			IT RM20000690 A1 24-06-2002
			JP 2004517536 T 10-06-2004
			MX PA03005639 A 03-12-2004
			NZ 526584 A 25-02-2005
			PL 362975 A1 02-11-2004
			SK 7852003 A3 04-11-2003
			ZA 200304754 A 30-09-2004
EP 0802663	A	22-10-1997	JP 2865051 B2 08-03-1999
			JP 9284428 A 31-10-1997
			US 6009155 A 28-12-1999