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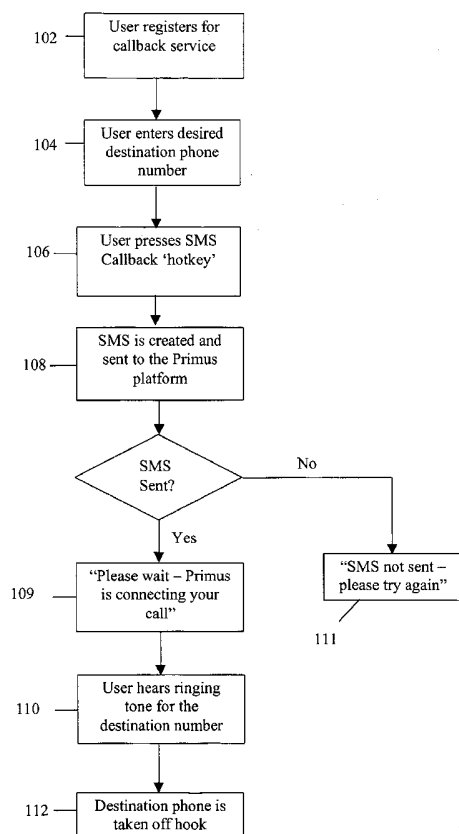
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(54) Title: IMPROVEMENTS RELATING TO TELECOMMUNICATIONS



(57) Abstract: A method of requesting a telecommunications service from a computer providing the telecommunications service via a mobile telecommunications device is described. The device is connectable to a home telecommunications network and is arranged to establish a telephone call to a desired destination telephone number via an alternative telecommunications network. The method comprises retrieving a unique identifier of the mobile telecommunications device, or identification information enabling the unique identifier to be determined, stored within the mobile telecommunications device; establishing the desired destination telephone number, and upon subsequent assertion of a dedicated single actuator on an interface of the device: constructing, within the mobile telecommunications device, a data message containing the retrieved unique identifier or identification information and the desired destination telephone number in a predetermined format; sending the data message containing the unique identifier or identification information and the desired destination telephone number from the mobile telecommunications device to the telecommunications service computer; and receiving and accepting an incoming telephone call from the telecommunications service computer which establishes or will establish a connection to the desired destination number over the alternative telecommunications network without further user interaction.



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IMPROVEMENTS RELATING TO TELECOMMUNICATIONS

Field of the Present Invention

The present invention concerns improvements to telecommunications and more particularly, though not exclusively, the present invention relates to callback services which involve the setting up of low-cost international calls on mobile telephones that utilise callback technology.

Background to the Present Invention

10 Callback services provide telephone users with low-cost and high-value calling solutions. Essentially, these services require a user to dial a predetermined number to a callback provider and then hang up their telephone after a set number of rings or, alternatively, the system may be set-up so that the call is taken down at the destination side of the call. After a short time, the callback provider calls the user's telephone.

15 When the user answers their telephone, they are connected to the low-cost network and they hear a dial tone which indicates that they can then make a low-cost telephone call over the callback provider's network. A telephone call such as this is known as a "callback".

20 Telephone users typically register for a callback service with a callback provider. During this process the user is assigned a telephone number, known as a callback push number. This number is usually unique to the user and is the number of a platform or server set-up to recognise the incoming call. Therefore, when a registered user wants to use the callback service they will call the number that was assigned to them when

25 they registered using a standard telephone. The platform recognises the incoming call and after one or two rings the caller hangs up; thereby, taking down the call. As mentioned above, alternatively, the system may be set-up such that the platform or server hangs up; thereby, taking down the call. The net result of both of these situations is that the provider's platform recognises the caller and no charge is made

30 to the account associated with the telephone because the call is not completed.

Also as part of the registration process, the user is required to identify the telephone number on which they wish to receive the callback. This number is known as the "delivery number". When the platform receives a telephone call from a user, the

platform searches a database for the correct delivery number for that user and then, within a short period of time, delivers the callback.

5 In the final part of the registration process, the user activates a billing account with the callback provider. This account is to be used for payment of calls made using the callback system and is usually opened with an initial deposit. When the platform searches the database for the correct callback delivery number, it also checks the user's account balance. If the user has sufficient funds in their account, the platform will then proceed to deliver the callback.

10

The user then receives the callback which is signalled to the user by the ringing of their telephone. Upon answering the telephone, the user hears a dial tone as if they had unhooked the receiver to make a conventional call. The user can then dial and make their call as they would normally, with the exception that they are charged at
15 preferential rates by the callback provider.

Examples of providers of the above type of callback service can be found at www.aitelephone.com/callback.html.

20 In emerging markets such as Africa, India and the Middle East it is advantageous for a telecommunications operator to provide callback services to consumers as the commercial conditions can prevent telecommunications operators from obtaining access numbers to offer other prepaid telephone services such as two-stage call set-up services. These services are most commonly offered as prepaid calling card products
25 or account based access number services.

In these markets, usually the regulator, or in some cases the incumbent state-owned operator, controls market entry for offshore competitors. Therefore, services where call set-up is not reliant on a call to a local access number being maintained
30 throughout the duration of the terminated call, as in prepaid calling card or account based products, are highly advantageous.

In addition to offering callback services, by utilising VOIP (Voice Over Internet Protocol) routing where available, it is possible for telecommunications operators to lower costs to the consumer and provide a more competitive product.

5 Generally speaking, due to deregulation in Western markets, telecommunications operators have moved away from callback services preferring to offer solutions based on two-stage call set-up processes, such as prepaid calling card products or account based access number services, as mentioned above.

10 A contributory factor to the movement away from callback systems is due to the laborious nature of such systems. Although functional, callback systems, as described above, do not provide the user with a straightforward procedure for initiating callback; on the contrary, the process is a cumbersome and protracted experience. An example of a complicated callback service is given in United States Patent Number 6,694,007
15 B2.

Furthermore, the process for initiating a callback telephone call, as described above, becomes more complex and problematic when applied to mobile telephones. The user is likely to have stored the callback push number in the address book of their mobile
20 telephone. In which case, they will have to open the mobile telephone's address book and scroll for the push number. After which, the user will initiate the call to the push number manually.

Once the call to the provider's platform has been taken down, after one or two rings
25 so as to avoid a charge being made to the user, the platform delivers the callback to the delivery number, which in this case is a mobile telephone. Upon answering the call the user hears a dial tone and can dial the telephone number they wish to call. This telephone number is known as the "destination number".

30 However, it is also likely that a mobile telephone user will store the destination number in the phone book of their mobile telephone. As such, their mobile telephone perceives the callback call as an active call and may not allow the user to enter and scroll through the phone book while a call is active. Alternatively, in searching for the telephone number of the person they wish to call they may, or may have to, press

at least one of the numerical keys on the mobile telephone. As the call, as perceived by the mobile telephone, is essentially active at this point the telephone will send DTMF tones associated with the numerical keys which will in turn be received by the platform and perceived as the number that the user wishes to call. This is a highly
5 unsatisfactory situation as it will result in the misdial of the destination number.

A further method of initiating a callback call can be made by means of a web interface. An example of a provider of such a service can be found at www.satelcall.com. In this scenario, a user accesses a secure subscription website to
10 request a callback. However, in order to request a callback the user has to have access to the Internet, thereby precluding the user from using this system in a truly mobile manner if they do not have mobile Internet access. Also, if the user is using this service via a dial-up Internet connection, it is likely that they will have to disconnect from the Internet in order to receive the callback to their mobile telephone.

15

In order to understand fully further aspects of the present invention, it is necessary to consider "one key" or, as they are also known, "hotkey" services used in the telecommunications industry.

20 An early example of a hotkey service is the "Mercury button" found on telephones supplied by Mercury Communications Ltd in the United Kingdom in the late 1980s and early 1990s. Using this technology a user making local, national or international calls could press a key, namely the Mercury button, before dialling the call destination number. The effect of pressing this button is that an access code is prefixed to the
25 destination number – e.g. 1XXX destination number. The call is then routed over an alternative carrier rather than the incumbent service provider.

However, Mercury button phones were replaced by Least Cost Routing technology (LCR). This is where a user chooses the carrier that they wish to use by manually
30 dialling an access code which, typically, is a four digit number dialled before each call to direct the call over the desired provider. LCR has since been superseded by Carrier Pre-Selection, which is where the local incumbent provider's exchange is programmed to forward calls made by a user over a network chosen by the user by

default, without the need for an access code to be manually entered by the user. At present, such services have not been utilised in the mobile telephone arena.

With the advent of Mobile Virtual Network Operators (MVNO), namely mobile operators that do not own their own radio frequency spectrum and usually do not have their own network infrastructure but, instead, have business arrangements with traditional mobile operators to buy network time for sale to their own customers. Together with the emergence of Virtual Mobile Network Operators (VMNO) which are mobile telephone handset manufacturers that produce mobile telephones which are compatible with the SIM cards of network operators and offer lost-cost alternative routing but do not themselves offer network time. The competitive call routing market for mobile traffic has expanded. Customers are now offered greatly reduced costs when compared with mobile network operator tariffs, particularly in the international call termination market.

It has been noticed by the inventor that none of the services described above employ any technology that allows the consumer to seamlessly request a callback call in a simple manner on a mobile phone. The present invention aims to address this problem and the aforementioned prior art problems.

20

Summary of the Present Invention

According to one aspect of the present invention there is provided a method of requesting a telecommunications service from a computer providing the telecommunications service via a mobile telecommunications device, the device being connectable to a home telecommunications network and arranged to establish a telephone call to a desired destination telephone number via an alternative telecommunications network, the method comprising: retrieving a unique identifier of the mobile telecommunications device, or identification information enabling the unique identifier to be determined, stored within the mobile telecommunications device; establishing the desired destination telephone, and upon subsequent assertion of a dedicated single actuator on an interface of the device: constructing, within the mobile telecommunications device, a data message containing the retrieved unique identifier or identification information and the desired destination telephone number

in a predetermined format; sending the data message containing the unique identifier or identification information and the desired destination telephone number from the mobile telecommunications device to the telecommunications service computer; and receiving and accepting an incoming telephone call from the telecommunications service computer which establishes or will establish a connection to the desired destination number over the alternative telecommunications network without further user interaction.

The present invention therefore enables the telecommunications service, typically a callback, to be provided with minimal effort to the user. An application running on the mobile telecommunications device can handle the construction of the message with minimal user input.

Specifying the details of the service required before requesting it means that far greater flexibility can be provided by the service itself. For example, the ability to set up a conference call very simply is made possible as is the option to specify a different delivery telephone number for the service (as is described in detail below).

The present invention is simple and seamless for the user to operate and is suitable for making outbound international calls from the user's home operator's network when used with a callback service.

The unique identifier of the mobile telecommunications device may be an International Mobile Equipment Identification (IMEI) number. Preferably, the establishing step comprises receiving a telephone number manually input into the mobile telecommunications device. The establishing step may also comprise retrieving a telephone number stored within the mobile telecommunications device.

The constructing step may comprise constructing an SMS message. Alternatively, the constructing step may comprise constructing an e-mail message.

The constructing step may also comprise incorporating the retrieved unique identifier and the desired destination telephone number into a header of the SMS message. Alternatively, the constructing step may comprise incorporating the retrieved unique

identifier and the desired destination telephone number into a subject field of the e-mail message.

5 The method of requesting a telecommunications service may further comprise:
establishing at the mobile telecommunications device a delivery telephone number to
which the telecommunications service is to be delivered; and wherein the construction
step comprises including the delivery telephone number in the data message.

10 This allows a user of the service to select the telephone number which will receive the
incoming telephone call. In this respect, the delivery telephone number may be
different to a telephone number of the mobile telecommunications device, thereby
enabling the incoming telephone call to be received by a telecommunications device
other than the user's telecommunications device. The delivery telephone number may
be a telephone number of a non-mobile telecommunications device.

15 Additionally, the method may further comprise presenting the user with the option of
selecting a different delivery number to the telephone number of the mobile
telecommunications device.

20 The present invention allows the user to designate the delivery number of the callback
on an ad hoc basis. Enabling the user to have the callback delivered to their home
landline number for example. This provides for a richer experience and offers the
ability of connecting other parties to a call. In the emerging markets, this has
enormous potential to provide mobile telephone users with the means to enable
25 communication amongst family, friends and colleagues with the cost of the call being
charged to the registered user.

The establishing step may comprise receiving a delivery telephone number manually
input into the mobile telecommunications device. Alternatively, the establishing step
30 may comprise retrieving a delivery telephone number stored within the mobile
telecommunications device.

The method of requesting a telecommunications service may also comprise receiving
a unique prepayment identifier and on subsequent actuation of a dedicated single

actuator: retrieving a predetermined telephone number of the telecommunications service computer; establishing a telephone call with the telecommunications service computer; and transmitting the unique prepayment identifier to the telecommunications service computer to register the same. This advantageously
5 allows a user to use the service by means of prepayment. A prepayment account can be set-up and activated simply by actuation of a single key.

In order to facilitate the prepayment service, the method may further comprise reading the value of a prepayment identifier store and if the value is a default value,
10 overwriting the default value with the unique identifier. Preferably, the constructing step may further comprise retrieving the stored unique prepayment identifier and incorporating the same into the data message, thereby enabling a pre-payment account to be topped-up simply and easily using single key actuation.

15 The retrieving and constructing steps are preferably carried out on the mobile telecommunications device by the assertion of a single actuator. This further simplifies the required user input in that the creation and sending of the message can be handled by a single press of a button on the mobile phone for example. Also the actuator may be dedicated to the function of requesting the telecommunications
20 service. In this case, regardless of which mode the mobile telecommunications device is in, once the destination telephone number (address) is recalled or input, a single key press is required to request and receive the service, which advantageously makes the process extremely user-friendly and easy to use.

25 The invention further resides in a method of providing a telecommunications service from a telecommunications service platform to a mobile telecommunications device, the platform being connectable to the mobile telecommunications device via a home telecommunications network and being arranged on request to establish a telephone call from the mobile telecommunications device to a desired destination telephone
30 number via an alternative telecommunications network, the method comprising: receiving upon a single assertion of a dedicated actuator of a user interface of the mobile telecommunications device, a data message containing a unique identifier of the mobile telecommunications device or identification information enabling the unique identifier to be determined, and the desired destination telephone number in a

predetermined format; validating the sender of the data message by comparing the sent unique identifier with a plurality of stored valid unique identifiers; determining if the sender has sufficient funds or payment facilities in their account; and establishing a telephone call from the telecommunications service platform to the mobile telecommunications device which creates or will create a connection to the desired destination number over the alternative telecommunications network without further user interaction.

The establishing step of the method of providing a telecommunications service from a telecommunications service platform to a mobile telecommunications device may further comprise: identifying a delivery telephone number from a store of delivery telephone numbers, where each delivery telephone number is associated with a unique identifier; establishing a call path from the alternative telecommunications network to a telephone exchange of the desired destination telephone number; calling the delivery telephone number from the alternative telecommunications network; and connecting a call from the mobile telecommunications device associated with the delivery telephone number to the communications device associated with the desired destination telephone via the alternative telecommunications network. The connecting step may occur on answer of the call to the delivery telephone number.

20

Preferably, the data message may contain a unique identifier of the mobile telecommunications device in the predetermined format and the unique identifier of the mobile telecommunications device may be an International Mobile Equipment Identification (IMEI) number.

25

Additionally, the data message may contain the delivery telephone number in the predetermined format and the method may comprise identifying the unique identifier from its predetermined position within the format.

Suitably, the delivery telephone number may comprise a plurality of delivery telephone numbers, and the method may further comprise establishing a conference call between the plurality of delivery numbers.

30

Additionally, the receiving step may comprise receiving an SMS data message and the validating step may comprise reading a header of the SMS message to determine the unique identifier and the desired telephone number.

- 5 The receiving step may comprise receiving an e-mail data message and the validating step may comprise reading a header of the e-mail message to determine the unique identifier and the desired telephone number.

Suitably, the data message may contain a unique prepayment identifier in the predetermined format and the method may comprise identifying the unique prepayment identifier from its predetermined position within the format. The method may further comprise storing account details of the mobile telecommunications device using the unique prepayment identifier as an index and wherein the validating step comprises using the unique prepayment identifier to look up the account details of the telecommunications device.

The invention further resides in a method of requesting and providing a telecommunications service from a computer providing the telecommunications service via a mobile telecommunications device, the device being connectable to a home telecommunications network and arranged to establish a telephone call to a desired destination telephone number via an alternative telecommunications network, the method comprising, in response to receiving an assertion of a dedicated single actuator of a user interface of the mobile telecommunication device: constructing, within the mobile telecommunications device, a data message containing a unique identifier and a desired destination telephone number in a predetermined format; sending the data message containing the unique identifier and the desired destination telephone number from the mobile telecommunications device to the telecommunications service computer; receiving, at the telecommunications service computer, the data message containing the unique identifier and the desired destination telephone number in the predetermined format; validating, at the telecommunications service computer, the sender of the data message by comparing the unique identifier with a plurality of stored unique identifiers; and establishing a telephone call from the telecommunications service computer to the mobile telecommunications device which creates or will create a connection to the desired

destination number over the alternative telecommunications network without further user interaction.

The invention also resides in a mobile telecommunications device, the device being
5 connectable to a home telecommunications network and arranged to establish a
telephone call to a desired destination telephone number via an alternative
telecommunications network, the device comprising: a user interface comprising an
actuator dedicated to the function of requesting a telecommunications service from a
computer providing the telecommunications service; retrieval means for retrieving a
10 unique identifier stored within the mobile telecommunications device; constructing
means for constructing, within the mobile telecommunications device, a data message
containing the retrieved unique identifier and the desired destination telephone
number in a predetermined format; sending means for sending the data message
containing the unique identifier and the desired destination telephone number from the
15 mobile telecommunications device; and receiving means for receiving and accepting
an incoming telephone call from the telecommunications service provider which
establishes or will establish a connection to the desired destination number over the
alternative telecommunications network without further user interaction, wherein, in
response to user actuation of the dedicated actuator, the receiving means, constructing
20 means and sending means are operable without further user interaction to request the
telecommunications service.

The invention also resides in a module within a mobile telecommunications device
comprising: retrieval means for retrieving a unique identifier stored within the mobile
25 telecommunications device; constructing means for constructing, within the mobile
telecommunications device, a data message containing the retrieved unique identifier
and the desired destination telephone number in a predetermined format; sending
means for sending the data message containing the unique identifier and the desired
destination telephone number from the mobile telecommunications device; wherein
30 the receiving means, constructing means and sending means are operable in response
to user actuation of a dedicated actuator of the device, without further user interaction
to request the telecommunications service.

The module may further comprise retrieving means arranged to retrieve a unique identifier of the mobile telecommunications device. Preferably, the retrieving means may be arranged to retrieve a delivery number and the construction means is arranged to add the retrieved delivery number to the data message.

5

The present invention is advantageous in that in addition to being able to designate the delivery number of the callback, the user can designate multiple delivery numbers to receive a callback. Thus facilitating a conference call.

10 Brief Description of the Drawings

A telecommunications system and methods of using the telecommunications system according to preferred embodiments of the present invention will now be described by way of example, with reference to the accompanying drawings in which:

15 Figure 1 is a schematic block diagram showing a telecommunications system over which callback telephone calls are made in accordance with embodiments of the present invention;

Figure 2 is a schematic representation of the protocol layers of a mobile phone for use
20 with the present invention;

Figure 3 is an example of a mobile phone keypad with a dedicated callback "hotkey" button for use with embodiments of the present invention;

25 Figure 4 is a flow diagram showing an overview of a method of performing a callback according to a first embodiment of the present invention from the user's perspective;

Figure 5a is a flow diagram showing some of the method steps of Figure 4 in greater detail;

30

Figure 5b is a schematic representation of part of the system shown in Figure 1 together with a further system component for implementing a further embodiment of the invention;

Figure 5c is a flow diagram showing the method steps for updating a lookup table according to a further embodiment of the invention;

5 Figure 6 is a flow diagram showing an overview of the steps taken by the Primus platform in performing a callback according to the first embodiment of the present invention;

10 Figure 7 is a signalling call flow diagram of the messages sent to and from some of the elements of the telecommunications system according to the first embodiment of the present invention;

Figure 8 is a flow diagram showing the method steps for defining the callback delivery number, according to a second embodiment of the present invention;

15 Figure 9 is a schematic diagram of a mobile phone screen in accordance with a second embodiment of the present invention;

20 Figure 10 is a flow diagram showing the method steps taken for using a prepaid voucher in a third embodiment of the invention, from the user's perspective;

Figure 11 is a flow diagram showing the method steps for setting up a prepayment account on the Primus platform in accordance with the third embodiment;

25 Figure 12 is a flow diagram showing the method steps for topping up a prepaid account in the third embodiment of the invention, from the user's perspective; and

Figure 13 is a flow diagram showing the method steps for topping up a prepaid account on the Primus platform in the third embodiment.

30 Detailed Description of the Preferred Embodiments of the Present Invention

Referring to Figure 1, there is shown a system 10 which is suitable for implementing presently preferred embodiments of the present invention.

The system 10 comprises a GSM telecommunications network 12 and a Public Switched Telephone Network (PSTN) 14. A callback-enabled mobile telecommunications device 16, referred to hereinafter as the "Primus phone", is connectable to the GSM network 12 at a base station 18 which includes an antenna, and a Base Station Controller (BSC) 19. The BSC 19 communicates with a Mobile Switching Centre (MSC) 20. The MSC 20 is an integral part of the GSM network: it not only handles all the tasks of a conventional phone network (such as establishing a connection between the mobile phone 12 and the PSTN 14) but also provides all the functions needed for mobile communication, including authentication and verification.

The MSC 20 is connected to a Visited Location Register (VLR) 22 and a Home Location Register (HLR) 24, which both comprise databases. The HLR 24 contains administrative information about the subscribers to a particular mobile network, and also keeps track of the location of each subscriber within the network 12. The HLR 24 also stores the unique International Mobile Equipment Identity (IMEI) number of each mobile phone 12. The VLR 22 contains temporary information about the subscriber's location within the network 12 which is communicated to the HLR 24 when required.

The MSC 20 is also connected to a Short Messaging Service Centre (SMSC) 26. The SMSC 26 primarily acts to route SMS messages to and from mobile telecommunications devices. The SMSC 26 acts as a store and forward service for SMS messages, thereby enabling SMS messages to be delivered to a recipient if their phone 12 is not switched on, or if they are out of network coverage at the time the message was sent.

Connected to the PSTN 14 is a remote server computer 28, referred to hereinafter as the "Primus platform". The Primus platform 28 is connectable to a further network 38 which may be a GSM public or private network via a telecommunications switch 15, referred to herein after as the "Primus switch". A destination mobile telecommunications device (destination phone) 13, or another suitable type of device, is shown connected to the further network 38 via a destination exchange 17 and destination base station 21.

The Primus platform 28 comprises a database of registered users and their associated account details 51, a database of prepayment account activation voucher codes and top up prepayment voucher codes (GCSK database) 53 (used in a further embodiment) and an SMS engine 58 for creating, sending and receiving SMS messages 68.

The Primus phone 16 has a keypad 30 and a graphics display screen 32. The keypad 30 includes a plurality of keys which include a dedicated Primus hotkey, referred to hereinafter as the “Primus P-key”, 34 (the purpose of which will be described later) and a send key 35 that is generally pressed when a user 40 wishes to make a call. A Subscriber Identity Module (SIM) card 36 is also provided in the phone 16. The SIM card 36 is arranged to store the phone number of the subscriber 40, a telephone directory and SMS messages.

15

When a subscriber makes use of their Primus phone 16, some of the information contained on the SIM card 36 is transmitted to the HLR database which recognises the subscriber. More particularly, when the Primus phone 16 is switched on, it locks onto the network cell in which it is currently located and is sent the Local Area Identity (LAI) code from the cell’s base station 18. The LAI code is comprised of three codes: a Mobile Country Code (MCC), a Mobile Network Code (MNC) and a Location Area Code (LAC) which together make up the global identity of the area. The Primus phone 16 then contacts the MSC 20 and reports its position using information from the LAI. This information is then stored in the VLR 22. The MSC 20 then sends a signal to the HLR 24 reporting that the Primus phone 16 is active in its service area.

20
25

Referring now to Figure 2, the Primus phone 16 also includes a microprocessor 42. The microprocessor 42 includes an application layer 44, a protocol layer 46, a hardware driver 48, an operating system 50 for running software, and a hardware layer 52.

30

The application layer 44 provides services for application programs running on the Primus phone 16, and is arranged to receive a keypad event, e.g. an event relating to the pressing of the Primus P-key 34 (as shown on a standard keypad in Figure 3) by a

user 40, and to communicate with the SIM 36. The operating system 50 is a program that manages all the other application programs running on the Primus phone 16, such as an application 60 for performing a callback call. The protocol layer 46 comprises a set of rules and conventions which govern how the Primus phone communicates with the mobile network 12. The hardware layer 52 enables the operating system 50 to communicate with the phone's hardware which includes a screen 32, the keypad 30, and also a microphone, a speaker, a power supply, a telecommunications transmitter and receiver (frequency (RF) module) (all not shown) via the hardware driver 48 which provides a direct interface to the hardware. A lookup table 54 for storing a plurality of access numbers is also provided on the Primus phone. The lookup table 54 contains a list of countries, against each entry on the list there is a SMS callback push number for that country. An example of part of such a lookup table is shown below.

Country	SMS Callback Push Number
UK	00447786200061
Norway	004799123456
Japan	00813661213456
DEFAULT NUMBER	00447786200061

15

The lookup table 54 can be updated via SMS messaging. This can be done in such a way that it is invisible to the user 40 or, alternatively, the user 40 can confirm the number or manually input SMS callback push numbers, if required.

20 A first embodiment of the present invention, wherein an international phone call is routed via a low-cost telecommunications network, is now described.

With reference to Figure 4 of the drawings, there is shown an overview of a method 100 for implementing the first embodiment of the present invention, according to the user's perspective.

25

The method 100 commences with a user 40 registering at Step 102 for a callback service. In order to register, the user will need to have access to a Primus phone on

which to make callback telephone calls. Registration can take place via the Internet, WAP, SMS messaging, a call centre or mailed registration form. When registering, the user is asked to provide their personal details to enable a user account to be set-up, and also for their preferred payment method (for example, Debit/Credit Card or Direct
5 Debit). They are also asked to provide their mobile telephone number which will be the default delivery number and the IMEI of their handset which is unique to each handset.

When a user wishes to make a low-cost international call using the present invention
10 they enter at Step 104 the desired international phone number or, as it is also known, destination number, that they wish to be connected to. This may either be done by the user 40 directly entering the number using the keypad 30 on the Primus phone 16, indirectly from the phone's address book (not shown), from a list of recently dialled phone numbers (not shown) or from an SMS message (not shown). The user 40 then
15 actuates at Step 106 the dedicated Primus P-key 34 provided on the Primus phone 16.

The Primus phone then, using the callback call application 60, creates at Step 108 an SMS text message which contains the data to set-up a callback call and sends it to the Primus platform. If the SMS message is sent correctly, the user is called back by the
20 Primus platform and on picking up the incoming call receives at Step 109 an audio message from the Primus platform 28, such as "Please wait – Primus is connecting your call", which can be heard by the user 40 through the speaker of the Primus phone 16. However, if due to lack of network coverage or another factor, the SMS message was not sent, then 'SMS not sent – please try again' is displayed at Step 111 on the
25 screen 32. The customer may send the SMS message again after checking the usual reasons for SMS message failure (for example, SIM Inbox or Outbox full, or out of network coverage).

Within a short period of time after the user has been called back, the Primus Platform
30 28 connects to the destination number and the user 40 hears at Step 110 a standard ringing tone for the destination number. The destination mobile telecommunications device (destination phone) 13 is taken off hook by its operator at Step 112 and the call can then proceed at preferential rates.

A more detailed description of the first embodiment of the present invention is now given with reference to the flow diagram of Figure 5a. This flow diagram illustrates the method 120 that is carried out by the software application 60 running on the Primus phone 16 in order to instigate a callback call.

5

As a result of the user 40 pressing at Step 106 the Primus P-key, the application 60 stores the destination number as a temporary number 62 in the application layer 44. The destination number was entered at Step 104 and includes the full international standard trunk dialling (STD) code, i.e. with 00XX or +XX prefixed to the telephone number. In this description, a UK based registered subscriber is making an international call from the UK to an Indian mobile telephone.

The application 60 then reads the stored IMEI of the Primus phone. Once the application 60 determines the IMEI, the application 60 creates an SMS message at Step 122 and adds the last ten digits of the IMEI to the header of the SMS. The destination number which is stored as a temporary number 62 is added to the SMS message header by the application. The header of the SMS message will consist of the following information:

<last ten digits of the Primus phone's IMEI><space><destination number>

Therefore, in this description since a UK based subscriber is making an international call to an Indian mobile telephone the header will be similar to:

6002945780_+919899866296

The application 60 then interrogates at Step 124 the SIM card to establish the Public Land Mobile Network (PLMN) being utilised. The SIM card 36 contains a unique code known as the International Mobile Subscriber Identity (IMSI). The IMSI contains a five digit code, the first three digits of which denote the country in which the SIM card 36 is registered (i.e. the home country), and the last two digits of which specify the mobile network with which the SIM card is registered. The application 60 reads at Step 124 the first three digits of this code which indicates the country that the SIM card 36 is registered in. As mentioned previously, when the Primus phone 16 is

switched on, the LAI (which includes the mobile country code or MCC) is sent to the Primus phone 16 from the HLR 24. The application obtains at Step 126 the MCC from the LAI and uses the lookup table 54 to identify the correct SMS callback push number for that country code. In this description, the call is being made from a UK mobile telephone; therefore, the MCC is 234. This MCC identifies 00447786200061 as the UK SMS callback push number.

However, if the user is not using the Primus phone in their home country, in this case the UK, and consequently the Primus phone is roaming, then the MCC would be the code of the country in which the Primus phone is roaming. Accordingly, at Step 126 the application looks up the SMS callback push number for that country in the lookup table 54. If a SMS callback push number is not available for that country then the Primus phone uses the default SMS callback push number (usually the callback access number for the home country).

The SMS callback push numbers listed in the lookup table 54 are each associated with a Primus platform located in that country. Local Primus platforms are used due to the relatively long length of time it takes for a callback call to be set up if the SMS callback message is sent internationally from the Primus phone 16. Typically, a post dial delay of up to one minute can occur when sending an SMS callback message internationally. In contrast, if the SMS callback message is sent to a local Primus platform which forwards the message to the Primus platform 28 that has access to the account details of the users of the system, post dial delay can be reduced to a negligible period of time.

The SMS callback push numbers stored in the lookup table 54 are updated via SMS messaging, and is now described with reference to Figures 5b and 5c of the drawings. It is to be appreciated that the lookup table 54 is typically provided with all handsets regardless of the country of use and is a table which is designed, if required, to be changed remotely by the Primus platform 28.

Referring firstly to Figure 5b, there is shown an SMS platform 64. The SMS platform 64 is connected to the Primus platform 28 via the PSTN 14, and to the SMSC 26 via the Internet 66 (i.e. via TCP/IP). The SMS platform 64 will typically comprise a

server computer including an SMS gateway interface for connecting to a telecommunications network. The SMS platform 64 will typically be part of the mobile network 12. Data between the Primus platform 28 and the SMS platform 64 may also be sent via the Internet.

5

Referring now to Figure 5c, there is shown a method 201 for updating the lookup table 54 via SMS messaging. The method 201 commences with the SMS engine 58 of the Primus platform 28 generating at Step 203 an SMS message 68 to instruct the amendment of an entry in the lookup table 54 stored in the Primus phone 16. The SMS message 68 may contain a change command, together with data which represents a new SMS callback push number which is to be written to a specific part of the lookup table 54. Alternatively, the SMS message 68 may contain an instruction to remove an entry in the lookup table 54.

10

The SMS message 68 is then sent at Step 205 to an SMS platform 64 via the PSTN 14. Next, the SMS message 68 is sent at Step 207 to the SMSC 26 for forwarding to the mobile phone 16. The SMSC 26 provides a store and forward service which stores messages and forwards them to a user 40 when their Primus phone 16 is switched on and connected to the GSM telecommunications network 12. If the Primus phone 16 is switched on, the SMS message 68 is sent at Step 209 from the SMSC 26 to the Primus phone 16. The SMS message 68 is then used by the application 60 installed on the Primus phone 16 to update at Step 211 the lookup table 54.

20

A confirmatory SMS message may then be sent at Step 213 from the Primus phone 16 to the SMS engine 58 of the Primus platform 28 via the SMSC 26 and the SMS platform 64. The confirmatory SMS message 70 may contain an indication of whether or not the requested change to the lookup table 54 was successful. The confirmatory SMS message may be encoded in a suitable format (if required) at the SMS platform 64 for subsequent delivery to the SMS engine 58.

25

30

With reference to Figure 6 of the drawings, there is shown an overview of a callback handling method 140 which is carried out at the Primus platform 28, which supports the first embodiment of the invention.

At the Primus platform 28, the set-up of a callback call is a two-stage process. The first stage comprises authenticating the user, authorising the user and accounting (logging the call made). The second stage of the process comprises service delivery and setting up of a callback call to the user.

5

The method 140 commences with the Primus platform 28 receiving at Step 142 the callback message from a Primus phone 16. In order to authenticate the sender of the callback message, the Primus platform 28 reads at Step 144 the callback message and uses the IMEI contained in the message to identify at Step 146 the user 40 from its database of users 51, in which the IMEI of the Primus phone 16 is stored if the user 40 has registered. If the user 40 is not a registered user, the callback set-up process will not be allowed to continue and the Primus phone 16 will be sent at Step 148 an SMS message notifying them that they are not a registered user and giving them information on how to register.

15

Otherwise, if the user 40 is registered, the callback set-up process will be allowed to continue. The Primus platform 28 finds out at Step 150 if the user 40 has sufficient funds to complete the call. If the user 40 does not have sufficient funds or their payment method is invalid, the user 40 is sent at Step 152 an SMS message asking them to top-up their account or to provide valid payment details. However, if sufficient funds are available, the user 40 is authorised and the Primus platform 28 continues to set-up the callback call. The rest of the process can then be monitored in order to keep track of the user's activity while accessing the network resources. This accounting data can be used for trend analysis, capacity planning, billing, auditing and cost allocation.

25

Once the standard AAA (authentication, authorisation and accounting) process elements have been completed or initiated, as necessary, the Primus platform 28 then begins the second stage of the process of setting-up the callback call.

30

The Primus platform 28 searches at Step 154 the user account database 51 and identifies the callback delivery number stored for the user 40. The Primus platform 28 identifies the destination number from the received SMS callback message. A call is set up at Step 156 from the Primus switch 15 to the destination exchange 17 and, in

turn, to the destination number, i.e. the destination phone 13. While this call is set-up, the Primus platform 28 calls at Step 158 the delivery number it identified from the user's details retrieved from the user database 51. The user receives the audio message of Step 109 from the Primus platform 28, which can be heard by the user 40 through the speaker of the Primus phone 16. Once the call path is established at Step 160 and the destination phone 13 is ringing, the user 40 hears at Step 110 a standard ringing tone. Upon answer of the destination phone, the callback call is in progress and the user is able to speak to the person at the destination phone 13.

Figure 7 shows an overview of the signalling call-flow between selected elements of the telecommunications system 100, beginning with the callback message and ending with a full-duplex call. For simplicity, some of the elements of the telecommunications system have been omitted from the diagram.

An SMS callback message 200 containing the IMEI of the Primus phone 16 and the destination number is sent from the Primus phone 16 to the Primus platform 28 via the MSC 20 and SMSC 26. The Primus platform then performs authentication, authorisation and accounting (AAA) on the information contained in the SMS callback message 200 as described above. Depending on the outcome of AAA, the user will either be informed that callback set-up has failed or that they can expect to receive a callback shortly.

In order to set-up the callback call, the Primus platform 28 in conjunction with the Primus switch 15 sends a Destination Call set-up message 202 to the destination exchange 17 to set-up a call-path to the destination phone 13. This message 202 is forwarded over the PSTN 38 via the destination exchange 17 to the destination phone 13 which responds to the Destination Call set-up message with an Acknowledgement Destination call set-up message 204.

As the call-path is set-up from the Primus platform 28 to the destination phone 13, the Primus platform 28 plays an audio message 206, such as "Please wait – Primus is connecting your call", to the user 40 through the speaker of the Primus phone 16. When the call-path is set-up, the user 40 hears a standard ringing tone for the destination number, as shown by 208, confirming that the destination handset is

alerting its user to the incoming call. At this point the destination phone 13 rings alerting the destination phone's user to the incoming call. When the destination phone 13 is answered (off-hook), a full duplex call 210 is established and the users can conduct full-duplex telephone call normally.

5

The call is routed over the Primus platform 28 and the Primus switch 15 which facilitate preferential call rates. The Primus platform maintains a real-time call log (not shown) against the credit balance of the user's account. The user can then be billed accordingly.

10

A second embodiment of the present invention, wherein the user is presented with an opportunity to define the number to which the callback is delivered, is now described with reference to Figures 8 and 9.

15 Referring to Figure 8, the method 160 of implementing the second embodiment of the present invention, according to the user's perspective, commences with a user 40 entering the international telephone number, or destination number, at Step 104 that they wish to be connected to, as described in the description of the main embodiment of the present invention.

20

However, when the user 40 presses at Step 106 the dedicated Primus P-key 34 provided on the Primus phone 16, the user is presented with a prompt displayed on screen as shown in Figure 9. The callback delivery number is displayed at Step 162 on the screen 32 of the Primus phone 16. The user is then presented at Step 164 with
25 the option of selecting the displayed telephone number as their desired delivery number. If this number is not their desired delivery number, then the user can enter at Step 166 their desired delivery number by selecting 'No' and entering a secondary delivery number into the Primus phone's keypad or using another number from the phonebook. Once the desired delivery number is displayed on the screen, whether it
30 has been entered by the user or it is the default number, the user presses at Step 168 the key that corresponds to 'Yes' on the keypad 30. The SMS message sent by the user is then created and sent from the Primus phone 16 to the Primus platform 28 in the same manner as has been described in the first embodiment at Step 108.

If the user has selected a new delivery number then the header of the SMS message will have the new delivery number appended to it:

5 <last ten digits of handset IMEI><space><destination number><space><new delivery number>

Therefore, a UK based subscriber making an international call to an Indian mobile telephone requesting a new delivery number which is a UK landline will send an SMS message with a header that will be similar to:

10 6002945780_+919899866296_+442076696570

Or, alternatively, it is possible for the new delivery number to be in a different country, say India for example:

15 6002945780_+919899866296_+91989967700

When the Primus platform 28 receives an SMS message that defines a new delivery number, it uses the new number to deliver the callback instead of the default delivery number stored for that registered user.

To mitigate the risk of calls being delivered in error to a secondary delivery number, the Primus phone renders the secondary number invalid when the phone is powered down. At this point the delivery number is erased from the Primus phone's memory.

25 In an alternative embodiment of the present invention, multiple delivery addresses may be added to the SMS message header, i.e.:

30 <last ten digits of handset IMEI><space><destination number><space><delivery no. 1><space><delivery no. 2><space><delivery no. 3><space><delivery no. n>

This allows a callback to be sent to multiple destinations and a conference call to be set-up at preferential rates using the Primus platform 28.

In a third embodiment of the invention, the Primus phone 16 also comprises an interface allowing the user to request an account balance via an SMS message. In order to achieve this, the SMS message header contains an information request field in the header instead of a destination number or new delivery number field:

5

<last ten digits of handset IMEI><space><account information request>

Details of the user's account, such as their account balance, can be sent by SMS message or by a callback.

10

A command check digit such as @1 may be used to indicate an information request and may be appended to the header part of the SMS message. This provides a means of requesting various services or functions from the Primus platform, where a balance request is only one of the possible options available. For example, the check digit may be associated with a menu option on the Primus phone.

15

In a further embodiment of the invention the user can obtain a callback service by using a prepaid voucher. Figure 10 of the drawings shows an overview of a method 180 for implementing this embodiment of the present invention at the Primus phone, according to the user's perspective.

20

The user 40 purchases, or is provided with, at Step 182 a prepaid voucher. The voucher contains a ten-digit activation number, referred to hereinafter as the GCSK Key (GCSK). As in the earlier embodiment where the user registers for the callback service, the user will need to have access to a Primus phone into which they input at Step 184 the GCSK with a leading digit, for example *1234567890 (where * is associated with the star button of the Primus phone). The leading digit enables the Primus phone to distinguish the number from other numbers entered into the Primus phone, such as standard telephone numbers.

25

30

The user presses at Step 186 the Primus P-key. At this point the Primus phone automatically stores the GCSK, preferably in a dedicated submenu in the Primus phone's Call Options menu. However, the GCSK can only be stored in the Primus phone if the default factory set GCSK field (0000000000) is present. Therefore, the

- Primus phone checks at Step 188 to see if the GCSK value stored within it is 0000000000. If this is not the case, an error message is displayed to the user. On the other hand, if the GCSK value stored in the Primus phone is 0000000000 the GCSK overwrites at Step 190 the default value. This prevents the user from having their GCSK inadvertently overwritten and thus losing access to their account which is created by the Primus platform. The Primus phone then initiates at Step 192 a telephone call with the Primus platform during which the GCSK including the leading digit is then sent to the Primus platform via DTMF tones.
- Figure 11 of the drawings shows an overview of a method 300 for implementing this embodiment of the present invention, according to the Primus platform's perspective. After receiving at Step 302 the activation GCSK via DTMF tones, the Primus platform then searches at Step 304 its GCSK database for the received GCSK. The Primus platform then validates at Step 306 the GCSK. If it is found to be invalid, a message is sent at Step 309 informing the user. However, if the GCSK is found to be valid, the Primus platform creates and opens at Step 308 an account for the user utilising the GCSK as the account identification (ID) and registering the user's Calling Line Identifier (CLI) against that account ID.
- The user can then obtain a callback by entering their desired destination number into the Primus phone and pressing the Primus P-key on the Primus phone which creates an SMS message that is sent to the Primus platform, as described previously. When using the prepaid voucher service to obtain a callback, as in the present embodiment of the invention, the SMS message contains a further field in its header, namely the GCSK with the leading digit. Therefore, the header of the SMS message contains the following information:

<IMEI><space>*<GCSK><space><destination number>

- As an example, the header of the SMS callback message sent from the Primus phone of the UK based subscriber described above, who is making an international call to an Indian mobile telephone, will be similar to:

6002945780_*1234567890_+919899866296

The call is then set up as described previously with the exception that the account debited by the Primus platform is associated with the GCSK sent in the SMS message.

5 Figure 12 of the drawings shows an overview of a method 220 for topping up an account by a user on their Primus phone which supports this embodiment of the invention. When the user 40 uses all of the credit available in the GCSK account, they can purchase a top up voucher to obtain more credit. The voucher contains a top up GCSK which is stored in the GCSK database of the Primus platform together with
10 the associated credit that the voucher entitles the user to. The user at Step 222 inputs the new ten digit GCSK with a leading digit of their choosing, for example *2345678901 (where * is associated with the star button of the Primus phone). Again, this enables the Primus phone to distinguish the number from other numbers entered into the Primus phone, such as standard telephone numbers.

15

The user presses at Step 224 the Primus P-key. The Primus phone checks at Step 226 to see if a GCSK has been stored previously. If a GCSK has not been stored previously, i.e. the GCSK stored in the phone is the default GCSK (0000000000), then a message is sent at Step 227 that the GCSK is invalid as they do not have a
20 GCSK account to top up. In this example, a GCSK has been stored previously.

Subsequently, the Primus phone creates at Step 228 an SMS message in which its header contains the following information:

25 <IMEI><space>*<GCSK (activation)>*<GCSK (top up)>

For example, if the top up GCSK that is inputted into the Primus phone by the user is *2345678901, the SMS header will be similar to:

30 6002945780_ *1234567890_ *2345678901

The SMS message containing the top up GCSK is then sent at Step 230 to the Primus platform.

Figure 13 of the drawings shows an overview of a method 240 for topping up an account according to the third embodiment of the present invention, from the perspective of the Primus platform. At Step 242 the Primus platform receives the above SMS message. The Primus platform then searches at Step 244 its GCSK
5 database for the received top up GCSK. The Primus platform checks at Step 246 to see if the top up GCSK is valid. If so, the Primus platform adds at Step 248 the credit associated with the top up GCSK to the account associated with the activation GCSK contained in the header of the SMS message. If the top up GCSK is not valid, for example the top up GCSK has been used or does not exist, an appropriate error
10 message is sent at Step 247 to the user.

Upon successful completion of top up of the account associated with the activation GCSK, the Primus platform sends at Step 250 a confirmation SMS message to the user verifying that the account has been topped up.

15

The use of a prepaid card service is advantageous because it provides further security to the user and a degree of anonymity for the user. In particular, the user does not have to provide their personal details nor their preferred payment method in order to obtain a callback service. Many users of mobile services prefer to use prepaid
20 voucher systems as it also gives the user greater control of the amount of money they spend on mobile communications.

In this third embodiment, the GCSK (activation) is effectively used as a unique identifier of the mobile telecommunications device, therefore it is possible to use this
25 unique voucher identifier once it has been registered at the Primus platform as the unique identifier of the mobile telecommunications device and thereby omit sending the IMEI in the data message to the platform.

Having described particular preferred embodiments of the present invention, it is to be
30 appreciated that the embodiments in question are exemplary only, and that variations and modifications, such as those that will occur to those possessed of the appropriate knowledge and skills, may be made without departure from the spirit and scope of the invention as set forth in the appended claims. For example, the present embodiments have been described using SMS messages for sending the callback requests.

However, it is to be appreciated that any form of messaging could be used, such as e-mail for example, even though this has less advantages than the use of SMS messaging. Also, it is to be appreciated that the text sequence provided from the phone to the platform in the header of the SMS message could, alternatively, be
5 provided in the body of the SMS message.

CLAIMS:

1. A method of requesting a telecommunications service from a computer providing the telecommunications service via a mobile telecommunications device, the device being connectable to a home telecommunications network and arranged to establish a telephone call to a desired destination telephone number via an alternative telecommunications network, the method comprising:

retrieving a unique identifier of the mobile telecommunications device, or identification information enabling the unique identifier to be determined, stored within the mobile telecommunications device;

establishing the desired destination telephone number, and upon subsequent assertion of a dedicated single actuator on an interface of the device:

constructing, within the mobile telecommunications device, a data message containing the retrieved unique identifier or identification information and the desired destination telephone number in a predetermined format;

sending the data message containing the unique identifier or identification information and the desired destination telephone number from the mobile telecommunications device to the telecommunications service computer; and

receiving and accepting an incoming telephone call from the telecommunications service computer which establishes or will establish a connection to the desired destination number over the alternative telecommunications network without further user interaction.

2. The method of Claim 1, wherein the constructing step further comprises retrieving a push telephone number for the telecommunications service computer.

3. The method of Claim 2, wherein the constructing step further comprises addressing the data message to the push telephone number for the telecommunications service computer.

4. The method of Claim 2 or 3, wherein the constructing step further comprises selecting the push telephone number from a plurality of push telephone numbers stored in the mobile telecommunications device.

5. The method of Claim 4, further comprising determining the current country location of the mobile telecommunications device and using the current location in the selecting step to determine a corresponding push telephone number.
- 5 6. The method of any of Claims 2 to 5, wherein the sending step further comprises using the push telephone number to request connect to a telecommunications network for sending the data message to the telecommunications service computer.
- 10 7. The method of any preceding claim, wherein the unique identifier is an International Mobile Equipment Identification (IMEI) number.
8. The method of any preceding claim, wherein the establishing step comprises receiving a telephone number manually input into the mobile telecommunications
15 device.
9. The method of any preceding claim, wherein the establishing step comprises retrieving a telephone number stored within the mobile telecommunications device.
- 20 10. The method of any preceding claim, wherein the constructing step comprises constructing an SMS message.
11. The method of Claim 10, wherein the constructing step comprises incorporating the retrieved unique identifier and the desired destination telephone
25 number into a header of the SMS message.
12. The method of any preceding claim, wherein the constructing step comprises constructing an e-mail message.
- 30 13. The method of Claim 12, wherein the constructing step comprises incorporating the retrieved unique identifier and the desired destination telephone number into a subject field of the e-mail message.
14. The method of any preceding claim, further comprising:

establishing at the mobile telecommunications device a delivery telephone number to which the telecommunications service is to be delivered; and

wherein the construction step comprises including the delivery telephone number in the data message.

5

15. The method of Claim 14, wherein the delivery telephone number is different to a telephone number of the mobile telecommunications device.

16. The method of Claim 14 or 15, wherein the delivery telephone number is a
10 telephone number of a non-mobile telecommunications device.

17. The method of any of Claims 14 to 16, wherein the method further comprises presenting the user with the option of selecting a different delivery number to the telephone number of the mobile telecommunications device.

15

18. The method of Claim 17, wherein the establishing step comprises receiving a delivery telephone number manually input into the mobile telecommunications device.

20 19. The method of Claim 17, wherein the establishing step comprises retrieving a delivery telephone number stored within the mobile telecommunications device.

20. The method of any preceding claim, further comprising receiving a unique prepayment identifier and on subsequent actuation of a dedicated single actuator:

25 retrieving a predetermined telephone number of the telecommunications service computer;

establishing a telephone call with the telecommunications service computer;
and

transmitting the unique prepayment identifier to the telecommunications
30 service computer to register the same.

21. The method of Claim 20, further comprising reading the value of a prepayment identifier store and if the value is a default value, overwriting the default value with the unique identifier.

22. The method of Claim 20 or 21, wherein the constructing step further comprises retrieving the stored unique prepayment identifier and incorporating the same into the data message.

5

23. A method of maintaining an up-to-date means for requesting a telecommunications service from one of a plurality of telecommunications service computers, the method comprising: receiving an instruction for updating a lookup table a plurality of push telephone numbers for the plurality of telecommunications
10 service computers, and executing the instruction to update the lookup table.

24. A method according to Claim 23, further comprising generating a confirmation message upon successful execution of the instruction and transmitting the same back to the source of the instruction.

15

25. A method according to Claim 23 or 24, wherein the executing step comprises removing, adding and/or amending data in the lookup table.

26. A method of providing a telecommunications service from a
20 telecommunications service platform to a mobile telecommunications device, the platform being connectable to the mobile telecommunications device via a home telecommunications network and being arranged on request to establish a telephone call from the mobile telecommunications device to a desired destination telephone number via an alternative telecommunications network, the method comprising:

25 receiving upon a single assertion of a dedicated actuator of a user interface of the mobile telecommunications device, a data message containing a unique identifier of the mobile telecommunications device or identification information enabling the unique identifier to be determined, and the desired destination telephone number in a predetermined format;

30 validating the sender of the data message by comparing the sent unique identifier with a plurality of stored valid unique identifiers;

determining if the sender has sufficient funds or payment facilities in their account; and

establishing a telephone call from the telecommunications service platform to the mobile telecommunications device which creates or will create a connection to the desired destination number over the alternative telecommunications network without further user interaction.

5

27. The method of Claim 26, wherein the establishing step comprises:

identifying a delivery telephone number from a store of delivery telephone numbers, where each delivery telephone number is associated with a unique identifier;

10 establishing a call path from the alternative telecommunications network to a telephone exchange of the desired destination telephone number;

calling the delivery telephone number from the alternative telecommunications network; and

15 connecting a call from the mobile telecommunications device associated with the delivery telephone number to the communications device associated with the desired destination telephone via the alternative telecommunications network.

28. The method of Claim 27, wherein the connecting step occurs on answer of the call to the delivery telephone number.

20 29. The method of any of Claims 26 to 28, wherein the data message contains a unique identifier of the mobile telecommunications device in the predetermined format.

30. The method of Claim 29, wherein the unique identifier of the mobile
25 telecommunications device is an International Mobile Equipment Identification (IMEI) number.

31. The method of any of Claims 26 to 30, wherein the data message contains the delivery telephone number in the predetermined format and the method comprises
30 identifying the unique identifier from its predetermined position within the format.

32. The method of Claim 31, wherein the delivery telephone number comprises a plurality of delivery telephone numbers, and the method further comprises establishing a conference call between the plurality of delivery numbers.

33. The method of any of Claims 26 to 32, wherein the receiving step comprises receiving an SMS data message.

5 34. The method of Claim 33, wherein the validating step comprises reading a header of the SMS message to determine the unique identifier and the desired telephone number.

35. The method of any of Claims 26 to 34, wherein the receiving step comprises
10 receiving an e-mail data message.

36. The method of Claim 35, wherein the validating step comprises reading a header of the e-mail message to determine the unique identifier and the desired telephone number.

15

37. The method of any of Claims 26 to 36, wherein the data message contains a unique prepayment identifier in the predetermined format and the method comprises identifying the unique prepayment identifier from its predetermined position within the format.

20

38. The method of Claim 37, further comprising storing account details of the mobile telecommunications device using the unique prepayment identifier as an index and wherein the validating step comprises using the unique prepayment identifier to look up the account details of the telecommunications device.

25

39. A method of requesting and providing a telecommunications service from a computer providing the telecommunications service via a mobile telecommunications device, the device being connectable to a home telecommunications network and arranged to establish a telephone call to a desired destination telephone number via an
30 alternative telecommunications network, the method comprising, in response to receiving an assertion of a dedicated single actuator of a user interface of the mobile telecommunication device:

constructing, within the mobile telecommunications device, a data message containing a unique identifier and a desired destination telephone number in a predetermined format;

5 sending the data message containing the unique identifier and the desired destination telephone number from the mobile telecommunications device to the telecommunications service computer;

receiving, at the telecommunications service computer, the data message containing the unique identifier and the desired destination telephone number in the predetermined format;

10 validating, at the telecommunications service computer, the sender of the data message by comparing the unique identifier with a plurality of stored unique identifiers; and

establishing a telephone call from the telecommunications service computer to the mobile telecommunications device which creates or will create a connection to the
15 desired destination number over the alternative telecommunications network without further user interaction.

40. A mobile telecommunications device, the device being connectable to a home telecommunications network and arranged to establish a telephone call to a desired
20 destination telephone number via an alternative telecommunications network, the device comprising:

a user interface comprising an actuator dedicated to the function of requesting a telecommunications service from a computer providing the telecommunications service;

25 retrieval means for retrieving a unique identifier stored within the mobile telecommunications device;

constructing means for constructing, within the mobile telecommunications device, a data message containing the retrieved unique identifier and the desired destination telephone number in a predetermined format;

30 sending means for sending the data message containing the unique identifier and the desired destination telephone number from the mobile telecommunications device; and

receiving means for receiving and accepting an incoming telephone call from the telecommunications service provider which establishes or will establish a

connection to the desired destination number over the alternative telecommunications network without further user interaction,

wherein, in response to user actuation of the dedicated actuator, the receiving means, constructing means and sending means are operable without further user interaction to request the telecommunications service.

41. A module within a mobile telecommunications device comprising:

retrieval means for retrieving a unique identifier stored within the mobile telecommunications device;

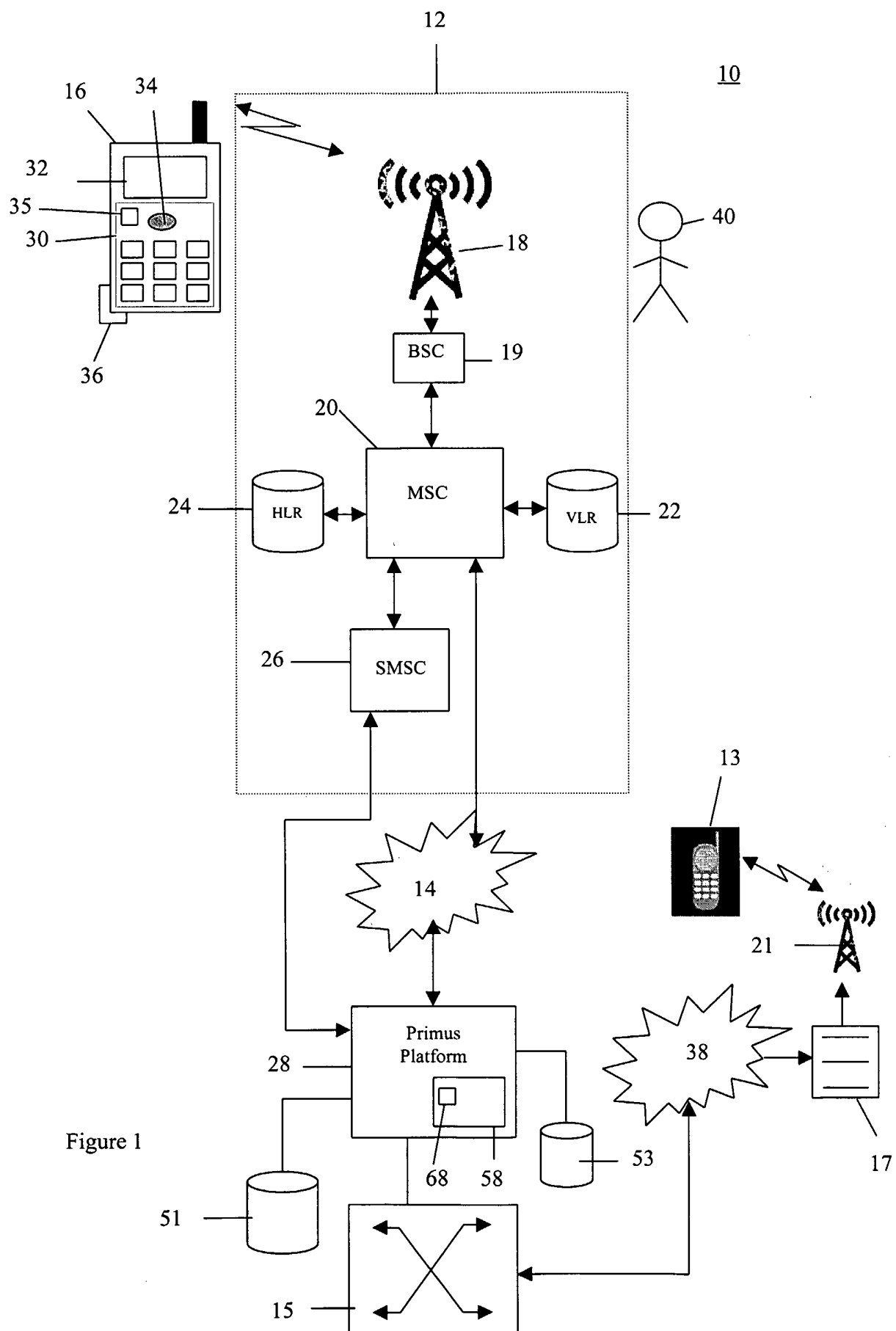
constructing means for constructing, within the mobile telecommunications device, a data message containing the retrieved unique identifier and the desired destination telephone number in a predetermined format;

sending means for sending the data message containing the unique identifier and the desired destination telephone number from the mobile telecommunications device;

wherein the receiving means, constructing means and sending means are operable in response to user actuation of a dedicated actuator of the device, without further user interaction to request the telecommunications service.

42. The module of Claim 41, further comprising retrieving means arranged to retrieve a unique identifier of the mobile telecommunications device.

43. The module of Claim 41 or 42, wherein the retrieving means is arranged to retrieve a delivery number and the construction means is arranged to add the retrieved delivery number to the data message.



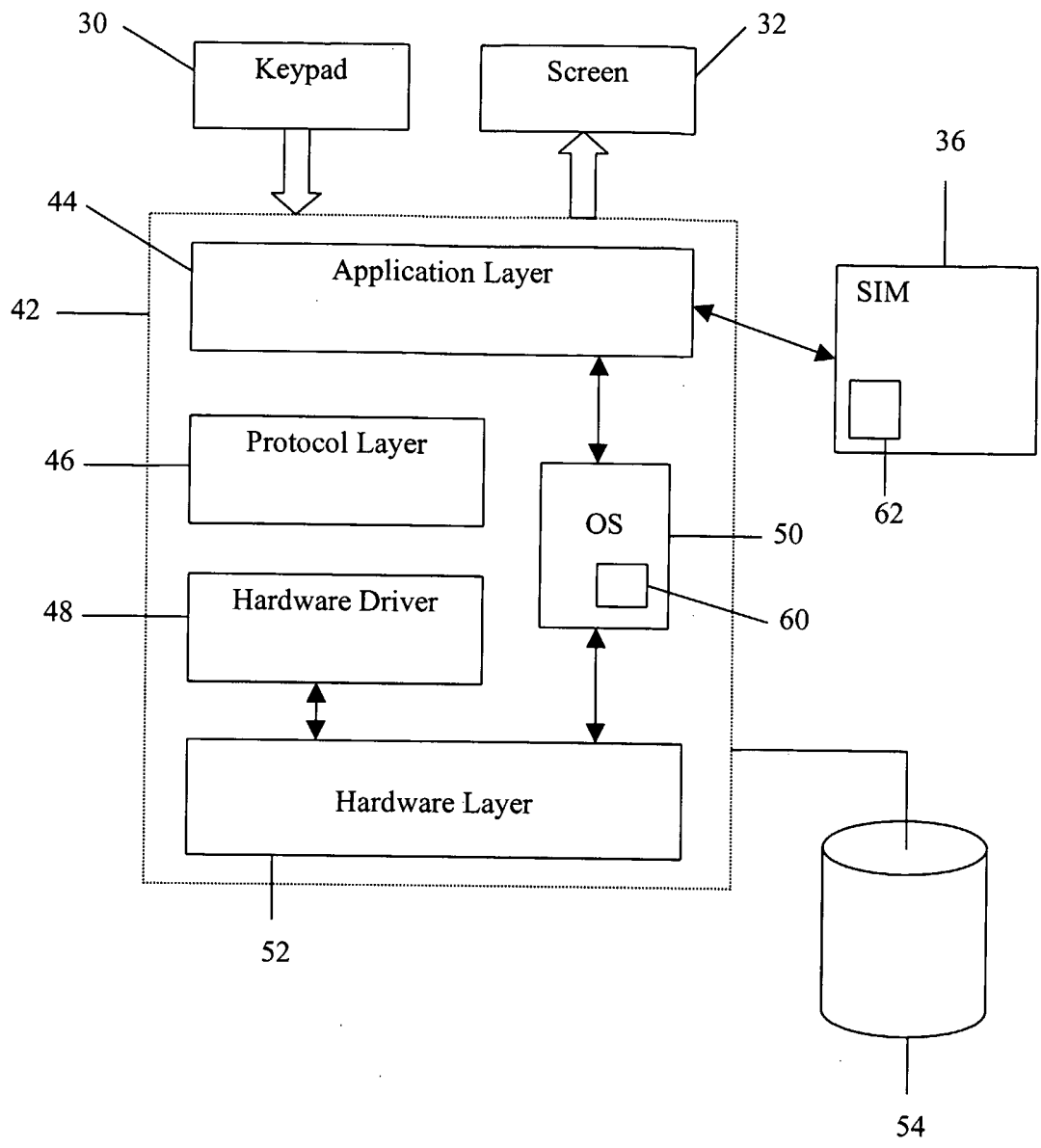


Figure 2

35

30

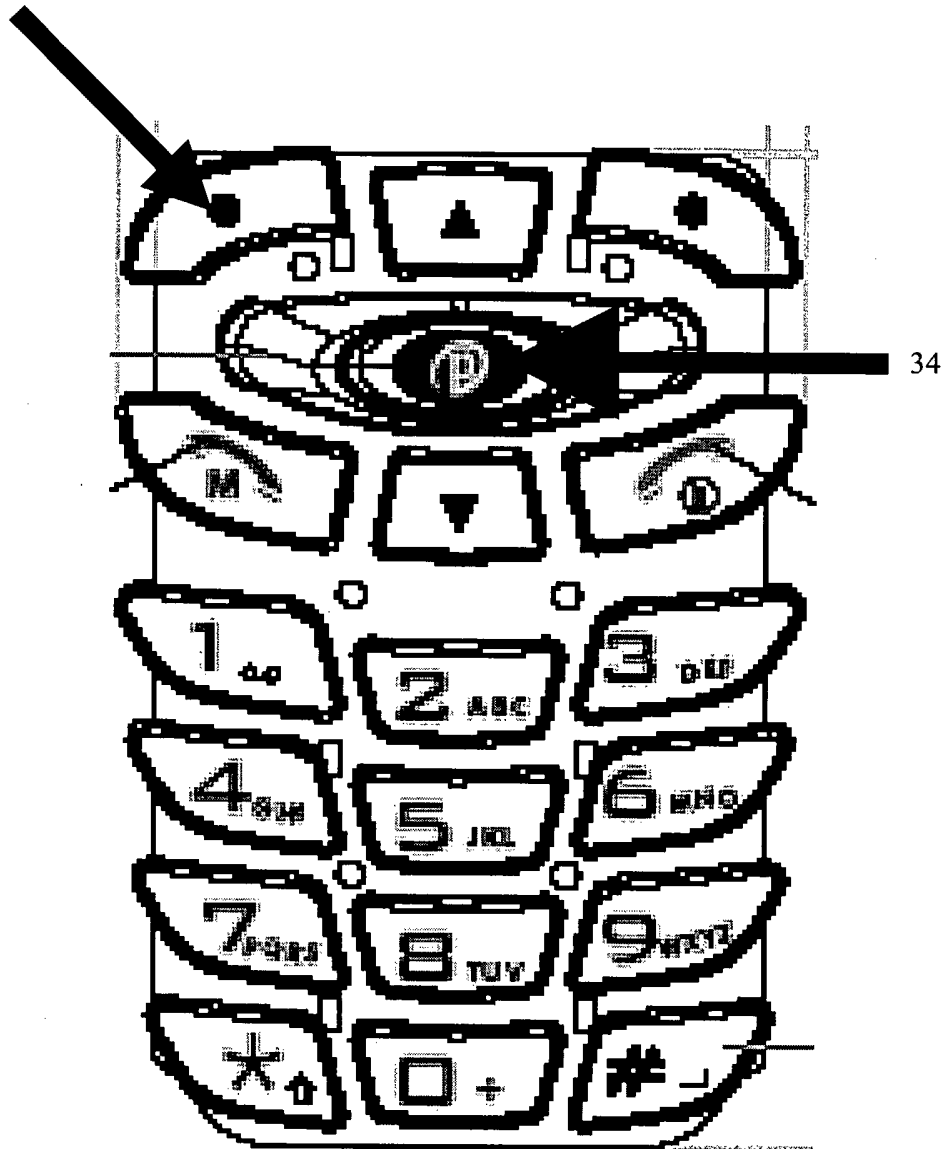


Figure 3

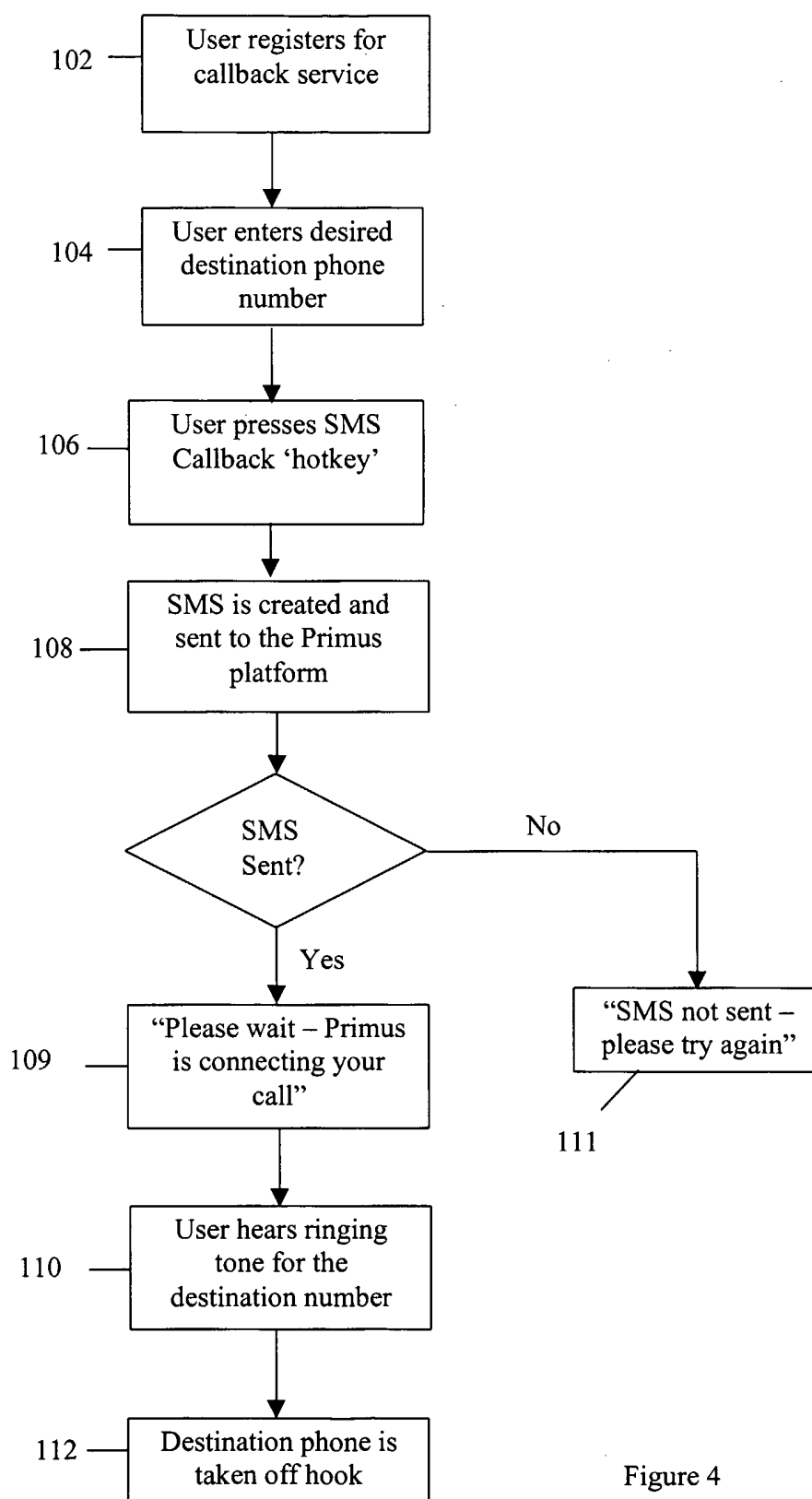
100

Figure 4

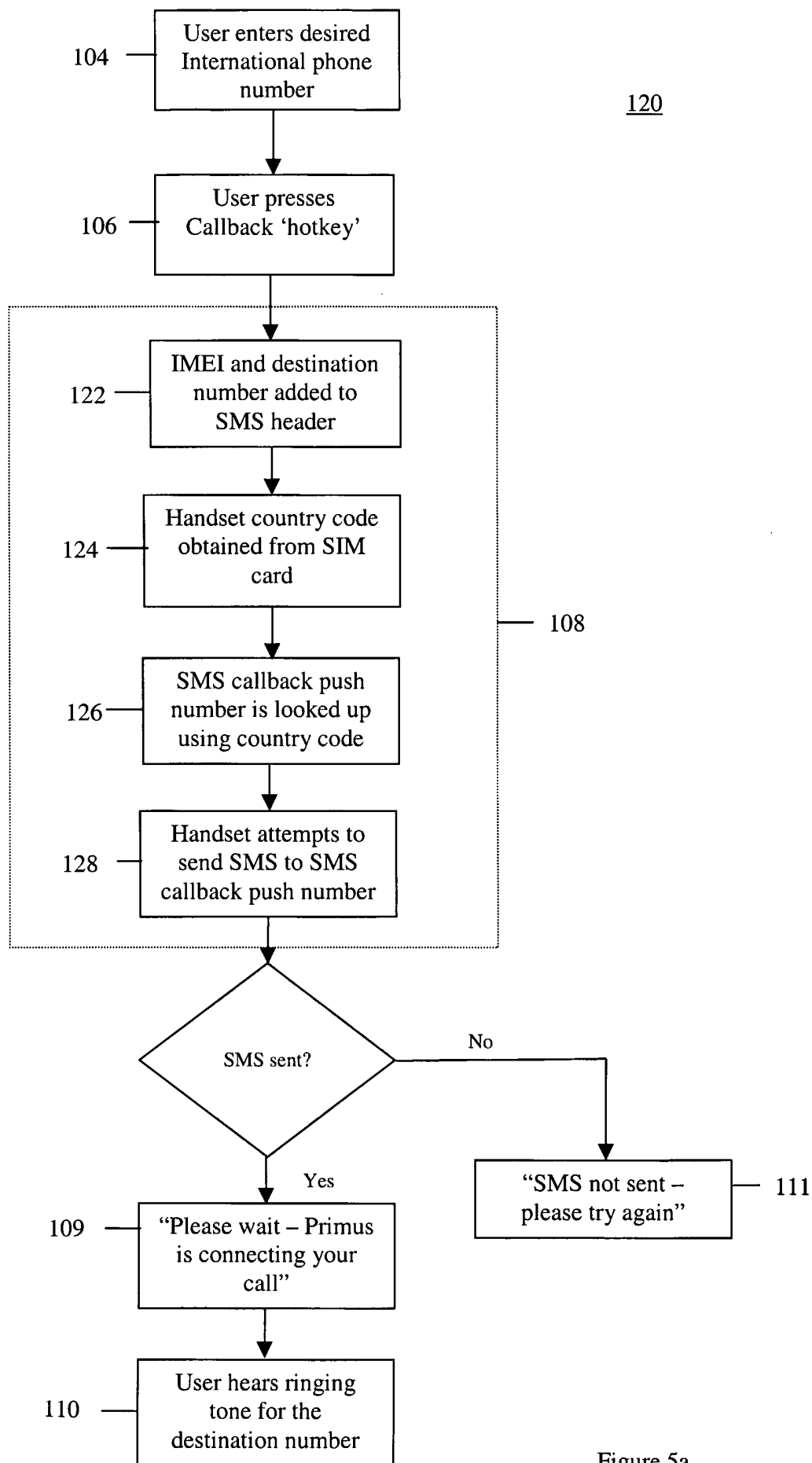


Figure 5a

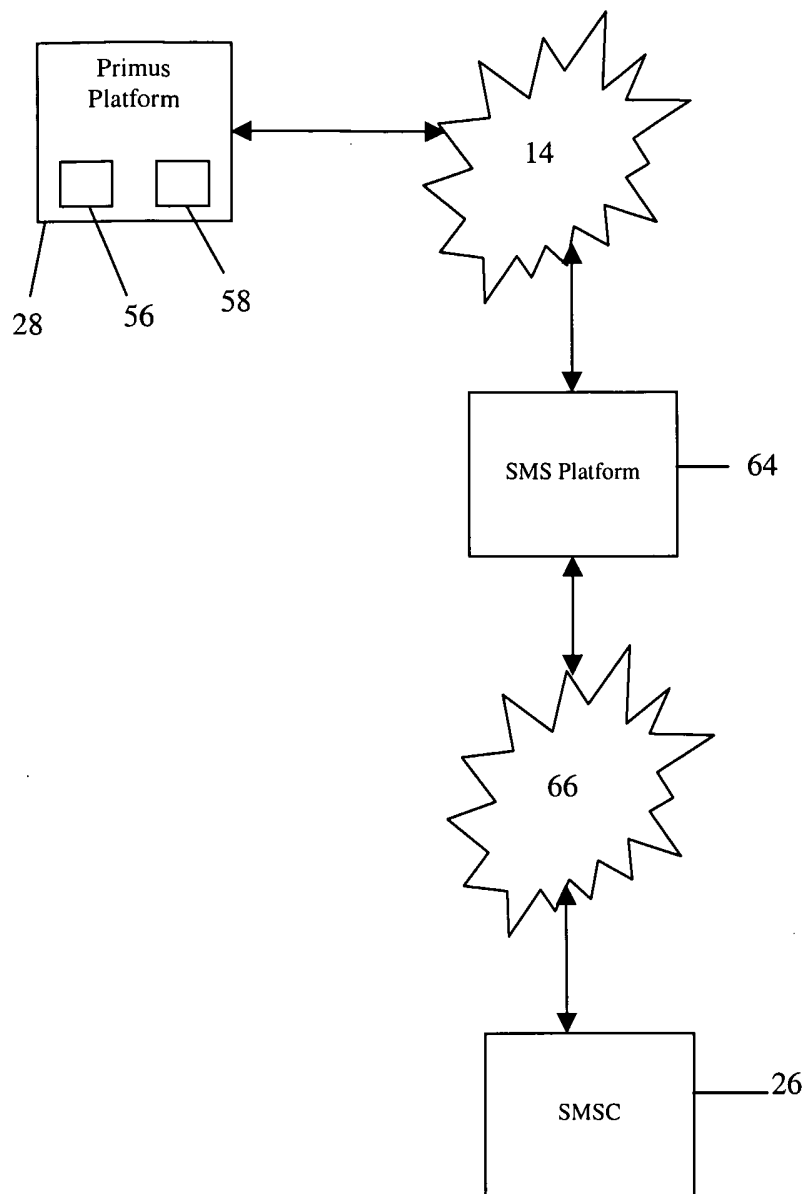
10

Figure. 5b

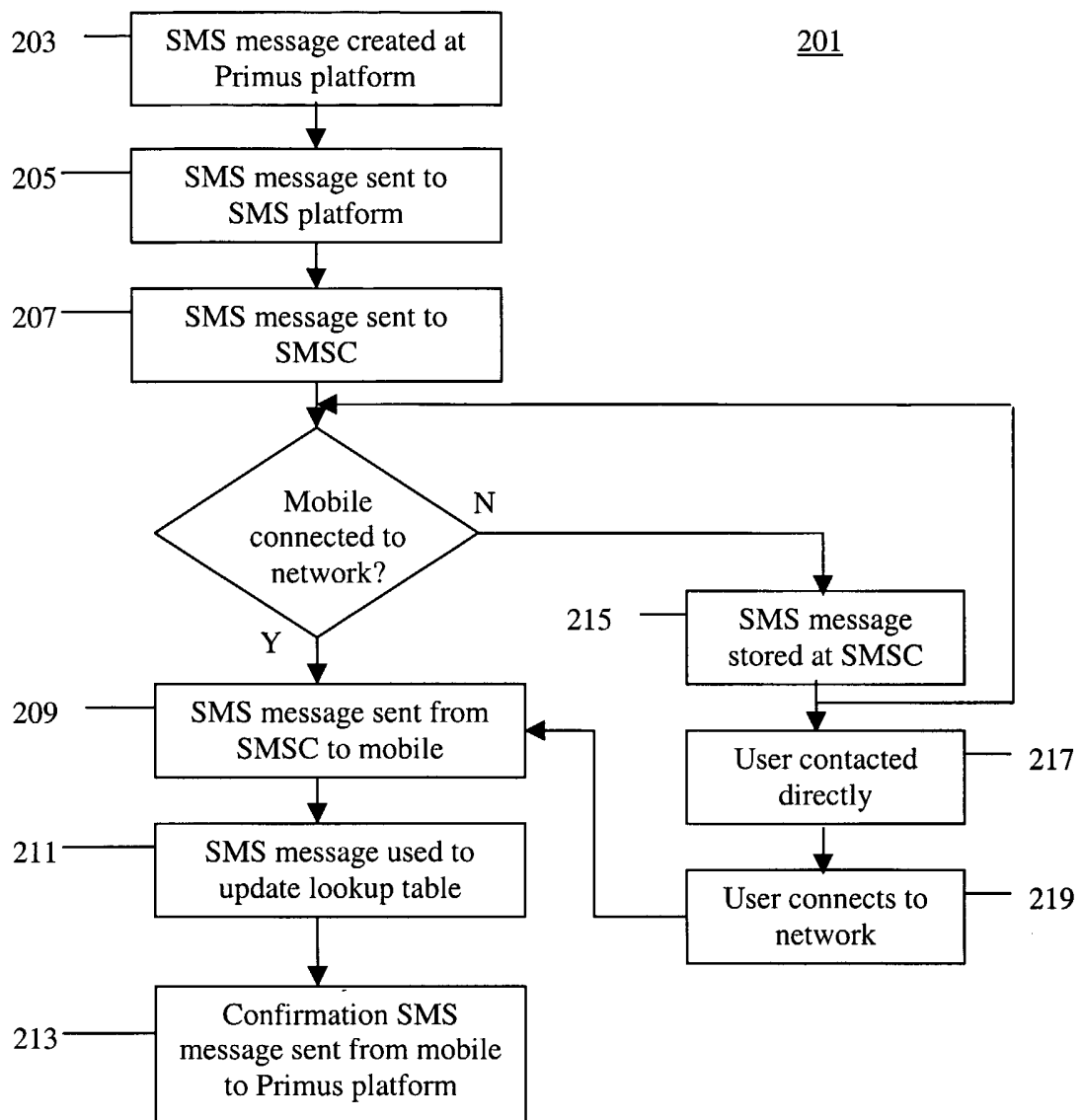


Figure 5c

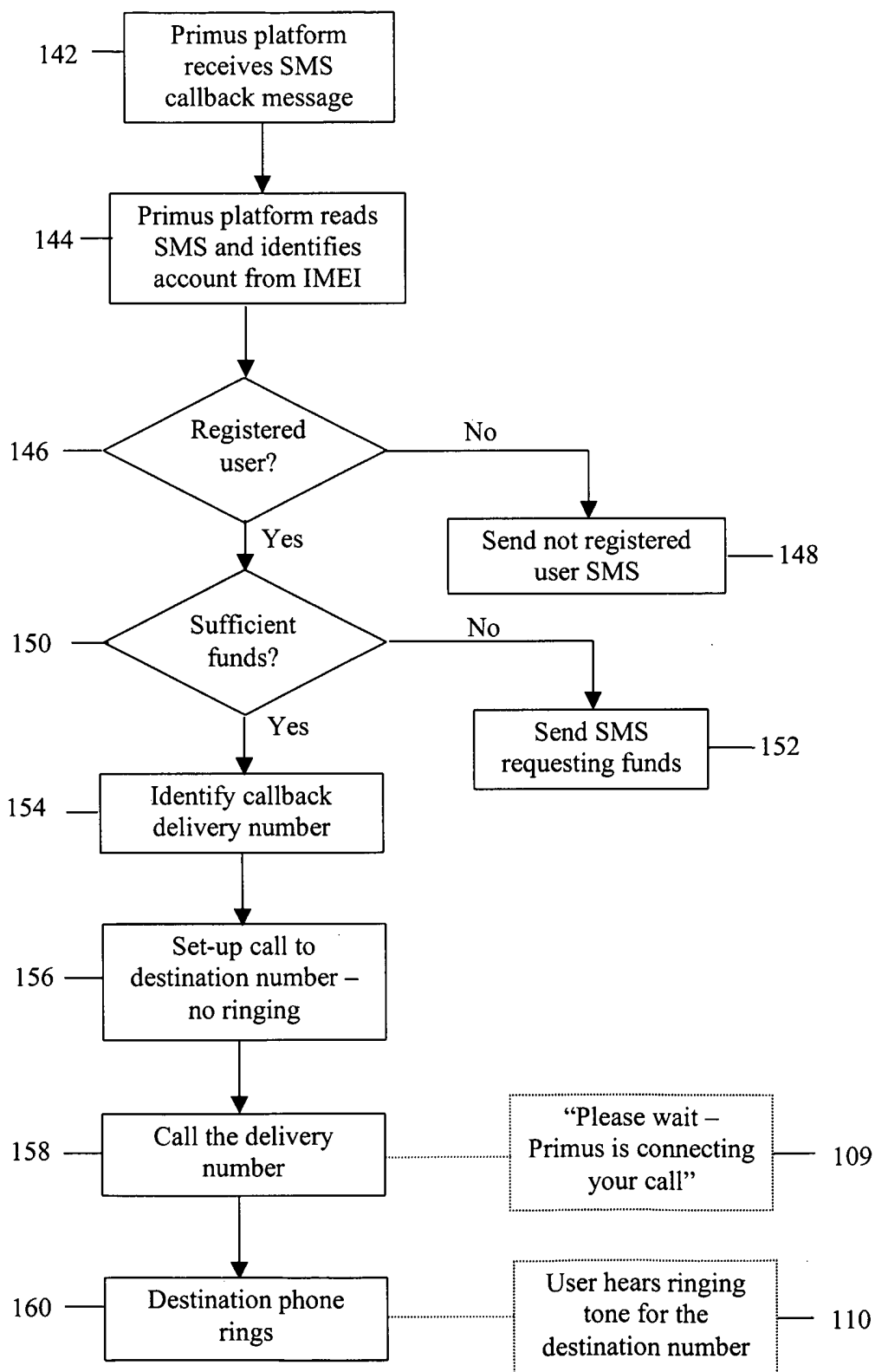
140

Figure 6

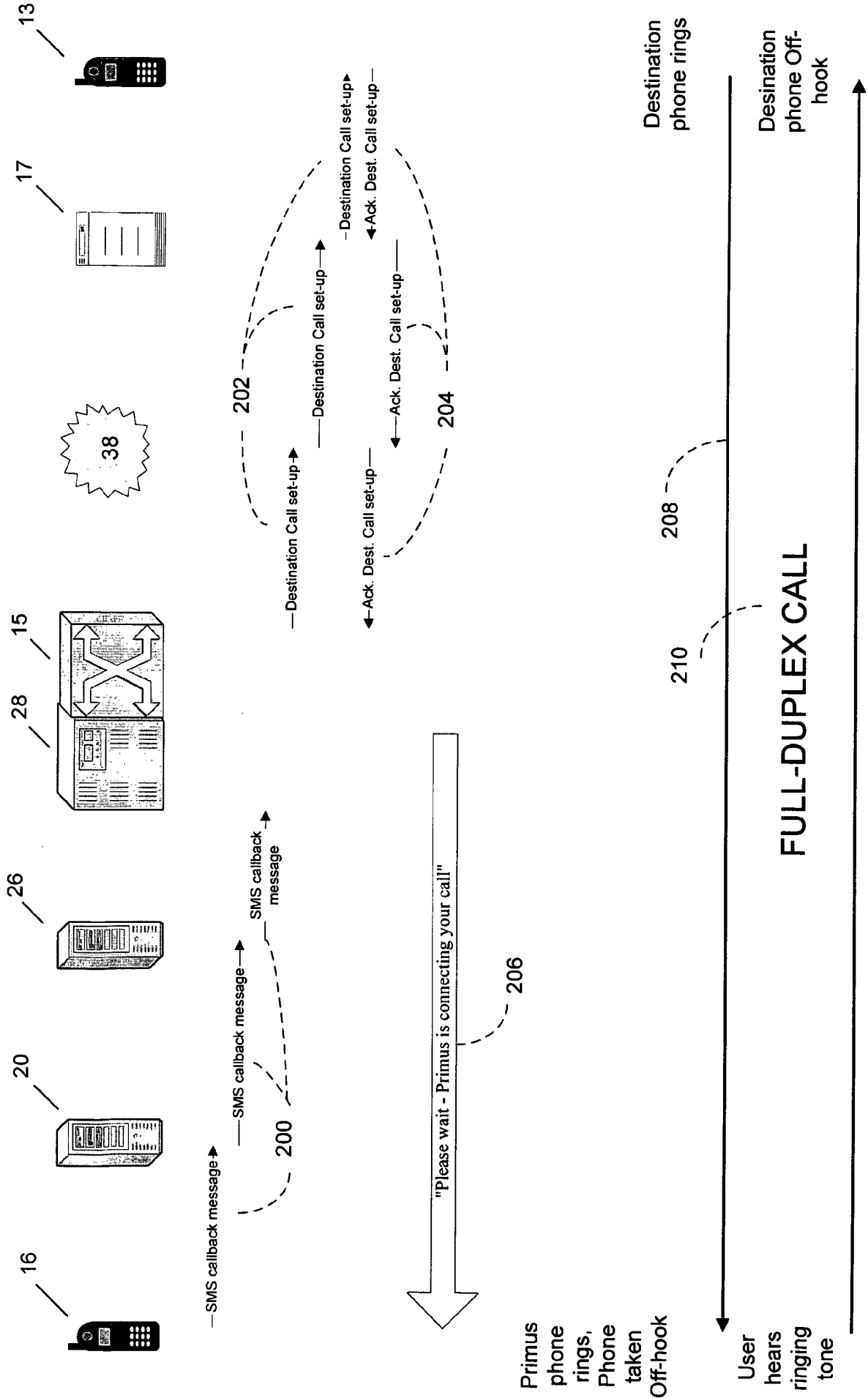


Figure 7

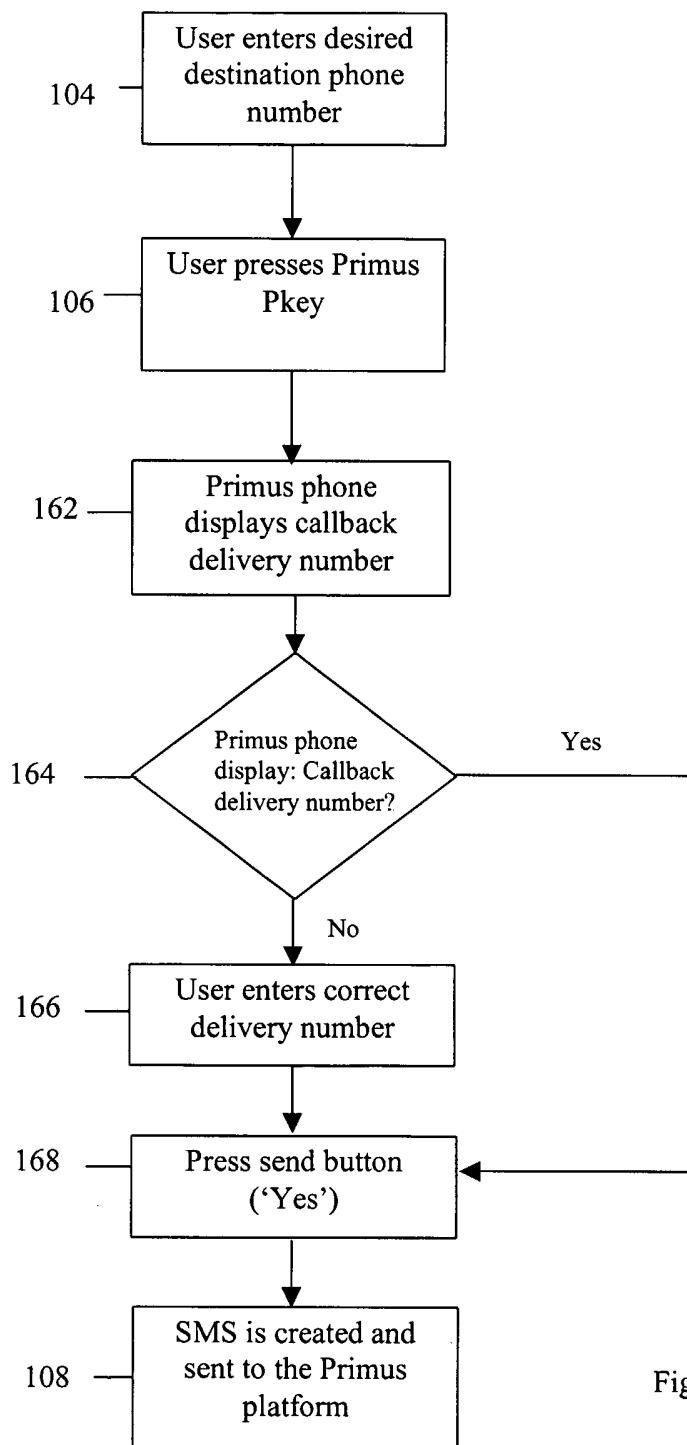
160

Figure 8

Figure 9

Callback delivery
number?

+442076696570

Yes

No

32

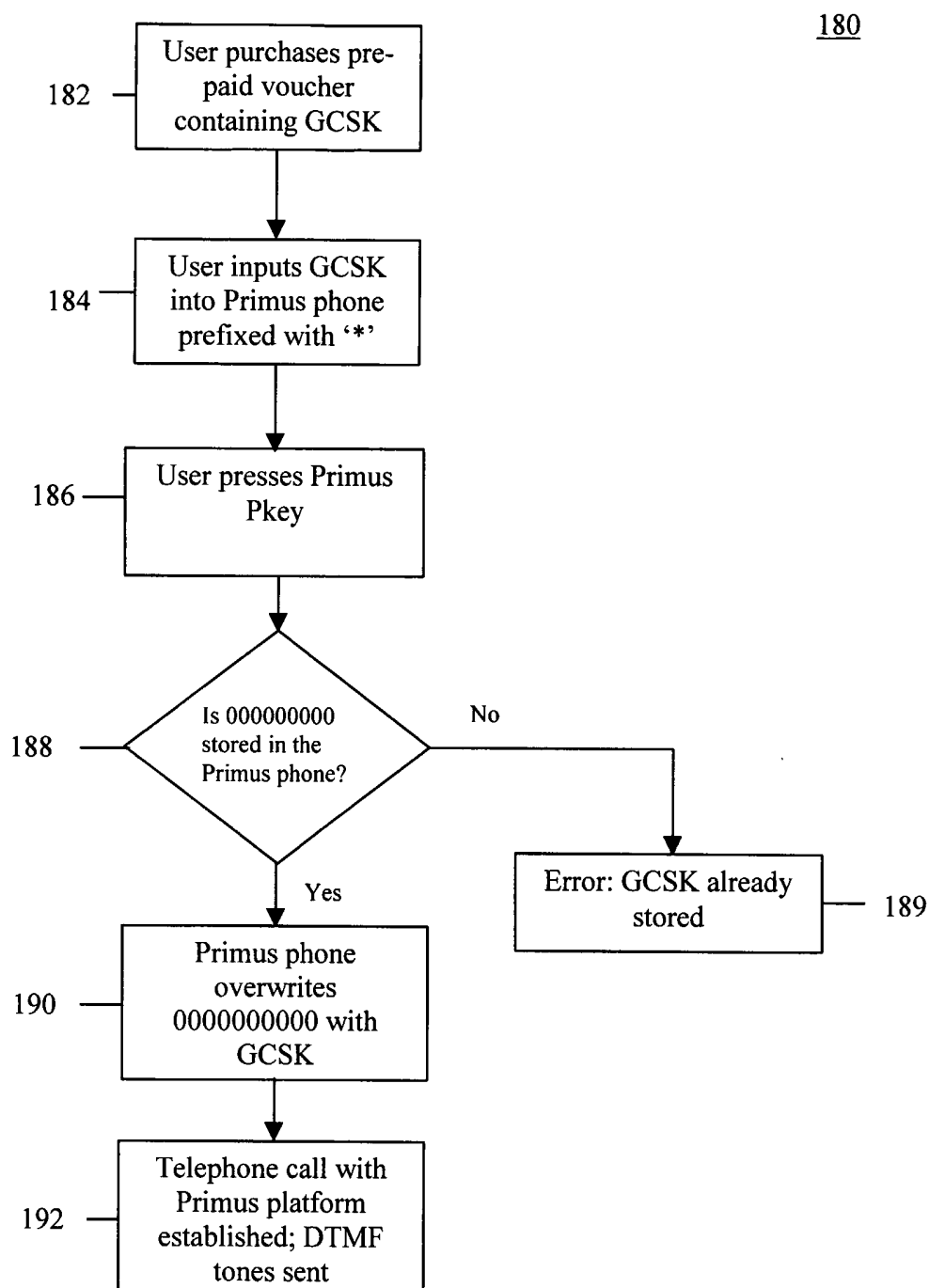


Figure 10

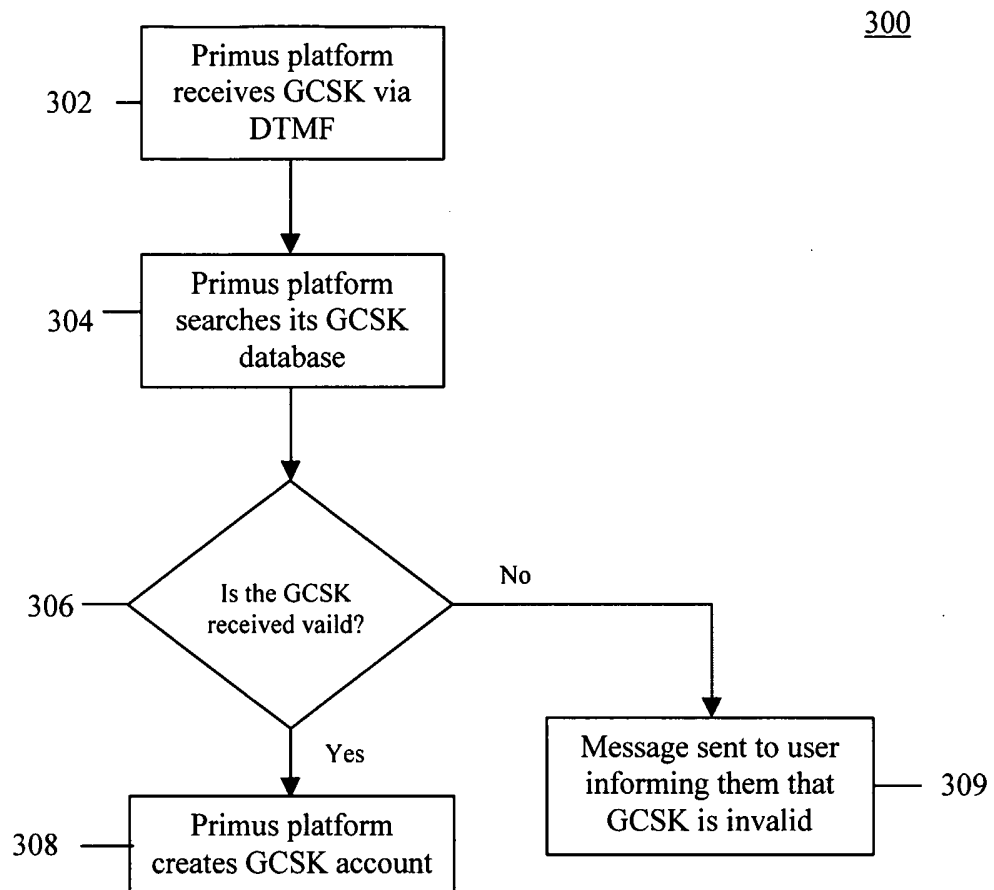
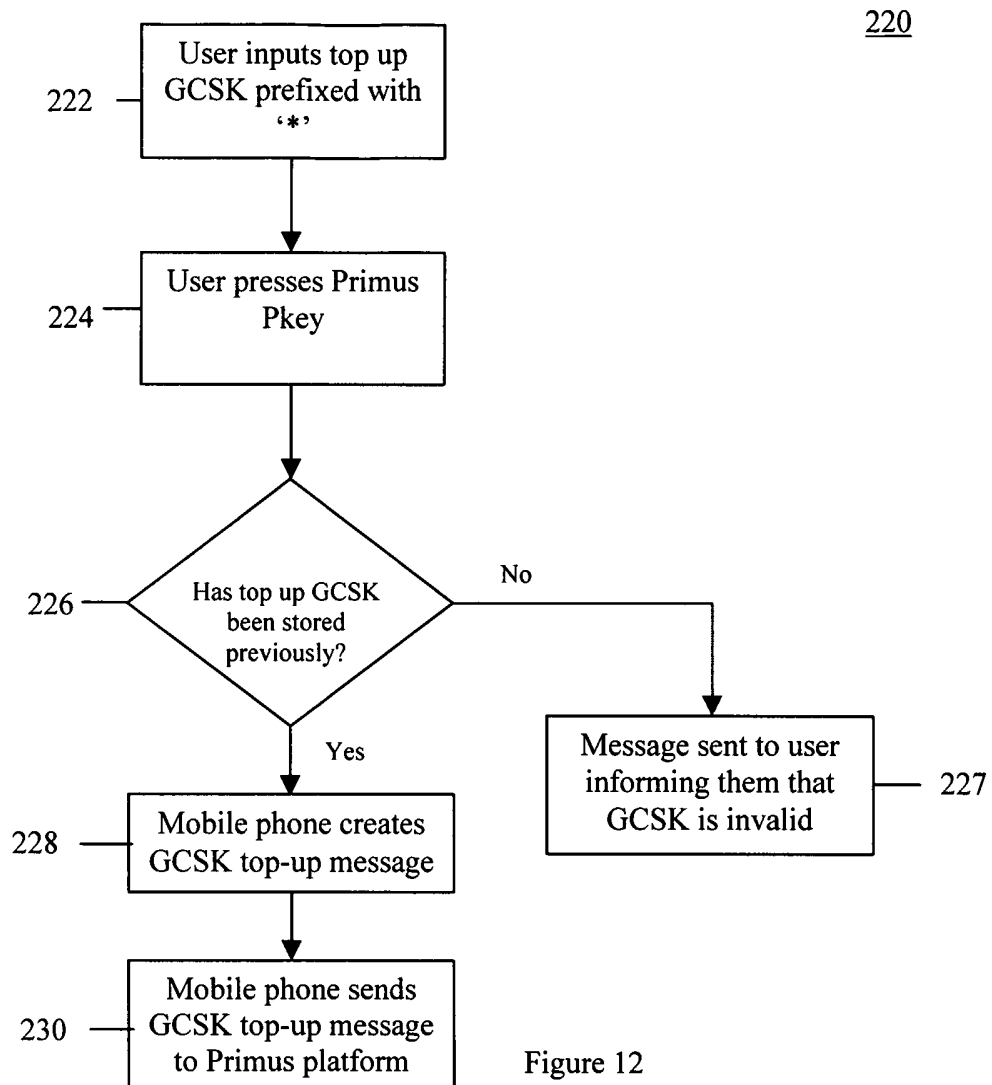


Figure 11



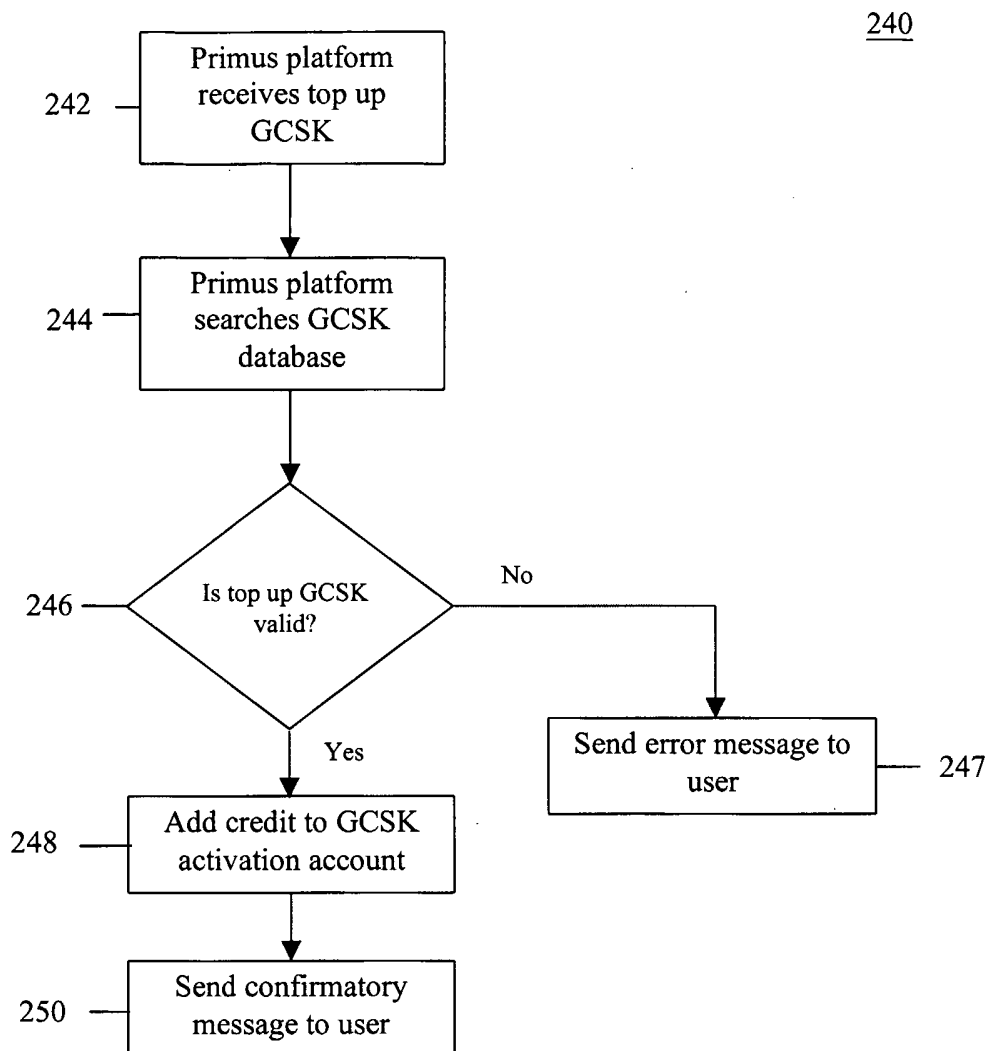


Figure 13