

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e) (Page 1 of 1)**

First Named Inventor:	Ivan Zhidov	Nonprovisional Application Number (if known):	
Title of Invention:	Telephone Network System and Method		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
3. The applicable box is checked below:
 - I. ☒ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**
 - i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
---OR---
 - (b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
 - ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.
- II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**
 - i. A request for continued examination has been filed with, or prior to, this form.
 - ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
 - iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
 - iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
 - v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature <u>/Stuart J. West/</u>	Date <u>04/29/2020</u>
Name (Print/Typed) <u>Stuart J. West</u>	Practitioner Registration Number <u>43258</u>
Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.*	
☐ *Total of _____ forms are submitted.	

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD
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As the below named inventor, I hereby declare that:

This declaration ☐ The attached application, or
is directed to: ☒ United States application or PCT international application number 16/031,806
filed on 07/10/2018

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

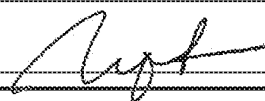
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001
by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Ivan ZHIDOV Date (Optional): 4/22/2019

Signature: 

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

FLYP-001/03US

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of
Invention

TELEPHONE NETWORK SYSTEM AND METHOD

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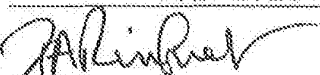
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LEGAL NAME OF INVENTOR

Inventor: Peter A. RINFRET

Date (Optional): _____

Signature: 

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD
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As the below named inventor, I hereby declare that:

This declaration ☐ The attached application, or
is directed to: ☒ United States application or PCT international application number 14/307,052
filed on 06/17/2014.

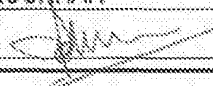
The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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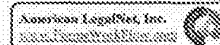
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LEGAL NAME OF INVENTOR	
Inventor: <u>Sunir KOCHHAR</u>	Date (Optional): <u>4/21/2017</u>
Signature: 	

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UNITED STATES UTILITY PATENT APPLICATION

TITLE

TELEPHONE NETWORK SYSTEM AND METHOD

INVENTORS

IVAN ZHIDOV

PETER A. RINFRET

SUNIR KOCHHAR

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This application is a divisional application and claims the benefit of priority to co-pending US Patent Application No. 17/039,566, filed September 30, 2020 by Zhidov et al., which is a divisional of US Patent Application No. 16/444,753, filed June 18, 2019, by Zhidov, et al., which is a divisional application of US Patent Application No. 16/031,806 (now Patent No. 10,334,094), filed July 10, 2018 by Zhidov, et al., which is a continuation application of US Patent Application No. 15/582,091 (now Patent No. 10,051,105), filed April 28, 2017, by Zhidov, et al., which is a continuation application of US Patent Application No. 14/307,052 (now Patent No. 9,667,770), filed June 17, 2014, by Zhidov, et al., which is a continuation-in-part application of US Patent Application No. 13/944, 853, filed July 17, 2013, by Zhidov, et al., the complete contents of each of which is hereby incorporated herein by reference.

BACKGROUND

TECHNICAL FIELD

[0002] The present invention relates to systems and methods for setting up and connecting telephone calls, and delivering information related to such telephone calls using an Internet

Protocol (IP) or other data channel while delivering the voice portion of the call in accordance with CDMA, GSM or like voice channel delivery standards.

BACKGROUND

[0003] The volume of telephone calls and text messaging has increased dramatically and users are finding it more and more difficult to manage that volume of calls and messages. The current systems to aid in managing some types of calls only provide minimal assistance to the user. It is therefore an advantage of some, but not necessarily all, embodiments of the present invention to provide systems and methods for assisting callers and call recipients with the management of calls and messages.

[0004] Additional advantages of various embodiments of the invention are set forth, in part, in the description that follows and, in part, will be apparent to one of ordinary skill in the art from the description and/or from the practice of the invention.

SUMMARY

[0005] Responsive to the foregoing challenges, Applicant has developed an innovative method of providing telephone service by transmitting call handling information between a handset and a switch using an IP channel or similar protocol channel and by transmitting a voice call associated with the call handling information between the handset and the switch using a voice channel provided in accordance with a voice channel protocol, e.g., in accordance with CDMA or GSM, 3G, 4G, LTE or like future protocol channels standards.

[0006] Applicant has further developed an innovative method of providing telephone service comprising: automatically storing electronic information that indicates an association of a secondary telephone number and a primary telephone number with a telephone handset in a computer memory associated with a server; automatically storing electronic information that indicates a selection of call processing rules for the primary telephone number in the computer memory; automatically storing electronic information that indicates a selection of call processing rules for the secondary telephone number in the computer memory; receiving an electronic indication of an incoming call to the secondary telephone number at the server, said electronic indication of an incoming call being received from a switch associated with the server; automatically accessing the call processing rules for the secondary telephone number under the control of the server responsive to the receipt of the electronic indication of the incoming call to the secondary telephone number; automatically handling the incoming call in accordance with the accessed call processing rules for the secondary telephone number; transmitting pre-call information via a data channel to the handset under the control of the server, said pre-call information including a bridge telephone number for connecting the handset to the incoming call at the switch; and receiving, at the server via the data channel, an electronic indication of a

selection of a call processing rule for handling the incoming call to the secondary telephone number, or establishing a voice channel connection between the handset and the switch as a result of the handset calling the switch using the bridge number.

[0007] Applicant has further developed an innovative method of providing telephone service, comprising: automatically storing electronic information that indicates an association of a secondary telephone number and a primary telephone number with a telephone handset in a computer memory associated with a server; automatically associating a unique bridge telephone number with each of a plurality of contact telephone numbers in the computer memory; automatically transmitting information that indicates the association of the unique bridge telephone number with each of a plurality of contact telephone numbers to the handset via the data channel; automatically associating each primary telephone number and bridge telephone number pairing with a corresponding secondary telephone number and contact telephone number pairing in the computer memory; receiving, at a switch associated with the server, an outgoing call from the handset to the bridge telephone number via a voice channel; receiving, at the server, information from the switch indicating the outgoing call is being made to the bridge telephone number from the primary telephone number; receiving, at the switch, information from the server directing the switch to: (a) connect the outgoing call to a contact telephone number associated with the primary telephone number and bridge telephone number pairing, and (b) identify the telephone number from which the outgoing call is being made as the secondary telephone number.

[0008] Applicant has still further developed an innovative method of providing telephone service, comprising: enrolling a telephone handset in a telecommunications system having a server and a switch, wherein said telephone handset is associated with a primary telephone number in a database associated with the server and switch; electronically transmitting an application from the

server to the telephone handset via a data channel responsive to telephone handset enrollment, wherein said application is: adapted to send instructions to have one or more secondary telephone numbers referenced to the primary telephone number in the database, adapted to present visually perceptible call processing rules on the telephone handset, and adapted to transmit information indicating a selection of call processing rules from the telephone handset to the server; electronically receiving instructions from the telephone handset via the data channel to reference the one or more secondary telephone numbers to the primary telephone number; storing telephone handset information, including the primary telephone number and the one or more secondary telephone numbers referenced to the primary telephone number, in the database; electronically receiving instructions from the telephone handset via the data channel to store user selected call processing rules for the telephone handset in the database, wherein the user selected call processing rules include instructions to route calls over a voice channel in a manner that will indicate that the calls are made to or from the one or more secondary telephone numbers; electronically transmitting information to the telephone handset via the data channel, said information being adapted to cause a pre-call information to be displayed on the telephone handset responsive to initiation of an outgoing call using the one or more secondary telephone numbers or an incoming call to the one or more secondary telephone numbers; electronically receiving from the telephone handset via the data channel call handling information indicating a user selected call processing rule to be used to process the outgoing or incoming call; and automatically handling the outgoing or incoming call based on the call handling information.

[0009] Applicant has still further developed an innovative method of providing telephone service, comprising: associating a telephone handset with primary and secondary telephone numbers in a database; receiving, from the telephone handset via a data channel, digital

information indicating primary call processing rules for handling calls to the first telephone number; storing the primary call processing rules digitally; receiving, from the telephone handset via the data channel, digital information indicating secondary call processing rules for handling calls to the secondary telephone number; storing the secondary call processing rules digitally; receiving a call request to the secondary telephone number; transmitting pre-call information to the telephone handset via the data channel responsive to receipt of the call request, wherein said pre-call information is based on the secondary call processing rules; responsive to the pre-call information, receiving information indicative of a user input to the telephone handset over the data channel; and processing the call based on the stored alternative call processing rules and user input to the telephone handset, wherein said processing includes an option of connecting the call over a voice channel.

[0010] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] In order to assist the understanding of this invention, reference will now be made to the appended drawings, in which like reference characters refer to like elements.

[0012] FIG. 1 is a schematic diagram illustrating a network architecture that may be used to provide telephone service in accordance with embodiments of the present invention.

[0013] FIG. 2 is a block diagram illustrating a method of providing telephone calls in accordance with embodiments of the present invention.

[0014] FIG. 3 is a block diagram illustrating data channel and voice channel connections used to provide telephone service in accordance with embodiments of the present invention.

[0015] FIG. 4 is a block diagram illustrating a method of setting up and connecting an incoming call in accordance with one embodiment of the present invention.

[0016] FIG. 5 is a block diagram illustrating a method of setting up and connecting an outgoing call in accordance with one embodiment of the present invention.

[0017] FIG. 6 is a call sequence diagram illustrating a method of setting up and connecting a conference call in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION

[0018] Reference will now be made in detail to embodiments of the present invention, examples of which are illustrated in the accompanying drawings. It is to be understood that other embodiments may be utilized and structural changes may be made without departing from the scope of the present invention.

[0019] It should be noted that in connection with the described embodiments, reference is made to a data channel. A preferred data channel may be an Internet Protocol (IP) channel, which is not a conventional telephone voice channel. However, other data, non-conventional voice, channels over which information may be transmitted between a telephone handset and a server may be used in alternative embodiments of the invention.

[0020] With reference to FIG. 1, embodiments of the present invention may be implemented using a system having a server 100, associated computer memory, such as a database 120, and an associated telecommunications switch 110 which communicate through a network with a telephone handset 340. The server 100 may be connected to the database 120 and the switch 110. The server 100 may also be connected via the Internet 316 through one or more nodes, such as a Gateway GPRS Support Node (GGSN) 322 and a Servicing GPRS Support Node (SGSN) 324, to a mobile network 313. The switch 110 may be connected through the PSTN 310 to the mobile network 313 at a Mobile Switching Center (MSC) 314. In turn, the MSC 314 may be connected to a Home Location Register database (HLR) 318, a Visitor Location Register database (312), a Mobile Number Portability database (MNP) 320, a location server 308, and the SGSN 324. The SGSN 324 may be connected to one or more Radio Network Controllers (RNC) 326 and/or one or more Processor Control Units (PCU) 327, which in turn may be connected to one or more Base Stations (BS) 328 and to one or more mobile devices referred to collectively as "handsets" 340.

[0021] The communications between the server 100 and the handset 340 over the Internet 316 may utilize IP as a protocol opposed to protocols used to establish communications according to CDMA, GSM, or like standards. Such IP governed communications are referred to herein as being conducted over a "data channel." Conversely, communications between the switch 110 and the handset over the PSTN 310 may be transmitted and received in accordance with CDMA, GSM or like standards as opposed to using IP. Such CDMA, GSM or like governed communications, when used to carry voice information, are referred to herein as being conducted over a "voice channel."

[0022] With reference to FIGS. 1 and 2, method embodiments of the invention may be facilitated starting with step 200 in which a handset 340 may be used to subscribe to the telephone network that includes the server 100 and switch 110 used to provide telephone service in accordance with embodiments of the invention. A user may subscribe to the telephone network in step 200 by enrolling the telephone handset 340 using a data channel connection between the handset and the server 100. Responsive to a data channel request received from the handset 340, a handset application may be transmitted to the handset from the server 100, and installed and stored in memory associated with the handset in step 202. Once the handset application is installed on the handset 340, the handset may connect to the server 100 by operation of the handset application as needed over a data channel connection which may include the BS 328, RNC 326 or PCU 327, SGSN 324, GGSN 322, and Internet 316.

[0023] In connection with step 204, the server 100 may transmit information to the handset 340 via the data channel, which, through automatic operation of the handset application, permits the user to select one or more secondary telephone numbers to be referenced to a primary telephone number for the handset. The primary telephone number, preferably, may be a SIM number or ESN which is assigned to the handset 340 at the time of activation. Once selected, the handset 340 may

automatically transmit information which to the server 100 over the data channel which requests that the secondary telephone numbers be associated with the primary telephone number. In response, the server 100 may store (i.e., reference) information indicating the association of the one or more selected secondary telephone numbers in computer memory associated with the server such as the database 120. In an alternative embodiment, the server 100 may automatically assign one or more secondary telephone numbers to the handset 340, as opposed to them being selected.

[0024] In step 206 of FIG. 2, the handset 340 may be used to access the handset application installed thereon to select call processing rules for handling incoming and outgoing voice channel calls to and from the handset 340. Information indicating call processing rules may be transmitted from the handset 340 to the server 100 via the data channel by automatic operation of the handset application. Custom call processing rules may be selected for, and associated with, each of the primary telephone number and the one or more secondary telephone numbers associated with the primary telephone number. The call processing rules information may be automatically stored in a computer memory, such as database 120, by the server 100. An indication of the association of particular call processing rules with a particular 10 handset 340 and particular primary and/or secondary telephone numbers may also be stored in the database 120. The call processing rules may include preset responses for incoming calls, such as custom stored voice message(s) and/or custom stored text message(s) to be associated with the primary and/or one or more secondary telephone numbers. The call processing rules may further permit the handset 340 to be used to control the availability of the secondary telephone numbers as well as activation of additional secondary telephone numbers and deactivation of existing secondary telephone numbers. Information indicating the call processing rules for the primary telephone number and secondary telephone numbers may be stored automatically in memory associated with the handset 340. The

call processing rules may further include stock rules used for all telephone numbers, such as an option to accept or not accept (i.e., drop) an incoming call. With reference to step 208, the application stored on the handset 340 may enable it to be used to receive incoming calls from, and place outgoing calls to, a recipient telephone (not shown) which is connected to the PSTN 310, as explained in more detail below.

[0025] With reference to FIGS. 3 and 4, the handset 340 may be used to receive incoming (terminating) calls to a secondary telephone number, using a telephone network automated structure having a network layer 101 and an application layer 102 associated therewith. An incoming call to the secondary telephone number may be placed in step 402 by a calling party. The incoming call is routed from the caller's telephone to the PSTN 310. In step 404, the incoming call may be routed over the PSTN 310 to the switch 110. Responsive to receipt of the incoming call at the switch 110, a Call Manager 104 application, which cooperates with a Mobility Manager 106 application, and a Web Manager 108 application, which are all associated with the server 100, may access the call processing rules in the database 120 which are associated with the secondary telephone number that is being called. Subject to the accessed call processing rules, the Call Manager 104 may assign or look up a bridge telephone number to be used for completion of the call in step 406. The bridge telephone number may be associated with the switch 110, and calls to the bridge telephone number may be automatically routed to this switch.

[0026] The call processing rules may provide for call routing via a call distribution algorithm where the call could be routed to one or many telephone numbers. The call processing rules may be user selectable and configurable, and may apply to voice, text and/or other data messaging. The call processing rules may govern how calls are handled and may provide automated call routing or call dropping based on location data of the calling and/or called party. The call processing rules

may further govern handling calls based on incoming caller ID, which may identify a calling party as being on an accepted caller ID list or a non-accepted caller ID list. The call processing rules may further provide call routing based on weekday, weekend, holiday, time of day, biometrics data, and accelerometer data information. The call processing rules may still further provide call routing based on an interface with a handset 340 calendar to check availability to accept calls. Such calendars may include, for example, Outlook, Google Calendar, and other user calendars.

[0027] If the call processing rules indicate that the secondary telephone number is not available to this particular caller, or to all callers, however, the Call Manager 104 may apply such rule or rules and reject the incoming call at the conclusion of step 406. Application of the call processing rules for a call rejection may result in the call simply not being answered, being dropped, or automated return of a voice, text, or other type of message to the calling telephone number or a communication device associated therewith.

[0028] On the other hand, if the call processing rules permit completion of the call, in step 408 the Call Manager 104 may transmit pre-call notification information to the handset 340, which includes the assigned/looked up bridge telephone number, via the data channel connection, i.e., over the Internet 316 and the Mobile Data Network 348. The pre-call information may include information used by the application installed on the handset 340 to cause a display of the calling telephone number, the calling party name, calling party location, such as GPS location, and/or the called secondary telephone number, as well as other information in step 410. The incoming pre-call information may be received at the handset 340 before or during the call ringing on the handset.

[0029] In step 412, responsive to receipt of the incoming pre-call notification information, the handset application may cause the handset 340 to display call handling choices for the call. For example, the handset 340 may be directed under the control of the handset application to display

receive call, drop call, custom voice mail message, and/or custom text message choices. The choices may be selected through interaction with the handset 340, all before the call is connected or dropped. In step 414, the selection of either delivering a responsive text message (416), not accepting, i.e., "dropping" the call (418), or responding to the call with a custom voice message (420) may be transmitted from the handset 340 to the server 100 via the data channel. Thereafter, the Call Manager 104 may automatically implement the drop call or respond with text or voice message instructions received over the data channel, and the call attempt may be terminated thereafter.

[0030] If the call is accepted in step 414, however, the handset application may automatically cause the handset 340 to call the bridge telephone number in step 422 over a voice channel. The return call from the handset 340 to the bridge telephone number may be routed over the PSTN 310 to the switch 110 using a voice channel connection. In step 424, once the call to the bridge telephone number is received at the switch 110, the switch may "bridge" the incoming voice channel call to the bridge telephone number with the incoming voice channel call to the secondary telephone number to thereby connect the incoming call from the calling party to the handset 340 via a voice channel. Further, the switch 110 may automatically send signaling information to the calling party telephone which causes the secondary telephone number to be displayed as the number to which the call has been completed.

[0031] With continued reference to FIG. 3, the web manager 108 may be used to process Internet 316 transactions for the server 110. The system may also employ a web portal 350 to link a digital device 360 other than a handheld 340 to the telecommunications system for calling in accordance with embodiments of the invention. For example, embodiments of the invention may

be used with digital devices 360 such as a desktop computer, laptop computer, iPad, tablet, iPod 790, or the like.

[0032] With reference to FIGS. 3 and 5, the handset 340 may be used to place outgoing (originating) calls from a secondary telephone number, using the telephone network automated structure shown in FIG. 3 and described above. If the party to be called has not yet been called using a secondary telephone number, an outgoing call from the handset 340 may be initiated to such party in step 502 by opening the handset application installed thereon. Once the handset application is open, the handset 340 may be used to choose a secondary telephone number as the originating telephone number in step 504. A list of such secondary telephone numbers may be stored in memory associated with the handset.

[0033] In step 506, the handset 340 may be used to enter, or select from an address file, a contact telephone number to be called in order to initiate a call to such telephone number. The handset application may cause the handset 340 to transmit information to the server 100 Call Manager 104 via the data channel automatically as a result of the selection of the secondary telephone number and the contact telephone number. The transmitted information may indicate the secondary telephone number from which the call is to appear to the called party to have been placed, and the contact telephone number to be called.

[0034] In step 508, responsive to receipt of the data channel communication from the handset 340 requesting set up of a call from it to the telephone number to be called, the Call Manager 104 may access the call processing rules in the database 120 which are associated with the secondary telephone number from which the call is to appear to have been placed. In step 510, subject to the accessed call processing rules, the Call Manager 104 may assign a bridge telephone number to be

used to connect the call from the handset 340 to the switch 110 and send pre-call information including the bridge telephone number to the handset via the data channel.

[0035] The bridge telephone number may be associated with the switch 110, and calls to the bridge telephone number may be automatically routed to this switch. Once the bridge telephone number is assigned, the server 100 under the control of the Call Manager 104, may store information in the database 120 which associates the bridge telephone number with the primary telephone number for the handset 340, the secondary telephone number selected for the call, and the contact telephone number to be called. More specifically, the stored information may indicate that each combination of primary telephone number and bridge telephone number are uniquely associated with each combination of secondary telephone number and contact telephone number. In other words, each combination of primary telephone number and bridge telephone number for the handset 340 map to a unique combination of secondary telephone number and contact telephone number in the database 120 memory.

[0036] In step 512, responsive to receipt of the bridge telephone number information over the data channel, the handset application may cause the handset 340 to automatically call the bridge telephone number via a voice channel. The return call from the handset 340 to the bridge telephone number may be routed over the PSTN 310 to the switch 110 using a voice channel connection.

[0037] In step 514, the Call Manager 104 may instruct the switch 110 to place a voice channel call to the telephone number to be called using the secondary telephone number as the originating telephone number from the switch. Once the call to the bridge telephone number from the handset 340 is received at the switch 110, the switch may "bridge" the incoming voice channel call to the bridge telephone number with the outgoing voice channel call from the secondary telephone number to the contact telephone number to thereby connect the outgoing call from the handset 340

to the party being called via a voice channel. Further, the switch 110 may automatically send signaling information to the called party telephone which causes the secondary telephone number to be displayed as the number from which the call appears to have been placed. Because each pairing of a primary telephone number and a bridge telephone number maps to a unique contact telephone number and secondary telephone number pairing, the call can be completed at the switch 110 to the correct contact telephone number while showing the desired secondary telephone number as the originating number.

[0038] With continued reference to FIG. 5, in the event that the contact telephone has been previously called using the secondary telephone number on the handset 340, the user may directly select the bridge telephone number associated with the secondary telephone number and contact telephone number in step 506 either using the handset application in step 502, or without opening the handset application in step 512. Alternatively, the handset may have a stored "shortcut" which, when the user selects the contact telephone number to be called from the secondary telephone number, results in the associated bridge telephone number being dialed. In either case, the handset 340 may dial the bridge telephone number to connect with the Call Manager 104 in step 512. In step 514, the Call Manager 104 may look up the secondary telephone number and the contact telephone number associated with the paired bridge telephone number and primary telephone number for the handset 340. Thereafter, the switch 110 may dial the contact telephone number and bridge the call from the handset 340 in a manner that makes the secondary telephone number appear to be the telephone number from which the call is being placed.

[0039] FIG. 6 is a call flow diagram illustrating a method of setting up and connecting a multi-party conference call in accordance with an embodiment of the present invention. With reference to FIGS. 3 and 6, the communication sequence for a conference call is illustrated between the

handset application stored on the handset 340, the Call Manager 104 application associated with the server 100 and switch 110, and a conference call invitee handset. In step 600, the application on the handset 340 may be used to select invitees (users) for a conference call. The telephone numbers of the invitees may be selected from an address book or manually entered. Further, the conference call may be selected to be initiated immediately, or at some future date and time.

[0040] Once the invitees are selected, the handset 340 may be instructed by the handset application to transmit a conference request to the server 100 via a data channel. In step 602, the Call Manager 104 operating on the server 100 may assign a conference bridge telephone number to the conference call in response to receipt of the conference request. In step 604, the Call Manager 104 may cause the server 100 to send conference invitation messages to each of the invitee handsets, and more specifically, applications stored on the invitee handsets, via a data channel. The invitation messages may include the assigned bridge telephone number for the conference call and an optional PIN or code number for the conference call. The invitation message may provide a notice, for example, "Jack has invited you to join a conference call," and further include identification of other invited participants.

[0041] In step 606, each invitee handset may be used to accept to join the conference call, join at a later time, or decline to join. If the acceptance is for a future scheduled conference call, an indication of the acceptance (including acceptance to join late) may be transmitted from each invitee handset under the control of the application installed thereon, to the server 100 Call Manager 104 via the data channel. Further, if the invitation is declined altogether, an indication thereof may be transmitted from each invitee handset to the server 100. Thereafter, the Call Manager 104 may transmit information to the originating handset 340, and optionally the invitee

handsets, via the data channel, which indicates acceptance of a future conference call, acceptance to join late (step 610), or declination of the conference call invitation.

[0042] If the conference call invitation is accepted and it is time for the call, each accepting invitee handset may automatically or manually dial the bridge telephone number using a voice channel. The switch 110 may receive the voice channel calls to the bridge telephone number and may authenticate the invitees right to join the conference call in step 608 by comparing the invitee's telephone number with that of the invitee list, as well as comparing any PIN input by the invitee with the PIN selected for the conference call. If the authentication is successful, the invitee handset is connected to the call via the voice channel. An automatic update may be transmitted via the data channel from the server to the originating handset 340 indicating that a particular invitee handset has joined the conference call.

[0043] If an invitee chose to join late, the server 100 may automatically transmit a reminder to the affected invitee handset to join the call at the agreed time in step 612. Thereafter, the late joining invitee handset may dial the bridge telephone number automatically or manually using a voice channel. The switch 110 may receive the voice channel call to the bridge telephone number, authenticate the late joining invitee handset, and connect the handset to the conference call in step 614.

[0044] The foregoing has described the principles, embodiments and modes of operation of the present invention. However, the invention should not be construed as being limited to the particular embodiments discussed. The above described embodiments should be regarded as illustrative rather than restrictive, and it should be appreciated that variations may be made in those embodiments by workers skilled in the art without departing from the scope of the present invention as defined by the following claims.

CLAIMS

What Is Claimed:

1. A method of providing telephone service, comprising:

automatically storing electronic information that indicates an association of a secondary telephone number and a primary telephone number with a mobile device in a computer memory associated with a server;

automatically transmitting information that indicates an access telephone number to the mobile device via a data channel;

automatically associating a primary telephone number and access telephone number pairing with a corresponding secondary telephone number and contact telephone number pairing in the computer memory;

receiving, at a switch associated with the server, an outgoing call from the mobile device to the access telephone number via a second channel;

receiving, at the server, information from the switch indicating the outgoing call is being made to the access telephone number from the primary telephone number; and

receiving, at the switch, information from the server directing the switch to:
 - (a) connect the outgoing call to the contact telephone number of the secondary telephone number and contact telephone number pairing, and
 - (b) identify a telephone number from which the outgoing call is being made as the secondary telephone number.
2. The method of claim 1, wherein the data channel is an Internet protocol (IP) channel.
3. The method of claim 2, wherein the second channel is established in accordance with a CDMA or GSM standard.

4. The method of claim 1, wherein the second channel is not an Internet Protocol (IP) channel.
5. An apparatus, comprising:
 - a memory; and
 - a processor operatively coupled to the memory,the processor configured to automatically store electronic information that indicates an association of a secondary telephone number and a primary telephone number with a mobile device in a computer memory associated with a server,
 - the processor configured to automatically transmit information that indicates an access telephone number to the mobile device via a data channel,
 - the processor configured to automatically associate a primary telephone number and access telephone number pairing with a corresponding secondary telephone number and contact telephone number pairing in the computer memory,
 - the processor configured to receive, at the server, information from a switch associated with the server and in response to the switch receiving an outgoing call from the mobile device to the access telephone number via a second channel,
 - the information indicating the outgoing call is being made to the access telephone number from the primary telephone number,
 - the processor configured to send, to the switch, information from the server directing the switch to:
 - (a) connect the outgoing call to the contact telephone number of the secondary telephone number and contact telephone number pairing, and

(b) identify a telephone number from which the outgoing call is being made as the secondary telephone number.

6. The apparatus of claim 5, wherein the data channel is an Internet Protocol (IP) channel.
7. The apparatus of claim 5, wherein the second channel is established in accordance with a CDMA or GSM standard.
8. The apparatus of claim 5, wherein the second channel is not an Internet Protocol (IP) channel.
9. A non-transitory processor-readable medium storing code representing instructions to be executed by a processor, the code comprising code to cause the processor to:

automatically store electronic information that indicates an association of a secondary telephone number and a primary telephone number with a mobile device in a computer memory associated with a server;

automatically transmit information that indicates an access telephone number to the mobile device via a data channel;

automatically associate a primary telephone number and access telephone number pairing with a corresponding secondary telephone number and contact telephone number pairing in the computer memory;

receive, at the server, information from a switch associated with the server and in response to the switch receiving an outgoing call from the mobile device to the access telephone number via a second channel,

the information indicating the outgoing call is being made to the access telephone number from the primary telephone number; and

send, to the switch, information from the server directing the switch to:

(a) connect the outgoing call to the contact telephone number of the secondary telephone number and contact telephone number pairing, and

(b) identify a telephone number from which the outgoing call is being made as the secondary telephone number.

10. The non-transitory processor-readable medium of claim 9, wherein the data channel is an Internet Protocol (IP) channel.
11. The non-transitory processor-readable medium of claim 9, wherein the second channel is established in accordance with a CDMA or GSM standard.
12. The non-transitory processor-readable medium of claim 9, wherein the second channel is not an Internet Protocol (IP) channel.

ABSTRACT

Systems for and methods of delivering telephone calls using the combination of a data channel and a voice channel are disclosed. A data channel connection with the telephone handset may provide pre-call information used to set up incoming and outgoing calls which are ultimately connected using a voice channel. Use of the pre-call information may permit the same handset to be associated with multiple secondary telephone numbers from which calls appear to have been made and to which calls appear to have been placed.

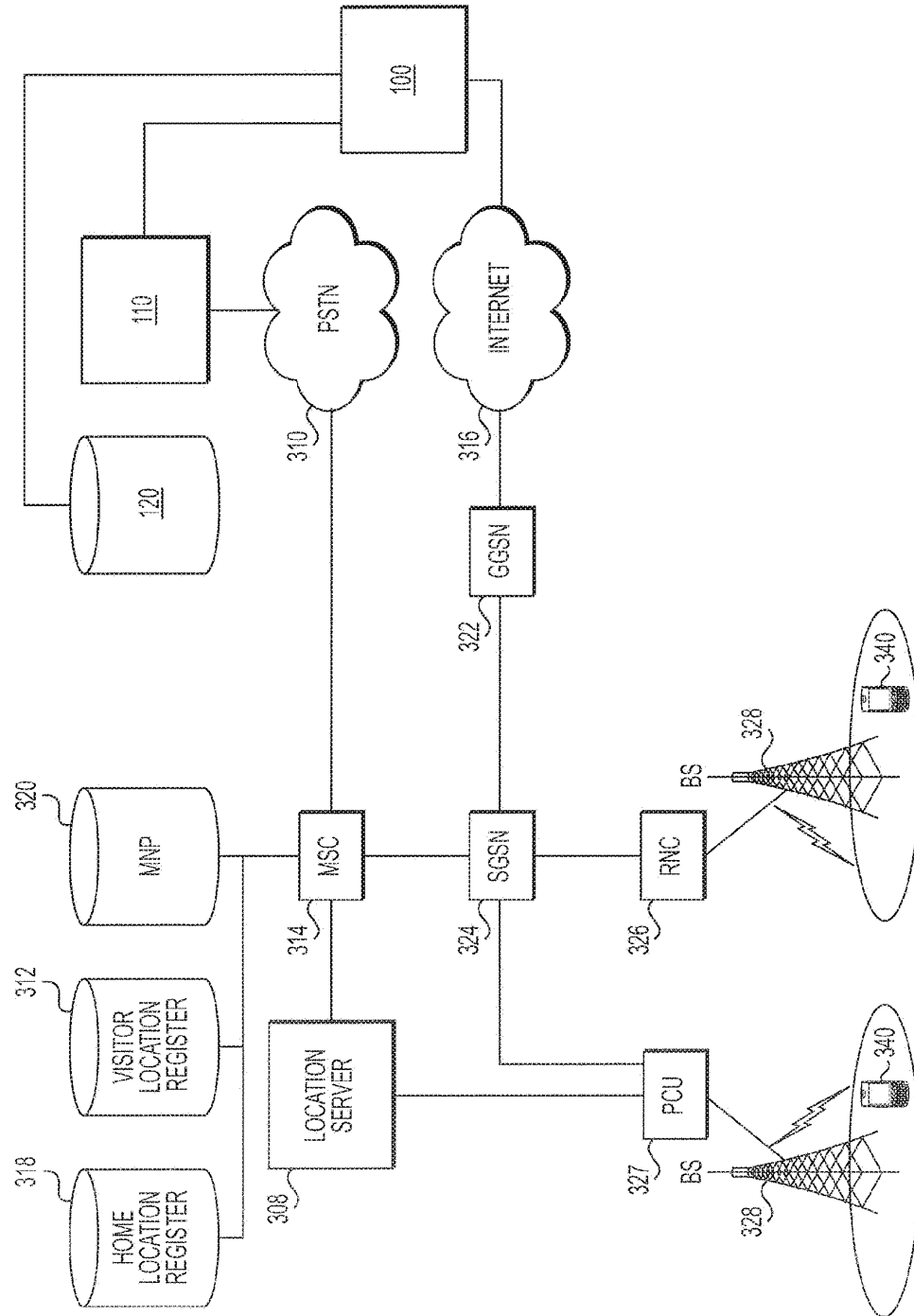


FIG. 1

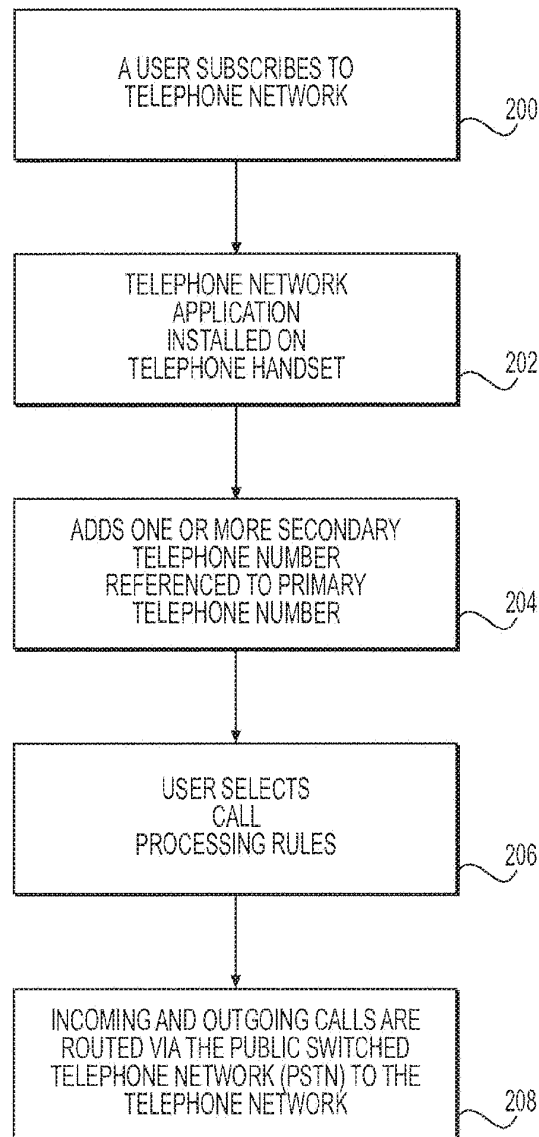


FIG. 2

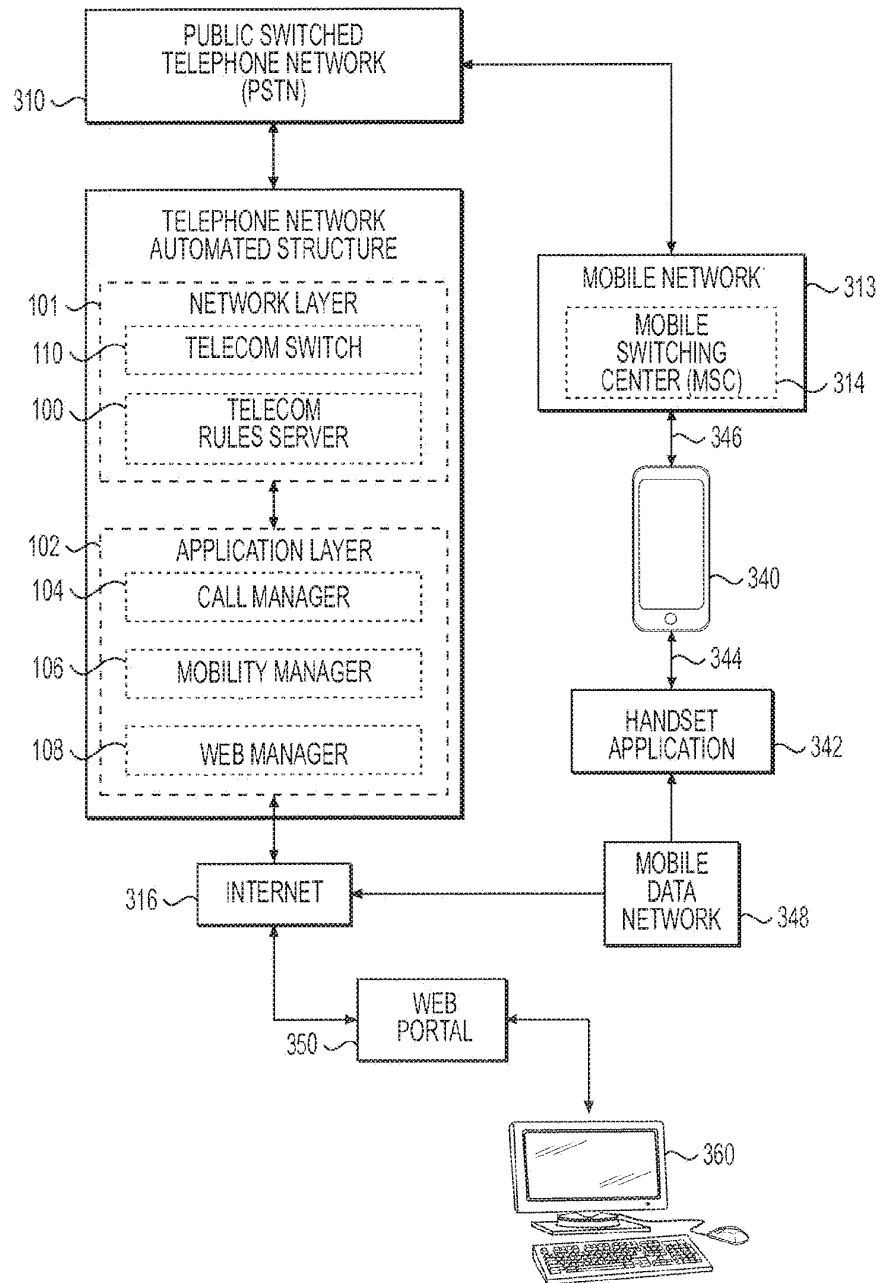


FIG. 3

208

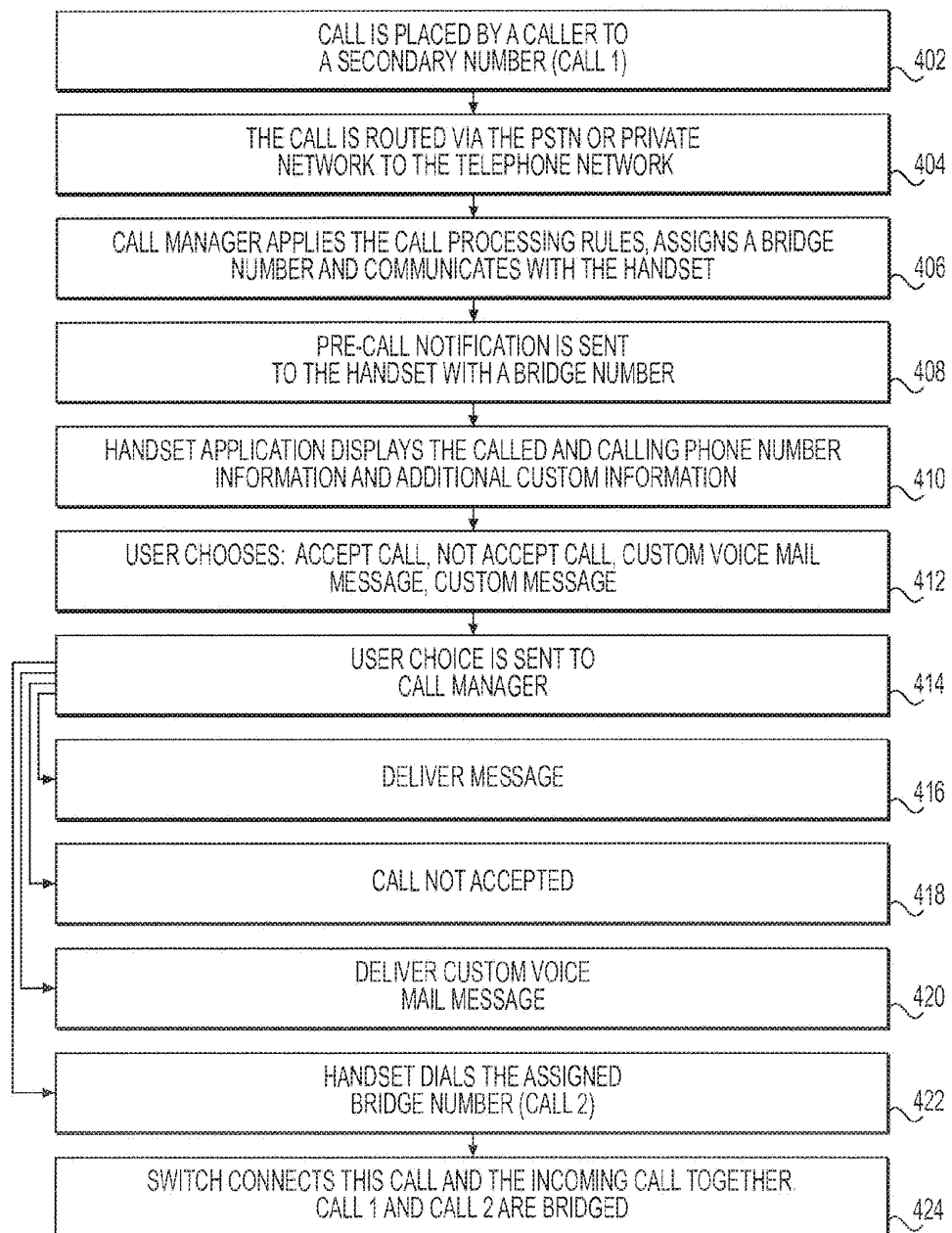


FIG. 4

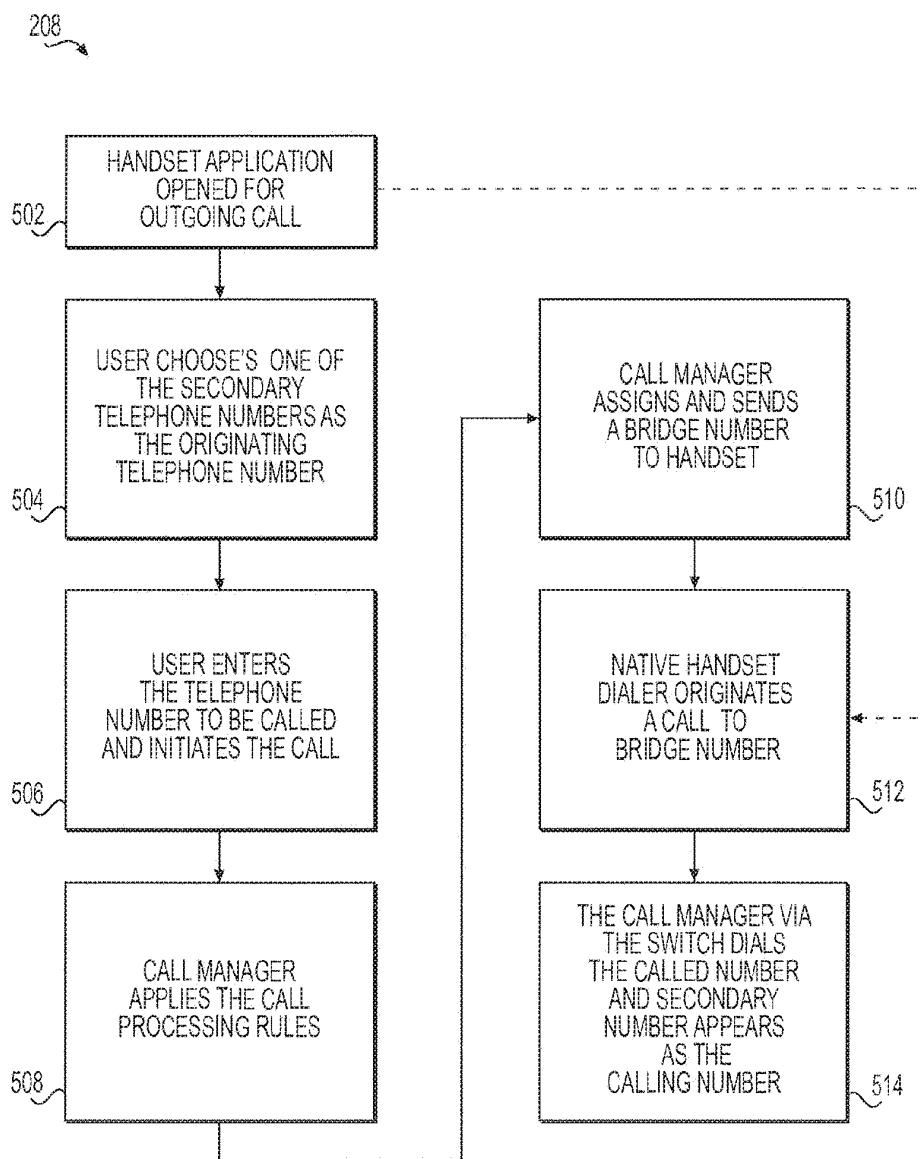


FIG. 5

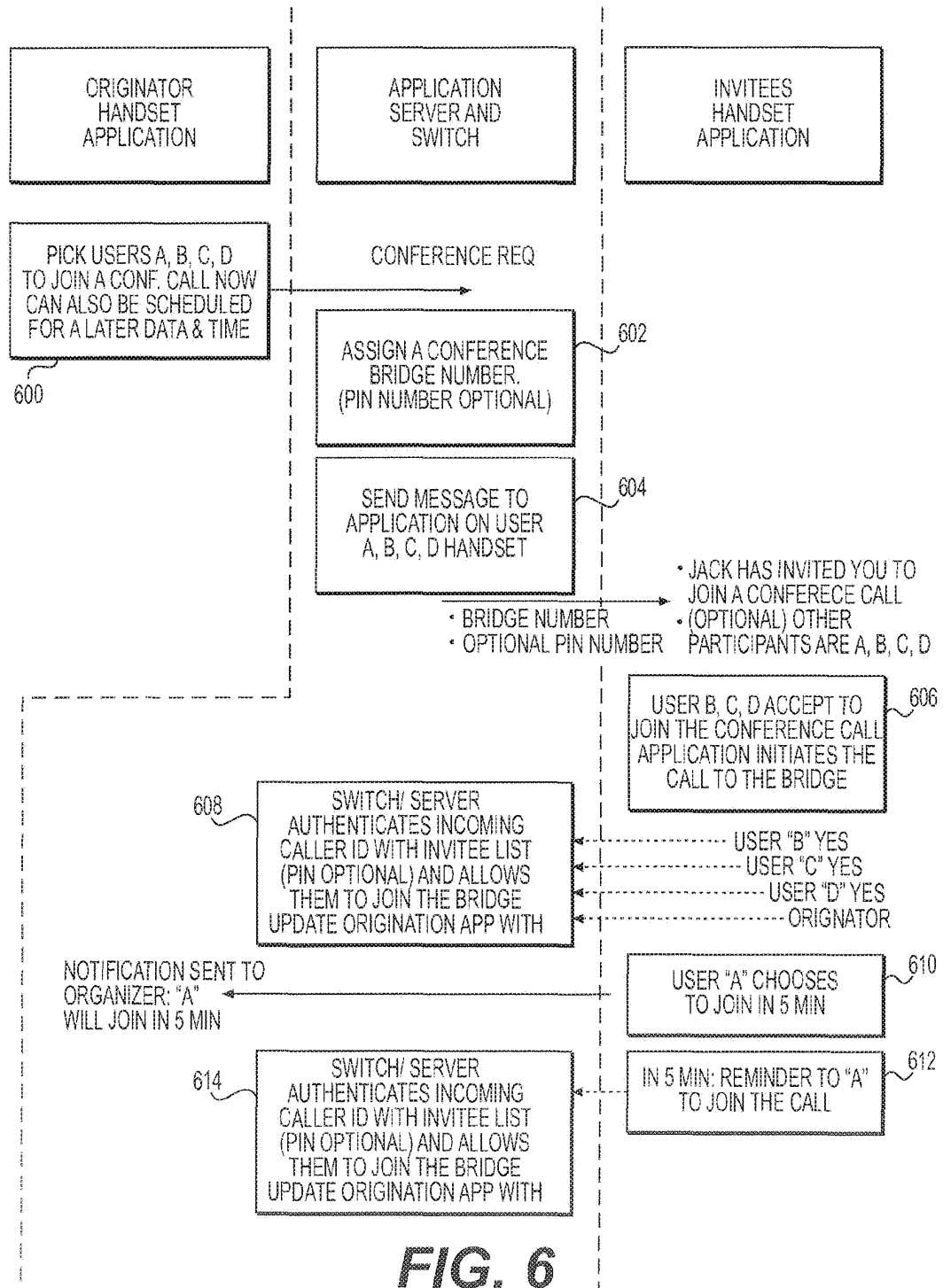


FIG. 6

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		TELEPHONE NETWORK SYSTEM AND METHOD		
First Named Inventor/Applicant Name:		Ivan Zhidov		
Filer:		Stuart James West		
Attorney Docket Number:		GETFL-01001DIV3		
Filed as Small Entity				
Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	80	80
UTILITY SEARCH FEE	2111	1	350	350
UTILITY EXAMINATION FEE	2311	1	400	400
REQUEST FOR PRIORITIZED EXAMINATION	2817	1	2100	2100
Pages:				
Claims:				
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				3000

Electronic Acknowledgement Receipt	
EFS ID:	42584198
Application Number:	17243401
International Application Number:	
Confirmation Number:	4808
Title of Invention:	TELEPHONE NETWORK SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Ivan Zhidov
Customer Number:	43490
Filer:	Stuart James West
Filer Authorized By:	
Attorney Docket Number:	GETFL-01001DIV3
Receipt Date:	28-APR-2021
Filing Date:	
Time Stamp:	19:27:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 3000
RAM confirmation Number	E20214RJ28371481
Deposit Account	503203
Authorized User	Stuart West
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	WebADS.pdf	154884	no	9
			6455ce35762157b7c40df147f7aeb6f95d97a1c9		
Warnings:					
Information:					
2	TrackOne Request	20210428-TrackOneForm-GETFL-01001DIV3.pdf	109890	no	2
			1cdcedd62a7a8cc1d8e22d66228125c665b812c6		
Warnings:					
Information:					
3	Oath or Declaration filed	20210428-Oaths-GETFL-01001DIV3.pdf	434300	no	3
			860b0f95b6b903584147e23e14494f10ce98aa9c		
Warnings:					
Information:					
4		20210428-UPA-GETFL-01001DIV3.pdf	197586	yes	23
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	18	
	Claims		19	22	
	Abstract		23	23	
Warnings:					
Information:					
5	Drawings-only black and white line drawings	20210428-Drawings-GETFL-01001DIV3.pdf	314653	no	6
			7cae5abc3cf8956fe1936901b3e40cf37a07b143		

Warnings:					
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6	Fee Worksheet (SB06)	fee-info.pdf	39897	no	2
			9c548a77f1cf2230b3ff738787d4707079b689d3		
Warnings:					
Information:					
Total Files Size (in bytes):			1251210		
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

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Postal Code	02554	Country ⁱ	US	
Inventor 3				
Legal Name				
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	Sunir		Kochhar	

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number		GETFL-01001DIV3	
		Application Number			
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD				
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Oro Valley	State/Province	AZ	Country of Residence ⁱ	US
Mailing Address of Inventor:					
Address 1		98 E. Loch Lomond Place			
Address 2					
City	Oro Valley	State/Province	AZ		
Postal Code	85737	Country ⁱ	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

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☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	43490		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	TELEPHONE NETWORK SYSTEM AND METHOD		
Attorney Docket Number	GETFL-01001DIV3	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country ⁱ

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:						☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
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Registration Number								
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Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Division of	17039566	2020-09-30

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		

Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
17039566	Division of	16444753	2019-06-18		
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16444753	Division of	16031806	2018-07-10	10334094	2019-06-25
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16031806	Continuation of	15582091	2017-04-28	10051105	2018-08-14
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15582091	Continuation of	14307052	2014-06-17	9667770	2017-05-30
Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
14307052	Continuation in part of	13944853	2013-07-17		
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This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ¹	Filing Date (YYYY-MM-DD)	Access Code ¹ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. ☐ 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

[Clear](#)

☒ Assignee
 ☐ Legal Representative under 35 U.S.C. 117
 ☐ Joint Inventor

☐ Person to whom the inventor is obligated to assign.
 ☐ Person who shows sufficient proprietary interest

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name Flypsi, Inc.

Mailing Address Information For Applicant:

Address 1		2040 Bedford Road	
Address 2		Suite 100	
City	Bedford	State/Province	TX
Country ¹	US	Postal Code	76021
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
If the Assignee or Non-Applicant Assignee is an Organization check here. ☒			
Organization Name	Flypsi, inc.		
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	2040 Bedford Road		
Address 2	Suite 100		
City	Bedford	State/Province	TX
Country i	US	Postal Code	76021
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.			

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	GETFL-01001DIV3
		Application Number	
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Stuart J. West/			Date (YYYY-MM-DD)	
First Name	Stuart	Last Name	West	Registration Number	43258
Additional Signature may be generated within this form by selecting the Add button.					

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 17/243,401			
APPLICATION AS FILED - PART I									
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)		
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	80		N/A			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	350		N/A			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	400		N/A			
TOTAL CLAIMS (37 CFR 1.16(i))	12	minus 20 = *	x 50 =	0.00					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 240 =	0.00					
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00					
			TOTAL	830	TOTAL				
* If the difference in column 1 is less than zero, enter "0" in column 2.									
APPLICATION AS AMENDED - PART II									
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	*	Minus **	x	=		x	=	
	Independent (37 CFR 1.16(h))	*	Minus ***	x	=		x	=	
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
			TOTAL ADD'L FEE			TOTAL ADD'L FEE			
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	*	Minus **	x	=		x	=	
	Independent (37 CFR 1.16(h))	*	Minus ***	x	=		x	=	
	Application Size Fee (37 CFR 1.16(s))								
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
			TOTAL ADD'L FEE			TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.									



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
17/243,401	04/28/2021	2642	830	GETFL-01001DIV3	12	3

CONFIRMATION NO. 4808

FILING RECEIPT



0000000125375641

43490

WEST & ASSOCIATES, A PC
3050 CITRUS CIRCLE
SUITE 209
WALNUT CREEK, CA 94598

Date Mailed: 05/06/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Ivan Zhidov, Chickasha, OK;
Peter Rinfret, Nantucket, MA;
Sunir Kochhar, Oro Valley, AZ;

Applicant(s)

Flypsi, Inc., Bedford, TX;

Assignment For Published Patent Application

Flypsi, inc., Bedford, TX

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a DIV of 17/039,566 09/30/2020 PAT 11012554
which is a DIV of 16/444,753 06/18/2019 ABN
which is a DIV of 16/031,806 07/10/2018 PAT 10334094
which is a CON of 15/582,091 04/28/2017 PAT 10051105
which is a CON of 14/307,052 06/17/2014 PAT 9667770
which is a CIP of 13/944,853 07/17/2013 ABN

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 05/05/2021

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/243,401**

Projected Publication Date: 08/12/2021

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

TELEPHONE NETWORK SYSTEM AND METHOD

Preliminary Class

455

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor

community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3	4808
43490	7590	06/11/2021	EXAMINER	
WEST & ASSOCIATES, A PC 3050 CITRUS CIRCLE SUITE 207 WALNUT CREEK, CA 94598			ART UNIT	
			2647	
			PAPER NUMBER	
			2647	
			NOTIFICATION DATE	
			06/11/2021	
			DELIVERY MODE	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DOCKET@WESTPATENTLAW.COM
PATENT@WESTPATENTLAW.COM
STUARTJAMESWEST@COMCAST.NET

<i>Decision Granting Request for Prioritized Examination (Track I)</i>	Application No. 17/243,401	Applicant(s) Zhidov et al.	
	Examiner CHERYL P GIBSON BAYLOR	Art Unit OPET	AIA (FITF) Status Yes
1. THE REQUEST FILED <u>28 April 2021</u> IS GRANTED . The above-identified application has met the requirements for prioritized examination A. ☒ for an original nonprovisional application (Track I). B. ☐ for an application undergoing continued examination (RCE). 2. The above-identified application will undergo prioritized examination. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs: A. filing a <u>petition for extension of time</u> to extend the time period for filing a reply; B. filing an <u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u>, or a multiple dependent claim; C. filing a <u>request for continued examination</u> ; D. filing a notice of appeal; E. filing a request for suspension of action; F. mailing of a notice of allowance; G. mailing of a final Office action; H. completion of examination as defined in 37 CFR 41.102; or I. abandonment of the application. Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.			
/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET			

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
17/243,401	04/28/2021

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

43490

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature /Peter Rinfret/

Date (Optional) 06/30/2021

Name Peter Rinfret

Title CEO Flypsi, Inc., Applicant

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	43136664
Application Number:	17243401
International Application Number:	
Confirmation Number:	4808
Title of Invention:	TELEPHONE NETWORK SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Ivan Zhidov
Customer Number:	43490
Filer:	Stuart James West
Filer Authorized By:	
Attorney Docket Number:	GETFL-01001DIV3
Receipt Date:	30-JUN-2021
Filing Date:	28-APR-2021
Time Stamp:	15:09:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	20210630-POA-GETFL-01001DIV3.pdf	518419 2983247701df148ed64e3043818b16c330ac19fb	no	1
Warnings:					

Information:	
Total Files Size (in bytes):	518419
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3

CONFIRMATION NO. 4808

POA ACCEPTANCE LETTER

43490
WEST & ASSOCIATES, A PC
3050 CITRUS CIRCLE
SUITE 207
WALNUT CREEK, CA 94598



Date Mailed: 07/07/2021

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/30/2021.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/cvorachack/

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed		PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce	
Electronic Petition Request	TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT		
Application Number	17243401		
Filing Date	28-Apr-2021		
First Named Inventor	Ivan Zhidov		
Attorney Docket Number	GETFL-01001DIV3		
Title of Invention	TELEPHONE NETWORK SYSTEM AND METHOD		
☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action ☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.			
Owner		Percent Interest	
Flypsi, Inc.		100%	
The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s) 10334094 as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns. In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later: - expires for failure to pay a maintenance fee; - is held unenforceable; - is found invalid by a court of competent jurisdiction; - is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321; - has all claims canceled by a reexamination certificate; - is reissued; or - is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer. ☒ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.			

☐ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status: ☒ Small Entity ☐ Micro Entity ☐ Regular Undiscounted	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ☒ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number <u>43258</u> ☐ A sole inventor ☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ☐ A joint inventor; all of whom are signing this request	
Signature	/Stuart J. West/
Name	Stuart J. West

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
 Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal				
Application Number:		17243401		
Filing Date:		28-Apr-2021		
Title of Invention:		TELEPHONE NETWORK SYSTEM AND METHOD		
First Named Inventor/Applicant Name:		Ivan Zhidov		
Filer:		Stuart James West		
Attorney Docket Number:		GETFL-01001DIV3		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	170	170
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				170

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 17243401

Filing Date: 28-Apr-2021

Applicant/Patent under Reexamination: Zhidov

Electronic Terminal Disclaimer filed on July 9, 2021

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	43203223
Application Number:	17243401
International Application Number:	
Confirmation Number:	4808
Title of Invention:	TELEPHONE NETWORK SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Ivan Zhidov
Customer Number:	43490
Filer:	Stuart James West
Filer Authorized By:	
Attorney Docket Number:	GETFL-01001DIV3
Receipt Date:	09-JUL-2021
Filing Date:	28-APR-2021
Time Stamp:	15:05:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 170
RAM confirmation Number	E202179F05063024
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33592	no	2
			52bd633b9ee815330860b770b98334fb94b84f20		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30172	no	2
			c0be5f28734673c565368b4b8c440469618e4bdb		
Warnings:					
Information:					
Total Files Size (in bytes):			63764		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

43490 7590 07/20/2021
WEST & ASSOCIATES, A PC
3050 CITRUS CIRCLE
SUITE 207
WALNUT CREEK, CA 94598

EXAMINER

HUYNH, NAM TRUNG

ART UNIT

PAPER NUMBER

2647

DATE MAILED: 07/20/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3	4808

TITLE OF INVENTION: TELEPHONE NETWORK SYSTEM AND METHOD

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	10/20/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

43490 7590 07/20/2021
WEST & ASSOCIATES, A PC
3050 CITRUS CIRCLE
SUITE 207
WALNUT CREEK, CA 94598

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3	4808

TITLE OF INVENTION: TELEPHONE NETWORK SYSTEM AND METHOD

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$600	\$0.00	\$0.00	\$600	10/20/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
HUYNH, NAM TRUNG	2647	455-413000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3	4808
43490	7590	07/20/2021	EXAMINER	
WEST & ASSOCIATES, A PC 3050 CITRUS CIRCLE SUITE 207 WALNUT CREEK, CA 94598			HUYNH, NAM TRUNG	
			ART UNIT	PAPER NUMBER
			2647	

DATE MAILED: 07/20/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b) (2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/243,401	Applicant(s) Zhidov et al.	
	Examiner Nam T Huynh	Art Unit 2647	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on 28 April 2021.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-12. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material ____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	5. ☒ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
--	---

/NAM T HUYNH/ Primary Examiner, Art Unit 2647	
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DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Terminal Disclaimer

2. The terminal disclaimer filed on 7/9/21 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of **US Patent No. 10,334,094** has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

3. Claims 1-12 are allowed.
4. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the closest prior art of record, Black et al. (US 2006/0140200), teaches a method of providing telephone service, comprising: automatically storing electronic information that indicates an association of a secondary telephone number (**second telephone number**) and a primary telephone number (**base telephone number**) with a mobile device (**telephone 110**) in a computer memory associated with a server (**alias service provider**) (a telephone may have a base telephone number and a second telephone number that the subscriber owns registered in alias service provider) [paragraphs 38, 42, 65, 124]; automatically transmitting information that indicates an access telephone number (**temporary telephone number**) to the mobile device via a data channel (alias service provider may transmit a temporary telephone number to the telephone via Internet) [paragraphs 74, 76-77]. However, none of the prior art either alone or in combination provides the motivation to teach

“automatically associating a primary telephone number and access telephone number pairing with a corresponding secondary telephone number and contact telephone number pairing in the computer memory; receiving, at a switch associated with the server, an outgoing call from the mobile device to the access telephone number via a second channel; receiving, at the server, information from the switch indicating the outgoing call is being made to the access telephone number from the primary telephone number; and receiving, at the switch, information from the server directing the switch to: (a) connect the outgoing call to the contact telephone number of the secondary telephone number and contact telephone number pairing, and (b) identify a telephone number from which the outgoing call is being made as the secondary telephone number” in combination with all the remaining limitations of the claim. Claims 5 and 9 recite similar subject matter and are allowed for the same reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam T Huynh whose telephone number is (571)272-5970. The examiner can normally be reached on 9am-5pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NAM T HUYNH/
Primary Examiner, Art Unit 2645

<i>Notice of References Cited</i>	Application/Control No. 17/243,401		Applicant(s)/Patent Under Reexamination Zhidov et al.	
	Examiner Nam T Huynh		Art Unit 2647	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20060140200-A1	06-2006	Black; Jeffery D.	H04W76/20	370/401
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Issue Classification 	Application/Control No. 17/243,401	Applicant(s)/Patent Under Reexamination Zhidov et al.
	Examiner Nam T Huynh	Art Unit 2647

CPC						
Symbol					Type	Version
H04M	/	1	/	7243	F	2021-01-01
H04M	/	3	/	42263	I	2013-01-01
H04M	/	3	/	42042	I	2013-01-01
H04M	/	3	/	42272	I	2013-01-01
H04M	/	3	/	436	A	2013-01-01
H04L	/	65	/	1069	A	2013-01-01
H04W	/	76	/	10	A	2018-02-01
H04M	/	3	/	565	A	2013-01-01
H04M	/	2203	/	5054	A	2013-01-01

CPC Combination Sets							
Symbol				Type	Set	Ranking	Version
	/		/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/NAM T HUYNH/ Primary Examiner, Art Unit 2647 (Primary Examiner)	14 July 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 17/243,401	Applicant(s)/Patent Under Reexamination Zhidov et al.
	Examiner Nam T Huynh	Art Unit 2647

INTERNATIONAL CLASSIFICATION				
CLAIMED				
H04M1/7243	/	1	/	7243
H04M3/42	/	3	/	42

NON-CLAIMED				
H04M3/436	/	3	/	436
H04L29/06	/	29	/	06
H04W76/10	/	76	/	10
H04M3/56	/	3	/	56

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE	Total Claims Allowed: 12	
(Assistant Examiner) /NAM T HUYNH/ Primary Examiner, Art Unit 2647 (Primary Examiner)	(Date) 14 July 2021 (Date)	O.G. Print Claim(s) 1
		O.G. Print Figure 1

Issue Classification 	Application/Control No. 17/243,401	Applicant(s)/Patent Under Reexamination Zhidov et al.
	Examiner Nam T Huynh	Art Unit 2647

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 12	
/NAM T HUYNH/ Primary Examiner, Art Unit 2647 (Primary Examiner) _____ (Date) 14 July 2021		O.G. Print Claim(s) 1	O.G. Print Figure 1

<i>Search Notes</i> 	Application/Control No. 17/243,401	Applicant(s)/Patent Under Reexamination Zhidov et al.
	Examiner Nam T Huynh	Art Unit 2647

CPC - Searched*		
Symbol	Date	Examiner
H04M1/72547; H04M3/42272; H04M3/42042; H04L65/1069; H04M3/565; H04W76/10; H04M2203/5054; H04M3/436	07/14/2021	NTH

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor/Assignee search conducted	07/14/2021	NTH
See EAST search notes	07/14/2021	NTH
Interference search conducted	07/14/2021	NTH

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<i>Search Notes</i> 	Application/Control No. 17/243,401	Applicant(s)/Patent Under Reexamination Zhidov et al.
	Examiner Nam T Huynh	Art Unit 2647

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
H04M1/72547; H04M3/42272; H04M3/42042; H04L65/1069; H04M3/565; H04W76/10; H04M2203/ 5054; H04M3/ 436		07/14/2021	NTH

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Bibliographic Data

Application No: 17/243,401

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged: /NAM T HUYNH/

Examiner's Signature

Initials

Title: TELEPHONE NETWORK SYSTEM AND METHOD

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
04/28/2021	455	2647	
RULE			

APPLICANTS

Flypsi, Inc., Bedford, TX, UNITED STATES

INVENTORS

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Peter Rinfret, Nantucket, MA, UNITED STATES

Sunir Kochhar, Oro Valley, AZ, UNITED STATES

CONTINUING DATA

This application is a DIV of 17039566 09/30/2020 PAT 11012554

17039566 is a DIV of 16444753 06/18/2019ABN

16444753 is a DIV of 16031806 07/10/2018 PAT 10334094

16031806 is a CON of 15582091 04/28/2017 PAT 10051105

15582091 is a CON of 14307052 06/17/2014 PAT 9667770

14307052 is a CIP of 13944853 07/17/2013ABN

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

05/05/2021

** SMALL ENTITY **

STATE OR COUNTRY

UNITED STATES

ADDRESS

FILING FEE RECEIVED

\$3,000

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S27	171	S26 and @ad<"20130717"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/07/14 14:23
S26	274	S25 and (H04M1/72547 or H04M3/42272 or H04M3/42042 or H04L65/1069 or H04M3/565 or H04W76/10 or H04M2203/5054 or H04M3/436).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/07/14 14:23
S25	1,265	(assign\$4 allocat\$3 associat\$3 link\$3 correspond\$3) near2 ((phone telephone) adj number) with (bridge access conference switch) near2 number	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/07/14 14:23
S24	438	S23 and @ad<"20130717"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/07/14 14:23
S23	680	S22 and (H04M1/72547 or H04M3/42272 or H04M3/42042 or H04L65/1069 or H04M3/565 or H04W76/10 or H04M2203/5054 or H04M3/436).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/07/14 14:23
S22	10,137	(associat\$3 link\$3 correspond\$3) near2 number with (bridge access conference switch) near2 number	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2021/07/14 14:23

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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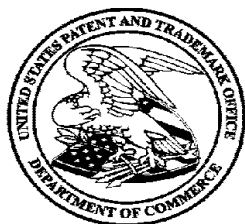
7/14/2021 5:47:23 PM

C:\Users\nhuynh1\Documents\EAST\Workspaces\16031806.wsp

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WALNUT CREEK, CA 94598



**Courtesy Reminder for
Application Serial No: 17/243,401**

Attorney Docket No: GETFL-01001DIV3

Customer Number: 43490

Date of Electronic Notification: 07/20/2021

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:

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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3

CONFIRMATION NO. 4808

PUBLICATION NOTICE



OC000000127662760

43490
WEST & ASSOCIATES, A PC
3050 CITRUS CIRCLE
SUITE 207
WALNUT CREEK, CA 94598

Title:TELEPHONE NETWORK SYSTEM AND METHOD

Publication No.US-2021-0250437-A1

Publication Date:08/12/2021

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

FEE ADDRESS INDICATION FORM

Application Number	17243401	Art Unit	2647
Filing Date	28-Apr-2021	Examiner Name	
First Name Inventor	Ivan Zhidov	Attorney Doc. Number	GETFL-01001DIV3

INSTRUCTIONS: In order for the fee address identified on this form to be effective, the issue fee must have been paid for the application listed on this form. Only an address represented by a customer number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application. For more information on customer numbers, see the Manual of Patent Examining Procedure (MPEP) § 403.

Please recognize as the Fee Address under the provisions of 37 CFR 1.363 the address associated with:

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I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application.

Signature	/Stuart J. West/	Date	10-15-2021
Name	Stuart James West	Registration Number	43258

Electronic Patent Application Fee Transmittal				
Application Number:		17243401		
Filing Date:		28-Apr-2021		
Title of Invention:		TELEPHONE NETWORK SYSTEM AND METHOD		
First Named Inventor/Applicant Name:		Ivan Zhidov		
Filer:		Stuart James West		
Attorney Docket Number:		GETFL-01001DIV3		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPL ISSUE FEE	2501	1	600	600
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				600

Electronic Acknowledgement Receipt	
EFS ID:	44046218
Application Number:	17243401
International Application Number:	
Confirmation Number:	4808
Title of Invention:	TELEPHONE NETWORK SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Ivan Zhidov
Customer Number:	43490
Filer:	Stuart James West
Filer Authorized By:	
Attorney Docket Number:	GETFL-01001DIV3
Receipt Date:	15-OCT-2021
Filing Date:	28-APR-2021
Time Stamp:	18:44:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 600
RAM confirmation Number	E20210EI44013064
Deposit Account	503203
Authorized User	Stuart West
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.20 (Post Issuance fees) 37 CFR 1.21 (Miscellaneous fees and charges)	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	62953	no	2
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Warnings:					
Information:					
2	Maintenance Fee Address Change	web85feeaddress.pdf	42674	no	1
			efb0dd5a58fd3ab0632d9ad156c802e12bf76ea15		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	40249	no	2
			daa83b7c0cb4d862f13977b7e31710dbd5428bb4		
Warnings:					
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Total Files Size (in bytes):			145876		
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Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
17243401	28-Apr-2021	Ivan Zhidov	GETFL-01001DIV3	4808

TITLE OF INVENTION :

TELEPHONE NETWORK SYSTEM AND METHOD

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Small	Utility under 35 USC 111(a)	2647	413000	
Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
\$600	\$0	\$600	20-Oct-2021	\$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
43490 WEST & ASSOCIATES, A PC 3050 CITRUS CIRCLE SUITE 207 WALNUT CREEK CA 94598 UNITED STATES 925-262-2220 ~~DOCKET@WESTPATENTLAW.COM~~	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☒ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status**Change in Entity Status**

Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.

- ☐ Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

- ☒ Applicant asserting small entity status. See 37 CFR 1.27.

Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

- ☐ Applicant changing to regular undiscounted fee status.

Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:☒ Issue Fee☐ I authorize USPTO to apply my previously paid issue fee to the current fees due☐ Publication Fee☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____☐ Advance Order - # of copies _____

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☐ The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed**NOTE: If no name is listed, no name will be printed**

For printing on the patent front page, list to be displayed as entered

1. WEST & ASSOCIATES, A PC

2. Stuart J. West, Reg. No. 43258

3. Charlotte Rodeen-Dickert,51040

5.Assignee Name(s) and Residence Data To Be Printed

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

Name	City	State	Country	Category
Flypsi, Inc.	Bedford	TEXAS	UNITED STATES	corporation

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Stuart J. West/	Date	10-15-2021
Name	Stuart James West	Registration Number	43258



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Alexandria, Virginia 22313-1450
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	11/16/2021	11178268	GETFL-01001DIV3	4808

43490 7590 10/27/2021
WEST & ASSOCIATES, A PC
3050 CITRUS CIRCLE
SUITE 207
WALNUT CREEK, CA 94598

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional inventors):

Ivan Zhidov, Chickasha, OK;
Peter Rinfret, Nantucket, MA;
Sunir Kochhar, Oro Valley, AZ;

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Flypsi, Inc., Bedford, TX;

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CERTIFICATION AND REQUEST FOR CONSIDERATION OF AN INFORMATION DISCLOSURE STATEMENT FILED AFTER PAYMENT OF THE ISSUE FEE UNDER THE QPIDS PROGRAM	
Non-Provisional Application Number: 17/243,401	Filing Date: April 28, 2021
First Named Inventor: ZHIDOV, Ivan	Title of Invention: Telephone Network System and Method
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Signature: /Stuart J. West/	Date: 9-November-2021
Name (Print/Typed): Stuart J. West	Practitioner Registration Number (If applicable): 43258
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【DESCRIPTION】**【Invention Title】****MULTI TERMINAL AND METHOD FOR ORIGINATING AND TERMINATING
CALL THEREOF, SYSTEM FOR PROVIDING MULTI-NUMBER SUPPORT
5 SERVICE TO THE TERMINAL****【Technical Field】**

The present invention relates to a terminal. More particularly, the present invention relates to a multi terminal a method for transmitting/receiving a call thereof, and a multi number support system using
10 the same.

【Background Art】

In general, a single number is assigned to a portable terminal, and a call process caused by transmitting and receiving a call is performed based on the number. However, a two-number service has been developed and
15 provided so as to provide various services to users.

The two-number service provides two telephone numbers to a single terminal so that a call may be transmitted and received by each phone number. In this instance, an additional telephone number for easy change or cancellation is provided in addition to a default telephone number, and the
20 user can make each call generated to each of the telephone number through a terminal.

However, the additional service of the two-number service has a drawback of only providing a speech call service or a speech mail box service for each telephone number. Korean Published Application No. 2002-58575
25 entitled "Short Message Transmission in Mobile Communication Multiple Telephone Number Service" discloses a technique for applying the two-number service to the short message service.

Korean Published Application No. 2002-41241 entitled "Automatic Response Service Method in Terminal Receiving Two-number Service" discloses another prior art related to the two-number service, which discloses a method for applying different automatic response messages to respective
5 call receive numbers assigned to a terminal. Korean Published Application No. 2005-72335 entitled "Method and System for Providing Additional Number Service in Mobile Communication Network" discloses another prior art for efficiently displaying an additional number provided by the additional number service to another user's mobile phone. Korean Published
10 Application No. 2005-70966 entitled "System and Method for Providing Multi Number Telephone Service in Mobile Terminal" discloses another prior art for providing a multi number telephone service without using a call switching scheme.

In addition to the two-number service related techniques, the 030
15 temporary number service has also been developed, which provides a temporary number to the terminal, and provides a call processing service by using the temporary number.

The above-described conventional two-number skills allow mobile communication service providers to provide predetermined services such as a
20 call transmission and receiving service, a speech service, and a short message service to users for the respective different numbers assigned to a single terminal. No skills for more efficiently managing the different numbers of the terminal and providing various additional services to users have been developed.

25 Therefore, it is difficult to efficiently provide various additional services such as call transmission and receiving, telephone sound, and dialing tone sound to the users according to numbers while the terminal is independently operable for the numbers.

The above information disclosed in this Background section is only for
30 enhancement of understanding of the background of the invention and therefore it may contain information that does not form the prior art that is

already known in this country to a person of ordinary skill in the art.

【Disclosure】

【Technical Problem】

5 The present invention has been made in an effort to provide a terminal having at least two different numbers to efficiently process and provide a call transmitting and receiving function and a number dependent additional service function to each of the numbers.

10 The present invention has been made in an effort to provide a multi terminal operable as a plurality of terminals and a call transmitting and receiving method thereof.

 The present invention has been made in an effort to provide a multi number support system for providing various functions to the multi terminal according to the respective numbers.

15 **【Technical Solution】**

 In one aspect of the present invention, a multi terminal for receiving a calling service through a network includes: an interface device for transmitting and receiving signals to/from the network; a storage device for storing, changing, and controlling multiple numbers including a default telephone number and at least one virtual telephone number, and including a multi number storage unit; an input device including a multi number selector for selecting a number from among the multiple numbers, setting the number to be a reference number operable in a general state, and setting other numbers to be hidden numbers operable in a hidden state, and an operation mode selector for setting an operation mode for the hidden number; and a controller including a call transmitter for attempting a transmitting call based on the input call receive number and a call receiver for performing a call receiving process when a receiving call is input through the interface device, wherein the call receiver processes the receiving call according to an operation mode set to the hidden mode when the call receive number extracted from the receiving

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call is a hidden number. In another aspect of the present invention, a call transmitting method in a terminal for receiving a calling service through a network, wherein the terminal is a multi terminal having multiple numbers including a default telephone number and at least one virtual telephone, includes: a) the terminal selecting a number from among the multiple number, setting the number to be a reference number, and setting other numbers to be hidden numbers when an operation setting mode is selected; b) setting the reference number to be a call transmit number when a call receive number is input and a calling function is selected; c) generating a call transmit signal including the call receive number, a predetermined identifier, and the call transmit number; and d) transmitting the call transmit signal to the network to attempt a transmitting call.

In another aspect of the present invention, a call transmitting method in a terminal for receiving a calling service through a network, wherein the terminal is a multi terminal having multiple numbers including a default telephone number and at least one virtual telephone, includes: a) the terminal selecting a number from among the multiple number, setting the number to be a reference number, and setting other numbers to be hidden numbers when an operation setting mode is selected; b) setting an input hidden number to be a call transmit number when a call receive number is input, the hidden is input, and a calling function is selected; c) generating a call transmit signal including the call receive number, a predetermined identifier, and the call transmit number; and d) transmitting the call transmit signal to the network to attempt a transmitting call.

In another aspect of the present invention, a call receiving method in a terminal for receiving a calling service through a network, wherein the terminal is a multi terminal having multiple numbers including a default telephone number and at least one virtual telephone, and one number from among the multiple numbers is set to be a reference number and other numbers are set to be hidden numbers, includes: a) the terminal receiving a call receive signal through a network; b) extracting a call receive number from the call receive

signal and determining a category; c) performing a call receiving process when the call receive number is the reference number; and d) selectively performing a call receiving process according to an operation mode set to the hidden number when the call receive number is the hidden number.

5 In another aspect of the present invention, a multi number support system for providing a calling service between terminals through a network includes: a register server for providing multiple numbers to the terminal and managing the multiple numbers; a call processing server for performing a call transmitting/receiving process for the respective number of the terminal; an additional service providing server for providing a personalized additional service requested for each number of the terminal; and a billing server for billing the call process and service provision executed by the call processing server or the additional service providing server for each number of the terminal.

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【Description of Drawings】

FIG. 1 shows a network connection state of a multi terminal according to an embodiment of the present invention.

20 FIG. 2 shows a configuration diagram for a multi terminal according to an embodiment of the present invention.

FIG. 3 shows a configuration diagram for a controller of a multi terminal shown in FIG. 2.

FIG. 4 shows a conceptual diagram for a multi terminal to which a reference number and a hidden number are assigned.

25 FIG. 5 shows a configuration diagram for a multi number support system according to an embodiment of the present invention.

FIG. 6 shows a call transmission process by a multi terminal according to an embodiment of the present invention.

30 FIG. 7 shows a call process in a multi number support system according to an embodiment of the present invention.

FIG. 8 shows a signal in a call transmission process and a flowchart

thereof.

FIG. 9 shows a call receiving process by a multi terminal according to an embodiment of the present invention.

FIG. 10 shows a concept for a multi terminal to which other types of reference number and hidden number are assigned.

【BEST MODE】

In the following detailed description, only certain exemplary embodiments of the present invention have been shown and described, simply by way of illustration. As those skilled in the art would realize, the described embodiments may be modified in various different ways, all without departing from the spirit or scope of the present invention. Accordingly, the drawings and description are to be regarded as illustrative in nature and not restrictive. Like reference numerals designate like elements throughout the specification.

Also, the term of module in the present specification represents a unit for processing a predetermined function or operation, which can be realized by hardware, software, or combination of hardware and software.

A multi terminal according to an embodiment of the present invention indicates a terminal to which a plurality of numbers is assigned, and in detail, it represents a terminal in which a default telephone number and at least at least one of virtual telephone number are assigned for each ESN (electrical serial number). In particular, the multi terminal independently provides all functions for each number so that each terminal operates as many as the virtually assigned numbers. For ease of description, the default telephone number and the virtual telephone number assigned to the terminal will be totally referred to as a multi number.

FIG. 1 shows a network connection state of a multi terminal according to an embodiment of the present invention.

As shown in FIG. 1, the multi terminal 100 is connected to the multi number support system 300 through the network 200, and receives a call

processing service for processing transmitted and received calls for the respective numbers and a personalized additional service through the multi number support system 300. The personalized additional service includes various types of message transmission services including a speech mail box service for providing a speech message for each number, an SMS (Short Message Service), and an LMS (Long Message Service), a call transmission number display service, and a call connecting sound service.

The multi terminal 100 receives a call service with various types of communication terminals 500 connected to various communication networks 400 through the multi number support system 300. The communication terminal 500 includes a computer connected to the Internet, a cable telephone connected to the PSTN, a cell phone connected to the mobile communication network, and the multi terminal according to the embodiment of the present invention.

FIG. 2 shows a configuration diagram for a multi terminal 100 according to an embodiment of the present invention.

As shown in FIG. 2, the multi terminal 100 includes a key input device 10, a controller 20, a storage device 30, an audio device 40, a display device 50, and an interface device 60.

The input device 10 includes a mouse and a keyboard, and particularly it includes a mode selector 11 and a multi number selector 12. The mode selector 11 and the multi number selector 12 include switches in cooperation with a key and a button installed outside the terminal.

The mode selector 11 selects various modes provided by the multi terminal. The modes provided by the multi terminal includes an operation setting mode for setting a reference number for processing call transmission and receiving of a terminal, a call receiving mode for performing general call receiving on a transmitting call of a predetermined number, an announcement mode for outputting announcement data designated by the user, a call disallowance mode for providing a predetermined additional service for each predetermined number without performing a call receiving process, a power

off mode for controlling the terminal to be in the power off state, and an automatic change mode for setting a predetermined number to be a reference number and performing a call receiving process.

The multi number selector 12 controls to select one of the default
5 telephone number and a virtual number assigned to the terminal.

The interface device 60 for performing a transmitting/receiving function through the network includes a receiver 61 for receiving a signal (particularly, a call receive signal) through the network and providing the signal to the controller 20 and a transmitter 62 for transmitting the signal
10 (particularly, a call transmit signal) provided by the controller 20 to the network.

The audio device 40 includes a microphone 41, a speaker 42, and an audio controller 43 for multi-modulating the speech signal input through the microphone 41 according to the control by the controller 20, demodulating the signal received through the receiver 61, and outputting the demodulated
15 signal to the speaker 42 as a speech signal.

The display device 50 includes an LCD and an EL for displaying information processed on the terminal 100 and information transmitted through the network on the screen.

The storage device 30 stores and controls various data controlled by
20 the terminal, and includes a multi number storage unit 31 and service data storage unit 32. The multi number storage unit 31 stores and controls multiple numbers provided by the system 300 through the interface device 60 or the multiple numbers provided through the input device 10, and particularly,
25 it stores and controls them by corresponding them to the default telephone number provided in correspondence to the ESN of the terminal and at least one virtual telephone number. The service data storage unit 32 stores additional service data provided for the respective numbers assigned to the terminal. For this purpose, the service data storage unit 32 includes various
30 storage tables for storing various service data according to the multiple numbers.

FIG. 3 shows a configuration diagram for a controller 20 of a multi terminal shown in FIG. 2.

As shown in FIG. 3, the controller 20 includes a reference number setter 21, an additional mode setter 22, a call transmitter 23 for processing a transmitted call for a predetermined number, a call receiver 24 for processing a predetermined received call input through the interface device 60, and a service provider 25 for providing an additional service for a predetermined number.

When an operation setting mode is selected by the mode selector 11, the reference number setter 21 sets a reference number for processing call transmission and receiving from among the multiple numbers according to the signal input by the multi number selector 12.

The numbers other than the reference number set for processing call transmission and receiving from among the numbers assigned to the terminal will be referred to as hidden numbers. In this instance, the reference number or the hidden numbers may be a default telephone number or a virtual telephone number.

FIG. 4 shows a conceptual diagram for a multi terminal to which a reference number and a hidden number are assigned. As shown in FIG. 4, the multi terminal sets a reference number for transmitting and receiving calls through a reference number setting key installed outside. The reference number is operable in the general state, and the hidden number is operable in the hidden state.

The general state represents the state in which the process for transmitting and receiving calls is performed in a like manner of the general terminal. That is, the reference number is processed as like a mobile phone number assigned to the general portable terminal, and general call transmission and receiving is performed based on the reference number. For example, when the user inputs a call receive number to the terminal and requests to transmit a call, the reference number together with the call receive number is set to be a reference number and is then transmitted to the

communication network. When a predetermined a received call including a reference number is received from the communication network, a connection process with the other user's terminal is performed in a like manner of a general call receiving process.

5 The hidden state indicates states other than the general state, and in detail, it represents the state in which the terminal performs a predetermined function, but it is operated in a specific case while it is not operated as if hidden in the general state. Particularly, the hidden state means the state in which numbers available for call transmission and receiving are assigned to
10 the terminal, and a call receiving process is performed according to a specific mode when call transmission is performed for a specific case or a receiving call is received for a corresponding number. For example, when attempting to transmit a call with a hidden number in the hidden state, the user must directly input the hidden number as a call transmit number as well as the call
15 receive number. The above-noted general call transmission process is performed when the hidden number is changed to the reference number. For example, when a receiving call is received for the hidden number in the hidden state from the other user's terminal, a process for the specific mode set to the hidden number is performed an a general call receiving process is
20 performed, or the general call receiving process is not performed. However, the hidden state according to the present invention is not restricted to the described embodiment.

 The reference number is operable as an independent terminal having a reference number, and other hidden numbers are operable as independent
25 terminal s having respective corresponding numbers. Therefore, the terminal having a reference number is operable in the general state, and the terminal having a hidden number is operable in the hidden state.

 The additional mode setter 22 selectively sets at least one mode from among the call receiving mode, announcement mode, call disallowance mode,
30 power off mode, and automatic change mode for the respective hidden numbers according to the mode selector 11.

The call transmitter 23 attempts call transmission by using a number from a plurality of numbers. In detail, when a number is selected from among the numbers by the multi number selector 12 or a reference number is selected in the operation setting mode, the call transmitter 23 sets the
5 selected number to be a call transmit number. The call transmitter 23 generates a call transmit signal including the call receive number input through the input device 10 and the call receive number and transmits the call receive signal to the network 200 through the transmitter 62. In this instance, it is possible to add a predetermined identifier (e.g., **) to the call transmit
10 number to determine which one from among the numbers included in the call transmit signal is a call transmit number. The call transmit signal may include an ESN properly assigned to the terminal.

The call receiver 24 process a received call for one of the multiple numbers. When a predetermined personalized additional service for the
15 received call is provided by the system 300, the call receive number is extracted from the signal, and it is determined to which one the call receive number belongs from among the multiple numbers assigned to the terminal. The personalized additional service for the determined number is processed.

Particularly, the call receiver 24 includes a call receive number
20 determination module 241 for determining a predetermined call receive number included in the call receive signal when receiving the call receive signal, and a plurality of call receiving processing modules 242-247 for performing a corresponding call receiving process according to the call receive number. The call receiving processing module includes a first call
25 receiving processing module 242 for performing a received call process when the call receive number is a reference number, a second call receiving processing module 243 for performing a received call process when the call receive number is a hidden number and a call receiving mode is set to the hidden number, a third call receiving processing module 244 for outputting
30 speech data corresponding to a hidden number and terminating the receiving call when the call receive number is the hidden number and an

announcement mode is set to the hidden number, a fourth call receiving processing module 245 for storing the call receive number to record existence of the received call and terminating the receiving call without response to the call receive signal when the call receive number is a hidden number and a call
5 disallowance mode is set to the hidden number, a fifth call receiving processing module 246 for storing the call receive number to record existence of the received call and terminating the receiving call without response to the call receive signal when the call receive number is a hidden number and a power off mode is set to the hidden number, and a sixth call receiving
10 processing module 247 for setting a hidden number corresponding to the call receive number and performing a call receiving process when the call receive number is a hidden number and an automatic change mode is set to the hidden number.

The service provider 25 independently provides additional services
15 according to the multiple numbers assigned to the terminal. The additional services include an OEM additional service including a telephone directory, a text message transmission function, and a message storing and managing function provided by a terminal manufacturer, and a personalized service including a wireless Internet service, a screen setting function, and a bell
20 sound setting function personally set by a subscriber. Therefore, the service provider 25 includes a first service providing module 251 for providing an OEM additional service according to the multiple numbers, a second service providing module 252 for providing a wireless Internet service according to the multiple numbers, and a third service providing module 253 for providing a
25 personalized service according to the multiple numbers. In addition, the service provider 25 includes a service providing module for processing increased additional services.

For example, the first service providing module 251 stores and controls the received message in correspondence to the default telephone
30 number in the message storage table of the service data storage unit 32 when receiving a message having the default telephone number as a call receive

number, and stores and controls the message received in correspondence to the default telephone number in the message storage table when receiving a message through a virtual telephone number. Therefore, when the subscriber attempts to check the received message, the first service providing
5 module 251 provides the messages that are received according to the multiple numbers.

Also, the first service providing module 251 stores a plurality of telephone numbers in the telephone table corresponding to the default telephone number or stores the telephone numbers according to the virtual
10 telephone numbers. Therefore, when the user inputs a request for searching telephone numbers, the first service providing module 251 searches the telephone numbers stored for the multiple numbers and provides search results.

For example, the third service providing module 253 sets different
15 kinds of bell sound that is output when a call receive signal is received for the multiples, or sets different screens displayed on the terminal when processing various signals including a call receive signal receiving function for the multiple numbers.

Therefore, users use a single terminal as like many terminals since
20 they can independently receive all the services that are provided by the single terminal according to a plurality of numbers.

The above-described multi terminal is a communication device for receiving a calling service, and it includes a wireless terminal including a mobile phone and a PDA, and a wired terminal including a PC having a calling
25 function.

FIG. 5 shows a multi number support system 300 for providing multiple numbers including a default telephone number and at least one virtual telephone number to the multi terminal 100 and providing a call processing service and a personalized additional service for the respective
30 multiple numbers.

As shown in FIG. 5, the multi number support system 300 includes a

register server 310, a call processing server 320, an additional service providing server 330, and a billing server 340.

The register server 310 registers and controls the numbers assigned to the terminal, and in detail, it assigns multiple numbers to multi terminal and controls them. For this purpose, the register server 310 includes a register database 311 for storing a default telephone number for each terminal and at least one virtual telephone number. Particularly, the default telephone number and the virtual telephone numbers are stored corresponding to the ESN assigned to the terminal, and subscriber information can be additionally stored and controlled.

The call processing server 320 processes transmitted and received calls for the respective numbers.

The additional service providing server 330 provides a personalized additional service to the terminal, and particularly, it provides a personalized additional service that is requested for each number to one terminal. Accordingly, the additional service providing server 330 includes an SMS server and a speech mail box server.

The billing server 340 bills the service used by the terminal in cooperation with the call processing server 320 and the additional service providing server 330, and includes a billing database 341 for storing a billing history. Particularly, the billing server 340 bills the single terminal for each assigned number. That is, the terminal is billed according to the service executed based on one of the multiple numbers, and the billing database 341 accordingly stores the default telephone number and at least one virtual telephone number corresponding to the ESN assigned to the terminal and stores a billing history according to the service used for each number.

A method for a multi terminal to transmit and receive a call according to an embodiment of the present invention will now be described.

The method for a multi terminal to transmit a call according to an embodiment of the present invention will now be described.

FIG. 6 shows a flowchart for a call transmission process by a multi

terminal according to an embodiment of the present invention, and FIG. 7 shows a flowchart for a call process in a multi number support system according to an embodiment of the present invention.. FIG. 8 shows a signal in a call transmission process and a flowchart thereof, and particularly, it shows a call transmitting and receiving process for a call between multi terminals communicating through a mobile communication network. The terminal on the call transmitting side and the call receiving side is connected to the SSP (Service Switching Point) through the MSC (mobile telephone switching office), and the multi number support system is operable as a SCP (Service Control Point) for supporting a calling service for the multiple numbers through the SSP. In addition, communication between the multiple terminals is available through a HLR (Home Location Register).

The user determines a predetermined number as a number for transmitting and receiving a call as a default from among the multiple numbers in advance to the case of transmitting a call by using the multi terminal, as shown in FIG. 6. In detail, the user selects an operation setting mode through the mode selector 11 and sets a reference number through the multi number selector 12. When the operation setting mode is selected, the reference number predetermined module 21 of the controller 20 sets one of multiple numbers as a reference number (e.g., one of a reference telephone number and a virtual telephone number) according to the signal input by the multi number selector 12 (S100-S110). Other numbers are set to be a hidden number when one number is set to be a reference number from among the multiple numbers. However, the present invention is not restricted to this, and it is possible to set predetermined numbers to be hidden numbers if needed. To set the hidden numbers in the embodiment of the present invention include to automatically set other numbers to be hidden numbers when the reference number is set, and to respectively set predetermined numbers to be hidden numbers through a predetermined process. The reference number is operable in the general state, and the hidden numbers are operable in the hidden state.

When the user inputs the number assigned to a predetermined communication terminal 500 as a call transmit number and presses a calling button to select the calling function (S120-S140), the call transmitter 23 sets the reference number as a call transmit number and generates a call transmit
5 signal including the call receive number and the call transmit number (S150). In this instance, a predetermined identifier can be added to the call transmit number. The call transmit signal is transmitted to the multi number support system 300 through the transmitter 62 (S160).

When the user sets the hidden number to be a call transmit number
10 and attempts to make a call, the user sets a predetermined hidden number to be a reference number through the mode selector 11 and the multi number selector 12 again (S170-S180). When the predetermined hidden number is set to be the reference number again according to the above-noted operation, a call transmit signal including the call receive number input through the steps
15 of (S130-S160) is generated. Also, the user can directly input a predetermined hidden number as a call transmit number (S190), and in this instance, a call transmit signal including the input call receive number and the input call transmit number is generated. It is possible to make a call by setting the hidden number other than the reference number to be a call
20 transmit number in various manners.

It is possible to change the step for setting the reference number in the call transmitting process. For example, the operation setting mode is divided into a first operation mode for setting the default telephone number to be a reference number and a second operation mode for setting the virtual
25 telephone number to be a reference number. It is possible to set the default telephone number to be a reference number without additional selecting process when the first operation mode is set by the mode selector 11, and to select a virtual telephone number and set the same to be a reference number through the multi number selector 12 when the second operation mode is set.

30 When the call transmit signal is transmitted from the terminal 100 to the multi number support system 300, the multi number support system 300

performs a call transmit process.

As shown in FIG. 7, the call processing server 320 of the multi number support system 300 receives a call transmit signal from the multi terminal 100 and extracts a call receive number and a call transmit number from the signal (S200-S210). The call processing server 320 searches the register database 311 based on the call receive number to determine whether the call receive number is a virtual telephone number (S220). When the call receive number included in the call transmit signal is a virtual telephone number, the call processing server 320 determines the default telephone number of the corresponding terminal corresponding to the call receive number and checks the location of the call receiving terminal based on the default telephone number (S230). The call processing server 320 generates a call receive signal having the call receive number and transmits the call receive signal to the call receiving terminal 500 the location of which is checked, and the call receive number included in the transmitted call receive signal is a virtual default telephone number. As shown in FIG. 8, when the call receiving terminal 500 is a multi terminal, the call receiving multi terminal receives the call receive signal through the virtual telephone number (S240).

When the call receive number included in the call transmit signal is a default telephone number in the previous step of (S220), the location of the call receiving terminal is checked without additional determination step (S230), and a call receive signal is transmitted.

A call receiving processing method in a multi terminal will now be described.

FIG. 9 shows a flowchart for a call receiving process according to an embodiment of the present invention.

When a call receive signal is transmitted from a predetermined terminal to the multi terminal (S300), the call receive signal is transmitted to the controller 20 through the receiver 61, as shown in FIG. 9. The call receive number determining module 241 of the call receiver 24 extracts a call receive number from the call receive signal and determines which one from

among the multiple numbers assigned to the terminal corresponds to the extracts call receive number (S310).

When the call receive number is a reference number set for processing the current call transmitting and receiving, the first call receive
5 processing module 242 performs a general call receive signal process (S320-S330). In this instance, the call receive signal is processed by the call receiver 24, and hence, calling between the terminals will be performed through the audio device 40.

When the call receive number is not a reference number in the step of
10 (S320), that is, when the call receive number is a hidden number, the mode set to the hidden number is determined (S340-S350), and the second to sixth call receive processing modules 243-247 are operated according to the mode.

In detail, when the call receive number is a hidden number and a call receiving mode is set to the hidden number (S360), the call receiving process
15 is performed by the second call receive processing module 243 (S370). When a specific bell sound or a specific screen is set to the hidden number according to control by the second call receive processing module 243, the bell sound is output through the speaker 42 by the third service providing module 253 of the service provider 25 and the screen is displayed through the
20 display device 50 (S380). A call is performed between the terminals since the call receiving process is performed (S390).

When the call receive number is a hidden number and an announcement mode is set to the hidden number (S400), the call receiving process is not performed, and the third call receive processing module 244
25 reads a stored automatic answering message for the hidden number from the service data storage unit 32 and transmits the same data through the transmitter 62 (S410). For example, an automatic answering message such as "I'm not available and call you later as I'm in the meeting now." Is transmitted to the call transmitting terminal that has transmitted a call receive
30 signal. Therefore, the call transmitting terminal checks the state of the call receiving multi terminal 100 based on the automatic answering message.

The third call receive processing module 244 of the multi terminal 100 stores the call receive number to record generation of a call on the corresponding hidden number and terminates the call receive signal process (S420-S430).

5 When the call receive number is a hidden number and a call disallowance mode is set to the hidden number (S440), the fourth call receive processing module 245 stores the call receive number to record generation of a call on the corresponding hidden number and terminates the process without an additional response to the call receive signal (S450-S460).
10 Accordingly, the multi number support system 300 notifies the call transmitting terminal 500 of no calling performance when receiving no response to the call receive signal from the call receiving multi terminal 100.

 However, when the signal transmitted from the call transmitting side is not a call signal but a message signal even when the call disallowance mode
15 is set to the hidden number, the service provider 25 stores and controls the received message according to the hidden number according to control by the fifth call receive processing module 245, and notifies the user of receiving of a predetermined message on the hidden number through the display device 50 and the speaker 42.

20 When the call receive number is a hidden number and the power off mode is set to the hidden number (S470), the fifth call receive processing module 246 stores the call receive number to record generation of a call on the corresponding hidden number and terminates the process without an additional response to the call receive signal (S480-S490). The multi
25 number support system 300 notifies the call transmitting terminal 500 of the fact that the call cannot be connected because the power of the call receiving terminal is turned off.

 When the call receive number is a hidden number and an automatic change mode is set to the hidden number (S500), the reference number setter
30 21 sets the hidden number to be a reference number according to the control by the sixth call receive processing module 247 so that the multi terminal 100

may be operated by the hidden number (S510). In this instance, a call receiving process is performed by the sixth call receive processing module 247 when the hidden number is changed to the reference number. In this case, predetermined bell sound or screen is provided when the bell sound or screen is set to the hidden number (S520-S530).

As described above, the multi terminal 100 selectively performs a call receiving process according to the condition whether the call receive number included in the call receive signal is a reference number or a hidden number, and the terminal is accordingly operated as a terminal having a reference number or a terminal having a hidden number.

Therefore, the user can acquire efficiencies of using many terminals by actually using a single terminal.

The billing server 340 of the multi number support system 300 generates billing data according to the provision of personalized service or the process of a transmitted call for each number of the terminal having transmitted and received a call, and subsequently notifies the subscriber of the generation of billing data. Therefore, the multi terminal is independently billed for each number. For example, the default telephone number assigned to a single multi terminal can be used for the company and other virtual telephone numbers can be used for the personal purpose, and in this instance, a single terminal can be used as two terminals since the billing is performed for each telephone number.

In the above-described embodiment of the present invention, the default telephone number and the virtual telephone number can be provided by the same communication network, or they can be provided by different communication networks. For example, the virtual telephone number can be a telephone number for a telephone connected to the PSTN, a number assigned to another type of mobile terminal such as a PDA, or a cell phone number while the default telephone number of the multi terminal is a mobile phone number for a calling service through a mobile communication network. FIG. 10 shows that terminals having telephone numbers provided by different

communication networks are classified into terminals by the reference number and the virtual numbers.

The call transmitting and receiving processing method can be realized into a program stored on a computer readable recording medium. The
5 recording medium includes any kinds of recording devices for storing computer readable data, for example, a CD-ROM, a magnetic tape, a floppy disk, and a carrier wave format (e.g., Internet transmission).

While this invention has been described in connection with what is presently considered to be practical exemplary embodiments, it is to be
10 understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

【INDUSTRIAL APPLICABILITY】

According to the embodiment of the present invention, multiple
15 numbers are assigned to a single terminal, and various services including a telephone number dependent calling tone function and a speech mail box function as well as the number dependent additional services are provided. Hence, sales are increased.

Further, the virtual multi mobile phone effect for providing a multiple
20 mobile phone function with a single mobile phone is provided by providing a call transmit number function and a call receive number function for each of the multiple numbers and also providing additional services.

Also, customer satisfaction and subscriber promotion can be increased by additionally providing convenience to the subscriber in the
25 number mobility condition.

【CLAIMS】

1. A multi terminal for receiving a calling service through a network comprising:

5 an interface device for transmitting and receiving signals to/from the network;

a storage device for storing, changing, and controlling multiple numbers including a default telephone number and at least one virtual telephone number, and including a multi number storage unit;

10 an input device including a multi number selector for selecting a number from among the multiple numbers, setting the number to be a reference number operable in a general state, and setting other numbers to be hidden numbers operable in a hidden state, and an operation mode selector for setting an operation mode for the hidden number; and

15 a controller including a call transmitter for attempting a transmitting call based on the input call receive number and a call receiver for performing a call receiving process when a receiving call is input through the interface device, wherein

the call receiver processes the receiving call according to an operation
20 mode set to the hidden mode when the call receive number extracted from the receiving call is a hidden number.

2. The multi terminal of claim 1, wherein when the call receive number is input through the input device and a calling function is selected, the
25 call transmitter sets the reference number to be a call transmit number, generates a call transmit signal including the call receive number and the call transmit number, and transmits the call transmit signal to the network through the interface device.

30 3. The multi terminal of claim 1, wherein when the call receive number is input through the input device, a predetermined hidden number is

input, and a calling function is selected, the call transmitter sets the hidden number to be a call transmit number, generates a call transmit signal including the call receive number and the call transmit number, and transmits the call transmit signal to the network through the interface device.

5

4. The multi terminal of claim 2 or claim 3, wherein the call transmitter additionally adds a predetermined identifier for identifying the call transmit number to the call transmit signal and transmits the signal to the network.

10

5. The multi terminal of any one of claim 1 to claim 3, wherein when the call receive number included in the call receive signal is a hidden number, the operation mode set to the hidden number includes at least one of:

15

an automatic state change mode for automatically changing the hidden number to the reference number and processing the call receiving;

a call receiving mode for processing the call receiving without changing to the general state;

20

an announcement mode for outputting announcement data designated by the user;

a call disallowance mode for storing message receiving in a storage space of the corresponding number without performing a call receiving process; and

25

a power off mode for operating a power off state without performing a call receiving process.

6. The multi terminal of claim 5, wherein the controller further comprises:

30

a reference number setter for setting a reference number in the general state for processing the call transmitting and receiving process of the terminal from among the multiple numbers according to the signal input by the

multi number selector; and

an additional mode setter for setting at least one operation mode to the hidden numbers other than the reference number according to the operation by the mode selector.

5

7. The multi terminal of claim 5, wherein the call receiver includes a call receive number determining module for determining the call receive number included in a call receive signal when receiving the call receive signal through the interface device, and additionally includes at least one of:

10 a first call receive processing module for performing a call receiving process when the call receive number is a reference number;

a second call receive processing module for performing a call receiving process when the call receive number is a hidden number and a call receiving mode is set to the hidden number;

15 a third call receive processing module for outputting speech data corresponding to the hidden number and terminating the receiving call when the call receive number is a hidden number and an announcement mode is set to the hidden number;

20 a fourth call receive processing module for storing the call receive number to record generation of call receiving, and terminating the receiving call without response to the call receive signal when the call receive number is a hidden number and a call disallowance mode is set to the hidden number;

25 a fifth call receive processing module for storing the call receive number to record generation of call receiving, and terminating the receiving call without response to the call receive signal when the call receive number is a hidden number and a power off mode is set to the hidden number; and

30 a sixth call receive processing module for changing the hidden number corresponding to the call receive number to the reference number in the general state, and performing a call receiving process while an initial screen and bell sound of the terminal is set by the corresponding number when the call receive number is a hidden number and a state automatic

change mode is set to the hidden number.

8. The multi terminal of claim 7, wherein the fourth call receive processing module stores and controls the data for the call receive number when the data for the personalized additional service are included in the call receive signal.

9. The multi terminal of any one of claim 1 to claim 3, wherein the controller further comprises a service provider for providing an independent additional service for each number as many as the multiple numbers,

the storage device further comprises a service data storage unit for storing additional service data provided for the multiple numbers assigned to the terminal, and

the service provider provides a corresponding additional service for the respective multiple numbers based on information stored in the service data storage unit.

10. The multi terminal of claim 9, wherein the additional service includes at least one of an OEM additional service provided by a terminal manufacturer, an SMS, an MMS, a mail service, a wireless Internet service, a telephone directory, a call transmitting and receiving number storage service, an initial screen service, a bell sound service, a camera storage service, and a personalized setting service.

11. The multi terminal of claim 9, wherein when a predetermined personalized additional service is provided for the call receive signal, the call receiver extracts a call receive number from the signal, determines to which number the call receive number corresponds from among the multiple numbers assigned to the terminal, and processes and provides a personalized additional service for the determined number.

12. The multi terminal of any one of claim 1 to claim 3, wherein the default telephone number and the virtual telephone number are provided by the same communication network.

5 13. The multi terminal of any one of claim 1 to claim 3, wherein the default telephone number and the virtual telephone number are provided by different communication networks, and the virtual telephone numbers are provided by different communication networks.

10 14. A call transmitting method in a terminal for receiving a calling service through a network, wherein the terminal is a multi terminal having multiple numbers including a default telephone number and at least one virtual telephone, the call transmitting method comprising:

a) the terminal selecting a number from among the multiple number, setting the number to be a reference number, and setting other numbers to be hidden numbers when an operation setting mode is selected;

b) setting the reference number to be a call transmit number when a call receive number is input and a calling function is selected;

c) generating a call transmit signal including the call receive number, a predetermined identifier, and the call transmit number; and

d) transmitting the call transmit signal to the network to attempt a transmitting call.

15 15. A call transmitting method in a terminal for receiving a calling service through a network, wherein the terminal is a multi terminal having multiple numbers including a default telephone number and at least one virtual telephone, the call transmitting method comprising:

a) the terminal selecting a number from among the multiple number, setting the number to be a reference number, and setting other numbers to be hidden numbers when an operation setting mode is selected;

b) setting an input hidden number to be a call transmit number when a

call receive number is input, the hidden is input, and a calling function is selected;

c) generating a call transmit signal including the call receive number, a predetermined identifier, and the call transmit number; and

5 d) transmitting the call transmit signal to the network to attempt a transmitting call.

16. A call receiving method in a terminal for receiving a calling service through a network, wherein the terminal is a multi terminal having
10 multiple numbers including a default telephone number and at least one virtual telephone, and one number from among the multiple numbers is set to be a reference number and other numbers are set to be hidden numbers, the call receiving method comprising:

a) the terminal receiving a call receive signal through a network;

15 b) extracting a call receive number from the call receive signal and determining a category;

c) performing a call receiving process when the call receive number is the reference number; and

d) selectively performing a call receiving process according to an
20 operation mode set to the hidden number when the call receive number is the hidden number.

17. The call receiving method of claim 16, wherein the mode set to the hidden number includes at least one of:

25 a call receiving mode for performing a call receiving process;

an announcement mode for outputting announcement data designated by a user;

a call disallowance mode for providing an additional service without performing a call receiving process;

30 a power off mode for operating the terminal to be in a power off state without performing a call receiving process, and

an automatic state change mode for setting the hidden number to be a reference number and performing a call receiving process.

18. The call receiving method of claim 17, wherein d) comprises:
- 5 performing a call receiving process when the call receive number is a hidden number and a call receiving mode is set to the hidden number;
- outputting speech data corresponding to the hidden number and terminating the receiving call when the call receive number is a hidden number and an announcement mode is set to the hidden number;
- 10 storing the call receive number to record generation of call receiving and terminating the receiving call without response to the call receive signal when the call receive number is a hidden number and a call disallowance mode is set to the hidden number;
- storing the call receive number to record generation of call receiving and terminating the receiving call without response to the call receive signal when the call receive number is a hidden number and a power off mode is set to the hidden number; and
- 15 changing a hidden number corresponding to the call receive number to a reference number and performing a call receiving process when the call receive number is a hidden number and an automatic state change mode is set to the hidden number.
- 20

19. A recording medium storing a program for realizing the method disclosed by any one of claim 14 to claim 18.
- 25

20. A multi number support system for providing a calling service between terminals through a network, comprising:
- a register server for providing multiple numbers to the terminal and managing the multiple numbers;
- 30 a call processing server for performing a call transmitting/receiving process for the respective number of the terminal;

an additional service providing server for providing a personalized additional service requested for each number of the terminal; and

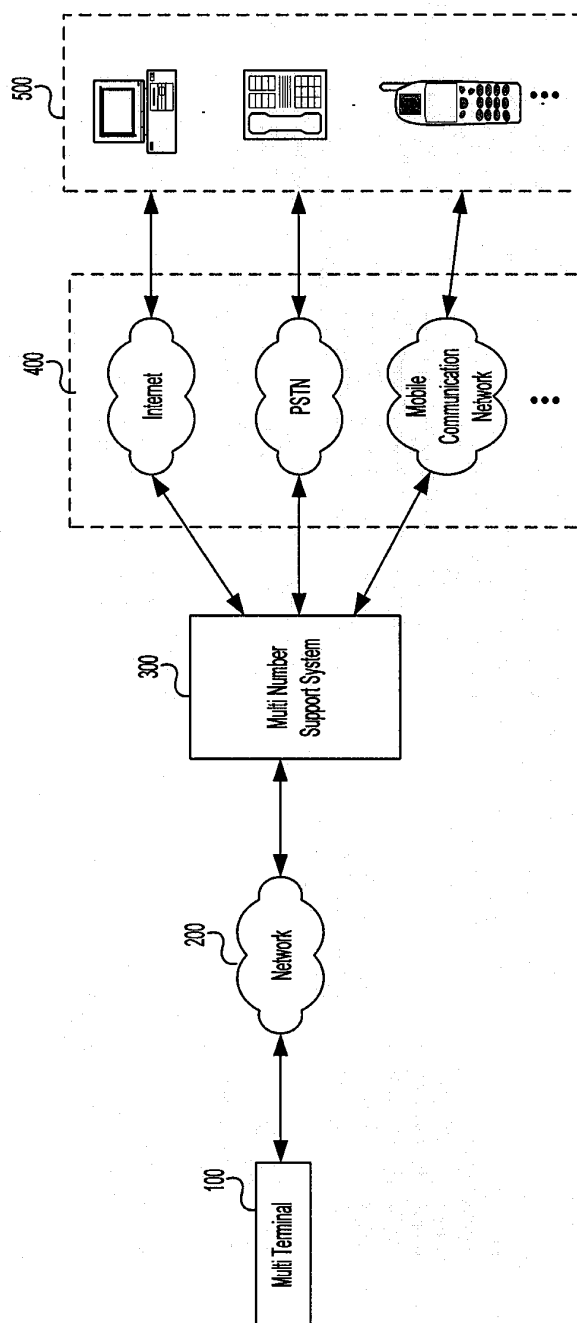
a billing server for billing the call process and service provision executed by the call processing server or the additional service providing
5 server for each number of the terminal.

21. The multi number support system of claim 20, further comprising

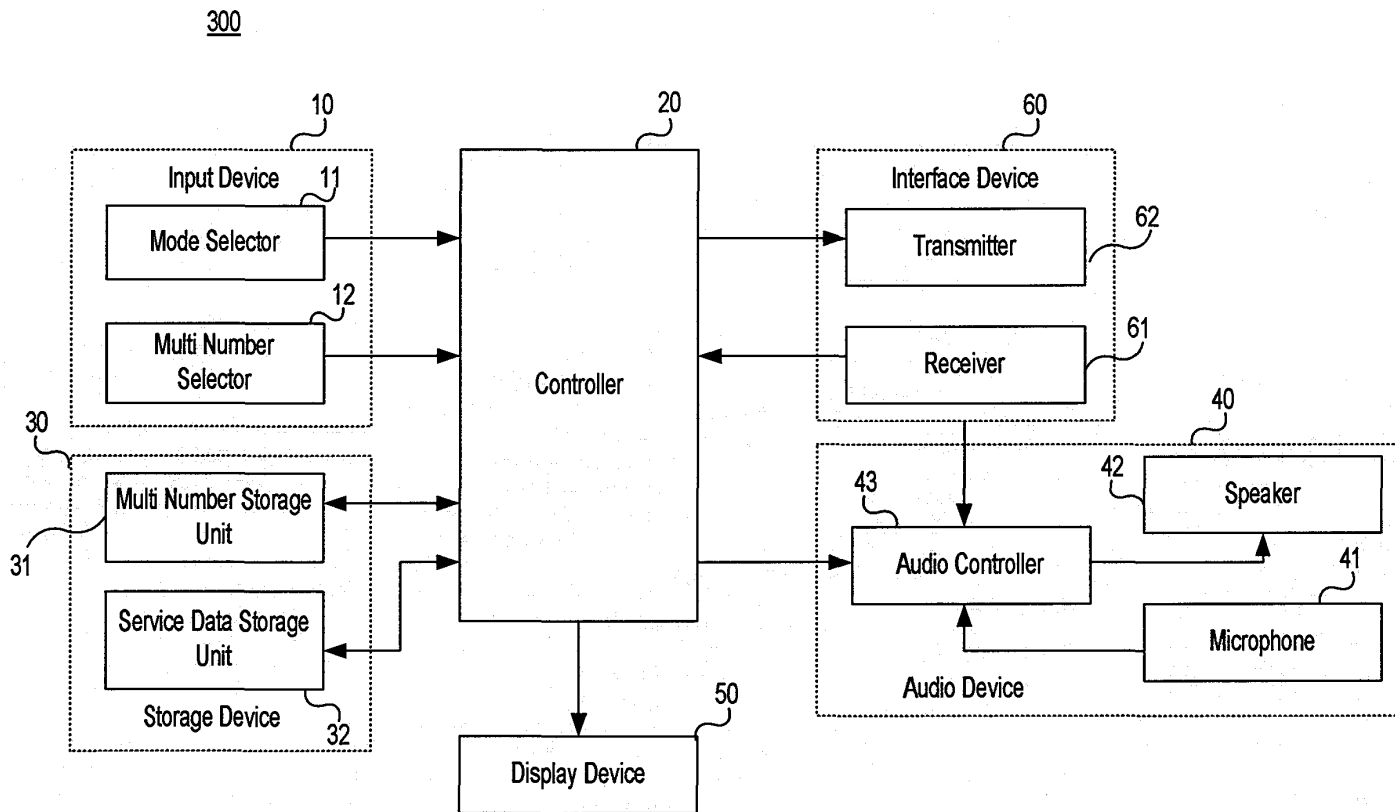
a billing database for storing a default telephone number and at least
10 one virtual telephone number corresponding to an ESN (electrical serial number) provided to the terminal, setting an additional service for each number, and storing a billing history according to the used service.

15

【FIG. 1】



【FIG. 2】



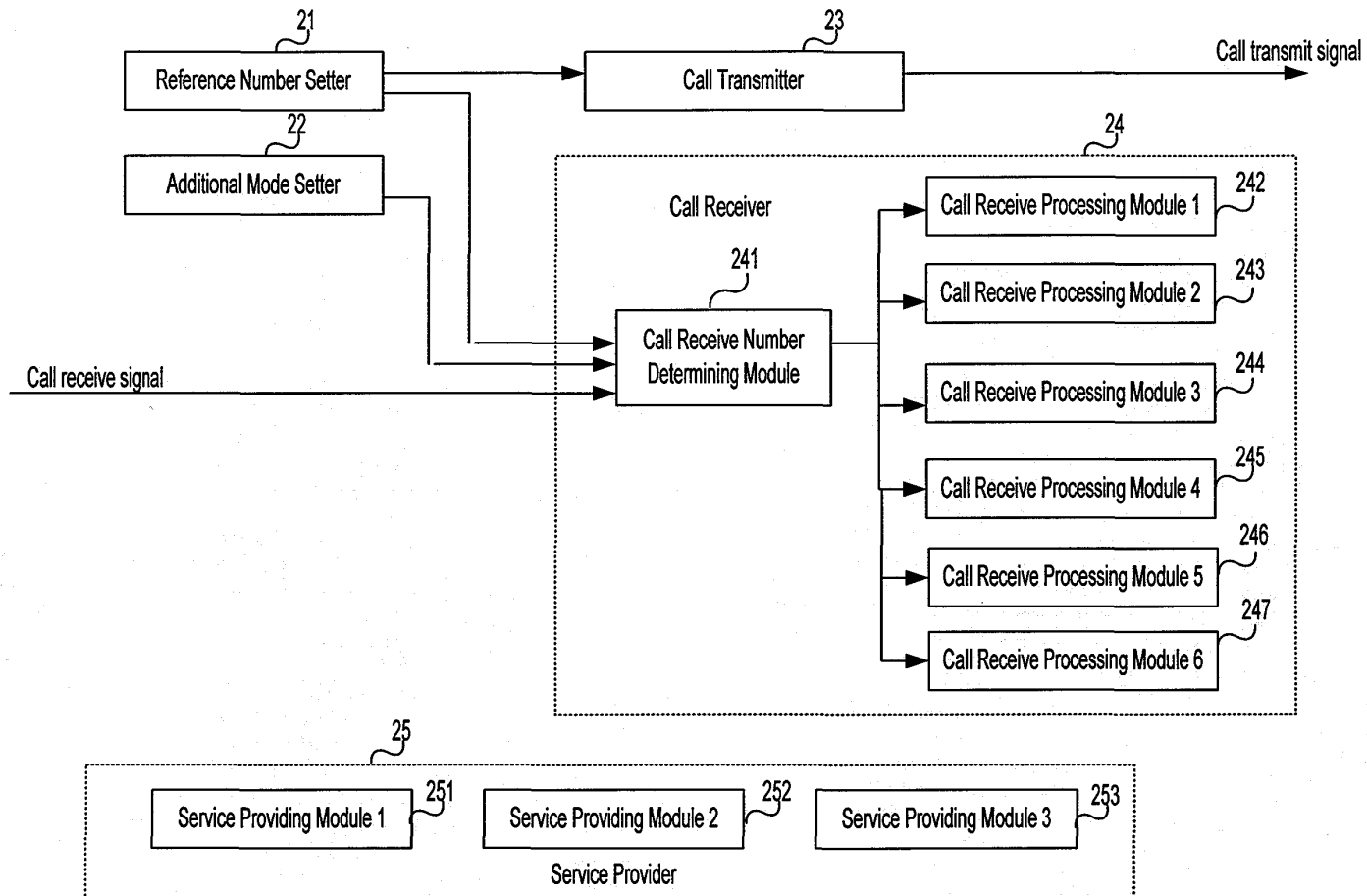
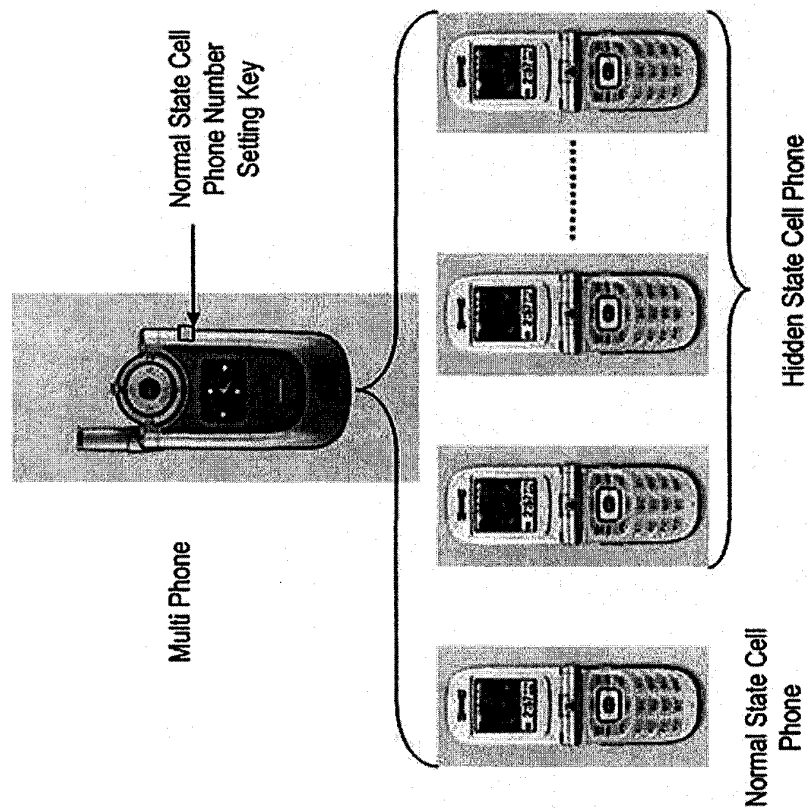
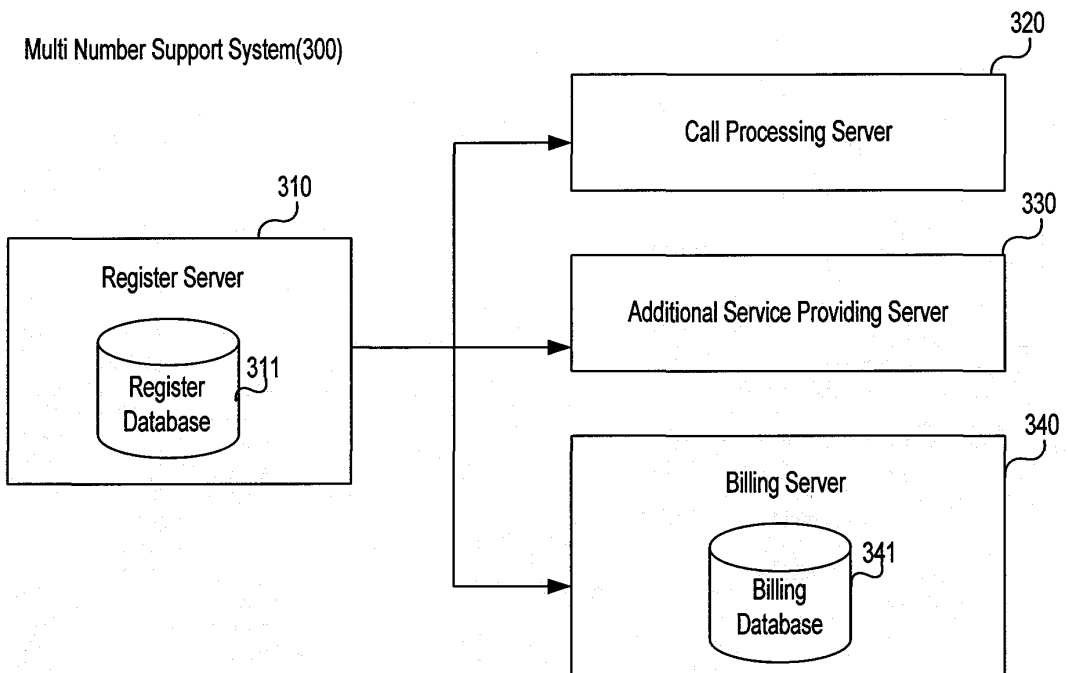


FIG. 3

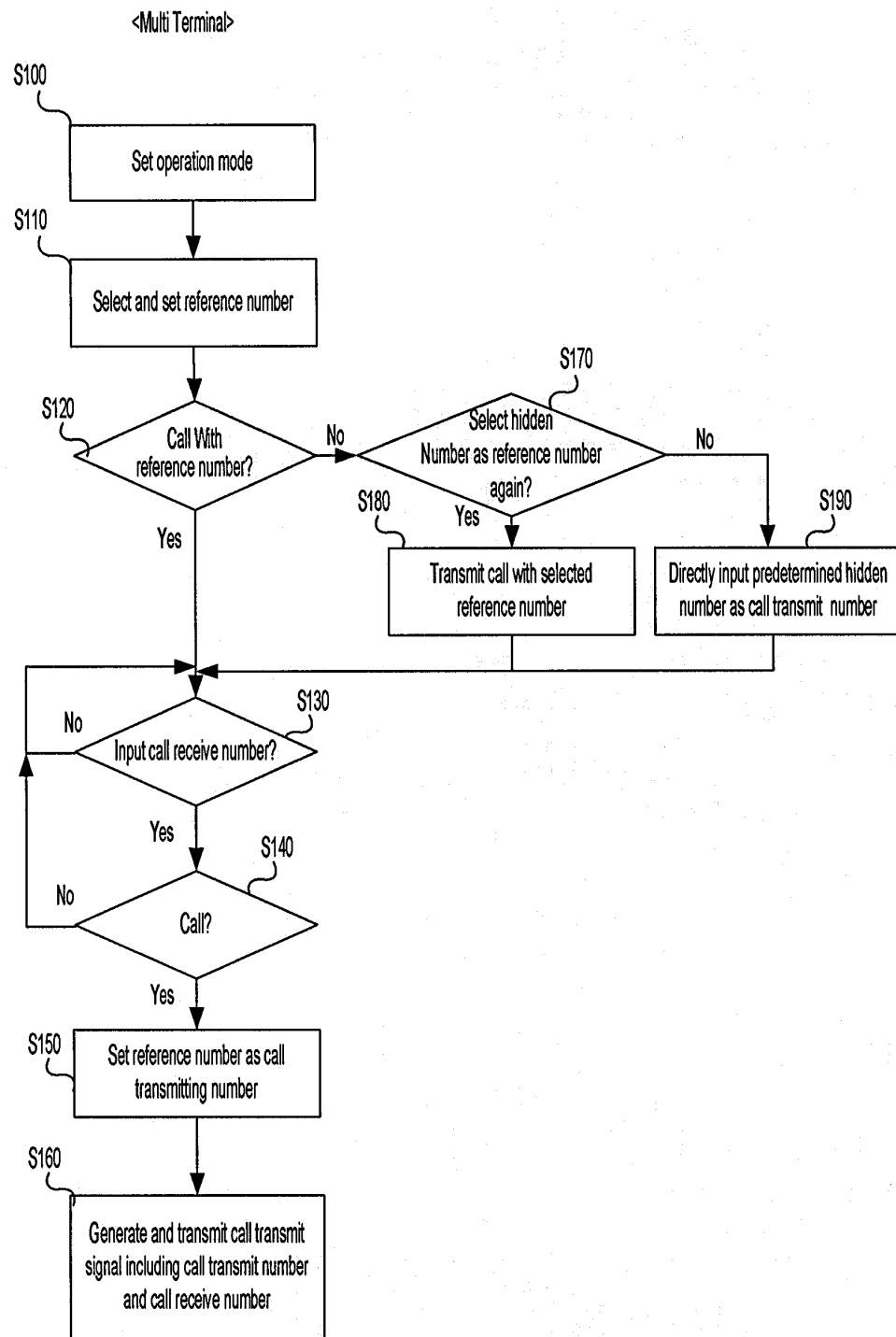
【FIG. 4】



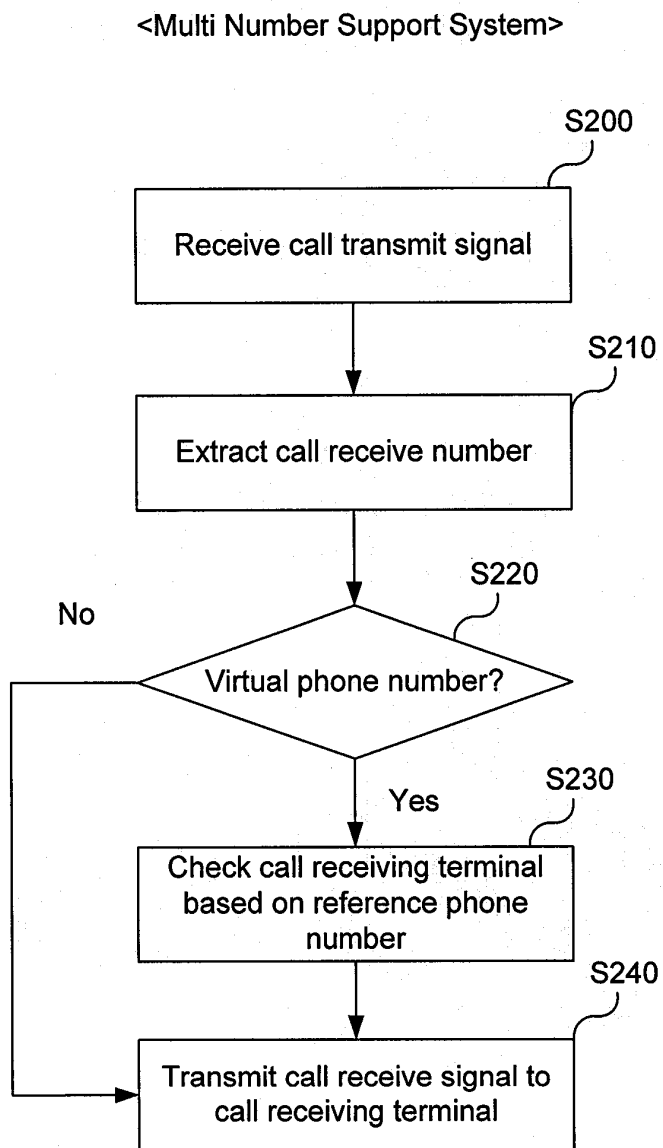
【FIG. 5】

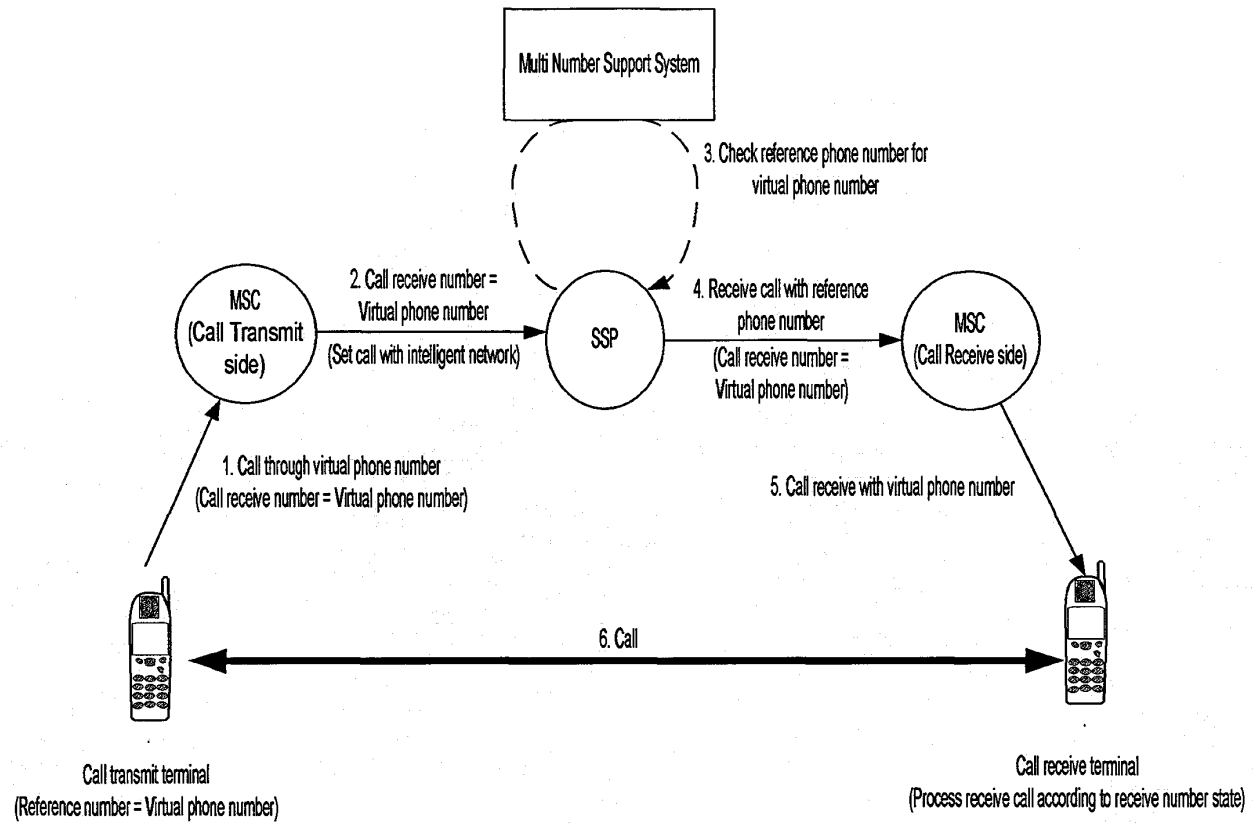


【FIG. 6】



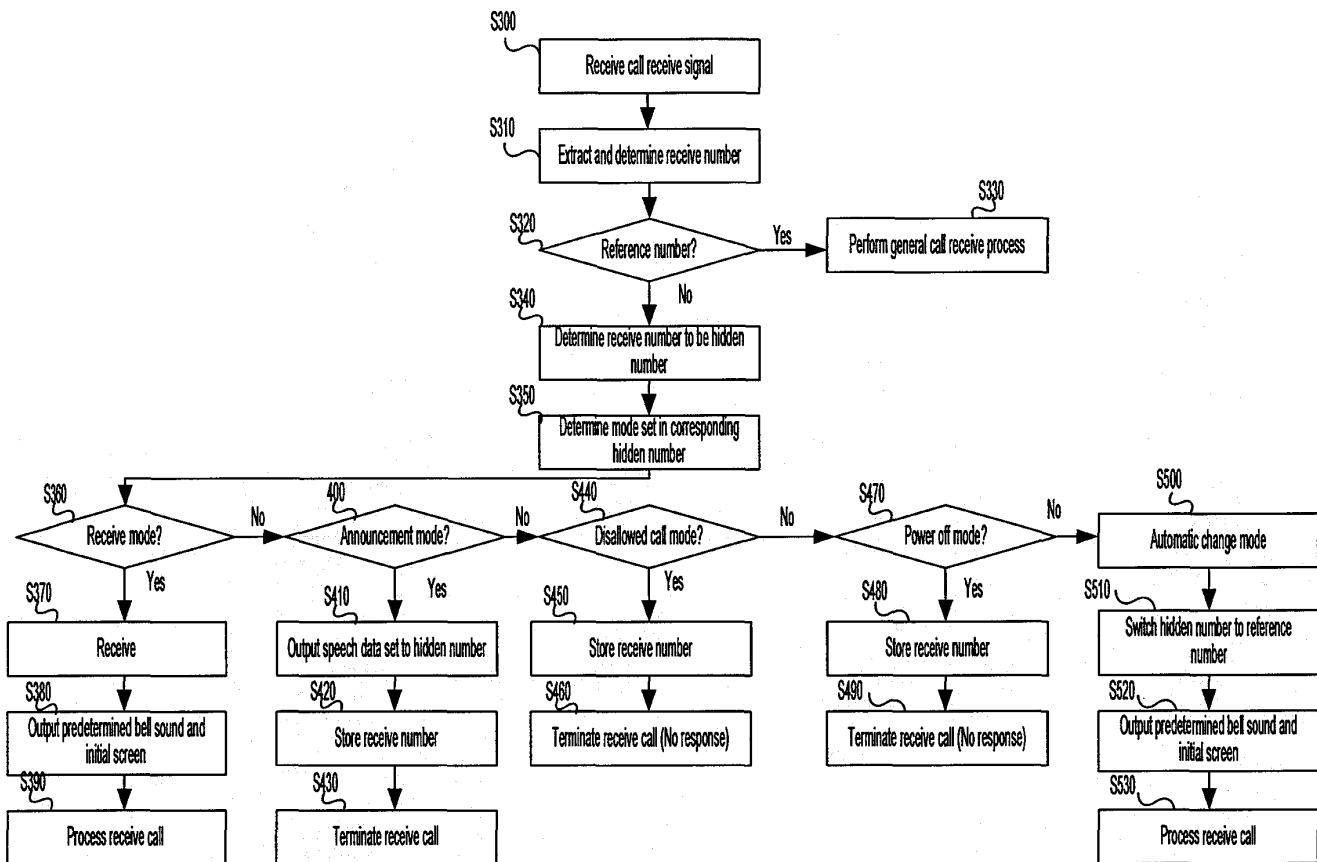
【FIG. 7】



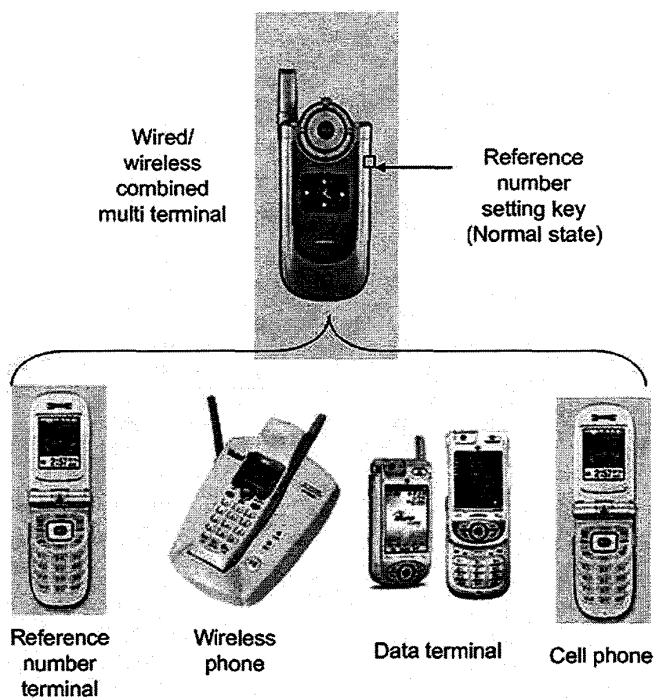


[FIG. 8]

[FIG. 9]



【FIG. 10】



(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 November 2007 (22.11.2007)

PCT

(10) International Publication Number
WO 2007/131269 A1

(51) International Patent Classification:
H04Q 7/38 (2006.01) *H04M 3/42* (2006.01)

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(21) International Application Number:
PCT/AU2007/000633

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(22) International Filing Date: 11 May 2007 (11.05.2007)

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2006902478 11 May 2006 (11.05.2006) AU

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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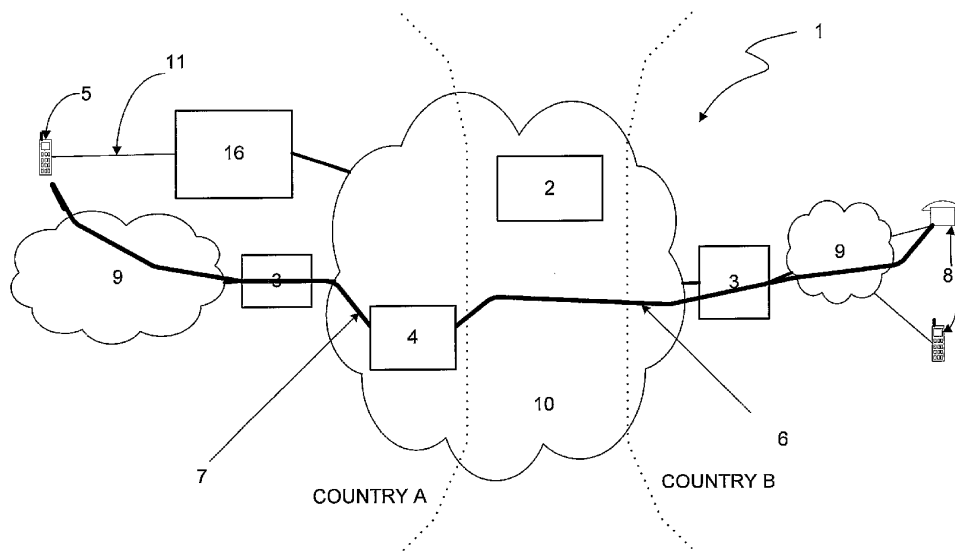
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Published:
— with international search report

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(54) Title: SYSTEM AND METHOD FOR COMMUNICATION



(57) Abstract: A system (1) that allows roaming cellular radio telephones (5) to communicate with remote telephony devices (8) using the Internet (10) or other suitable communications networks. The system includes one or more call bridges (4) that implement call legs (6,7) which can be bridged. The bridged call legs define a communications path between the roaming cellular radio telephone and the telephony device. Call bridges are selected under control of servers (2) so as to provide optimum call charges thereby mitigating costs and other factors related to the roaming nature of the cellular radio telephone.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

- 1 -

"System and Method for Communication"**Field of the Invention**

This invention relates to a system and method for the telephone communication, particularly, although not exclusively for telephone communication using handheld
5 cellular radio telephones ('mobile phones').

Throughout the specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

10 Background Art

The use of handheld cellular radio telephones is well known. One of the advantages of the cellular radio telephones is that they are portable. As is well known, mobile phones are linked to a cellular radio network and use that network to communicate with other telephony devices. The networks that the mobile
15 phones use to communicate and the tariffs paid for the use of the services available to the user depend upon which network service provider, and the level of service that users select. Advances in cellular radio telephone communications now mean that most users can take their mobile phones and use them within other networks – includes networks that are in other regions or countries. This is
20 often referred to as 'roaming'. This functionality is facilitated through the use of 'roaming agreements' between cellular radio telephone network service providers in different locations. These agreements allow users to have access to the cellular radio networks, for example in different countries and to avail themselves of the functionality provided by these networks. The call tariffs associated with
25 making and receiving calls whilst roaming varies from network to network, and also on the network service provider to which the Subscriber Identity Module (SIM) card of the 'phone is attached. However, these roaming call tariffs are most often much greater than the tariffs that would be charged if the same call was

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placed or received within the mobile phone's network service provider. In addition, charges are often incurred for receiving a call when roaming.

Attempts have been made to mitigate the high costs of these tariffs, for example through complex 'call back' arrangements or through the use of phone cards.

5 However, these schemes do not provide the same seamless functionality provided when the phone is used 'at home' and necessitate the user to take extra steps. These schemes do not reduce call tariffs for receiving calls.

Even when mobile phones are used within the network owned by the network service provider, tariffs can be higher than normal for certain situations. For
10 example, with some 'pre-paid' mobile phones on some plans, it may be cheaper to phone to some other countries than it is to phone a local number.

It should also be pointed out that if a 'roaming' user uses a voicemail or messaging facility then this requires an international call to be made – to access the voicemail service in the user's 'home' country. The costs of doing this can be
15 excessive.

Disclosure of the Invention

In accordance with a first aspect of the present Invention, there is provided a method of establishing communication in a communication system using at least one telephony device and at least one communications interface characterised in
20 that it comprises

receiving and communicating call data to the at least one communications interface about a call initiated by a telephony device,

establishing communication between a communications facilitator and a first telephony device to identify said at least one communications interface to
25 said first telephony device, and

- 3 -

establishing at least a first call leg between said first telephony device and said at least one communications interface to allow access to communications data routed via said at least one communications interface.

Preferably, the call initiated by a telephony device is initiated by said first
5 telephony device.

Preferably, receiving call data comprises receiving call data at said communications facilitator transmitted from said first telephony device, said call data comprising a request for establishment of communication with a second telephony device.

10 Preferably, communicating call data to the at least one communications interface about a call initiated by a telephony device comprises communicating call data from said communications facilitator to the at least one communications interface about a call initiated by said first telephony device.

Preferably, the method further comprises:

15 signalling said first telephony device to call said at least one communications interface to establish communication between said first telephony device and said at least one communications interface thereby establishing said first call leg.

Preferably, the method further comprises

20 establishing communication between the at least one communications interface and a second telephony device to establish a second call leg; and

coupling the first call leg and the second call leg at the at least one communications interface to thereby establish communication between said first telephony device and said second telephony device.

25 Preferably, said communications data routed by said communications interface comprises call data from said second telephony device.

- 4 -

Preferably, the call initiated by a telephony device is initiated by a second telephony device.

Preferably, the receiving call data comprises receiving call data at the at least one communications interface transmitted from the second telephony device, said call
5 data comprising a request for the establishment of communication with the first telephony device.

Preferably, communicating call data to the at least one communications interface about a call initiated by a telephony device comprises communicating call data to the at least one communications interface about a call initiated by the second
10 telephony device.

Preferably, the method further comprises

signalling said first telephony device to call said at least one communications interface to establish communication between said first telephony device and said at least one communications interface thereby establishing said first call
15 leg.

Preferably, the method further comprises establishing communication between the communication facilitator and the at least one communications interface to transmit the call data to the communications facilitator from the at least one communications interface.

20 Preferably, the method further comprises identifying the at least one communications interface on the basis of the transmitted data received by the communications facilitator from the at least one communications interface.

Preferably, the method further comprises:

establishing a second call leg between the second telephony device and the
25 at least one communications interface; and

- 5 -

coupling the first and second call legs at the at least one communications interface to thereby establish communication between the first telephony device and the second telephony device.

Preferably, said communications data routed by said communications interface
5 comprises call data from said second telephony device.

Preferably, the system includes a first communications interface and a second communications interface, and the call initiated by a telephony device is routed via the first and second communications interfaces, and wherein the first call leg is established between the first telephony device and the first communications
10 interface, the method comprising:

coupling the first communications interface and the second communications interface to establish data communication therebetween;

establishing a third call leg between the second telephony device and the second communications interface; and

15 coupling the first and third call legs via the first communications interface and the second communications interface to thereby establish communication between the first telephony device and the second telephony device.

Preferably, the coupling of the first communications interface and the second communications interface is enabled by:

20 establishing communication between the communications facilitator and the second communications interface to communicate the identity of the first communications interface from the communications facilitator to the second communications interface;

25 establishing communication between the first communications interface and the second communications interface upon receipt by the second communications interface of the identity of the first communications interface.

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Preferably, the first and second communications interfaces are provided as a single unit, such that the coupling of the first communications interface with the second communications interface is provided integral within said single unit.

Preferably, the first communications interface and the second communications
5 interface are provided remote from each other, and the method comprising:

establishing a fourth call leg between the first communications interface and the second communications interface prior to establishing the third call leg to couple the first communications interface and the second communications interface;

10 bridging the first call leg and the fourth call leg at the first communications interface; and

bridging the third call leg and the fourth call at the second communications interface, thereby coupling the first call leg and the third call leg via the first communications interface, the second communications interface and the
15 fourth call leg to thereby establish communication between the first telephony device and the second telephony device.

Preferably, the call initiated by a telephony device is initiated by a second telephony device.

Preferably, receiving and communicating call data to the at least one
20 communications interface about a call initiated by a telephony device comprises receiving call data from the second telephony device about the call initiated by the second telephony device and communicating the call data to the at least one communications interface about the call initiated by the second telephony device.

Preferably, the method further comprises establishing communication between
25 the communication facilitator and the at least one communications interface to transmit the call data to the communications facilitator from the at least one communications interface.

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Preferably, the method further comprises identifying the at least one communications interface on the basis of the transmitted call data received by the communications facilitator from the at least one communications interface.

Preferably, said method further comprises storing audio or other multimedia
5 information received from said second telephony device at said at least one communications interface, said audio or multimedia forming said communications data routed by said at least one communications interface.

Preferably, the method further comprises transmitting notification from said at least one communications interface to said communications facilitator of the
10 storage of said audio or multimedia information.

Preferably, the method further comprises

signalling said first telephony device to call said at least one communications interface to establish communication between said first telephony device and said at least one communications interface thereby establishing said first call
15 leg.

Preferably, the method further comprises receiving a request at said at least one communications interface from said first telephony device for retrieval of said audio or multimedia information.

Preferably, the method further comprises transmitting said stored audio or
20 multimedia information from said at least one communications interface to said first telephony device.

Preferably, the system includes a first communications interface and a second communications interface, and the call data relating to the call initiated by the second telephony device is communicated to the first communications interface,
25 the method further comprising:

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transmitting said stored audio or multimedia information from said first communications interface to said second communications interface.

Preferably, the method further comprises transmitting notification from said first communications interface to said second communications interface of the storage
5 of said audio or multimedia information.

Preferably, the coupling of the first communications interface and the second communications interface is enabled by:

10 establishing communication between the communications facilitator and the first communications interface to communicate the identity of the second communications interface from the communications facilitator to the first communications interface; and

15 establishing communication between the first communications interface and the second communications interface upon receipt by the first communications interface of the identity of the second communications interface.

Preferably, the method further comprises:

signaling said first telephony device to call said second communications interface to establish communication between said first telephony device and said second communications interface thereby establishing said first call leg.

20 Preferably, the method further comprises receiving a request at said second communications interface from said first telephony device for retrieval of said audio or multimedia information.

Preferably, the method further comprises transmitting said stored audio or multimedia information from said second communications interface to said first
25 telephony device.

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Preferably, the first and second communications interfaces are provided as a single unit, such that the coupling of the first communications interface with the second communications interface is provided integral within said single unit.

Preferably, the first communications interface and the second communications
5 interface are provided remote from each other.

In accordance with a second aspect of the present invention there is provided a communication system including at least one telephony device, at least one communications interface and a communications facilitator, wherein the at least one communications interface and the communications facilitator are arranged to
10 communicate, said communications facilitator being operable to receive call data about a call initiated by a telephony device, and the communications facilitator being operable to communicate with a first telephony device to identify the at least one communications interface to said first telephony device, and

the at least one communications interface is arranged to receive
15 communication from said first telephony device to enable access of communications data routed via said at least one communications interface.

Preferably, the call initiated by a telephony device is initiated by said first telephony device.

Preferably, receiving call data comprises receiving call data at said
20 communications facilitator transmitted from said first telephony device, said call data comprising a request for establishment of communication with a second telephony device.

Preferably, communicating call data to the at least one communications interface about a call initiated by a telephony device comprises communicating call data
25 from said communications facilitator to the at least one communications interface about a call initiated by said first telephony device.

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Preferably, the communications facilitator is operable to signal said first telephony device to call said at least one communications interface to establish communication between said first telephony device and said at least one communications interface thereby establishing said first call leg.

- 5 Preferably, the communications interface is operable to establish communication between the at least one communications interface and a second telephony device to establish a second call leg, and to couple the first call leg and the second call leg at the at least one communications interface to thereby establish communication between said first telephony device and said second telephony
10 device.

Preferably, said communications data routed by said communications interface comprises call data from said second telephony device.

Preferably, the call initiated by a telephony device is initiated by a second telephony device.

- 15 Preferably, the receiving call data comprises receiving call data at the at least one communications interface transmitted from the second telephony device, said call data comprising a request for the establishment of communication with the first telephony device.

- 20 Preferably, communicating call data to the at least one communications interface about a call initiated by a telephony device comprises communicating call data to the at least one communications interface about a call initiated by the second telephony device.

- 25 Preferably, the communications facilitator is operable to establish communication between the communication facilitator and the at least one communications interface to transmit the call data to the communications facilitator from the at least one communications interface.

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Preferably, the at least one communications interface is identified on the basis of the transmitted data received by the communications facilitator from the at least one communications interface.

5 Preferably, the communications interface is operable to establish communication between the second telephony device and the at least one communications interface to establish a second call leg; and to couple the first and second call legs at the at least one communications interface to thereby establish communication between the first telephony device and the second telephony device.

10 Preferably, said communications data routed by said communications interface comprises call data from said second telephony device.

Preferably, the system includes a first and a second communications interface, and the call initiated by a telephony device is routed via the first and second communications interfaces and wherein the first call leg is established between the first telephony device and the first communications interface, and the first
15 communications interface is arranged for coupling with the second communications interface, and the second communications interface is operable to establish a third communication leg with the second telephony device and the second communications interface such that coupling of the first and third legs via said first communications interface and said second communications interface
20 thereby establishes communication between the first telephony device and the second telephony device.

Preferably, the communications facilitator is in data communication with the second communications interface and is operable to communicate the identity of the first communications interface to the second communications interface such
25 that the first communications facilitator is arranged to communicate with the first communications facilitator and to establish communication between the first communications interface and the second communications interface upon receipt by the second communications interface of the identity of the first communications interface.

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Preferably, the first and second communications interfaces are provided as a single unit, such that the coupling of the first communications interface with the second communications interface is provided integral within said single unit.

Preferably, the first communications interface and the second communications
5 interface are provided remote from each other, and wherein the second
communications interface is operable to establishing a fourth call leg between the
first communications interface and the second communications interface prior to
establishing the third call leg to couple the first communications interface and the
second communications interface, and wherein the first communications interface
10 is operable to bridge the first call leg and the fourth call leg at the first
communications interface, and the second communications interface is operable
to bridge the third call leg and the fourth call leg at the second communications
interface to thereby couple the first call leg and the third call leg via the first
communications interface, the second communications interface and the fourth
15 call leg to thereby establish communication between the first telephony device
and the second telephony device.

Preferably, the at least one communications interface is arranged to storing audio
or other multimedia information received from said second telephony device, said
audio or multimedia forming said communications data routed by said at least one
20 communications interface.

Preferably, the at least one communications interface is operable to transmitting
notification from said at least one communications interface to said
communications facilitator of the storage of said audio or multimedia information.

Preferably, the at least one communications interface is arranged to receive a
25 request from said first telephony device for retrieval of said audio or multimedia
information.

Preferably, the at least one communications interface is operable to transmit said
stored audio or multimedia information from said at least one communications
interface to said first telephony device.

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Preferably, the system includes a first communications interface and a second communications interface, and the call data relating to the call initiated by the second telephony device is communicated to the first communications interface, the first communications interface being operable to transmit said stored audio or
5 multimedia information from said first communications interface to said second communications interface.

Preferably, the first communications interface is operable to transmit notification from said first communications interface to said second communications interface of the storage of said audio or multimedia information.

- 10 In accordance with a third aspect of the present invention there is provided a cellular radio telephone for communication with a telephony device, the cellular radio telephone being operable, in response to a signal from a remote communications facilitator, to communicate with at least a first communications interface to establish a first call leg, the first communications interface being
15 selectable by the communications facilitator, whereby the at least a first communications interface is arranged for communication with the telephony device to establish a second call leg, and whereby the first call leg is bridged to the second call leg thereby establishing communication between the cellular radio telephone and the telephony device via the communications interface.
- 20 Preferably, the cellular radio telephone is arranged for communication with the call facilitator, and operable to transmit a request to the communications facilitator to establish communication with the telephony device, the cellular radio telephone being further operable, in response to a signal from the communications facilitator, to establish communication with the first communications interface thereby
25 establishing the first call leg.

In accordance with a fourth aspect of the present invention there is provided a communications interface for use in establishing communication between a telephony device and a cellular radio telephone, the cellular radio telephone being located remotely from the telephony device, and the communication between the
30 cellular radio telephone and the telephony device comprise at least two call legs,

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wherein the communications interface is operable to bridge the at least two call legs to establish communication between the cellular radio telephone and the telephony device via the communications interface.

Preferably, the communications interface is arranged for communication with
5 another communications interface to define a further call leg between said communication interfaces.

Preferably, the communications interface is operable to store multimedia information received from the telephony device.

Preferably, the communications interface is further operable to transmit the
10 multimedia information to the first communications interface for storage therein, and the cellular radio telephone is operable to retrieve the stored multimedia information from the first communications interface.

In accordance with a fifth aspect of the present invention there is provided a communications facilitator for establishing communication between a telephony
15 device and a cellular radio telephone, the cellular radio telephone being located remotely from the telephony device, wherein the communications facilitator is operable to initiate communication between the cellular radio telephone and a first communications interface, thereby establishing a first call leg between the cellular radio telephone and the first communications interface, the communications
20 facilitator being further operable to initiate communication between the first communications interface and the telephony device to thereby establish a second call leg, whereby the first call leg and the second call leg can be bridged to thereby establish direct communication between the cellular radio telephone and the telephony device via the communications interface.

25 Preferably, the communications facilitator is operable to receive a request from the cellular radio telephone to establish communication with the telephony device, and to transmit details of the request, in response to the request, to the first communications interface and to signal the cellular radio telephone to call the first communications interface, to thereby establish the first leg.

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Preferably, the communications facilitator is further operable to initiate a communication between the first communications interface and a second communications interface arranged for communication with a telephony device via third call leg, the communications facilitator being operable to transmit details of
5 the first communications interface to the second communications interface so that the first and second communications interfaces can establish communications therebetween thereby establishing a fourth call leg, so that the first call leg and the fourth call leg can be bridged via the first communications interface, and the third call leg and the fourth call leg can be bridged via the second communications
10 interface, thereby establishing direct communication between the cellular radio telephone and the telephony device via the first and second communications interfaces.

Preferably, the communications facilitator is operable to select the communications interface in accordance with predetermined conditions.

15 Preferably, the communications facilitator includes storage means for storing data relating to calls established between the cellular radio telephone and the telephony device.

Preferably, the communications facilitator is further operable to transmit a signal to the cellular radio telephone to communicate with the first communications
20 interface to retrieve multimedia data therefrom.

In accordance with a sixth aspect of the present invention there is provided a data communication between a communications facilitator and a cellular radio telephone and at least one communications interface for enabling establishment of communication between a telephony device and the cellular radio telephone,
25 the cellular radio telephone being located remotely from the telephony device, wherein the data communication enables a communications facilitator to initiate communication between the cellular radio telephone and the first communications interface, thereby establishing a first call leg between the cellular radio telephone and the first communications interface, the data communication further enabling
30 the communications facilitator to initiate communication between the first

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communications interface and the telephony device to thereby establish a second call leg, whereby the first call leg and the second call leg can be bridged to thereby establish direct communication between the cellular radio telephone and the telephony device via the communications interface.

- 5 In this way, by selecting the communications interfaces, mobile phone calls can be routed to the most appropriate call bridge to minimise call tariffs.

Other aspects of the invention involve maintaining various databases which are used to establish optimum service operating behaviour of the mobile phone and the system in general.

10 **Brief Description of the Drawings**

The invention will now be described, by way of example only, with reference to the following figures, of which:

- Figure 1 schematically illustrates the architecture of an embodiment of a telephone communication system in accordance with a first aspect of the present
15 invention;

Figure 2 schematically illustrates a first embodiment of the invention for the establishment of two call legs between a mobile telephone and a phone in a remote country using the system of Figure 1 where a roaming mobile is calling a phone in a remote country;

- 20 Figure 3 is a sequence diagram for the establishment of a call between a mobile telephone and a phone in a remote country as illustrated in Figure 2;

- Figure 4 schematically illustrates a second embodiment of the invention for the establishment of three call legs between a mobile telephone and a phone in a remote country using the system of Figure 1, where the phone in the remote
25 country is calling the mobile telephone;

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Figure 5 is a sequence diagram for the establishment of a call between a mobile telephone that is being called by a phone in a remote country and as illustrated in Figure 4;

Figure 6 is a sequence diagram illustrating a third embodiment of the invention
5 used for the recording and retrieval of voice messages by a roaming mobile phone 5 using the system of Figure 1;

Figure 7 is a schematic illustration of a fourth embodiment of the invention;

Figure 8 is a sequence diagram for a fifth embodiment of the invention, for the establishment of a call between a mobile telephone that is being called by a
10 phone in a remote country and as illustrated in Figure 4; and

Figure 9 is a sequence diagram illustrating a sixth embodiment of the invention used for the recording and retrieval of voice messages by a mobile phone using the system of Figure 1.

Best Mode(s) for Carrying Out the Invention

15 Throughout the specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

The term 'telephony device' is used herein to describe any device or apparatus
20 that communicates within telephony environments. Examples are fixed landline phones, cellular radio phones, cordless phones, internet phones or any other such devices.

Figure 1 illustrates schematically the components of one embodiment of a system of the present invention.

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The system 1 comprises a call server 2, at least one call bridge 4, and at least two media gateways 3. It will be appreciated from the following description that other numbers of call servers 2 call bridges 4, and media gateways 3 can be used.

A roaming handheld cellular radio telephone 5 ('roaming mobile phone 5') is
5 loaded with a software application which provides a mobile phone user interface thereby enabling the user to make and receive phone calls and voice mail messages. Preferably, the use of Java® can be used to write this software application, but other programming methods may also be used. The use of software applications, including those written in Java® is well known to persons
10 skilled in the art and need not be described in any further detail herein. This application could be preloaded on the roaming mobile phone 5 or it could be loaded later, for example by downloading from a server. The downloading could be performed, for example, using the Internet and General Packet Radio Service (GPRS). When roaming, the roaming mobile phone 5 is located in a first country,
15 A, and may wish to communicate with another telephony device 8 located elsewhere, for example in another country, B.

The mobile phone software application enables the roaming mobile phone 5 to communicate via a communications link 11, for example using GPRS, Short Message Service (SMS), or other low cost signalling method, with the call server
20 2 for the purpose of making or receiving phone calls to/from remote telephony devices. If required an internet access server 16 can be provided to enable communications via the communications link 11. The software application is able to transmit/receive call details to/from the call server 2, such as - when making a call - details of the source of the call (usually that of a roaming mobile device
25 wishing to place a call) and the destination phone number. The call server 2 uses this information and assists in establishing and receiving phone calls and voice mail messages between the roaming mobile phone 5 and other destination telephony devices. After receiving instructions from the call server 2, the software application is also responsible for initiating phone calls to directed call bridges 4 or
30 other telephony devices 8. The mobile phone software application may also have features that detect calls to and from local (i.e. local to the country where the

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mobile is roaming) devices in order to allow the roaming mobile phone 5 to operate as it normally would.

The call server 2, under control of software, co-ordinates the establishment of phone calls between two telephony devices via the call bridges 4. The call server
5 2 will maintain a database which contains information regarding current call costs associated with multiple telephone service operators. This information is used to establish optimum service operating behaviour, for example by choosing which mobile operator to use within a roaming country so as to minimise call costs and/or for the making call bridge telephone number selection choices so as to
10 minimise call costs, and/or determining if call divert options are cheaper than receiving a call outright, etc. This information is also signalled to the roaming mobile phone 5 whereby it will use this information to configure itself (under the control of the mobile phone software application) so as to establish optimum service behaviour of the mobile phone. The call server 2 also keeps a database of
15 all system call bridges 4 and all their associated callable phone numbers. The call server 2 can also keep databases storing additional information such as customer preferences related to calls and voice mails and other databases that allow it to make decisions about setting up calls and voice mails. As mentioned above, the call servers 2 receive messages via the communications link 11 (for example,
20 using GPRS, SMS, or other low cost signalling methods) from the roaming mobile phone 5 indicating the requirement for a new call establishment (either making or receiving a call) or retrieving a voice mail message. The call server 2 may also receive messages from a call bridge 4 (typically using the Internet Protocol over the Internet) indicating that a telephony endpoint wishes to make a call or leave a
25 voice mail message to a roaming telephony device.

The system 1 will now be described further with reference to Figure 2. Phone calls consist of at least two call legs, a first call leg 7 from a source telephony endpoint (for example, the roaming mobile phone 5) to a nominated call bridge 4 and a second call leg 7 between a nominated call bridge 4 to a destination
30 telephony endpoint 8. Additional call legs, between call bridges 4, can also be used to establish end to end calls. After receiving call details from the roaming mobile phone 5 or a call bridge 4, it is the function of the call server 2 to instruct

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- the roaming mobile phone 5 via a communications link 11 (for example, using GPRS, SMS or other low cost signalling method) to initiate a call to a nominated call bridge 4 or other telephony device. It is also the function of the call server 2 to instruct the nominated call bridge 4 (typically using the Internet Protocol over the
- 5 Internet 10) to initiate or receive a call between itself and a destination telephony device or another call bridge 4. The call server 2 can also include the functions associated with user authorisation, user current country location information, generation of user call detail records for billing, etc. In this regard, the call server 2 can include appropriate storage means (not shown) for storing data as required.
- 10 There need only be one call server 2 for the system 1 to operate but there may be more than one for the purposes of reducing the signalling delay and/or scalability and/or redundancy purposes.

The telephony devices and roaming mobile phones 5 operate in conventional networks 9 such as PSTN and cellular radio telephone networks.

- 15 State Variables maintained at the call server 2 are as follows:

CALL_PROCEEDING_{i,k} – This variable indicates the state of establishing a call at call bridge 4 having an identifier *CB_i* and associated with a phone number *NCB_{i,k}* of call bridge 4. Valid states include IDLE, IN_PROGRESS, and FAILED. At system start-up this variable is initialised to IDLE for all call bridges 4.

- 20 *CALL_ID* – Each call request to the call server 2 is given a unique call identifier.

Associated with each *CALL_ID* is a unique and randomly generated *TONE_ID*. A *TONE_ID* is a sequence of one or more digits between 0 and 9

- The call bridge 4, under control of software, is operable to receive or make call legs 6, 7 as instructed by the call server 2. It is also able to "bridge" call legs 6, 7
- 25 such that the phone call between a source telephony device – in this embodiment the roaming mobile phone 5 - and destination telephony devices 8 is perceived to be direct. Phone calls made by the call bridge 4 can be via circuit switched network (e.g. the Public Switched Telephone Network (PSTN)) or can be via the

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Internet 10 (e.g. using Voice over Internet Protocol (VoIP) technology) or a combination of these and other technologies. The structure and operation of the Internet and the use of communication protocols such as Internet Protocol (IP) and VoIP is well known and need not be further described.

- 5 For the purposes of lowering the cost of establishing and maintaining call legs 6, 7, it is preferable to use the Internet and VoIP technology where possible. Ideally, there will one or more call bridges 4 located in each country. Each call bridge 4 will be identified with a unique identifier CB_i and be callable via a set of K_i (where K_i is an integer greater than zero) telephone numbers $NCB_{i,k}$ ($k = 1, 2, \dots K_i$), for
10 example through the use of Direct Inward Dialling (DID) numbers.

In order to couple PSTN calls to VoIP (and vice versa) media gateways 3 are used – as illustrated in the Figures.

- The way in which a roaming mobile phone 5 is able to establish a call to a remote telephony device 8, such a fixed landline phone, or a mobile phone, located in
15 another country, using the communications system of the present invention will now be described.

- It is assumed that the user of the roaming mobile phone 5 has enabled international roaming and has access to a local mobile telephone network 9. The structure and operation of mobile phones and cellular telephone networks is well
20 known to persons skilled in the art and need not be described in any further detail herein.

- It is also assumed that user of the roaming mobile phone 5 has pre-installed the mobile phone software application. When the mobile phone software application is running, the roaming mobile phone 5 is operable, under control of the software
25 application to send a short packet of data to the call server 2 – via GPRS or other method as described above – to indicate that roaming mobile phone 5 is located within a specific area. In this way, the call server 2 is able to determine where the roaming mobile phone 5 is located.

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In a first embodiment of the invention, one method for making a call between an initiating roaming mobile phone 5 to a destination telephony device 8 located in another country is as follows, and as illustrated in Figures 2 and 3:

- 5 1) The user at the roaming mobile phone 5 uses the pre-installed mobile phone software application to place a call to the required destination telephony device 8.
- 2) The mobile phone software application will send a short message to the call server 2 via GPRS 11 (or otherwise) with the call details, including;
 - 10 a. the source roaming mobile phone 5 phone number, N_s , and possibly other identifiers that uniquely identify the roaming mobile phone 5, and
 - b. destination telephony device 8 phone number, N_d .

At the call server 2:

Upon receiving the call request from the roaming mobile phone 5, the call server 2
 15 will nominate a suitable call bridge having the identifier CB_j that is callable via at least one telephone number $NCB_{j,k}$. Preferably, this number will be one that will incur a small or minimal call cost when the roaming mobile phone 5 establishes communication with nominated call bridge CB_j via this number. The call server 2 will proceed according to the following pseudo code:

20 IF CALL_PROCEEDING_j = IDLE THEN

- i. Set CALL_PROCEEDING_{j,k} = IN_PROGRESS
- ii. Signal nominated call bridge CB_j and transmit the phone number N_s of the roaming mobile phone 5 (and possibly other identifiers that uniquely identify the roaming mobile device),
 25 the destination number N_d of the destination telephone device 8, the nominated call bridge number $NCB_{j,k}$, together with a

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uniquely generated *CALL_ID* and the *TONE_ID* identifying this call to nominated call bridge *CB_j*.

5 iii. In response to this, and with one or more messages, the call server 2 will then transmit the following data to the initiating roaming mobile phone 5 software application

 a) a telephone number *NCB_{j,k}* of nominated call bridge *CB_j*; and

 b) the *TONE_ID* associated with this call.

 iv. Upon call response status from *CB_j* or timeout

10 IF *CB_j* responds with SUCCESS for this *CALL_ID* THEN

 Start call detail record for this call. Call detail records are used for user accounting and billing.

 ENDIF

 Set *CALL_PROCEEDING_{j,k}* = IDLE

15 ELSE

 Wait (with timeout) for *CALL_PROCEEDING_{j,k}* = IDLE

 ENDIF

At the initiating source, roaming mobile phone 5:

20 Upon receiving the telephone number *NCB_{j,k}* of nominated call bridge *CB_j* and the *TONE_ID* associated with the call from the call server 2, the mobile phone software application will initiate a call to nominated call bridge *CB_j* using the telephone number *NCB_{j,k}*. When nominated call bridge *CB_j* answers, the mobile

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phone software application immediately sends, in order, the sequence of DTMF tones contained in the signalled *TONE_ID*.

At nominated call bridge CB_j :

Upon receiving the call request from the call server 2, nominated call bridge CB_j
5 then establishes the two call legs – a first call leg 6 and second call leg 7 of Figure 2 - that will constitute the call between the roaming mobile phone 5 and the required destination telephony device 8 in the following manner:

Set CONFIRM = FALSE

Wait (with a timeout) for next incoming call on the telephone number $NCB_{j,k}$

10 IF next call on the telephone number $NCB_{j,k}$ has caller ID (CID) information present THEN

IF CID = N_s (or other unique identifier for the mobile roaming phone
5) CONFIRM = TRUE

ENDIF

15 ELSE

CONFIRM = TENTATIVE

ENDIF

IF CONFIRM = FALSE THEN return FAILED status associated with this *CALL_ID* to the call server 2 and exit.

20 IF CONFIRM = TRUE OR CONFIRM = TENTATIVE THEN

Make a call to the telephone number N_d of the destination telephony device 8

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IF call with N_d is NOT RINGING THEN

Alert BUSY or otherwise detected state to roaming mobile phone 5

Return FAILED status associated with this *CALL_ID* to call server 2 and exit

ENDIF

5 ELSE IF call with destination telephony device 8 N_d is RINGING
THEN

Alert the roaming mobile phone 5 with RINGING

Wait for answer at the telephone destination device N_d

If the destination telephony device 8 answers (and thereby establishing the
10 second call leg 7) THEN

Answer roaming mobile phone 5 (and thereby establishing first call leg 6)

Record transmitted tones by the mobile phone into *Tone_Id*

IF *Tone_id* = *TONE_ID* associated with this *CALL_ID* THEN

Bridge the first and second call legs 6, 7 (such that the source roaming mobile
15 phone 5 and destination telephony device 8 perceive the call to be direct).

CONFIRM = TRUE

Return SUCCESS status associated with this *CALL_ID* to the call server 2

ELSE (wrong tone ID or no tones detected)

Terminate two call legs

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Return FAILED status associated with this *CALL_ID* to the call server 2 and exit

ENDIF

Upon the event that either source roaming mobile phone 5 or the destination telephony device 8 terminates the call or the call attempt process is terminated for
 5 any reason, then the call bridge *CB_j* is operable to return TERMINATE status associated with the *CALL_ID* of the terminated call to the call server 2.

At the call server 2, and upon receiving the TERMINATE status from nominated call bridge *CB_j* for that *CALL_ID*, the call server 2 records the call detail record for that call if it was initially successful in setting it up.

10 In a second embodiment of the invention, a method for making a call from a telephone device 12 in one country to a roaming mobile phone 5 located in another country will now be described with reference to Figures 4 and 5.

As above, it is assumed that the user of the roaming mobile phone 5 has enabled international roaming. It is also assumed that user of the roaming mobile phone 5
 15 has pre-installed the mobile phone software application. As before, the roaming mobile phone 5, under control of the software application, is operable to transmit a data packet to the call server 2 indicating its location via a communications link 11 such as GPRS or any other suitable method as described in respect of the first embodiment.

20 In addition, the user of the roaming mobile phone 5 will have set up a 'call divert' function to divert incoming calls to the roaming mobile phone 5 number to a suitable telephone number, *NCB_{h,p}*, designated for a call bridge denoted as the home call bridge 4" and having an identifier *CB_h*. Thus, any phone call made to the roaming mobile phone 5 will be diverted – in the usual, known manner – to
 25 home call bridge *CB_h*.

One method for making a call from a source telephony device 12 to the roaming mobile phone 5 is as follows, and is illustrated in Figure 4:

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1. The source telephony device 12 makes a call to the roaming mobile phone 5 and the call is diverted to home call bridge CB_h in the usual way, for example via a PSTN network 9 and media gateway 3. This is a second call leg 14.
- 5 2. From the caller ID information contained in call setup message from the source telephony device 12 (or otherwise), home call bridge CB_h is operable to extract the phone number N_s of the source telephony device 12, and the phone number N_d destination roaming mobile phone 5 being called.
- 10 3. Home call bridge CB_h then establishes the "ringing" alert tone for source initiating telephony device 12.
4. Home call bridge CB_h is then operable to transmit – to the call server 2 - the phone number N_s of both the source telephony device 12, and the phone number of the roaming mobile phone 5 N_d , as well as a $CALL_ID$ which uniquely identifies this call, the $CALL_ID$ being created by home call
15 bridge CB_h in response to this call request.
5. The call server 2 is then operable to nominate a suitable call bridge having the identifier CB_j which preferably will be callable using a number, $NCB_{j,k}$ that will incur a small or minimal call cost when the destination roaming
20 mobile phone 5 establishes a call with nominated call bridge CB_j having this number (on the basis of the information sent from the roaming mobile phone 5 regarding its location) and to transmit this data to home call bridge CB_h so that home call bridge CB_h can communicate with nominated call bridge CB_j . Home call bridge CB_h and nominated call bridge CB_j can be
25 the same call bridge devices if they are both callable with suitable phone numbers.
6. Upon receiving information about nominated call bridge CB_j , home call bridge CB_h is operable to establish a call between itself and nominated call bridge CB_j associating it with the $CALL_ID$. This inter- call bridge call leg

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13 between the two call bridges CB_h , CB_j and is only necessary where the two bridges are not the same. If the inter-call bridge call leg 13 is required, then it can be established over the Internet 10 using VoIP, or the call can be established by any other suitable communications means.

5 The system 1 then proceeds as follows:

At the call server 2:

The call server 2 proceeds according to the following pseudo code:

IF $CALL_PROCEEDING_{j,k} = IDLE$ THEN

- 10 i. Transmit the roaming mobile phone 5 number N_d , the nominated call bridge number $NCB_{j,k}$, together with the unique $CALL_ID$ and a randomly generated $TONE_ID$ identifying the call to nominated call bridge CB_j . This $CALL_ID$ is identical to the $CALL_ID$ that home call bridge CB_h used to establish a call connection between itself and nominated call bridge CB_j
- 15 ii. With one or more messages, the call server 2 then signals to the roaming mobile phone 5 software application:
 - a) the telephone number $NCB_{j,k}$ of CB_j ; and
 - b) the $TONE_ID$ associated with this call.
- iii. Set $CALL_PROCEEDING_{j,k} = IN_PROGRESS$
- 20 iv. Upon call response status from nominated call bridge CB_j or timeout

IF nominated call bridge CB_j responds with SUCCESS for this $CALL_ID$ THEN

Start call detail record for this call

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ENDIF

Set CALL_PROCEEDING_{j,k} = IDLE

ELSE

Wait (with timeout) for CALL_PROCEEDING_{j,k} = IDLE

5 ENDIF

At the called roaming mobile phone 5 :

Upon receiving the telephone number $NCB_{j,k}$ of nominated call bridge CB_j and the $TONE_ID$ associated with this call from the call server 2 the roaming mobile phone 5 , under control of the mobile phone software application, will initiate a call

10 to nominated call bridge CB_j using the number $NCB_{j,k}$. When nominated call bridge CB_j answers, then the roaming mobile phone 5, under control of the software application, immediately sends, in order, the sequence of DTMF tones contained in the signalled $TONE_ID$. In this way, a first call leg 15 is established between the roaming mobile phone 5 and nominated call bridge CB_j .

15 At nominated call bridge CB_j :

Upon receiving the call request from the call server 2, nominated call bridge CB_j is then operable to then establish a call between the roaming mobile phone 5 and home call bridge CB_h in the following manner:

Set CONFIRM = FALSE

20 Wait (with a timeout) for next incoming call on the telephone number $NCB_{j,k}$

IF next call on the telephone number $NCB_{j,k}$ has caller ID (CID) information present THEN

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IF CID = N_s (or other unique identifier for the mobile roaming phone

5)

CONFIRM = TRUE

ENDIF

5 ELSE

CONFIRM = TENTATIVE

ENDIF

IF CONFIRM = FALSE THEN return FAILED status associated with this *CALL_ID*
to the call server 2 and exit

10 IF CONFIRM = TRUE OR CONFIRM = TENTATIVE THEN

Answer the roaming mobile phone 5

Record transmitted tones by the roaming mobile phone 5 into Tone_id

IF Tone_id = *TONE_ID* associated with this *CALL_ID* THEN

Bridge the call between roaming mobile phone 5 and home call bridge CB_h , and

15 notify home call bridge CB_h of successful call bridging

Return SUCCESS status associated with this *CALL_ID* to the call server 2

ELSE (wrong tone ID or no tones detected)

Terminate the two call legs

Return FAILED status associated with this *CALL_ID* to the call server 2 and exit

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ENDIF

ENDIF

At home call bridge CB_h :

Upon successful call bridging at nominated call bridge CB_j , home call bridge CB_h ,

- 5 answers the call to source telephony device 12 and then bridges the call to nominated call bridge CB_j . The roaming mobile phone 5 and source telephony device 12 perceive the call to be direct at this time.

Upon the event that either roaming mobile phone 5 or the source telephony device 12 terminates the call or the call attempt process is terminated for any

- 10 reason, then nominated call bridge CB_j or home call bridge CB_h returns TERMINATE status associated with the $CALL_ID$ of the terminated call to call server 2.

At the call server 2:

Upon receiving a FAILED status from nominated call bridge CB_j , the call server 2

- 15 is operable to transmit a FAILED status to home call bridge CB_h . Home call bridge CB_h is then either operable to terminate the call OR prompt the originating caller to leave a voice mail message.

Upon receiving the TERMINATE status from nominated call bridge CB_j or from home call bridge CB_h , the call server 2 completes the call detail record for the call

- 20 associated with $CALL_ID$ if it was initially successful in setting it up.

It should be noted, that where there is only one call bridge i.e. two call bridges CB_h , CB_j are the same then certain steps as describe with regard to Figure 5 can be illustrated different. In this case, the step A of Figure 5 is not required.

- Similarly, the mobile phone 5 will call the home call bridge 4" (step B of Figure 5),
25 step C of Figure 5 will not be required, and the billing (step D of Figure 5) will take place between the home call bridge 4" and the call server 2.

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In a third embodiment of the invention, there is a method for recording a voice mail message (or other media message, e.g. picture, video, multi-media, etc.) and then retrieving the voice mail message from a roaming mobile phone 5. This will now be described with reference to Figure 6 and Figure 4, with particular
5 reference to a voice mail message being used. However, as stated, other media messages may be used in this embodiment.

As described above, it is assumed that the user of the roaming mobile phone 5 has enabled international roaming. It is also assumed that user of the roaming mobile has pre-installed the mobile phone software application, and that the
10 software application is running. As before, the roaming mobile phone 5, under control of the software application, is operable to transmit a data packet to the call server 2 indicating its location via a communications link 11 such as GPRS or any other suitable means as in the previous embodiments.

In addition, the user of the roaming mobile phone 5 will have set up a 'call divert'
15 function to divert incoming calls to the roaming mobile phone 5 number to a suitable telephone number, NCB_{hp} , designated for a home call bridge 4" located in the roaming mobile phone 5's country of origin and having the identifier CB_h . Thus, any phone call made to the roaming mobile phone 5 will be diverted – in the usual, known manner – to home call bridge CB_h .

20 One method for recording a voice mail message and then retrieving that voice mail message by a roaming mobile device is as follows:

- 1) An initiating source telephony device 12 makes a call to the roaming mobile phone 5 and the call is diverted to the home call bridge 4" having the identifier CB_h .
- 25 2) From the caller ID information contained in call setup message from the source telephony device 12 (or otherwise), home call bridge CB_h extracts the phone number N_s of the source telephony device 12, and the number N_d of the destination roaming mobile phone 5 being called.

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- 3) Home call bridge CB_h is then operable to establish a "ringing" alert tone for source telephony device 12.
- 4) Home call bridge CB_h is then operable to transmit both the source telephony device number N_s , and number N_d of the roaming mobile phone 5 and a generated $CALL_ID$ which uniquely identifies this call, to the call server 2.
- 5) The call server 2 will nominate a suitable call bridge 4' having the identifier CB_j that preferably will be callable with a number, $NCB_{j,k}$ that will incur a small or minimal call cost when the destination roaming mobile phone 5 establishes a call with this number. Details of this nominated call bridge CB_j is then transmitted back home call bridge CB_h by the call server 2. In an alternative embodiment, the two call bridges CB_h , CB_j can be the same call bridge device, e.g. if they are both callable with suitable phone numbers. In the case that the two call bridges CB_h and CB_j are the same call bridge device, that call bridge device contains the functionality that is described herein in relation to both the call bridges CB_h and CB_j . In Figure 6, the use of a single such call bridge device is represented by the home call bridge 4"; in such a case, the nominated call bridge for 4' is omitted. This embodiment will be described further later herein.
- 6) Upon receiving the nominated call bridge CB_j data, home call bridge CB_h answers the call from the source telephony device 12 and is then operable to transmit a message to the initiating source telephony device prompting the caller to "leave a message". The caller will then leave a message in response to the prompts in the usual, known manner. This voice message from the caller is stored on the hard disk at home call bridge CB_h in any suitable audio format as a file.
- 7) Once the caller has completed leaving the voice message, then home call bridge CB_h signals the call server 2 indicating that a voice message for this $CALL_ID$ is ready for retrieval.

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- 8) Home call bridge CB_h is then operable to forward the data file (via the Internet 10 or other suitable means) containing the voice mail message to nominated call bridge CB_j together with the $CALL_ID$ associated with this call message. This inter-call bridge file transfer between the two call bridges CB_h , CB_j is only required in the embodiment in which the two bridges are not the same device.

At the call server 2:

Upon receiving the voice mail ready message from home call bridge CB_h , the call server 2 proceeds according to the following pseudo code:

- 10 IF $CALL_PROCEEDING_{j,k} = IDLE$ THEN
- i. Signal nominated call bridge CB_j and transmit the nominated call bridge number $NCB_{j,k}$, the number N_d of roaming mobile phone 5 together with the unique $CALL_ID$ and a randomly generated $TONE_ID$ identifying this call. This $CALL_ID$ is identical to the $CALL_ID$ that home call bridge CB_h used to establish a call connection between itself and nominated call bridge CB_j .
 - 15 ii. With one or more messages, signal the roaming mobile phone 5 (which has the telephone number N_d) indicating a message is ready for retrieval and transmit the following data to that mobile phone software application:
 - 20 i. a telephone number $NCB_{j,k}$ of nominated call bridge CB_j ; and
 - ii. the $TONE_ID$ associated with this call.
 - iii. Set $CALL_PROCEEDING_{j,k} = IN_PROGRESS$
 - iv. Upon call response status from nominated call bridge CB_j or timeout
- IF nominated call bridge CB_j responds with SUCCESS for this $CALL_ID$ THEN

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Start call detail record for this voice mail retrieval service

ENDIF

Set CALL_PROCEEDING_{j,k} = IDLE

ELSE

5 Wait (with timeout) for CALL_PROCEEDING_{j,k} = IDLE

ENDIF

At the called roaming mobile phone 5 :

Upon receiving the telephone number $NCB_{j,k}$ of nominated call bridge CB_j and the $TONE_ID$ associated with this call from the call server 2, the roaming mobile

10 phone 5, under control of the mobile phone software application, initiates a call to nominated call bridge CB_j using the number $NCB_{j,k}$. When nominated call bridge CB_j answers, then the roaming mobile phone 5, under control of the mobile phone software application, immediately sends, in order, the sequence of DTMF tones contained in the signalled $TONE_ID$.

15 At nominated call bridge CB_j :

Upon receiving the voice mail retrieval request from the call server 2, nominated call bridge CB_j is then operable to establish a call between the roaming mobile phone 5 and nominated call bridge CB_j in the following manner:

Wait (with timeout) for next incoming call

20 Set CONFIRM = FALSE

Wait (with a timeout) for next Incoming call on the telephone number $NCB_{j,k}$

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IF next call on the telephone number $NCB_{j,k}$ has caller ID (CID) information present THEN

IF CID = N_s (or other unique identifier for the mobile roaming phone 5)

5 CONFIRM = TRUE

ENDIF

ELSE

CONFIRM = TENTATIVE

ENDIF

10 IF CONFIRM = FALSE THEN return FAILED status associated with this $CALL_ID$ to the call server 2 and exit

IF CONFIRM = TRUE OR CONFIRM = TENTATIVE THEN

Answer the roaming mobile phone 5

Record transmitted tones by the roaming mobile phone 5 into $Tone_id$

15 IF $Tone_id$ = $TONE_ID$ associated with this $CALL_ID$ THEN

Play back the voice mail message to the roaming mobile phone 5 (the voice mail message being stored at nominated call bridge CB_j).

Return SUCCESS status associated with this $CALL_ID$ to call server 2

ELSE

20 Return FAILED status associated with this $CALL_ID$ to call server 2 and exit

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ENDIF

ENDIF

- Upon completion of the play back of the voice mail message, nominated call bridge *CB_j* returns TERMINATE status associated with the *CALL_ID* of the
- 5 terminated call to the call server 2.

At the call server 2:

Upon receiving the TERMINATE status from nominated call bridge *CB_j*, the call server 2 completes the call detail record for the call associated with *CALL_ID* if it was initially successful in setting it up.

- 10 In another, fourth, embodiment of the invention, the system described above in relation to Figure 7, can be used to facilitate communication between a cellular radio telephone and a telephony device, whether or not the cellular radio telephone is 'roaming', and, as such, they need not be in different countries.

In this embodiment, therefore, the mobile phone 5 does not need to be roaming.

- 15 In this embodiment, the mobile phone 5 may be in a network where, for the service that the mobile phone is subscribed to, call tariffs to certain destinations may be lower than for calls to certain other destinations.

It is assumed that user of the mobile phone 5 has pre-installed the mobile phone software application as described above in respect of the other embodiments.

- 20 The method for making a call from the mobile phone 5 to the destination telephony device 8 is as follows, and is described with reference to Figure 7:

- 1) The user at the mobile phone 5 uses the pre-installed mobile phone software application to place a call to the required destination telephony device 8.

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2) The mobile phone software application will send a short message as a call request to the call server 2 via a communications link 11 such GPRS (or otherwise) with the call details, including;

- a. the number N_s of mobile phone 5, and possibly other identifiers that uniquely identify the mobile phone 5, and
- b. the phone number, N_d , of the destination telephony device 8.

At the call server 2:

Upon receiving the call request from the mobile phone 5, the call server 2 will nominate a suitable or optimum call bridge 4 having an identifier CB_j . The basis on which nominated call bridge CB_j is chosen can for example be based on the knowledge that the tariff for the mobile phone 5 to call a certain call bridge callable with a telephone number $NCB_{j,k}$ is lower than the default or usual tariff to call the number, N_d of the destination telephony device 8. Additionally, the geographical location of a call bridge 4 can determine delay characteristics associated with the final end to end call and can also be considered in order to minimise call delay characteristics. Once a suitable nominated call bridge CB_j is chosen the call server 2 proceeds according to the following pseudo code:

IF $CALL_PROCEEDING_{j,k} = IDLE$ THEN

- i. Set $CALL_PROCEEDING_{j,k} = IN_PROGRESS$
- ii. Signal nominated call bridge CB_j and transmit the mobile phone number N_s (and possibly other identifiers that uniquely identify the mobile phone 5) of the mobile phone 5 the telephone number $NCB_{j,k}$, and the number N_d of the destination telephony device 8, together with a uniquely generated $CALL_ID$ and $TONE_ID$ identifying this call.

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iii. In response to this, and with one or more messages, the call server 2 will then transmit data to the initiating mobile phone 5 software application

a. a telephone number $NCB_{j,k}$ of nominated call bridge CB_j

b. the $TONE_ID$ associated with this call.

iv. Upon call response status from nominated call bridge CB_j or timeout

IF nominated call bridge CB_j responds with SUCCESS for this $CALL_ID$ THEN

10 Start call detail record for this call. Call detail records are used for user accounting and billing.

ENDIF

Set $CALL_PROCEEDING_{j,k} = IDLE$

ELSE

15 Wait (with timeout) for $CALL_PROCEEDING_{j,k} = IDLE$

ENDIF

At the initiating mobile phone 5:

Upon receiving the telephone number $NCB_{j,k}$ of nominated call bridge CB_j and the $TONE_ID$ associated with this call from the call server 2, the mobile phone 20 software application will initiate a call to nominated call bridge CB_j using the number $NCB_{j,k}$. When nominated call bridge CB_j answers, the mobile phone software application immediately sends, in order, the sequence of DTMF tones contained in the signalled $TONE_ID$.

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At nominated call bridge CB_j :

Upon receiving the call request from the call server 2, nominated call bridge CB_j then establishes two call legs – a first call leg 6 and a second call leg 7 – that will constitute the call between the mobile phone 5 and the required destination

5 telephony device 8 in the following manner:

Set CONFIRM = FALSE

Wait (with a timeout) for next incoming call on the telephone number $NCB_{j,k}$

IF next call on the telephone number $NCB_{j,k}$ has caller ID (CID) information present THEN

10 IF CID = N_s (or other unique identifier for the mobile phone 5)

CONFIRM = TRUE

ENDIF

ELSE

CONFIRM = TENTATIVE

15 ENDIF

IF CONFIRM = FALSE THEN return FAILED status associated with this $CALL_ID$ to the call server 2 and exit.

IF CONFIRM = TRUE OR CONFIRM = TENTATIVE THEN

Make a call to the telephone number N_d of the destination telephony device 8

20 IF call with N_d is NOT RINGING THEN

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Alert BUSY or otherwise detected state to mobile phone

Return FAILED status associated with this *CALL_ID* to call server 2 and exit

ENDIF

ELSE IF call with destination telephony device 8 is RINGING THEN

5 Alert the mobile phone 5 with RINGING

Wait for answer at the telephone destination device 8

If the destination telephony device 8 answers (and thereby establishing the second call leg 7) THEN

Answer mobile phone 5 (and thereby establishing first call leg 6)

10 Record transmitted tones by the mobile phone into *Tone_id*

IF *Tone_id* = *TONE_ID* associated with this *CALL_ID* THEN

Bridge the first call leg 6 and the second call leg 7 (such that the source mobile phone 5 and destination telephony device 8 perceive the call to be direct).

CONFIRM = TRUE

15 Return SUCCESS status associated with this *CALL_ID* to the call server.2

ELSE (wrong tone ID or no tones detected)

Terminate two call legs

Return FAILED status associated with this *CALL_ID* to the call server 2 and exit

ENDIF

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Upon the event that either source mobile phone 5 or the destination telephony device 8 terminates the call or the call attempt process is terminated for any reason, then nominated call bridge CB_j is operable to return TERMINATE status associated with the $CALL_ID$ of the terminated call to call server 2.

- 5 At the call server 2, and upon receiving the TERMINATE status from nominated call bridge CB_j for that $CALL_ID$, the call server 2 records the call detail record for that call if it was initially successful in setting it up.

- The preceding description of an embodiment of a method for recording a voice mail message and then retrieving that voice mail message by a roaming mobile
- 10 device 5 also introduced an alternative embodiment where the two call bridges CB_h and CB_j can be the same call bridge device. In such an embodiment, the functionality of the call bridges CB_h and CB_j are incorporated in a single call bridge. This alternative embodiment has been denoted in Figure 6, in which call bridge 4" may be used as the single call bridge. In such an embodiment, the step
 - 15 W of sending a voice message file to the nominated call bridge 4' does not occur, since there is no nominated call bridge 4'. Instead, the steps that occur are shown by the extra broken lines X, Y and Z in Figure 6. The broken line X shows that the mobile phone 5 calls the call bridge 4"; the call bridge 4" plays back the voice mail message to the mobile 5; and the return call detail records for billing come from
 - 20 the call bridge 4".

- In another, fifth, embodiment of the invention, the system 1 described in respect of Figure 4 can be used to establish communication between a mobile phone 5 whether it is in a roaming environment or elsewhere – for example to enable another, more cost effective, call tariff to be used where a remote, initiating
- 25 telephony device 12 is used to call the mobile phone 5. The system 1 is as illustrated in Figure 4 (except that the reference to the mobile phone 5 can be any mobile phone, not just a roaming phone).

- Again, it is assumed that user of the mobile phone 5 has pre-installed the mobile phone software application. In addition, the user of the mobile phone 5 will have
- 30 set up a 'call divert' function to divert incoming calls to the number of the mobile

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phone to the telephone number designated for a call bridge 4" located in the phone's country of origin and denoted as a home call bridge 4" having an identifier CB_h).

The method for making a call between an initiating telephony device 12 to the mobile phone 5 is as follows with reference to Figure 8:

1. The initiating telephony device 12 makes a call to the mobile phone 5 and the call is diverted to home call bridge CB_h .
2. From the caller ID information contained in call setup message from the initiating telephony device 12 (or otherwise), home call bridge CB_h extracts the phone number N_s of the initiating telephony device 12, and the number N_d of the mobile phone 5 being called.
3. Home call bridge CB_h establishes the "ringing" alert tone for initiating telephony device 12.
4. Home call bridge CB_h transmits the initiating telephony device number N_s , and the mobile phone number N_d and a $CALL_ID$ which uniquely identifies this call to the call server 2.
5. The call server 2 is then operable to nominate a suitable call bridge 4' with an identifier CB_j , with which the mobile phone 5 should communicate. The basis on which nominated call bridge CB_j is selected can for example be based on the knowledge that the tariff for the mobile phone 5 to call nominated call bridge CB_j (callable with a telephone number $NCB_{j,k}$) is lower than the tariff to receive a call from the initiating telephony device 12 using the usual, default network or rates. Additionally, the geographical location of nominated call bridge CB_j can determine delay characteristics associated with the final end to end call and can also be considered in order to minimise call delay characteristics. Details of nominated call bridge CB_j are the transmitted back to home call bridge CB_h , so that home call bridge CB_h , can communicate with nominated call bridge CB_j .

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The rest of the process is the same as described above with reference to Figures 4 and 5.

In another, sixth, embodiment of the invention, there is a system described in respect of Figure 9 that can be used to record and retrieve a recorded voicemail
5 message for a mobile phone 5 whether it is in a roaming environment or elsewhere – for example to enable another, more cost effective, call tariff to be used where a remote, initiating telephony device 12 is used to call the mobile phone 5. The system 1 is as illustrated in Figure 9.

As described in previous embodiments, it is assumed that user of the mobile
10 phone 5 has pre-installed the mobile phone software application. Further it is assumed that the 'call divert' function has been enabled, where calls are diverted to a home call bridge 4" with the identifier CB_h .

The method for recording a voice mail message and then and retrieving that voice mail message from mobile phone 5 is as follows with reference to Figure 9:

- 15 1) An initiating source telephony device 16 makes a call to the mobile phone 5 and the call is diverted in the usual way to home call bridge CB_h .
- 2) From the caller ID information contained in call setup message from the source telephony device 16 (or otherwise), home call bridge CB_h is operable to extract the phone number N_s of the initiating source telephony
20 device 16, and the phone number N_d of the destination mobile phone 5.
- 3) Home call bridge CB_h then establishes the "ringing" alert tone for initiating source telephony device N_s .
- 4) Home call bridge CB_h transmits both the initiating source telephony device
25 phone number N_s , and the mobile phone number N_d and a $CALL_ID$ which uniquely identifies this call to the call server 2.

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5) The call server 2 is then operable to nominate a call bridge 4' with the identifier CB_j with which the mobile phone 5 is to communicate. The basis on which nominated call bridge CB_j is chosen can for example be based on the knowledge that the tariff for the mobile phone 5 to used to retrieve the voice mail message from nominated call bridge CB_j (with a telephone number $NCB_{j,k}$), is lower than the usual, default tariff used to receive a voicemail message from an alternative voice mail recording device. Details of nominated call bridge CB_j is the transmitted back to home call bridge CB_h .

10 The system then proceeds to operate in the same way as described above in respect of the embodiment described with reference to Figure 6.

Various modifications and alternatives are possible within the scope of the present invention. For example and as referred to above, different numbers of call bridges can be used. Although only one call server 2 is described in this embodiment, several could equally be used. As well as VoIP, other suitable communications protocols can also be used. The mobile phone application can use other suitable programming languages and in particular, other languages for scripting user interfaces. The call server 2 can be used to store any suitable information that may be required by the system of the invention.

20 It is envisaged that more than one call bridge 4 could be utilised for calls from the mobile phone 5 to the telephony device 8, although the use of a single call bridge 4 is probably preferable.

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Claims

1. A method of establishing communication in a communication system using at least one telephony device and at least one communications interface characterised in that it comprises
 - 5 receiving and communicating call data to the at least one communications interface about a call initiated by a telephony device,
 - establishing communication between a communications facilitator and a first telephony device to identify said at least one
 - 10 communications interface to said first telephony device, and
 - establishing at least a first call leg between said first telephony device and said at least one communications interface to allow access to communications data routed via said at least one communications interface.
- 15 2. A method according to claim 1, wherein the call initiated by a telephony device is initiated by said first telephony device.
3. A method according to any one of the preceding claims, wherein receiving
 - 20 call data comprises receiving call data at said communications facilitator transmitted from said first telephony device, said call data comprising a request for establishment of communication with a second telephony device.
- 25 4. A method according to any one of the preceding claims, wherein communicating call data to the at least one communications interface about a call initiated by a telephony device comprises communicating call data from said communications facilitator to the at least one communications interface about a call initiated by said first telephony device.

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5. A method according to any one of the preceding claims, further comprising:
signalling said first telephony device to call said at least one
communications interface to establish communication between said
5 first telephony device and said at least one communications
interface thereby establishing said first call leg.
6. A method according to any one of the preceding claims, further comprising
establishing communication between the at least one
10 communications interface and a second telephony device to
establish a second call leg; and
coupling the first call leg and the second call leg at the at least one
communications interface to thereby establish communication
between said first telephony device and said second telephony
15 device.
7. A method according to any one of the preceding claims, wherein said
communications data routed by said communications interface comprises
call data from said second telephony device.
- 20 8. A method according to claim 1, wherein the call initiated by a telephony
device is initiated by a second telephony device.
9. A method according to claim 8 wherein the receiving call data comprises
receiving call data at the at least one communications interface transmitted
from the second telephony device, said call data comprising a request for
25 the establishment of communication with the first telephony device.
10. A method according to claim 8 or claim 9, wherein the communicating call
data to the at least one communications interface about a call initiated by a
telephony device comprises communicating call data to the at least one
communications interface about a call initiated by the second telephony
30 device.
11. A method according to any one of claims 8 to 10, further comprising

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signalling said first telephony device to call said at least one communications interface to establish communication between said first telephony device and said at least one communications interface thereby establishing said first call leg.

- 5 12.A method according to any one of claims 8 to 11, comprising establishing communication between the communication facilitator and the at least one communications interface to transmit the call data to the communications facilitator from the at least one communications interface.
- 10 13.A method according to any one of claims 8 to 12, comprising identifying the at least one communications interface on the basis of the transmitted data received by the communications facilitator from the at least one communications interface.
- 14.A method according to any one of claims 8 to 13, the method comprising:
- 15 establishing a second call leg between the second telephony device and the at least one communications interface; and
- coupling the first and second call legs at the at least one communications interface to thereby establish communication between the first telephony device and the second telephony device.
- 20 15.A method according to any one of claims 8 to 14, wherein said communications data routed by said communications interface comprises call data from said second telephony device.
- 25 16.A method according to any one of claims 8 to 15, wherein the wherein the system includes a first communications interface and a second communications interface, and the call initiated by a telephony device is routed via the first and second communications interfaces, and wherein the first call leg is established between the first telephony device and the first communications interface, the method comprising:
- 30 coupling the first communications interface and the second communications interface to establish data communication therebetween;

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establishing a third call leg between the second telephony device and the second communications interface; and

coupling the first and third call legs via the first communications interface and the second communications interface to thereby
5 establish communication between the first telephony device and the second telephony device.

17.A method according to claim 16, whereby the coupling of the first communications interface and the second communications interface is enabled by:

10 establishing communication between the communications facilitator and the second communications interface to communicate the identity of the first communications interface from the communications facilitator to the second communications interface;

15 establishing communication between the first communications interface and the second communications interface upon receipt by the second communications interface of the identity of the first communications interface.

18.A method according to claim 16 or claim 17, wherein the first and second communications interfaces are provided as a single unit, such that the
20 coupling of the first communications interface with the second communications interface is provided integral within said single unit.

19.A method according to claim 16 or claim 17, wherein the first communications interface and the second communications interface are provided remote from each other, and the method comprising:

25 establishing a fourth call leg between the first communications interface and the second communications interface prior to establishing the third call leg to couple the first communications interface and the second communications interface;

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bridging the first call leg and the fourth call leg at the first communications interface; and

5 bridging the third call leg and the fourth call at the second communications interface, thereby coupling the first call leg and the third call leg via the first communications interface, the second communications interface and the fourth call leg to thereby establish communication between the first telephony device and the second telephony device.

10 20. A method according to claim 1, wherein the call initiated by a telephony device is initiated by a second telephony device.

15 21. A method according to claim 21, wherein receiving and communicating call data to the at least one communications interface about a call initiated by a telephony device comprises receiving call data from the second telephony device about the call initiated by the second telephony device and communicating the call data to the at least one communications interface about the call initiated by the second telephony device.

20 22. A method according to claim 20 or claim 21, comprising establishing communication between the communication facilitator and the at least one communications interface to transmit the call data to the communications facilitator from the at least one communications interface.

23. A method according to any one of claims 20 to 22, comprising identifying the at least one communications interface on the basis of the transmitted call data received by the communications facilitator from the at least one communications interface.

25 24. A method according to any one of claims 20 to 23, wherein said method further comprises storing audio or other multimedia information received from said second telephony device at said at least one communications interface, said audio or multimedia forming said communications data routed by said at least one communications interface.

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25. A method according to claim 24, further comprising transmitting notification from said at least one communications interface to said communications facilitator of the storage of said audio or multimedia information.

5 26. A method according to claim 24 or claim 25, further comprising

 signalling said first telephony device to call said at least one
 communications interface to establish communication between said
 first telephony device and said at least one communications
10 interface thereby establishing said first call leg.

27. A method according to any one of claims 24 to 26, wherein it further
 comprises receiving a request at said at least one communications
 interface from said first telephony device for retrieval of said audio or
15 multimedia information.

28. A method according to any one of claims 24 to 27, wherein it further
 comprises transmitting said stored audio or multimedia information from
 said at least one communications interface to said first telephony device.

20 29. A method according to any one of claims 24 to 28, wherein the system
 includes a first communications interface and a second communications
 interface, and the call data relating to the call initiated by the second
 telephony device is communicated to the first communications interface,
25 the method further comprising:

 transmitting said stored audio or multimedia information from said
 first communications interface to said second communications
 interface.

30 30. A method according to claim 29, further comprising transmitting notification
 from said first communications interface to said second communications
 interface of the storage of said audio or multimedia information.

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31. A method according to claim 29 or claim 30, whereby the coupling of the first communications interface and the second communications interface is enabled by:

5 establishing communication between the communications facilitator and the first communications interface to communicate the identity of the second communications interface from the communications facilitator to the first communications interface; and

10 establishing communication between the first communications interface and the second communications interface upon receipt by the first communications interface of the identity of the second communications interface.

32. A method according to any one of claims 29 to 31, further comprising:

15 signaling said first telephony device to call said second communications interface to establish communication between said first telephony device and said second communications interface thereby establishing said first call leg.

20 33. A method according to any one of claims 29 to 32, wherein it further comprises receiving a request at said second communications interface from said first telephony device for retrieval of said audio or multimedia information.

34. A method of according to any one of claims 29 to 33, wherein it further comprises transmitting said stored audio or multimedia information from said second communications interface to said first telephony device.

25 35. A method according to any one of claims 29 to 34, wherein the first and second communications interfaces are provided as a single unit, such that the coupling of the first communications interface with the second communications interface is provided integral within said single unit.

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36.A method according to any one of claims 29 to 35, wherein the first communications interface and the second communications interface are provided remote from each other.

5 37.A communication system including at least one telephony device, at least one communications interface and a communications facilitator, wherein the at least one communications interface and the communications facilitator are arranged to communicate, said communications facilitator being operable to receive call data about a call initiated by a telephony device, and the communications facilitator being operable to communicate
10 with a first telephony device to identify the at least one communications interface to said first telephony device, and

the at least one communications interface is arranged to receive communication from said first telephony device to enable access of communications data routed via said at least one communications
15 interface.

38.A communication system according to claim 37, wherein the call initiated by a telephony device is initiated by said first telephony device.

20 39.A communication system according to claim 37 or claim 38, wherein receiving call data comprises receiving call data at said communications facilitator transmitted from said first telephony device, said call data comprising a request for establishment of communication with a second telephony device.

25 40.A communication system according to any one of claims 37 to 39, wherein communicating call data to the at least one communications interface about a call initiated by a telephony device comprises communicating call data from said communications facilitator to the at least one communications interface about a call initiated by said first telephony device.

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41. A communication system according to any one of claims 37 to 40, wherein the communications facilitator is operable to signal said first telephony device to call said at least one communications interface to establish communication between said first telephony device and said at least one communications interface thereby establishing said first call leg.
42. A communication system according to any one of claims 37 to 41, wherein the communications interface is operable to establish communication between the at least one communications interface and a second telephony device to establish a second call leg, and to couple the first call leg and the second call leg at the at least one communications interface to thereby establish communication between said first telephony device and said second telephony device.
43. A communication system according to any one of claims 37 to 42, wherein said communications data routed by said communications interface comprises call data from said second telephony device.
44. A communication system according to claim 37, wherein the call initiated by a telephony device is initiated by a second telephony device.
45. A communication system according to claim 44, wherein the receiving call data comprises receiving call data at the at least one communications interface transmitted from the second telephony device, said call data comprising a request for the establishment of communication with the first telephony device.
46. A communication system according to claim 44 or claim 45, wherein the communicating call data to the at least one communications interface about a call initiated by a telephony device comprises communicating call data to the at least one communications interface about a call initiated by the second telephony device.
47. A communication system according to any one of claims 44 to 46, wherein the communications facilitator is operable to establish communication

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between the communication facilitator and the at least one communications interface to transmit the call data to the communications facilitator from the at least one communications interface.

5 48. A communication system according to any one of claims 44 to 47, wherein the at least one communications interface is identified on the basis of the transmitted data received by the communications facilitator from the at least one communications interface.

10 49. A communication system according to any one of claims 44 to 48, wherein the communications interface is operable to establish communication between the second telephony device and the at least one communications interface to establish a second call leg; and to couple the first and second call legs at the at least one communications interface to thereby establish communication between the first telephony device and the second telephony device.

15 50. A communication system according to any one of claims 44 to 49, wherein said communications data routed by said communications interface comprises call data from said second telephony device.

20 51. A communication system according to claim 50, wherein the system includes a first and a second communications interface, and the call initiated by a telephony device is routed via the first and second communications interfaces and wherein the first call leg is established between the first telephony device and the first communications interface, and the first communications interface is arranged for coupling with the second communications interface, and the second communications
25 interface is operable to establish a third communication leg with the second telephony device and the second communications interface such that coupling of the first and third legs via said first communications interface and said second communications interface thereby establishes communication between the first telephony device and the second
30 telephony device.

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- 52.A communication system according to claim 51, wherein the communications facilitator is in data communication with the second communications interface and is operable to communicate the identity of the first communications interface to the second communications interface such that the first communications facilitator is arranged to communicate with the first communications facilitator and to establish communication between the first communications interface and the second communications interface upon receipt by the second communications interface of the identity of the first communications interface.
- 53.A communication system according to claim 50 or claim 51, wherein the first and second communications interfaces are provided as a single unit, such that the coupling of the first communications interface with the second communications interface is provided integral within said single unit.
- 54.A communication system according to any one of the claims 50 to 52, wherein the first communications interface and the second communications interface are provided remote from each other, and wherein the second communications interface is operable to establishing a fourth call leg between the first communications interface and the second communications interface prior to establishing the third call leg to couple the first communications interface and the second communications interface, and wherein the first communications interface is operable to bridge the first call leg and the fourth call leg at the first communications interface, and the second communications interface is operable to bridge the third call leg and the fourth call leg at the second communications interface to thereby couple the first call leg and the third call leg via the first communications interface, the second communications interface and the fourth call leg to thereby establish communication between the first telephony device and the second telephony device.
- 55.A communication system according to claim 37, wherein the at least one communications interface is arranged to storing audio or other multimedia information received from said second telephony device, said audio or

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multimedia forming said communications data routed by said at least one communications interface.

5 56.A communication system according to claim 55, wherein the at least one communications interface is operable to transmitting notification from said at least one communications interface to said communications facilitator of the storage of said audio or multimedia information.

10 57.A communication system according to claim 55 or claim 56, wherein the at least one communications interface is arranged to receive a request from said first telephony device for retrieval of said audio or multimedia information.

58.A communication system according to any one of claims 55 to 57, wherein the at least one communications interface is operable to transmit said stored audio or multimedia information from said at least one communications interface to said first telephony device.

15 59.A communication system according to any one of claims 55 to 58, wherein the system includes a first communications interface and a second communications interface, and the call data relating to the call initiated by the second telephony device is communicated to the first communications interface, the first communications interface being operable to transmit said stored audio or multimedia information from said first communications interface to said second communications interface.

20 60.A communication system according to claim 59 wherein, the first communications interface is operable to transmit notification from said first communications interface to said second communications interface of the storage of said audio or multimedia information.

25 61.A cellular radio telephone for communication with a telephony device, the cellular radio telephone being operable, in response to a signal from a remote communications facilitator, to communicate with at least a first communications interface to establish a first call leg, the first communications interface being selectable by the communications

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5 facilitator, whereby the at least a first communications interface is arranged for communication with the telephony device to establish a second call leg, and whereby the first call leg is bridged to the second call leg thereby establishing communication between the cellular radio telephone and the telephony device via the communications interface.

10 62.A cellular radio telephone according to claim 61, arranged for communication with the call facilitator, and operable to transmit a request to the communications facilitator to establish communication with the telephony device, the cellular radio telephone being further operable, in response to a signal from the communications facilitator, to establish communication with the first communications interface thereby establishing the first call leg.

15 63.A communications interface for use in establishing communication between a telephony device and a cellular radio telephone, the cellular radio telephone being located remotely from the telephony device, and the communication between the cellular radio telephone and the telephony device comprise at least two call legs, wherein the communications interface is operable to bridge the at least two call legs to establish communication between the cellular radio telephone and the telephony device via the communications interface.

20 64.A communications interface according to claim 63 arranged for communication with another communications interface to define a further call leg between said communication interfaces.

25 65.A communications interface according to claim 62 or claim 63, operable to store multimedia information received from the telephony device.

30 66.A communications interface according to claim 65, wherein the communications interface is further operable to transmit the multimedia information to the first communications interface for storage therein, and the cellular radio telephone is operable to retrieve the stored multimedia information from the first communications interface.

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- 67.A communications facilitator for establishing communication between a telephony device and a cellular radio telephone, the cellular radio telephone being located remotely from the telephony device, wherein the communications facilitator is operable to initiate communication between
5 the cellular radio telephone and a first communications interface, thereby establishing a first call leg between the cellular radio telephone and the first communications interface, the communications facilitator being further operable to initiate communication between the first communications interface and the telephony device to thereby establish a second call leg,
10 whereby the first call leg and the second call leg can be bridged to thereby establish direct communication between the cellular radio telephone and the telephony device via the communications interface.
- 68.A communications facilitator according to claim 67, wherein the communications facilitator is operable to receive a request from the cellular
15 radio telephone to establish communication with the telephony device, and to transmit details of the request, in response to the request, to the first communications interface and to signal the cellular radio telephone to call the first communications interface, to thereby establish the first leg.
- 69.A communications facilitator according to claim 67 or claim 68, wherein the
20 communications facilitator is further operable to initiate a communication between the first communications interface and a second communications interface arranged for communication with a telephony device via third call leg, the communications facilitator being operable to transmit details of the first communications interface to the second communications interface so
25 that the first and second communications interfaces can establish communications therebetween thereby establishing a fourth call leg, so that the first call leg and the fourth call leg can be bridged via the first communications interface, and the third call leg and the fourth call leg can be bridged via the second communications interface, thereby establishing
30 direct communication between the cellular radio telephone and the telephony device via the first and second communications interfaces.

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70.A communications facilitator according to any one of claims 67 to 69 wherein the communications facilitator is operable to select the communications interface in accordance with predetermined conditions.

5 71.A communications facilitator according to any one of claims 67 to 70 including storage means for storing data relating to calls established between the cellular radio telephone and the telephony device.

10 72.A communications facilitator according to any one of claims 67 to 71, wherein the communications facilitator is further operable to transmit a signal to the cellular radio telephone to communicate with the first communications interface to retrieve multimedia data therefrom.

15 73.A data communication between a communications facilitator and a cellular radio telephone and at least one communications interface for enabling establishment of communication between a telephony device and the cellular radio telephone, the cellular radio telephone being located remotely from the telephony device, wherein the data communication enables a communications facilitator to initiate communication between the cellular radio telephone and the first communications interface, thereby establishing a first call leg between the cellular radio telephone and the first communications interface, the data communication further enabling the communications facilitator to initiate communication between the first communications interface and the telephony device to thereby establish a second call leg, whereby the first call leg and the second call leg can be bridged to thereby establish direct communication between the cellular radio telephone and the telephony device via the communications interface.

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74.A method for establishing communication between a telephony device and a cellular radio telephone substantially as hereinbefore described with reference to the accompanying drawings.

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75. A system for establishing communication between a telephony device and a cellular radio telephone substantially as hereinbefore described with reference to the accompanying drawings.

5 76. A cellular radio telephone for communication with a telephony device substantially as hereinbefore described with reference to the accompanying drawings.

77. A communications interface for use in establishing communication between a telephony device and a cellular radio telephone substantially as hereinbefore described with reference to the accompanying drawings.

10 78. A communications facilitator for use in establishing communication between a telephony device and a cellular radio telephone substantially as hereinbefore described with reference to the accompanying drawings.

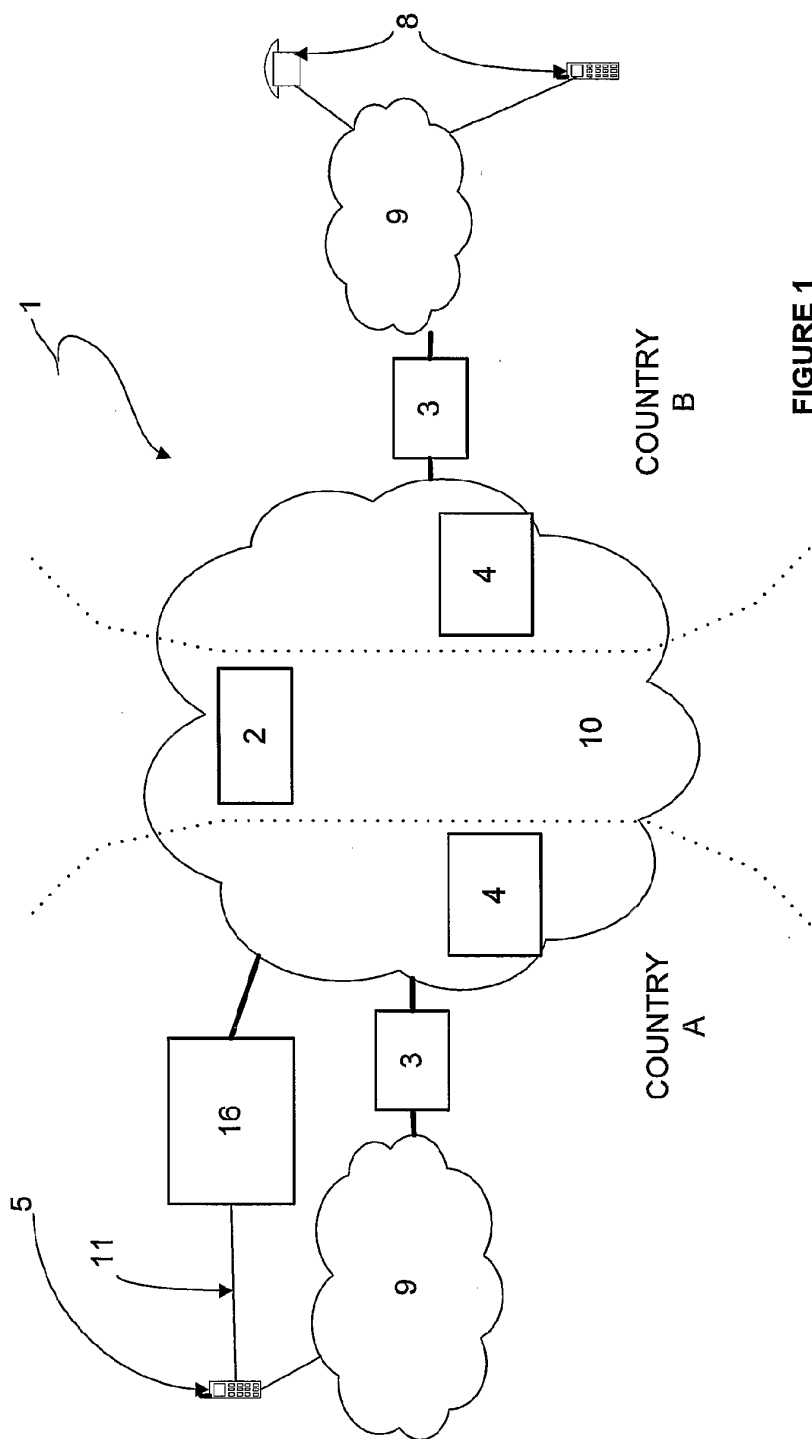


FIGURE 1

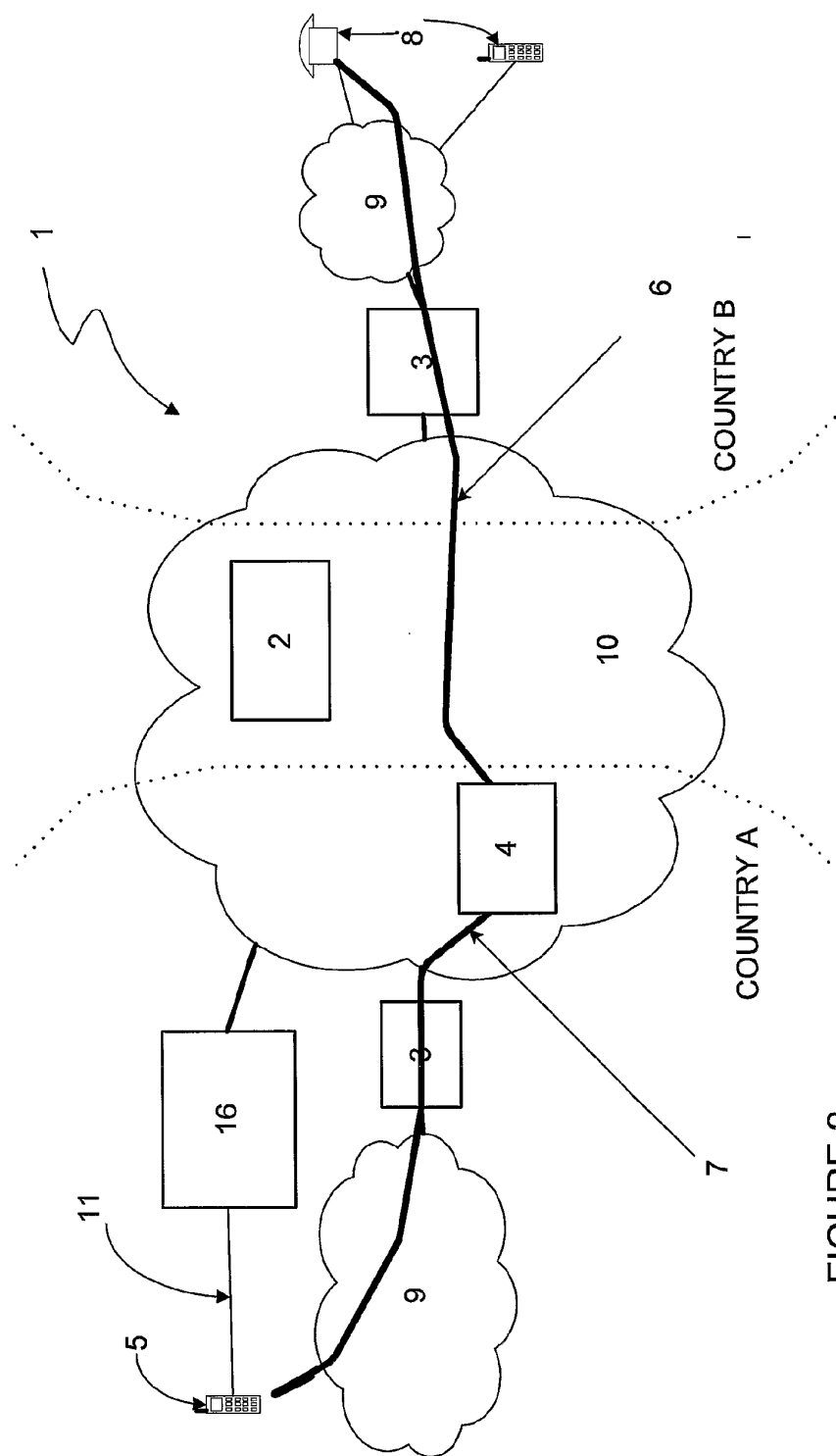


FIGURE 2

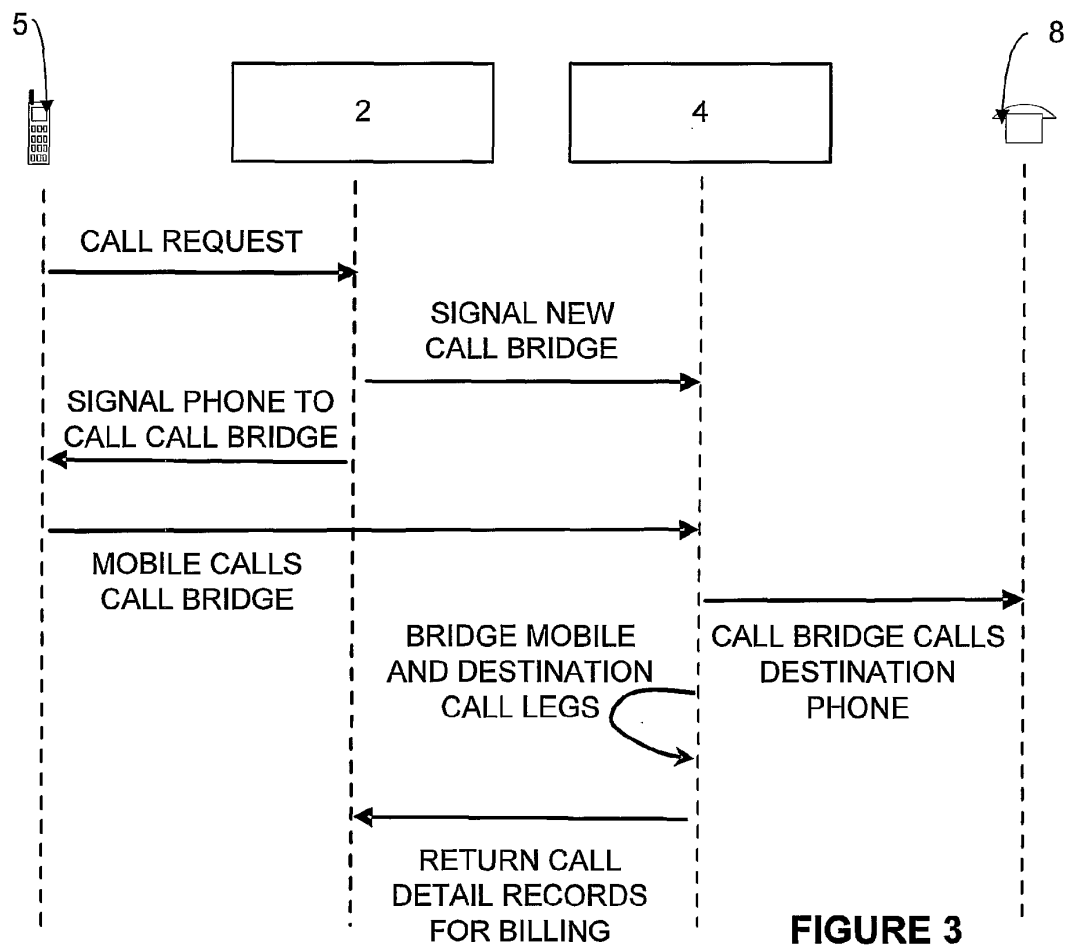
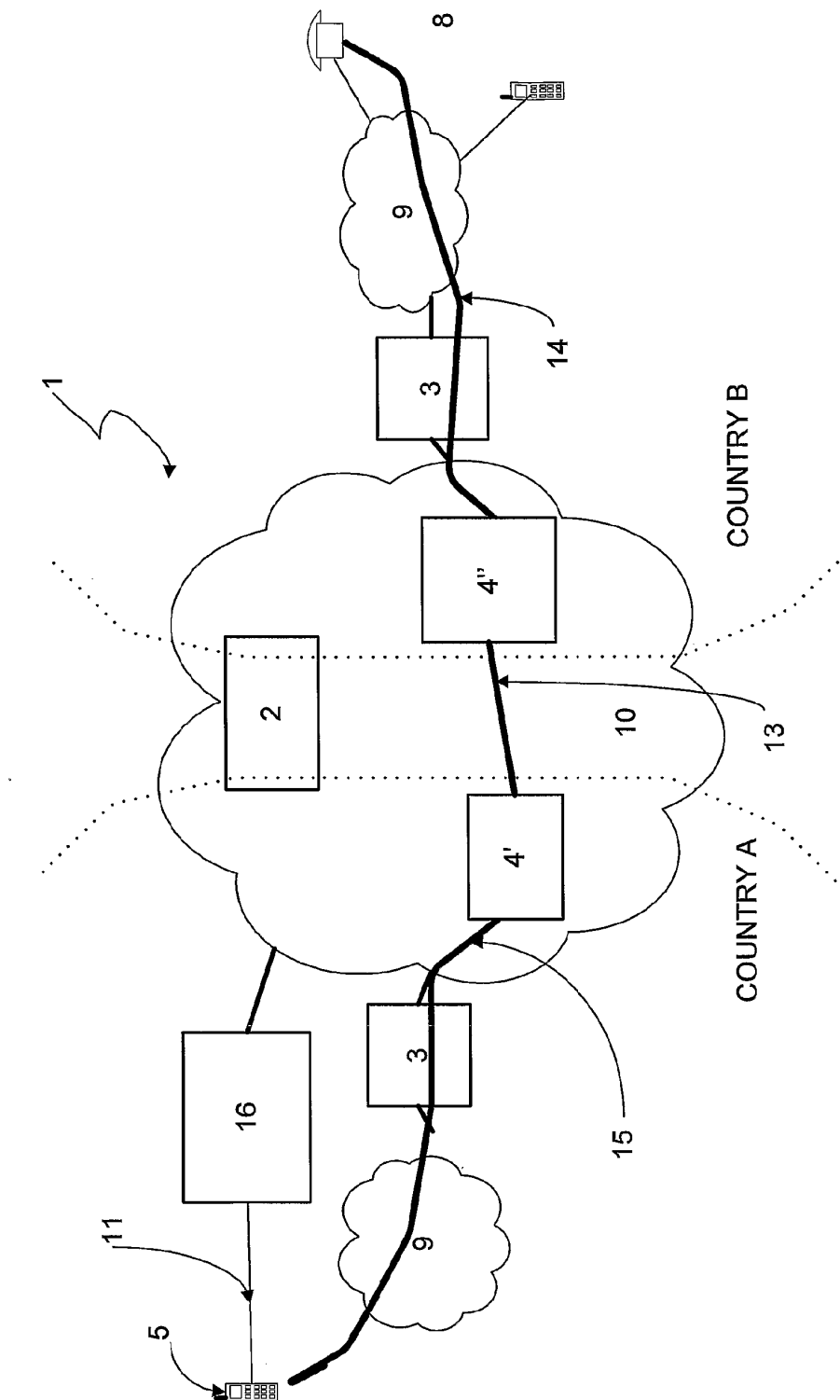
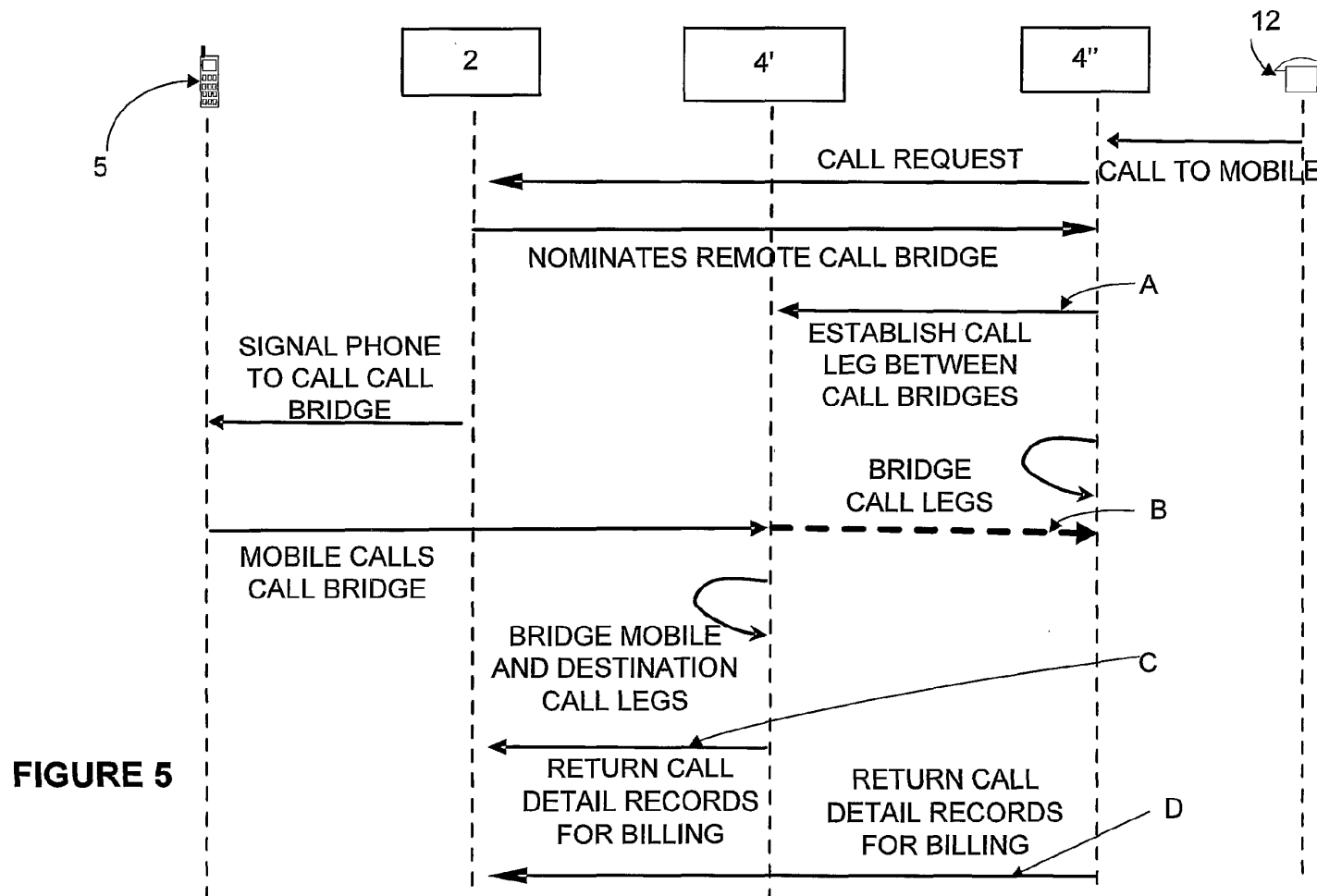
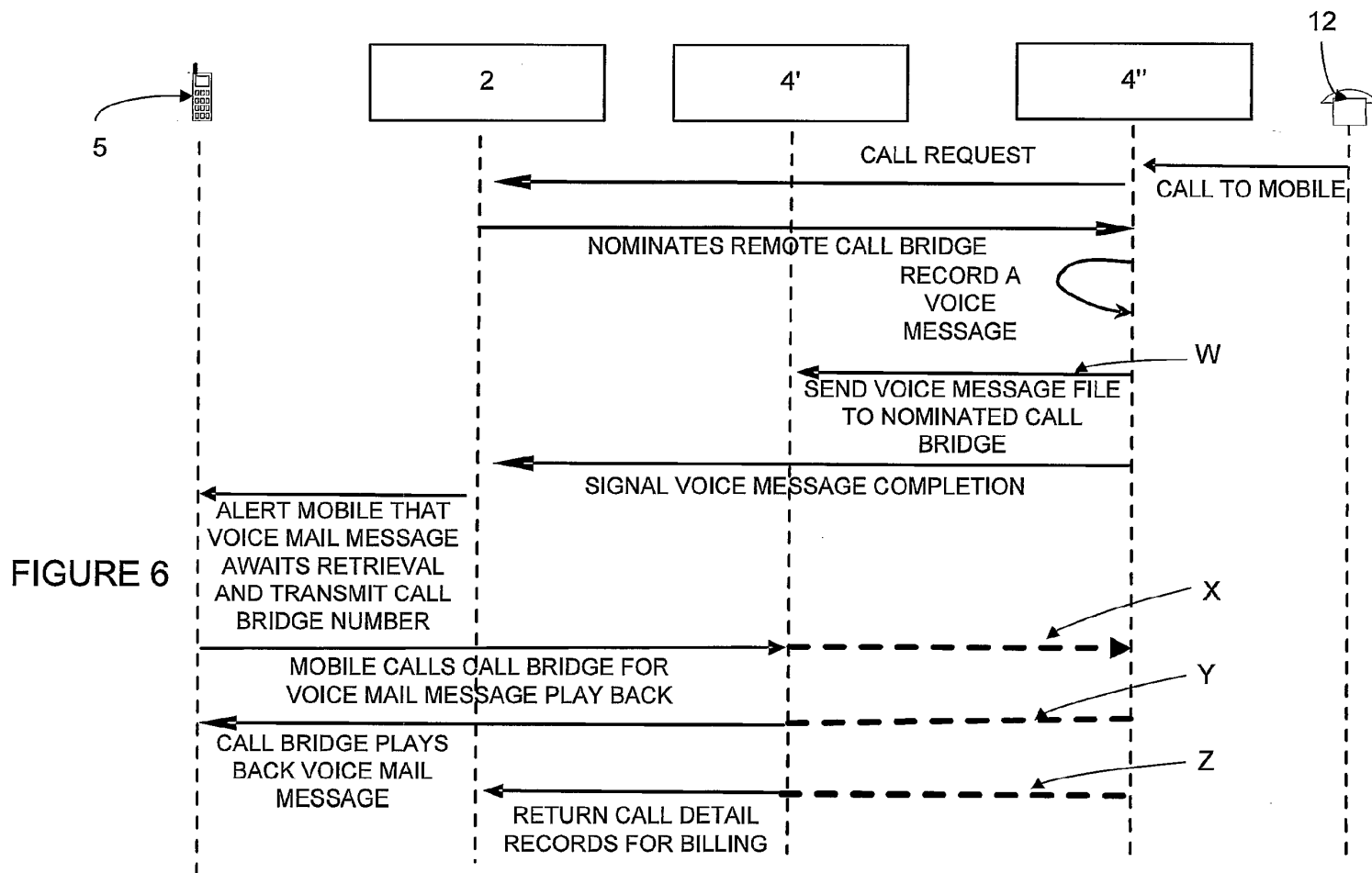


FIGURE 3

FIGURE 4







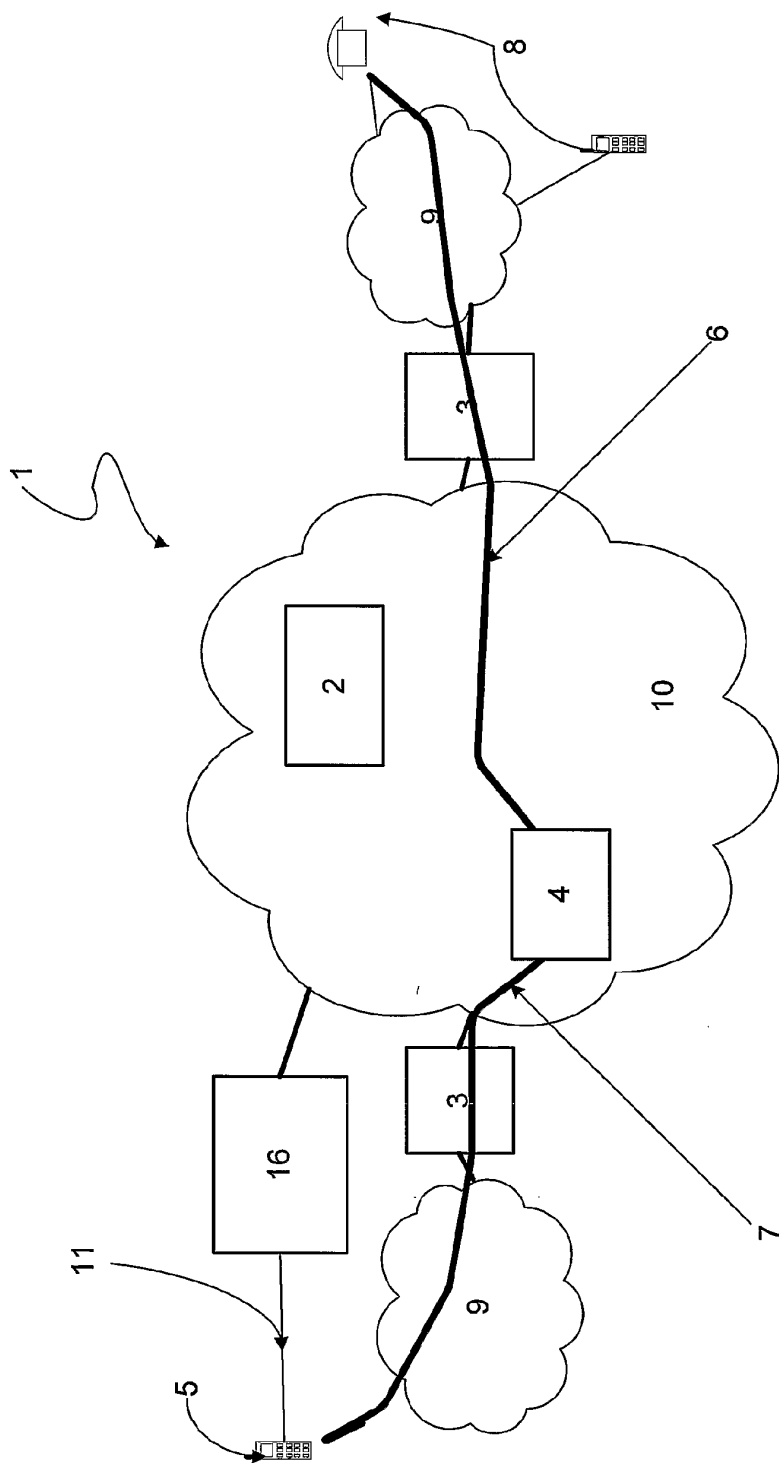
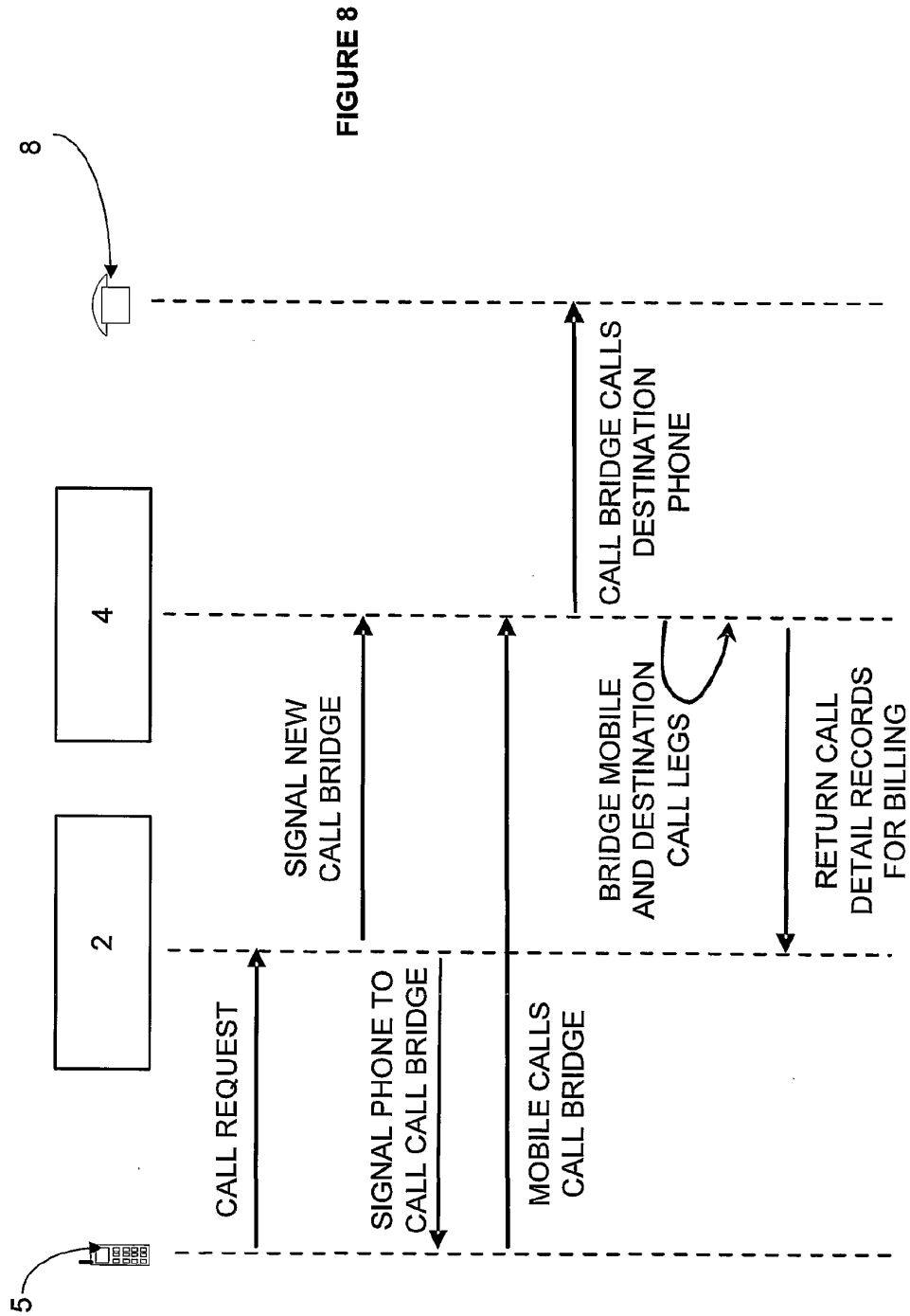


FIGURE 7



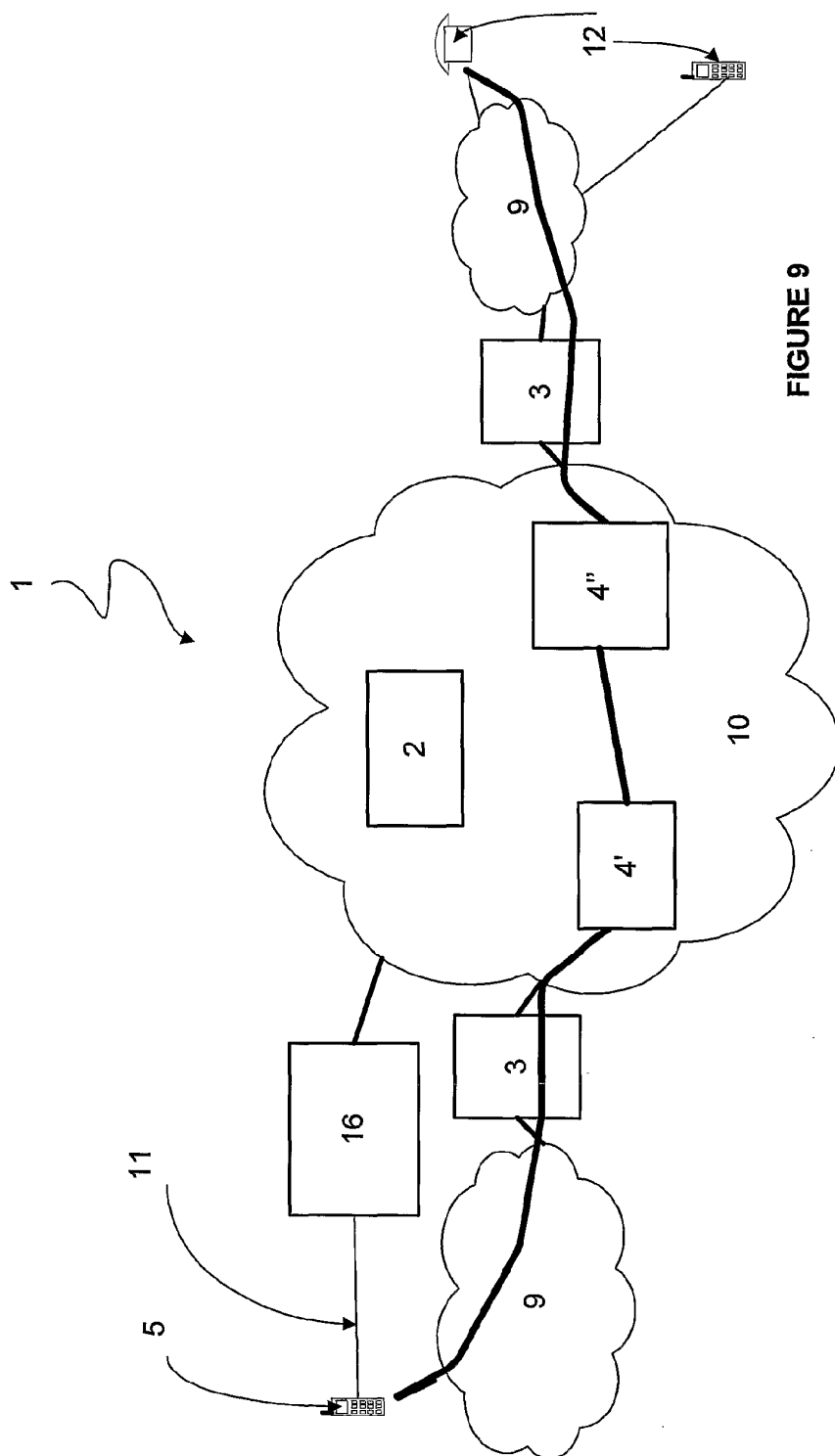


FIGURE 9

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application:	Confirmation No.: 4808
Inventor: Ivan Zhidov et al.	Examiner: HUYNH, NAM TRUNG
Application No.: 17/243,401	Group Art Unit: 2647
Filed: April 28, 2021	Customer No. 43490
Title: TELEPHONE NETWORK SYSTEM AND METHOD	

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97

Sir:

An Information Disclosure Statement along with attached PTO/SB/08 is hereby submitted. A copy of each listed publication is submitted, if required, pursuant to 37 C.F.R. §§1.97-1.98, as indicated below.

The Examiner is requested to review the information provided and to make the information of record in the above-identified application. The Examiner is further requested to initial and return the attached PTO/SB/08 in accordance with MPEP §609.

The right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered, is hereby reserved.

This statement is not intended to represent that a search has been made or that the information cited in the statement is, or is considered to be, prior art or material to patentability as defined in §1.56.

- A. ☐ *37 C.F.R. §1.97(b)*. This Information Disclosure Statement should be considered by the Office because:
- ☐ (1) It is being filed within 3 months of the filing date of a national application and is other than a continued prosecution application under §1.53(d);
 - OR --
 - ☐ (2) It is being filed within 3 months of entry of the national stage as set forth in §1.491 in an international application;
 - OR --
 - ☐ (3) It is being filed before the mailing of a first Office action on the merits;
 - OR --
 - ☐ (4) It is being filed before the mailing of a first Office action after the filing of a request for continued examination under §1.114.
- B. ☐ *37 C.F.R. §1.97(c)*. Although this Information Disclosure Statement is being filed after the period specified in *37 C.F.R. §1.97(b)*, above, it is filed before the mailing date of the earlier of (1) a final office action under §1.113, (2) a notice of allowance under §1.311, or (3) an action that otherwise closes prosecution on the merits, this Information Disclosure Statement should be considered because it is accompanied by one of:
- ☐ a statement as specified in §1.97(e) provided concurrently herewith;
 - OR --
 - ☐ a fee of \$180.00 as set forth in §1.17(p) authorized below, enclosed, or included with the payment of other papers filed together with this statement.
- C. ☐ *37 C.F.R. §1.97(d)*. Although this Information Disclosure Statement is being filed after the mailing date of the earlier of (1) a final office action under §1.113 or (2) a notice of allowance under §1.311, it is being filed before payment of the issue fee and should be considered because it is accompanied by:
- i. a statement as specified in §1.97(e);
 - AND --
 - ii. a fee of \$180.00 as set forth in §1.17(p) is authorized below, enclosed, or included with the payment of other papers filed together with this Statement.
- D. ☒ *37 C.F.R. §1.97(e)*. Statement.
- ☐ A statement is provided herewith to satisfy the requirement under 37 C.F.R. §§1.97(c);
 - AND/OR --
 - ☐ A statement is provided herewith to satisfy the requirement under 37 C.F.R. §§1.97(d);
 - AND/OR --
 - ☐ A copy of a dated communication from a foreign patent office clearly showing that the information disclosure statement is being submitted within 3 months of the filing date on the communication is provided in lieu of a statement under 37 C.F.R. § 1.97(e)(1) as provided for under MPEP 609.04(b) V.
- E. ☐ *Statement Under 37 C.F.R. §1.704(d)*. Each item of information contained in the information disclosure statement was first cited in a communication from a foreign patent office in a counterpart application that was received by an individual designated in § 1.56(c) not more than thirty (30) days prior to the filing of this information disclosure

statement. This statement is made pursuant to the requirements of 37 C.F.R. §1.704(d) to avoid reduction of the period of adjustment of the patent term for Applicant(s) delay.

A Search Report was issued in a counterpart application by the _____ Patent Office in Application No. _____ on _____.

F. ☒ 37 C.F.R. §1.98(a)(2). The content of the Information Disclosure Statement is as follows:

☐ Copies of each of the references listed on the attached Form PTO/SB/08 are enclosed herewith.

-- OR --

☒ Copies of U.S. Patent Documents (issued patents and patent publications) listed on the attached Form PTO/SB/08 are NOT enclosed.

-- AND/OR --

☒ Copies of Foreign Patent Documents and/or Non Patent Literature Documents listed on the attached Form PTO/SB/08 are enclosed in accordance with 37 C.F.R. §1.98 (a)(2).

-- AND/OR --

☐ Copies of pending *unpublished* U.S. patent applications are enclosed in accordance with 37 C.F.R. §1.98(a)(2)(iii). By providing this disclosure to the Examiner, Applicant in no way intends to relinquish their right to have the patent application and its prosecution preserved in confidence as provided for under 37 C.F.R. § 1.14. Nor does Applicant consider the provision of this information to the Examiner to be a basis for access to the application or the underlying file history under 37 C.F.R. § 1.11. Therefore, Applicant confirms that they intend to retain information regarding the applications and the prosecution of the applications preserved in confidence until such time as the application becomes publicly available as a result of publication or issuance.

G. ☐ 37 C.F.R. §1.98(a)(3). The Information Disclosure Statement includes non-English patents and/or references.

☐ Pursuant to 37 C.F.R. §1.98(a)(3)(i), a concise explanation of the relevance of each patent, publication or other information provided that is not in English is provided herewith.

☐ Pursuant to MPEP 609(B), an English language copy of a foreign search report is submitted herewith to satisfy the requirement for a concise explanation where non-English language information is cited in the search report.

-- OR --

☐ A concise explanation of the relevance of each patent, publication or other information provided that is not in English is as follows: _____

☐ Pursuant to 37 C.F.R. §1.98(a)(3)(ii), a copy of a translation, or a portion thereof, of the non-English language reference(s) is provided herewith.

H. ☐ 37 C.F.R. §1.98(d). Copies of patents, publications and pending U.S. patent applications, or other information specified in 37 C.F.R. § 1.98(a) are not provided herewith because:

☐ Pursuant to 37 C.F.R. §1.98(d)(1) the information was previously submitted in an Information Disclosure Statement for another application under which this application claims priority for an earlier effective filing date under 35 U.S.C. 120.

Application in which the information was submitted: _____

Information Disclosure Statement(s) filed on: _____

AND

☐ The information disclosure statement submitted in the earlier application complied with paragraphs (a) through (c) of 37 C.F.R. §1.98.

- I. ☒ *Fee Authorization.* The Commissioner is authorized to charge any additional fees which may be required, including petition fees and extension of time fees, to Deposit Account No. 503203 (Docket No. GETFL-01001DIV3).

Respectfully submitted,

Date: November 9, 2021

By: /Stuart J. West/
Stuart J. West
Registration No. 43,258

(21) Application No: 0722830.7	(51) INT CL: H04M 1/57 (2006.01)H04M 3/42 (2006.01) H04M 1/57 (2006.01)
(22) Date of Filing: 21.11.2007	(56) Documents Cited: EP 1422915 A1EP 0926910 A1WO 2006/005937 A1KR 200427023 AUS 6327353 B1US 5283824 B1US 20030147519 A1 EP 0986237 A3WO 2007/047580 A2JP 2002261935 AUS 6343120 B1US 5590184 BUS 20070064895 A1
(71) Applicant(s): Intellprop Limited (Incorporated in the Channel Islands) PO Box 626, National Westminster House, Le Truchot, ST. PETER PORT, Guernsey, GY1 4PW, United Kingdom	(58) Field of Search: INT CL H04M Other: On-Line - EPODOC, WPI
(72) Inventor(s): Jeffrey Wilson	
(74) Agent and/or Address for Service: D Young & Co 120 Holborn, LONDON, EC1N 2DY, United Kingdom	

- (54) Abstract Title: Maintaining privacy of primary telephone number by use of secondary number
- (57) A communication request from a subscriber of a network to establish a communication with a third party includes an indication of the third party's telephone number (i.e. a desired destination number), an indication of the telephone number of the user's telephone handset (i.e. its CLI), and an indication that the user wishes to withhold their handset's telephone number from the third party (e.g. this a predefined prefix added to the dialled destination number). On determining the presence of the indication that the user wishes to withhold their telephone number, the communication request is modified by replacing the indication of the user's telephone number with an indication of a secondary telephone number associated with the user before being forwarded to the third party. Thus the third party receives a communication request appearing to originate from the secondary telephone number. If the third party sends a communication request to the secondary number, the communication request may then be modified so that the destination address associated with the request (i.e. the secondary telephone number) is replaced with the user's handset's telephone number such that the request may be delivered to the user's handset. The communication request from the third party may be modified by adding a prefix (or suffix) to the telephone number of the third party such that if the user uses his telephone's reply feature to call or text the third party back, the privacy prefix is automatically included in his return call/text, thereby preserving his anonymity. Calls or text messages sent using the privacy prefix, or returned via the secondary telephone number, may receive special handling, eg they may be automatically recorded for future reference.

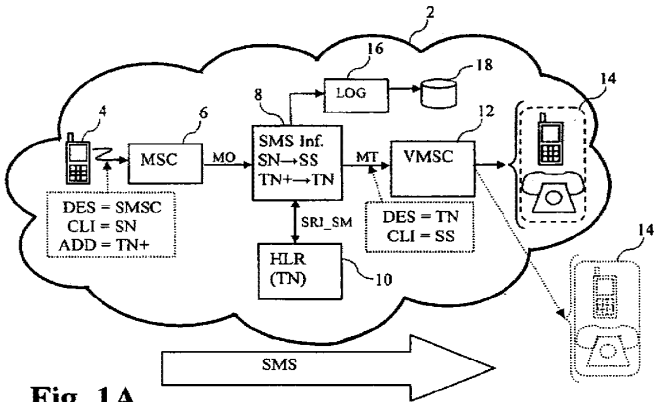
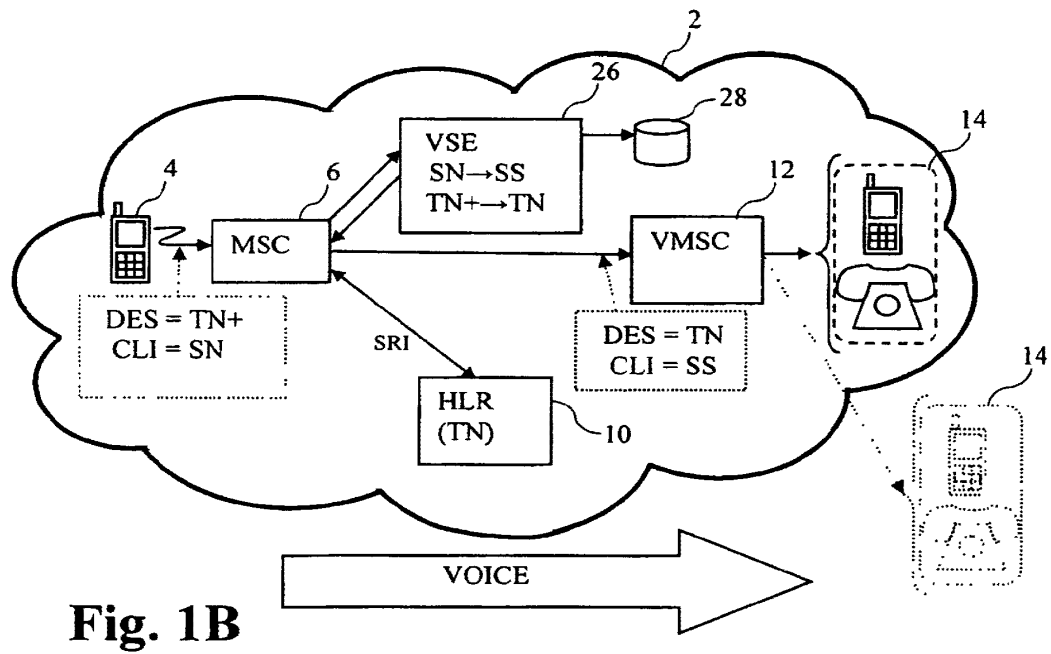
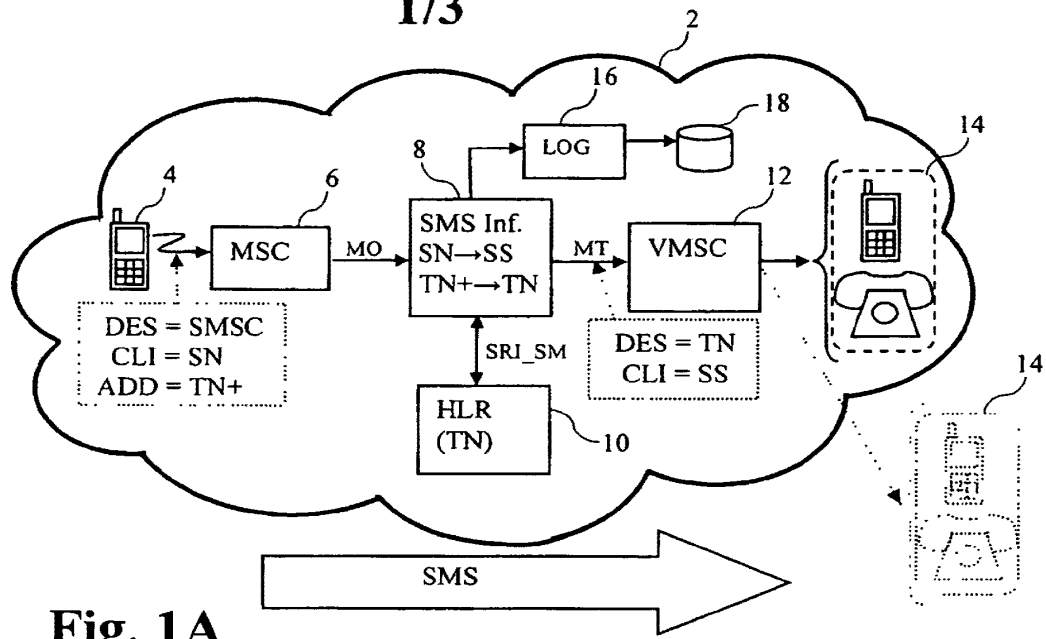
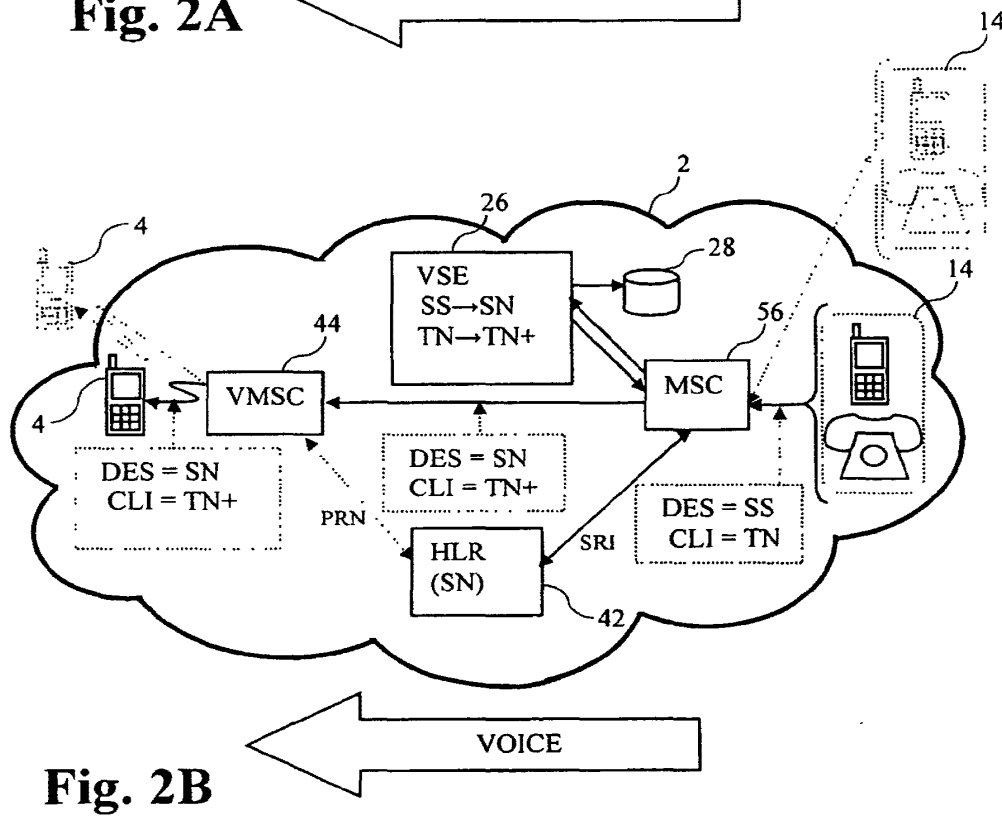
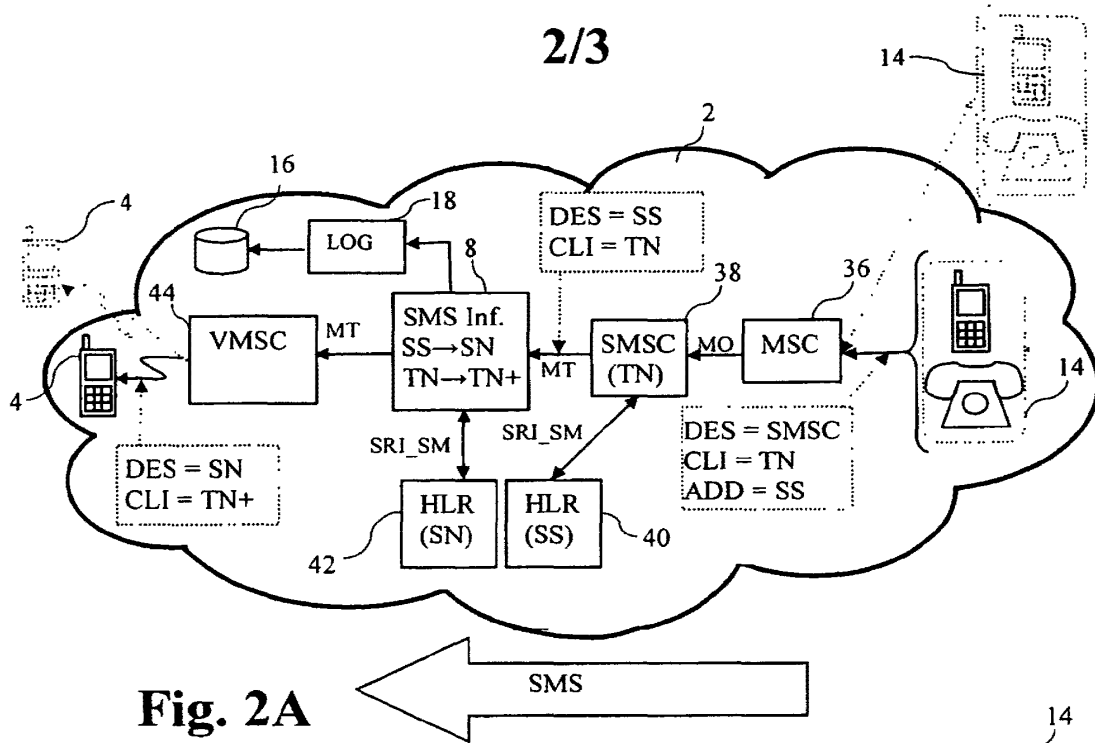


Fig. 1A

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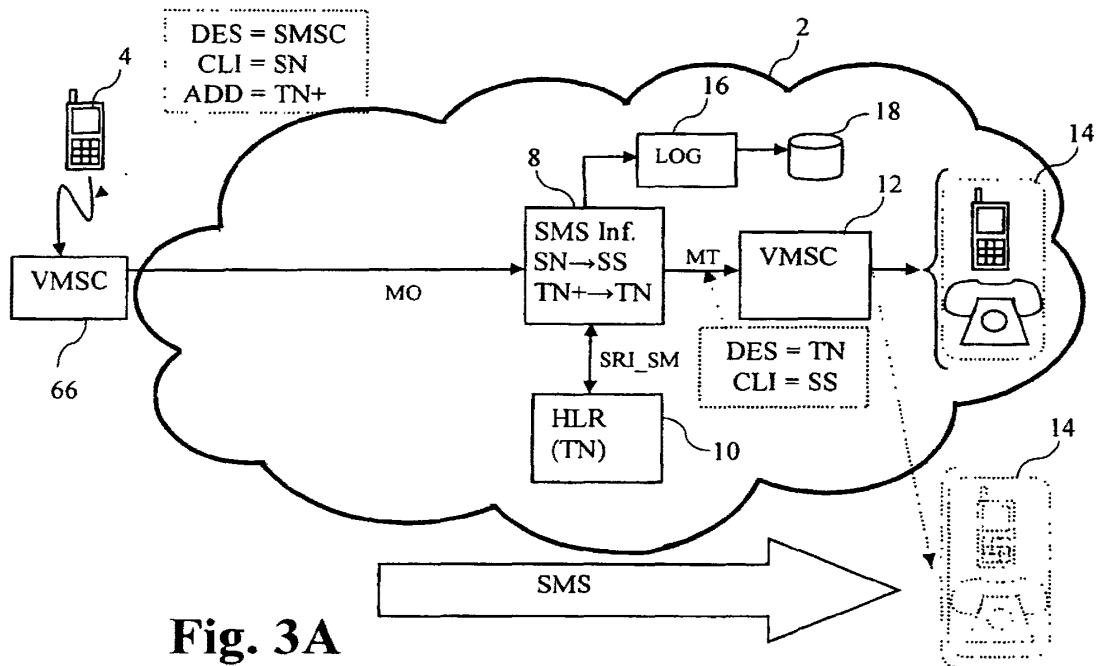


Fig. 3A

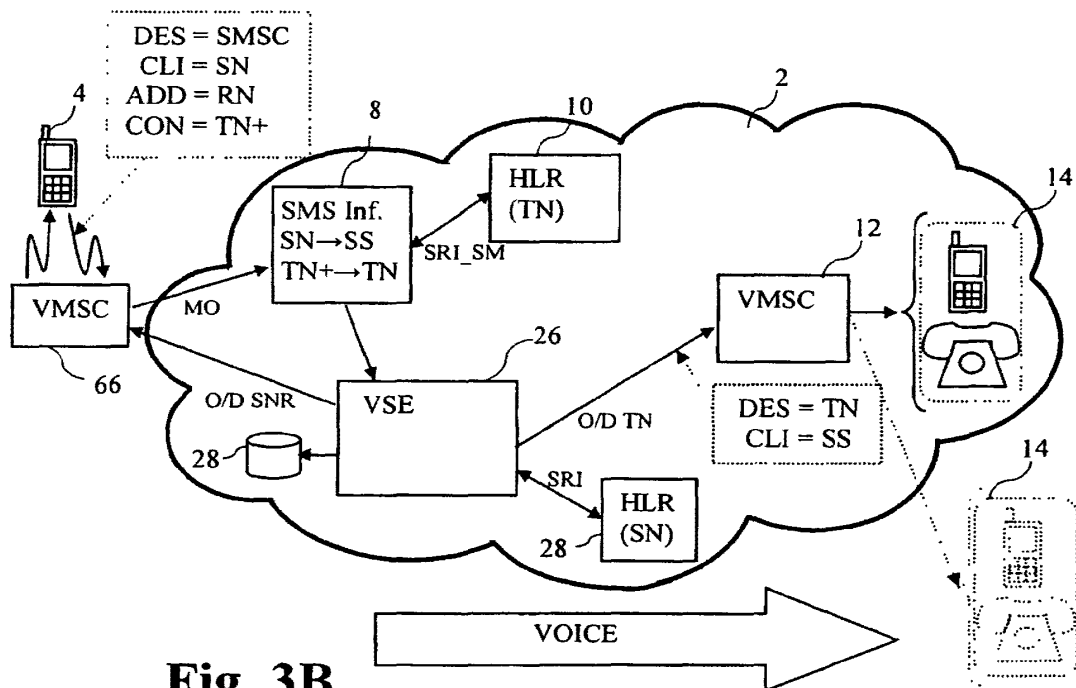


Fig. 3B

TITLE OF THE INVENTION**TELECOMMUNICATION NETWORKS**5 **BACKGROUND ART**

The invention relates to telecommunication networks, and in particular to apparatus and methods for processing communication requests in such networks.

A subscriber of a telecommunication network is generally provided with a
10 unique number which identifies the Subscriber Identity Module (SIM) (usually inserted into a telephone handset) he uses to access the telecommunication network. The number is generally referred to as the MSISDN of the subscriber, or simply as the subscriber's telephone number. The telephone number is specified by third parties in association with communications, e.g. voice calls or text messages, they wish to send
15 to the subscriber. The telecommunication network relies on the telephone number specified by the sending party to route the communication to the intended recipient's handset. The subscriber's telephone number is also often automatically associated with outgoing communications, e.g. voice calls or text messages to a third party. In this respect the subscriber's telephone number is associated with the communication as
20 what is often referred to as a calling line identity (CLI). Likewise, a CLI identifying the telephone number of a third party will usually be associated with communications received by the subscriber from the third party.

The use of a unique telephone number to identify a subscriber's handset for incoming communications, and the automatic release of this number as a CLI
25 associated with outgoing communications, provides for a simple mechanism for users of a telecommunications network to send and receive messages. For example, a subscriber who receives a communication from an unknown third party will readily be able to respond to the third party since their telephone number will generally be provided as a CLI of the received communication. Similarly, if the subscriber wishes
30 to contact a third party with a communication which is intended to elicit a reply, the subscriber does not need to manually specify their contact details, e.g. in the body of a text message or by stating their telephone number in a voice call. This is because the

subscriber knows that the third party will be able to readily obtain their contact details (i.e. telephone number) from the CLI associated with initial communication from the subscriber to the third party.

However, a drawback of this approach is reduced privacy in that often a
5 subscriber may wish to contact a third party without releasing their personal telephone number.

To address this issue it is generally possible for a subscriber to avoid releasing their personal telephone number by setting an option of their telephone handset or network such that their CLI is withheld when sending communications. However, this
10 too has drawbacks. For example, it is not uncommon for people to reject a communication having an unspecified (e.g. withheld) CLI. Thus if a subscriber chooses to withhold their CLI for privacy reasons, their communication may be rejected by the intended recipient. Furthermore, even if the third party recipient does not reject the communication, the third party would have no way of responding to the
15 subscriber unless the subscriber went to the trouble of specifying a separate response path (e.g. the subscriber could specify a telephone number of a second handset they own which has a telephone number they do not mind releasing). However, this solution requires the user to own a second telephone, and furthermore to either carry the second telephone around when he is expecting a communication to that number, or
20 to configure the second telephone to divert incoming calls to the subscriber's primary handset. The subscriber must also remember to withhold their telephone number in any communications to the third party made from their primary handset.

It will often be the case that a subscriber who wishes to keep their telephone number private from a given third party, or from a class of third party, will also often
25 want communications with that third party treated differently from their other "normal" communications. For example, the third party may be a tradesman, or other service provider, who the subscriber wishes to communicate with, but to whom the subscriber does not wish to release their private number. In this case, the subscriber may also want to log and record all voice communications with the tradesman and / or
30 store all text messages exchanged with the tradesman, e.g. to help resolve any future disputes as to what was agreed between them.

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Accordingly, there is a need for apparatus and methods that allow a user to more readily establish communications with a third party without revealing their primary telephone number, and optionally to allow such communications with the third party to be processed differently from other communications made by/to the
5 subscriber.

SUMMARY OF THE INVENTION

According to a first aspect of the invention there is provided a method of processing communication requests in a telecommunications network, the method comprising: receiving a request from a user of the network to establish a communication with a third party, wherein the communication request includes an indicator representative of a destination telephone number of the third party, an indicator representative of a primary telephone number of the user, and an indication that the user wishes to withhold the primary telephone number from the third party, and, responsive to the presence of the indication that the user wishes to withhold the primary telephone number, the method further comprises modifying the communication request by replacing the indicator representative of the primary telephone number with an indicator representative of a secondary telephone number associated with the user, and forwarding the modified communication request for routing to the third party.

Thus the user (subscriber) is able to instigate communications with the third party without revealing his primary telephone number. The communication request may be for a text communication or a voice communication (it will be appreciated that references throughout this description to voice calls should be interpreted to include video calls unless the context demands otherwise). The secondary telephone number may preferably be a virtual telephone number of the telecommunications network, or a fixed-line number belonging to the telecommunications network, allocated to the user.

The method may further comprise processing a communication between the user and the third party established on the basis of the communication request in a manner dependent on the presence of the indication that the user wishes to withhold the primary telephone number from the third party. For example, the processing may include automatically establishing a record of the communication (e.g. recording and/or making a log of a voice communication, or storing and/or making a log of a text communication).

The indication that the user wishes to withhold the primary telephone number from the third party may for example comprise a predefined prefix or suffix added to the destination telephone number associated with the communication request, and the method may comprise further modifying the communication request by removing the predefined prefix or suffix, e.g. so the communications request can be conventionally routed to the

third party. In some cases a prefix will be preferred over a suffix, e.g. a prefix corresponding to an unused telephone country code. This is because the addition of a prefix will generally have less impact on how a communication request is routed in telecommunication networks.

5 If the user is roaming on another network, the indication that the user wishes to withhold the primary telephone number from the third party may be provided by the user sending an initial communication request to a predefined service number. This approach can be useful for voice communication requests if the network on which the user is roaming is not configured to deal with a modified (e.g. prefixed) destination number as
10 an indication that the user wishes to withhold their telephone number. In such cases the voice call communication may then be subsequently established by a service apparatus associated with the predefined service number placing out-dialled calls to the user and third party, and bridging the respective out-dialled calls.

 According to a second aspect of the invention there is provided a method of
15 processing communication requests in a telecommunications network, comprising receiving a request from a third party to establish a communication with a user of the network having a primary telephone number, wherein the communication request includes an indicator representative of a secondary telephone number associated with the user as a destination telephone number for the communication request, and, responsive to
20 the presence of the indicator representative of the secondary telephone number as the destination telephone number for the communication request, the method further comprises modifying the communication request by replacing the indicator representative of the secondary telephone number with an indicator representative of the primary telephone number associated with the user, and forwarding the modified communication
25 request for routing to the user.

 Thus a user (subscriber) is able to receive communications from a third party without having revealed his primary telephone number to the third party. Again, the communication request may be for a text or voice communication, and the secondary number may be a virtual telephone number of the user's network, or a fixed-line number
30 belonging to the network, which has been allocated to the user.

 The method may further comprise processing a communication between the user and the third party established on the basis of the communication request in a manner

dependent on the use by the third party of the secondary telephone number as the destination telephone number, e.g. processing such as described above in connection with the first aspect of the invention, for example to establish a record of the communication.

The communication request may further include an indicator representative of a
5 telephone number of the third party. In this case the method may comprise further
modifying the communication request by adding a predefined prefix or suffix to the
indicated telephone number of the third party. This can be useful in combinations with
some embodiments of the first aspect of the invention where the predefined prefix or
suffix is also used by the user to indicate his primary number is to be withheld for
10 outgoing communications. By adding the predefined prefix / suffix to the indicator
representative of the number of the third party for incoming communication requests, the
user (as well as his handset) need only be aware of the modified form of the third party's
number for incoming and outgoing communications. This can help prevent the user from
inadvertently using a "reply" function of his handset to reply directly to the third party
15 without use of the prefix / suffix, so releasing his primary number.

According to a third aspect of the invention there is provided a service apparatus
for a telecommunications network, the apparatus comprising a communications request
processor operable to receive a request from a user of the network to establish a
communication with a third party, wherein the communication request includes an
20 indicator representative of a destination telephone number of the third party, an indicator
representative of a primary telephone number of the user, and an indication that the user
wishes to withhold the primary telephone number from the third party, wherein the
service apparatus is operable to determine the presence of the indication that the user
wishes to withhold the primary telephone number in the communications request, and in
25 response thereto, to modify the communication request by replacing the indicator
representative of the primary telephone number with an indicator representative of a
secondary telephone number associated with the user, and to forward the modified
communication request for routing to the third party.

According to a fourth aspect of the invention there is provided a service apparatus
30 for a telecommunications network, the apparatus comprising a communications request
processor operable to receive a request from a third party to establish a communication
with a user of the network having a primary telephone number, wherein the

communication request includes an indicator representative of a secondary telephone number associated with the user as a destination telephone number for the communication request, wherein the service apparatus is operable to determine the presence of the indicator representative of the secondary telephone number as the
5 destination telephone number for the communication request, and in response thereto, to modify the communication request by replacing the indicator representative of the secondary telephone number with an indicator representative of the primary telephone number associated with the user, and to forward the modified communication request for routing to the user.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the invention and to show how the same may be carried into effect reference is now made by way of example to the accompanying
5 drawings in which:

Figure 1A schematically shows a subscriber of a telephone communications network sending a text message communication to a third party in accordance with an embodiment of the invention;

Figure 1B schematically shows a subscriber of a telephone communications
10 network initiating a voice communication with a third party in accordance with an embodiment of the invention;

Figure 2A schematically shows a subscriber of a telephone communications network receiving a text message communication from a third party in accordance with an embodiment of the invention;

Figure 2B schematically shows a subscriber of a telephone communications
15 network receiving a voice communication from a third party in accordance with an embodiment of the invention;

Figure 3A schematically shows a subscriber of a telephone communications network sending a text message communication to a third party in accordance with an
20 embodiment of the invention; and

Figure 3B schematically shows a subscriber of a telephone communications network initiating a voice communication with a third party in accordance with an embodiment of the invention.

DETAILED DESCRIPTION

Figure 1A schematically shows a subscriber of a telephone communications network 2 sending a text message communication to a third party in accordance with an embodiment of the invention. In this example the network 2 conforms to the Global System for Mobile Communications (GSM) standards, and the text message communication is a Short Message Service (SMS) communication. The subscriber here is assumed to be using a conventional mobile telephone handset 4 to compose and send his message. Furthermore, in this example the subscriber's handset 4 is within range of a mobile base station (not shown) of the network 2. That is to say the subscriber is within his own network and is not "roaming" on another network. For simplicity, the subscriber handset 4 is taken to represent the subscriber, and so the handset 4 may sometimes be referred to as the subscriber 4.

The subscriber has a primary telephone number SN (Subscriber Number). This is the number associated with the Subscriber Identity Module (SIM) in his handset 4. The number will typically be of the form 44 1234 567 890. This primary telephone number SN is the number released as a CLI in association with conventional communications instigated by the subscriber from his handset in the conventional manner. Furthermore, communications from third parties addressed to the primary telephone number SN will be routed by the network 2 to the handset 4, again in accordance with standard techniques. Thus the primary telephone number SN corresponds with what might be termed the subscriber's "real" or "normal" telephone number. This is the number the subscriber may give to friends, family and colleagues etc., but which he may not wish to release to certain persons, or certain classes of person, e.g. tradesmen.

It should be noted that for simplicity in this description reference will sometimes be made to a leg of a communication request containing an indication of, or being associated with, one or more telephone numbers. E.g. a communication request originating from a sender's handset might be said to have an indication of the sender's telephone number as a CLI associated with the communication request. However, it will be appreciated that as is conventional in many telecommunications networks, e.g. in networks conforming to the GSM standard, the communication request might not

necessarily be associated with a direct indication of the telephone number, but rather will be associated with an indicator which is representative of the telephone number. For example, rather than including a direct indication of a sender's telephone number, a communication request will often include instead an indication of an IMSI
5 (International Mobile Subscriber Identity) number. The network receiving and processing the communication request may then recover the associated telephone number through conventional means (e.g. Visitor Location Register (VLR) look-up). Thus the IMSI associated with the call request may be considered as a direct proxy for the telephone number. Furthermore, for security reasons it is often the case that a
10 temporary IMSI is mapped to a subscriber so that his "true" IMSI does not need to be so frequently broadcast through the network. In either case, this description will sometimes simply refer to a telephone number being associated with a communication request, when it will be appreciated that references to the telephone number should sometimes be interpreted as references to an indicator representative of the telephone
15 number, e.g. an IMSI or a temporary IMSI, as used in conventional networks.

Turning back to Figure 1A, the third party to whom the subscriber wishes to communicate the text message is represented by hardware 14. For simplicity, the hardware 14 may sometimes be referred to directly as the third party 14. Furthermore still, the third party 14 will generally be referred to as tradesman 14 to distinguish this
20 third party (to whom the subscriber 4 does not wish to release his primary telephone number SN) from a third party to whom the subscriber 4 is happy to release his primary telephone number SN.

The tradesman's hardware 14 may be a mobile telephone handset or a fixed-line telephone, for example, as schematically indicated in Figure 1A. (In the case the
25 hardware 14 is a fixed-line telephone, it is assumed to be provided with appropriate means for relaying the text message contents to the tradesman, e.g. using a text display or text-to-speech feature). The tradesman's telephone number is taken here to be TN (Tradesman Number). In Figure 1A the tradesman 14 is assumed to be on the same network as the subscriber 4, as schematically indicated by the solid line representation
30 of hardware 14 within the schematically represented extent of the network 2. However, the tradesman 14 may equally be on a different network to the subscriber 4 (or nominally on the same mobile network, but roaming), as schematically indicated in

Figure 1A by the dotted line representation of hardware 14 outside the schematically represented extent of the network 2.

In accordance with embodiments of the invention, the subscriber 4 is associated with a secondary telephone number SS (Subscriber Secondary number). For example, the secondary number SS may be a number that the subscriber 4 “rents” from the owner (or a service provider) of telecommunication network 2. The secondary number SS may be considered as a telephone number of a virtual mobile handset. That is to say, the secondary telephone number SS conforms to a conventional number format for the network 2, but is not necessarily associated with a real SIM card. Furthermore, it is significant to note that the subscriber’s handset 4 may be conventional, with all functionality of embodiments of the invention being provided by the network 2 infrastructure.

To send a text message to the tradesman 14 without revealing his own primary number SN, the subscriber 4 first composes a desired text message as normal, e.g. comprising a content string such as “please provide a quote for painting a three-storey house”. The user then sends the text message to the telephone number (TN) of the tradesman 14 (e.g. as obtained from public adverts) along with a flag for indicating to the network 2 that the subscriber 4 does not wish to release his primary number SN to the tradesman, but instead wants to release his secondary number SS (i.e. the subscriber wants his “virtual” telephone number SS to be used as the CLI for the communication to the tradesman in place of his “real” telephone number SN). For ease of representations, the symbol “‡” will be used here to schematically represent the flag such that the flagged number of the tradesman is designated “TN‡”). In this embodiment the flag / indication is made by applying a predefined prefix to the otherwise normal telephone number of the tradesman. E.g. the tradesman’s conventional numbers TN in international format may have an additional code of 00 prepended. For example +44 1234 567 890 would become +00 44 1234 567 890. Since country code 00 is not currently used, a 00 prefix may readily be used as a flag to indicate the subscriber wishes to invoke his secondary number for the communication without clashing with any existing country code prefix. An alternative prefix could be a numeric prefix similar to the “141” prefix used in the UK for both fixed line and mobile networks to indicate that a caller’s CLI should be suppressed for

a voice call. For example, a prefix 142 could be used to indicate a request for the behaviour of embodiments of the invention as described herein (i.e. a request for CLI substitution / replacement). With most current telecommunication networks, use of this prefix would allow communication requests to be routed normally through the network infrastructure when applied to national format numbers, but may not route correctly when applied to international format numbers. For example, 142 07123 456 789 would be routed normally without requiring network modification, whereas 142 44 123 456 789 may not be (44 is the country code for the UK).

As noted above, in this description the notation $TN_{\ddagger}$ is used to indicate the tradesman's telephone number TN having the prefix ($\ddagger$) attached.

Thus the subscriber sends the text message for the tradesman 14 from his handset 4 to telephone number address $TN_{\ddagger}$. In accordance with conventional GSM SMS routing techniques, the text message is first directed to the SMS network infrastructure (SMS Inf.) 8 of the subscriber's home network 2, e.g. to a Short Message Service Centre (SMSC) or SMS router of the network 2. In accordance with this embodiment of the invention it will be assumed that the SMS network infrastructure of the subscriber's home network 2 is an SMS router 8 which is configured / programmed to operate in a largely conventional manner, save for the below described additional functionality associated with the use of the secondary number SS. The SMS router 8 may thus be considered a communications request processor in accordance with embodiments of the invention. Accordingly, as indicated in Figure 1A, the text message sent from the subscriber's handset is associated with a destination address (DES) of the subscriber's network's SMS router 8, a desired recipient address (ADD) of $TN_{\ddagger}$ (i.e. the tradesman's telephone number with prefix), and carries the subscriber's primary number (SN) as its CLI. The text message is conventionally routed through Mobile Switching Centre (MSC) 6 to arrive in mobile originating (MO) form at the SMS router 8.

On receipt of text messages in MO form, the SMS router 8 is configured to scan the desired recipient address associated with the text message communication in order to determine whether or not the predefined prefix is included. If the SMS router 8 determines that no prefix is included, the text message is routed to its destination in the conventional way. However, if it is determined that the prefix is included, the SMS

router 8 identifies that the text message is one which that should be processed in accordance with embodiments of the invention. To do this, the SMS router 8 is configured to modify the data, in particular the CLI and the desired destination address ADD, associated with the text message. As noted above, the CLI associated with the
5 text message on arrival at the SMS router 8 is the primary number SN of the handset 4 (since the text message has been conventionally routed to the SMS router 8). However, on determining from the presence of the prefix in the desired destination address that the subscriber does not wish to release the primary number SN to the tradesman, the SMS router 8 is configured to modify the SMS message properties so that in the CLI
10 field the primary number SN is replaced by the secondary number SS. This may be achieved, for example, based on a simple look-up in a database relating the subscriber's primary number SN to his secondary number SS. In addition to modifying the CLI of the message by replacing the primary number with the secondary number, the SMS router 8 is configured to remove the prefix from the desired destination
15 address field. Thus the message properties are modified by the SMS router 8 such that the CLI field is changed from SN to SS (as indicated by "SN→SS" within the schematically represented SMS router 8 in Figure 1A), and such that the desired destination address field ADD is changed from $TN_{\ddagger}$ to TN (as indicated by " $TN_{\ddagger} \rightarrow TN$ " in Figure 1A).

20 The modified text message may then be processed as normal. Thus the SMS router 8 queries a home location register (HLR) 10 associated with the tradesman's telephone number by sending an SRI_SM request specifying the desired destination address TN to determine where the tradesman is located within the network 2 (i.e. to determine the identity of the Visited Mobile Switching Centre (VMSC) to which the
25 tradesman is connected. In this example it is assumed the tradesman is on the same network as the subscriber (i.e. the tradesman's HLR 10 is within the network 2 and he is connected to VMSC 12. In response to sending the SRI_SM request, the SMS router 8 receives the routing information for VMSC 12. The SMS router 8 thus converts the text message to Mobile Terminated (MT) form, and forwards it to VMSC 12. As
30 indicated in Figure 1A, following the modification to the text message properties in the SMS router 8, the MT text message sent from the SMS router 8 to the VMSC 12 is associated with a destination address (DES) corresponding to the tradesman's

telephone number (TN), and carries the subscriber's secondary number (SS) as its CLI. The MT text message is routed from the VMSC 12 to the tradesman 14 in the normal way. Thus the tradesman receives a text message with a CLI indicating that it has come from the secondary number SS. The tradesman is unaware that the CLI
5 accompanying the message he receives is a substitute.

In addition to modifying the CLI of the text message, the SMS router 8 may also be configured to apply further processing to communications identified by the subscriber as intended for a third party to whom the subscriber does not want to release his telephone number. For example, in this embodiment the SMS router 8 is
10 configured to pass all messages including the predefined prefix to a message logger 16 for storage in a memory 18. Thus at a later stage the subscriber 4 may request a copy of messages sent by him to a given tradesman with whom he is in dispute, for example. The message logger 16 may be operable to allow a user to in-dial a service number associated with the logger and to listen to stored messages (e.g. using text-to-
15 speech technology). Alternatively, the message logger 16 may be operable to forward the messages to a personal archive of the subscriber - e.g. by automatically forwarding logged message contents to an email address of the subscriber (in this case the memory 18 may be dispensed with).

Figure 1B schematically shows what happens when the subscriber 4 of the
20 telephone communications network 2 wishes to instigate a voice call communication to the tradesman in accordance with an embodiment of the invention.

To establish a voice call to the tradesman 14 without revealing his own primary number SN, the subscriber 4 dials the telephone number of the tradesman along with a flag for indicating to the network 2 that the subscriber 4 does not wish to release his
25 primary number SN to the tradesman. For ease of use, in this example the flag for voice calls is the same as the flag for text messages - i.e. the addition of a prefix 00 to the country code of the intended destination number. Thus the subscriber makes a voice call / communication request by dialling telephone number $TN\ddagger$ from his handset 4.

30 In accordance with conventional GSM techniques, the voice call request arrives at MSC 6. As indicated in Figure 1B, the call request sent from the subscriber's handset and arriving at the MSC 6 is associated with a destination address (DES) of

TN‡ (i.e. the tradesman's telephone number with prefix), and carries the subscriber's primary number (SN) as its CLI. The network 2 employs conventional B-number routing functionality in the MSC 6 so that call requests including the predefined prefix in the destination address are identified and diverted to an apparatus 26 referred to here
5 as voice services equipment (VSE). (Call requests not including the predefined prefix in the destination address are routed as normal.) As with the SMS router 8 shown in Figure 1, the VSE 26 may be considered a communications request processor.

On receipt of call request from the MSC 6, the VSE 26 is configured to process the call request in accordance with embodiments of the invention. To do this, the VSE
10 26 is configured to modify the data, in particular the CLI and the destination address DES, associated with the call request. As noted above, the CLI associated with the call request on arrival at the VSE 26 is the primary number SN of the handset 4 (since the call request has been conventionally routed to the VSE 26). However, the VSE 26 is configured to modify the call request properties so that in the CLI field of the call
15 request the primary number SN is replaced by the secondary number SS. Again this may be achieved by interrogating a simple look-up database to check that the subscriber is authorised to use the service and to map the subscriber's primary number SN to the subscriber's secondary number SS. In addition to modifying the CLI of the call request by replacing the primary number by the secondary number, the VSE 26 is
20 configured to remove the prefix from the destination address field. Thus the call request properties are modified by the VSE 26 such that the associated CLI field is changed from SN to SS (as indicated by "SN→SS" within the schematically represented VSE 26 in Figure 1B), and such that the destination address field DES is changed from TN‡ to TN (as indicated by "TN‡→TN" in Figure 1B).

25 The modified call request is then returned by the VSE 26 to the MSC 6 such that the call remains routed ("tromboned") through the VSE. The MSC 6 treats the modified call request as a conventional call request intended for a destination address TN and having a CLI corresponding to the secondary telephone number SS substituted by the VSE 26 for the primary telephone number SN. The MSC 6 thus processes the
30 modified call request from the VSE 26 as normal. That is to say the MSC 6 queries the home location register (HLR) 10 associated with the tradesman's telephone number by sending an SRI request specifying the desired destination address TN to determine

where the tradesman is located within the network 2 (i.e. to determine the identity of the tradesman's VMSC/GMSC)

In response to sending the SRI request, the MSC 6 receives the routing information for VMSC 12 and routes the modified call request accordingly. As indicated in Figure 1B, following the modification to the call request properties in the VSE 26, the call request sent to the VMSC 12 is associated with a destination address (DES) corresponding to the tradesman's telephone number (TN), and carries the subscriber's secondary number (SS) as its CLI. The call request is routed from the VMSC 12 to the tradesman 14 in the normal way. Thus the tradesman receives a call request (i.e. his telephone rings) with a CLI indicating that it has come from the secondary number SS. The tradesman is unaware that the CLI accompanying the call request he receives is a replacement for the "true" CLI of the subscriber. When the tradesman answers the call request, e.g. by picking up his phone, a voice call is established (a "tromboned" call through the VSE 26).

As with the SMS router 8 in Figure 1A, in addition to modifying the CLI of the call request, the VSE 26 may also be configured to apply further processing to the call request communication and to the resulting voice call communication. For example, in this embodiment the VSE 26 is configured to log all call requests and record all voice communications passing through the VSE 26 in a memory 28. Thus at a later stage the subscriber 4 may obtain a copy of conversations between him and the tradesman, for example in the event of a dispute, or simply for easy minuting of the call. The VSE 26 may be operable to allow the subscriber to in-dial a service number associated with the VSE to listen to recorded calls. Alternatively, the VSE may be operable to forward an audio file of the recording to a personal archive of the subscriber - e.g. by automatically emailing the audio file to an email address of the subscriber. Alternatively, if no additional call processing is required, then the VSE could drop the call back to the MSC in order to avoid the tromboned call path. Also the functions of the VSE could be incorporated into the MSC (i.e. such that the VSE functionality is provided within the MSC rather than by a separate equipment).

Thus Figures 1A and 1B show how a subscriber can instigate communications (i.e. text messages as in Figure 1A, and voice calls as in Figure 1B) with a third party in a way that provides the third party with what appears to be a genuine CLI so the

third party is less inclined to reject the communication, but in a way that does not require the subscriber to release his personal (primary) telephone number to the third-party. Furthermore, the above described schemes provide for a ready way of applying additional processing to such communications. In the above examples the additional
5 processing provides for automatic recording / storing of communications between the subscriber and the third party.

Thus Figures 1A and 1B show schemes that allow a subscriber 4 to instigate communications that present a substituted CLI to third parties (i.e. a CLI indicating a secondary number SS instead of the true telephone number SN of the subscriber), and
10 which may be automatically subjected to additional processing services (e.g. logging / storing / recording). However, it may be useful in some embodiments if the subscriber were able to receive communications from third parties that are addressed to his secondary number, and it may further be useful if these communications could also be automatically subjected to further processing, such as recording / storing. This would
15 allow a tradesman to use the secondary number to instigate communications with the subscriber. I.e. the tradesman could send a text message or place a voice call to the secondary number with the communication being routed to the subscriber's handset. Thus two-way communication between the subscriber and the tradesman may be established without the tradesman needing to be made aware of the true telephone
20 number associated with the subscriber.

Figure 2A schematically shows a subscriber 4 of a telephone communications network 2 receiving a text message communication from a third party in accordance with an embodiment of the invention. Elements of Figure 2A which are similar to and will be understood from correspondingly elements of Figure 1A are indicated by the
25 same reference numeral. As with Figure 1A, the subscriber 4 in Figure 2A is assumed to be on his home network, as schematically indicated by the solid line representation of subscriber's handset 4 within the schematically represented extent of the network 2. However, the subscriber 4 could equally be roaming on a different network, as schematically indicated by the dotted line representation of subscriber's handset 4
30 outside the extent of the network 2.

As described above in connection with Figure 1A, the subscriber 4 has a primary telephone number SN. This is the conventional MSISDN number associated

with the subscriber and is the number to which communications intended for the subscriber are ultimately addressed within the network. However, the subscriber also has a secondary number SS associated with his handset / primary number. This is the number released to third parties to whom the subscriber does not want to release his
5 primary number. The secondary number may be released to third parties as a CLI of a communication from the subscriber, e.g., as shown in Figures 1A and 1B, or the subscriber may pass on the secondary telephone number to the third party in some other way, e.g. by simply telling them or writing it down. In any case, so far as the third party is concerned, the secondary number SS is the subscriber's "normal"
10 telephone number and is the number to which the third party sends communications.

As above, the third party in Figure 2A is assumed to be a tradesman. Again the tradesman 14 is assumed to be on the same network as the subscriber 4 (schematically indicated by the solid line representation of the tradesman's hardware 14 within the network 2). However, the tradesman 14 may equally be on a different network to the
15 subscriber 4 (as schematically indicated the dotted line representation of hardware 14 outside the extent of the network 2).

To send a text message to the subscriber 4, the tradesman 14 sends a text message indicating the secondary number SS as the desired recipient of his message in the normal way. E.g. the tradesman may use a "reply" function of his handset to reply
20 to a communication previously received from the subscriber 4 which bears the secondary number SS as the CLI, or the tradesman may manually enter the telephone number SS.

In accordance with conventional GSM SMS routing techniques, the text message is first directed to the SMS network infrastructure of the tradesman's home
25 network (here taken to be the same as subscriber's home network 2, but this is not significant). In accordance with this embodiment of the invention it will be assumed that the SMS network infrastructure to which the tradesman's text message is sent is a conventional SMSC 38. Accordingly, as indicated in Figure 2A, the text message sent from the tradesman is associated with a destination address (DES) of the tradesman's
30 SMSC 38, a desired recipient address (ADD) of SS (i.e. the subscriber's secondary telephone number), and carries the tradesman's normal telephone number (TN) as its

CLI. The text message is conventionally routed through Mobile Switching Centre (MSC) 36 to be delivered in mobile originating (MO) form at the SMSC 38.

On receipt of the text message, the tradesman's SMSC 38 processes the communication in the normal way. Thus the SMSC 38 queries a home location register (HLR) 40 associated with the subscriber's secondary telephone number SS by
5 sending an SRI_SM request specifying the desired destination address SS. The secondary number SS is preferably a virtual mobile number, and the HLR function 40 for this number may be implemented either in a conventional HLR, or preferably within the SMS infrastructure as a function of one or more SMS Routers. Thus the
10 network automatically routes HLR traffic relating to SS to the SMS Router implementing the HLR function for SS, which responds as though it were a conventional HLR. The HLR function is configured to give the address of an SMS Router as the VMSC address of the virtual mobile.

The HLR 40 is configured to respond to SRI_SM requests by providing routing
15 information to the tradesman's SMSC 38 indicating that the text message should be routed to the SMS network infrastructure of the subscriber's home network that is configured to provide the functionality of embodiments of the invention, in this example the SMS router 8. Thus the tradesman's SMSC 38 forwards the message in mobile terminated (MT) form to the SMS router 8 of the subscriber. As indicated in
20 Figure 2A, the MT text message sent from the tradesman's SMSC 38 to the subscriber's SMS router 8 carries an IMSI associated with a destination address (DES) corresponding to the subscriber's secondary telephone number (SS), and carries the tradesman's number (TN) as its CLI.

On receipt of text messages in MT form, the SMS router 8 acting as a virtual
25 mobile equipment is configured to compare the received IMSI with a database of IMSIs corresponding to secondary numbers to determine whether or not the received IMSI corresponds to one of the network's allocated secondary numbers. If the SMS router 8 determines that the destination is not one of the secondary numbers, the text message is routed to its destination in the conventional way. However, if it is
30 determined that the destination is a defined secondary number, i.e. in this case the secondary number SS of the subscriber 4, the SMS router 8 identifies that the text message is one that should be processed in accordance with embodiments of the

invention. To do this, the SMS router 8 is configured to modify the data, in particular the received IMSI (destination address) DES and the CLI, associated with the MT text message. As noted above, the received IMSI associated with the text message on arrival at the SMS router 8 is associated with the secondary number SS of the handset
5 4 (since this is the desired recipient address used by the tradesman in sending the message). The SMS router 8 is configured to modify the text message properties so that the received IMSI associated with the secondary number SS is replaced by the IMSI of the primary number SN. This may be achieved, for example, based on a simple look-up in a database relating the subscriber's primary number SN to his
10 secondary number SS and a conventional HLR query. In addition to modifying the destination IMSI of the message by replacing the secondary IMSI with the primary IMSI, the SMS router 8 may also be configured to add the predefined prefix for flagging outgoing communications from the subscriber as being communications for third parties to whom the subscriber does not wish to release their primary number to
15 the CLI associated with the message. Although this is not necessary for completing message delivery, it can be helpful because it means the CLI received by the subscriber will already include the predefined prefix. This means that if the subscriber saves the number of the tradesman from the received CLI, or uses a "reply to" function of his handset, the predefined prefix is automatically included in the number used.
20 This can help prevent the subscriber accidentally sending a communication to a tradesman without using the prefix, which would result in his primary number being released.

Thus the MT message properties are modified by the SMS router 8 such that the destination address filed DES is changed from SS to SN (as indicated by
25 "SS→SN" within the schematically represented SMS router 8 in Figure 2A), and such that the CLI field is changed from TN to TN_‡ (as indicated by "TN→TN_‡" in Figure 2A).

The modified text message may then be processed as normal. Thus the SMS router 8 queries a home location register (HLR) 42 associated with the subscriber's
30 primary telephone number SN by sending an SRI_SM request specifying the desired destination address SN to determine where the subscriber is located within the network 2 (i.e. to determine the identity of the VMSC to which the subscriber is connected). In

this example it is assumed the subscriber is not roaming and he is connected to VMSC 44. In response to sending the SRI_SM request, the SMS router 8 receives the routing information for VMSC 44. The SMS router 8 thus forwards the modified MT message to VMSC 44. The MT text message is routed from the VMSC 44 to the subscriber 4 in the normal way. As indicated in Figure 2A, following the modification to the text message properties in the SMS router 8, the MT text message passing through the VMSC 44 is associated with a destination IMSI corresponding to the subscriber's primary telephone number (SN), and carries the tradesman's number with prefix (TN‡) as its CLI.

10 In addition to modifying the destination address of the text message, the SMS router 8 may also be configured to apply further processing to communications initially addressed to the secondary number SS. For example, the SMS router 8 may be configured to pass all messages addressed to the secondary number SS to message logger 16 for storage in memory 18. Thus at a later stage the subscriber 4 may request
15 a copy of messages received by him from a given tradesman with whom he is in dispute, for example. Thus by combining the above-described functionality for subscriber-received text communications with the functionality for subscriber-originating text communications described in relation to Figure 1A, all text communications between the subscriber and tradesman may be automatically logged /
20 stored regardless of who sent the text.

Figure 2B schematically shows what happens when the tradesman 14 wishes to instigate a voice call communication to the subscriber 4 in accordance with an embodiment of the invention. Elements of Figure 2B which are similar to and will be understood from correspondingly elements of Figure 2A are indicated by the same
25 reference numeral.

To establish the voice call the tradesman 14 dials the secondary number SS of the subscriber from his handset as normal. In accordance with conventional GSM techniques, the corresponding voice call request is routed to MSC 56 within network 2 (because network 2 is the "owner" of the secondary number SS). As indicated in
30 Figure 2B, the call request sent from the tradesman and arriving at the MSC 56 is associated with a destination address (DES) of SS (i.e. the subscriber's secondary telephone number), and carries the tradesman's telephone number (TN) as its CLI. The

network 2 employs conventional B-number routing functionality in the MSC 56 so that call requests directed to numbers allocated as secondary numbers are identified and diverted to voice services equipment (VSE). Alternatively, the received virtual mobile destination number may be processed conventionally by the MSC, which
5 performs an HLR look-up using an SRI message as normal. The HLR function, preferably implemented in an SMS Router or alternatively in a conventional HLR, responds with a VMSC address which is the address of the VSE 26. The call is thus routed in the first instance to the VSE. The VSE in this example may be the same equipment as the VSE 26 shown in Figure 1B and described above in connection with
10 out-dialled calls from the subscriber to the tradesman. (Call requests not directed to one of the allocated secondary numbers are routed as normal.)

On receipt of call request from the MSC 56, the VSE 26 is configured to process the call request in accordance with embodiments of the invention. To do this, the VSE 26 is configured to modify the data, in particular the destination address DES
15 and the CLI, associated with the call request. As noted above, the destination address DES associated with the call request on arrival at the VSE 26 is the secondary number SS of the handset 4. However, the VSE 26 is configured to modify the call request properties so that in the destination address field of the call request the secondary number SS is replaced by the primary number SN. Again this may be achieved by
20 interrogating a simple look-up database to map the subscriber's primary number SN from the subscriber's secondary number SS. In addition to modifying the destination address of the call request by replacing the secondary number with the primary number, the VSE 26 is configured to add the prefix to the CLI field. Thus the call request properties are modified by the VSE 26 such that the associated destination
25 address field is changed from SS to SN (as indicated by "SS→SN" within the schematically represented VSE 26 in Figure 2B), and the CLI field is changed from TN to TN‡ (as indicated by "TN→TN‡" in Figure 2B).

The modified call request is then returned by the VSE 26 to the MSC 56. The MSC 56 treats the modified call request as a conventional call request intended for a
30 destination address SN and having a CLI corresponding to the tradesman's telephone number with prefix TN‡. The MSC 56 thus processes the modified call request from the VSE 26 as normal. That is to say the MSC 56 queries the home location register

(HLR) 42 associated with the subscriber's primary telephone number by sending an SRI request specifying the desired destination address SN in order to determine where the subscriber is located within the network 2, i.e. to determine the identity of the subscriber's VMSC. (The HLR will execute a conventional Provide Roaming Number
5 (PRN) request, as schematically indicated by the dotted arrow marked PRN in Figure 2B. This is to obtain appropriate routing details, e.g. a dynamically allocated temporary number belonging to the VMSC to which the subscriber is attached, in a conventional manner. It is noted that conventionally a PRN request is executed and a dynamic number allocated regardless of whether the VMSC is part of the home or part
10 of a foreign network.) In response to sending the SRI request, the MSC 56 receives the routing information for VMSC 44 and routes the modified call request accordingly. As indicated in Figure 2B, following the modification to the call request properties in the VSE 26, the call request sent to the VMSC 44 is associated with a dynamically allocated roaming number, and carries the tradesman's number with prefix as its CLI.
15 The call request is routed from the VMSC 44 to the subscriber's handset 4 in the normal way. Thus the subscriber receives a call request (i.e. his telephone rings) with a CLI indicating that it has come from the tradesman's number with prefix TN‡. When the subscriber answers the call request, e.g. by picking up his phone, a voice call is established using conventional call tromboning.

20 As before, in addition to modifying the destination number of the call request, the VSE 26 may also be configured to apply further processing to the call request communication and to the resulting voice call communication. For example, in this embodiment the VSE 26 is configured to log all call requests and record all voice communications (preferably by summing the audio from both sides of the call) passing
25 through the VSE 26 in a memory 28. Thus by combining the above-described functionality for subscriber-received communications with the functionality for subscriber-originating communications described in relation to Figure 1B, all voice communications between the subscriber and tradesman may be automatically recorded regardless of who originated the call.

30 Figure 3A is in large part similar to, and will be understood from Figure 1A. However, Figure 3A differs from Figure 1A in that it shows the subscriber 4 of the telephone communications network 2 sending a text message communication to the

tradesman when the subscriber is roaming on another network. This situation is schematically indicated in Figure 3A by the subscriber handset 4 being outside the schematically represented extent of his home network 2. The subscriber may send a text communication to the tradesmen 14 without revealing his primary number SN while he is roaming in the same way as when he is not roaming (Figure 1A).

Thus to send the text message without revealing his primary number SN the subscriber 4 first composes the text content of the message as normal, and then instructs his handset to send the text message to the telephone number of the tradesman 14 along with the prefix flag. The conventional GSM architecture is such that the text message is initially directed to the SMS network infrastructure of the subscriber's home network, e.g. to a Short Message Service Centre (SMSC) or SMS router of the network 2, even though he is roaming on another network. As with Figure 1A, in accordance with this embodiment it is assumed the SMS network infrastructure of the subscriber's home network 2 is SMS router 8. Accordingly, as indicated in Figure 3A, the text message sent from the subscriber's handset is routed in a conventional manner from the roaming handset to SMS router 8 via VMSC 66. Thus the MO format message arriving at the SMS router 8 is associated with a destination address (DES) of the SMS router 8, a desired recipient address (ADD) of TN $\dagger$ (i.e. the tradesman's telephone number with prefix), and carries the subscriber's primary number (SN) as its CLI.

On receipt of text messages in MO form, the SMS router 8 may additionally processes them in the same way as described above in relation to Figure 1A. Thus a subscriber may send text messages without revealing his primary number SN, and these messages may optionally be automatically further processed, e.g. logged / stored, regardless of whether the subscriber is roaming (Figure 3A) or on his home network 2 (Figure 1A).

However, the processing of voice call requests may require additional steps if the subscriber is roaming. This is because whereas text messages are automatically initially routed to the address of the SMS router 8 in the home network regardless of the specified intended recipient address TN $\dagger$, initial routing of voice calls is based on the specified intended recipient address itself, i.e. based on the dialled number TN $\dagger$. Thus, unless the "foreign" network on which the subscriber is roaming is configured to

properly deal with the prefix, the foreign network will be unable to route the call (e.g. because it will not know where calls beginning +00 should be routed to). In principle the foreign network could be configured to identify voice call requests having the prefix flag, and, based on the CLI of the roaming subscriber, route the calls to the subscriber's home network while maintaining the prefix so that the calls can be picked up in an MSC of the subscriber's home network and dealt with as described above in relation to Figure 1B. However, in practice it is unlikely that all, if any, foreign networks would be willing to adopt this scheme, especially if the foreign network does not implement its own version of embodiments of the invention. Accordingly, other techniques may be employed to allow a roaming subscriber to initiate a voice call to a third party without revealing his primary number SN, but revealing instead his secondary number. Figure 3B shows one such example. Elements of Figure 3B that are similar to and will be understood from corresponding elements of Figures 1A, 1B, 2A, 2B and/or 3A are identified by the same reference numeral.

Thus referring to Figure 3B, if the roaming subscriber 4 wishes to instigate a voice call to the tradesman 14, he initially composes a text message having content indicative of the tradesman's telephone number. In this example the text message simply contains the string TN‡ (e.g. in the form +00441234567890). The subscriber 4 then instructs his handset to send the text message to a predefined service number RN for setting up voice calls from roaming locations. It is noted there is no need for the subscriber to include the prefix 00 in the text message content for the network 2 to be able to identify the nature of the text message because this is already apparent from the mere fact the text message is sent to the special service number RN. However, in this embodiment it is assumed the subscriber does include the prefix so that in common with the communication schemes shown in the other figures the subscriber always uses the tradesman's number with prefix. This allows a single prefixed number to be used and stored in the subscriber's handset's phone book database, for example.

As discussed above in connection with Figure 3A, the text message is conventionally routed from the roaming handset 4 to SMS router 8 via, in this case, VMSC 66. Thus as schematically indicated in Figure 1, the MO format message arriving at the SMS router 8 is associated with a destination address (DES) of the SMS router 8, a desired recipient address (ADD) of RN (i.e. the predefined service number),

contains message content indicative of $TN_{\ddagger}$ (i.e. the tradesman's telephone number with prefix), and carries the subscriber's primary number (SN) as its CLI.

On receipt of text messages in MO form, the SMS router 8 identifies the text message as a request for a voice call to be established based on the fact the specified
5 desired recipient address is RN (i.e. the text message has been sent to the special service number). The SMS router 8 is configured to obtain data from the text message to be used in setting up the requested voice call. In particular the SMS router 8 is configured to use the subscriber's primary number SN (as determined from the CLI of the text message) to determine the subscriber's secondary number SS, e.g. through a
10 look-up database as described above. In addition, the SMS router 8 is configured to derive the desired recipient address based on an analysis of the text message content string in which the subscriber has provided the prefixed tradesman's telephone number $TN_{\ddagger}$. The SMS router 8 is configured to strip the prefix from $TN_{\ddagger}$ to obtain tradesman's telephone number TN, and to query a home location register (HLR) 10
15 associated with the tradesman's telephone number by sending an SRI_SM request specifying the desired destination address TN. This is to determine where the tradesman is located within the network 2 (i.e. to determine the identity of the VMSC to which the tradesman is connected. In this example it is assumed the tradesman is on the same network as the subscriber and he is connected to VMSC 12. In response to
20 sending the SRI_SM request, the SMS router 8 receives the routing information for VMSC 12.

The SMS router 8 then passes the tradesman's telephone number TN, the routing details of VMSC 12, and the primary (SN) and secondary (SS) numbers of the subscriber to VSE 26. The VSE 26 is configured to then establish a voice
25 communication between the subscriber 4 and the tradesman 14 by bridging out-dialled calls to each of them.

Thus the VSE 26 first queries the HLR 42 associated with the subscriber's primary telephone number by sending an SRI request specifying the subscriber's primary number SN to determine routing information for out-dialling the subscriber 4.
30 The HLR 42 responds to the SRI request in the normal way. Thus because the subscriber is roaming, the HLR will execute a conventional Provide Roaming Number (PRN) request (not represented in Figure 3B) to obtain a dynamically allocated

number belonging to the network on which the subscriber is roaming. In response to sending the SRI request, the VSE 26 receives an indication of the dynamically allocated roaming number, here taken to be SNR, to be used to contact the roaming subscriber. The VSE then instigates an out-dialled call to the subscriber's handset 4
5 using the allocated roaming number SNR (schematically indicated in Figure 3B by the arrow marked "O/D SNR"). This is conventionally routed to the subscriber 4, via VMSC 66. The VSE 26 in this example is configured to use the service number RN as the CLI of this call to alert the subscriber that it is related to his call request.

Preferably, when the subscriber answers the call, the VSE 26 instigates a
10 second out-dialled call to the tradesman ("O/D TN"). This is achieved using the routing information indicative of VMSC 12 obtained by the SMS router 8. For this call leg the VSE 26 uses the subscriber's secondary number SS as the CLI. This out-dialled call is routed through the VMSC 12 to the tradesman 14 in the normal way. Thus the tradesman receives a call request (i.e. his telephone rings) with a CLI indicating that it
15 has come from the secondary number SS. When the tradesman answers the call request, e.g. by picking up his phone, the VSE 26 bridges the two out-dialled calls so that a voice call is established between the subscriber and the tradesman.

As before, the VSE 26 may also be configured to apply further processing to the communication, e.g. to log all call requests and record all voice communications in
20 a memory 28.

In the example shown in Figure 3B, the subscriber texts a text message to a predefined service number to instigate a request for a voice call when he is roaming. Other techniques could be employed. For example a request using Unstructured Supplementary Service Data (USSD) could similarly be made.

25 It will be appreciated that the above-described embodiments are illustrative and may be modified in a number of ways. For example, in the above described embodiments certain functions and tasks are described as being performed by certain network elements, however in other examples different elements may perform different tasks. For example, in Figure 3B the SMS router 8 may route the call request
30 text message to a separate service apparatus (identified by number RN) to perform the tasks and functions described above as being performed by the SMS router 8.

Thus to summarise, embodiments of the invention can provide improvements in telecommunication networks in accordance with the following principles:

1. A secondary number is associated with a mobile handset so that it can receive communications (e.g. voice calls and text messages) sent to that number.
- 5 2. A means of indicating for outgoing communications (calls and texts) that the network should release the secondary number as a CLI associated with communications instead of a primary number of the handset.
3. Additional services may be applied to voice and/or text communications in association with use of the secondary number for both communications initiated by the subscriber and communications received by the subscriber.

Thus embodiments of the invention allow a mobile subscriber to rent a secondary 'alias' telephone number that he can release to third parties, either to whom he does not wish to reveal his true number, and/or with whom he wishes all calls to be subject to an additional service, such as voice call recording / text message storing.

15 The secondary number may be permanently allocated to the subscriber for as long as his subscription continues, or until he wishes to change the number. For example, if a third party abuses his knowledge of the secondary number, e.g. by making frequent unsolicited communications to the secondary number, the subscriber can simply swap to a different secondary number. Thus the subscriber does not need to change his

20 primary telephone number that may be well known and used by friends, family and work colleagues etc. in order to stop unwanted calls from a third party.

It will be appreciated that while the above-described embodiments of the invention have focussed on GSM networks, embodiments of the invention may also be implemented in other network architectures.

25 What is more, whereas the above described embodiments have been described in the context of an SMS router-based SMS infrastructure network, embodiments of the invention could equally employ a router-based SMS infrastructure network. For example, embodiments of the invention may use a suitably programmed programmable text message router, e.g. in the form of a Transaction Converter such as

30 is manufactured by Telsis (RTM) Limited.

Furthermore, while the above described mechanism for indicating that a user wishes to rely on his secondary number SS is based on adding a prefix to an otherwise

conventional telephone number, other techniques may equally be used. For example, a suffix might be added, or in the case of text messaging a suitable flag may be included in the body of the text message content. E.g. inclusion of a predefined sequence of characters at the beginning of text message may be used to indicate to the network 2 that the secondary number SS should be used. For voice communications the network may be configured to prompt the subscriber as to which number should be released as a CLI. For example, the subscriber may dial a number as normal and be prompted with an audio message "press 1 to use your primary number, press 2 to use your secondary number". The network 2 can then act accordingly. However, while many different schemes are possible, it is envisaged that in many cases the above described prefix scheme will be preferred because of its simplicity and transparency to the subscriber.

Thus a method of processing communication requests in a telecommunications network has been described. The method comprises receiving a request from a subscriber of the network to establish a communication with a third party. The received communication request includes an indication of the third party's telephone number (i.e. a desired destination number), an indication of the telephone number of the user's telephone handset (i.e. its CLI), and an indication that the user wishes to withhold their handset's telephone number from the third party (e.g. this a predefined prefix added to the dialled destination number). On determining the presence of the indication that the user wishes to withhold their telephone number, the communication request is modified by replacing the indication of the user's handset's telephone number with an indication of a secondary telephone number associated with the user before being forwarded to the third party. Thus the third party receives a communication request appearing to originate from the secondary telephone number. If the third party sends a communication request to the secondary number, the communication request may then be modified so that the destination address associated with the request (i.e. the secondary telephone number) is replaced with the user's handset's telephone number such that the request may be delivered to the user's handset.

CLAIMS

1. A method of processing communication requests in a telecommunications network, the method comprising: receiving a request from a user of the network to establish a communication with a third party, wherein the communication request
5 includes an indicator representative of a destination telephone number of the third party, an indicator representative of a primary telephone number of the user, and an indication that the user wishes to withhold the primary telephone number from the third party, and, responsive to the presence of the indication that the user wishes to withhold the primary
10 telephone number, the method further comprising modifying the communication request by replacing the indicator representative of the primary telephone number with an indicator representative of a secondary telephone number associated with the user, and forwarding the modified communication request for routing to the third party.
2. The method of claim 1, further comprising processing a communication between
15 the user and the third party established on the basis of the communication request in a manner dependent on the presence of the indication that the user wishes to withhold the primary telephone number from the third party.
3. The method of claim 2, wherein the processing includes establishing a record of
20 the communication.
4. The method of any of claims 1 to 3, wherein the indication that the user wishes to withhold the primary telephone number from the third party comprises a predefined
25 prefix or suffix added to the indicator representative of the destination telephone number associated with the communication request, and the method comprises further modifying the communication request by removing the predefined prefix or suffix.
5. The method of any of claims 1 to 3, wherein the user is roaming on another
30 telecommunications network, and the indication that the user wishes to withhold the primary telephone number from the third party is provided by the user sending an initial communication request to a predefined service number.

6. The method of claim 5, wherein the communication request is a request for a voice call communication, and the voice call communication is subsequently established by an apparatus associated with the predefined service number making out-dialled calls to
5 the both the user and third party, and bridging the respective out-dialled calls.

7. A method of processing communication requests in a telecommunications network, the method comprising: receiving a request from a third party to establish a communication with a user of the network having a primary telephone number, wherein
10 the communication request includes an indicator representative of a secondary telephone number associated with the user as a destination telephone number for the communication request, and, responsive to the presence of the indicator representative of the secondary telephone number as the destination telephone number for the communication request, the method further comprising modifying the communication
15 request by replacing the indicator representative of the secondary telephone number with an indicator representative of the primary telephone number associated with the user, and forwarding the modified communication request for routing to the user.

8. The method of claim 7, further comprising processing a communication between
20 the user and the third party established on the basis of the communication request in a manner dependent on the presence of the indicator representative of the secondary telephone number as the destination telephone number for the communication request.

9. The method of claim 8, wherein the processing includes establishing a record of
25 the communication.

10. The method of any of claims 7 to 9, wherein the communication request further includes an indicator representative of a telephone number of the third party, and the method comprises further modifying the communication request by adding a predefined
30 prefix or suffix to the indicator representative of a telephone number of the third party.

11. Service apparatus for a telecommunications network, the apparatus comprising a communications request processor operable to receive a request from a user of the network to establish a communication with a third party, wherein the communication request includes an indicator representative of a destination telephone number of the third party, an indicator representative of a primary telephone number of the user, and an indication that the user wishes to withhold the primary telephone number from the third party, wherein the service apparatus is operable to determine the presence of the indication that the user wishes to withhold the primary telephone number in the communications request, and in response thereto, to modify the communication request by replacing the indicator representative of the primary telephone number with an indicator representative of a secondary telephone number associated with the user, and to forward the modified communication request for routing to the third party.

12. Service apparatus for a telecommunications network, the apparatus comprising a communications request processor operable to receive a request from a third party to establish a communication with a user of the network having a primary telephone number, wherein the communication request includes an indicator representative of a secondary telephone number associated with the user as a destination telephone number for the communication request, wherein the service apparatus is operable to determine the presence of the indicator representative of the secondary telephone number as the destination telephone number for the communication request, and in response thereto, to modify the communication request by replacing the indicator representative of the secondary telephone number with an indicator representative of the primary telephone number associated with the user, and to forward the modified communication request for routing to the user.

13. A method of processing communication requests in a telecommunications network substantially as hereinbefore described with reference to the accompanying drawings.

30

14. A telecommunications network substantially as hereinbefore described with reference to the accompanying drawings.

33

Application No: GB0722830.7

Examiner: Mr Jared Stokes

Claims searched: 1 to 14

Date of search: 29 February 2008

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
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X	1 and 11 at least	KR200427023 A (KT Corp) See WPI abstract accession No.2004-531771
Y	4	US5283824 B1 (Shaw) See column 2 lines 11-28
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Categories:

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Y	Document indicating lack of inventive step if combined with one or more other documents of same category	P	Document published on or after the declared priority date but before the filing date of this invention
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X:

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Worldwide search of patent documents classified in the following areas of the IPC

H04M

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
H04M	0001/57	01/01/2006
H04M	0003/42	01/01/2006
H04M	0001/57	01/01/2006

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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	Filing Date		2021-04-28
	First Named Inventor	Ivan Zhidov	
	Art Unit	2647	
	Examiner Name	HUYNH, NAM TRUNG	
	Attorney Docket Number	GETFL-01001DIV3	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20040203565	A1	2004-10-14	Chin et al.	
	2	20100128857	A1	2010-05-27	Logan	
	3	20100177662	A1	2010-07-15	Meincke et al.	
	4	20120282903	A1	2012-11-08	Rabra et al.	
	5	20130295899		2012-05-07	Philip Lowman	
	6	20140362742	A1	2014-12-11	MARTINEZ et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2454886	GB	A	2009-05-27	Jeffrey Wilson		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

2	2007049943	WO	A1	2007-05-03	Jwa, Jeong-woo		
3	2007131269	WO	A1	2007-11-22	Cantoni, Antonio		

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	AUTHOR: SUPERUSER, What are the Internet Workings of the Google Voice captured at https://superuser.com/questions/325891/what-are-the-internal-workings-of-google-voice , posted August 2011, August 2011, internet publication	
	2	BENJAMIN E. JOHNSON, Google Voice: Connecting Your Telephone to the 21st Century, Computers Libr. 21, 2010 WLN 28403479, Computer in Libraries, Information Today, Inc., Jun 2010, June 1, 2010, Volume 30, Issue 5	
	3	H. SCHULZRINNE et al., The Session Initiation Protocol: Providing Advanced Telephony Services Across the Internet, Bell Labs Technical Journal, October-December 1998 Journal, December 1998	
	4	JOHN BRANDON, One Number to Rule Them All - MIT Technology Review captured at https://www.technologyreview.com/2009/04/02/214463/one-number-to-rule-them-all/ posted April 2, 2009, MIT Technology Review, April 2, 2009, MIT Technology Review, internet publication	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Stuart J. West/	Date (YYYY-MM-DD)	2021-11-09
Name/Print	Stuart J. West	Registration Number	43258

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Your fee transmittal sheet cannot be generated at this time. Please complete your submission. After completing your submission, please contact the Electronic Business Center (EBC) to request the fee transmittal sheet for this submission. We apologize for the inconvenience. Electronic Business Center (EBC) 1-866-217-9197 (toll-free) or 571-272-4100 6 a.m. to 12 Midnight Eastern Time Monday -Friday		
First Named Inventor/Applicant Name:				
Filer:				
Attorney Docket Number:				
Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : November 9, 2021

In re Application of :

Ivan Zhidov

DECISION ON PETITION

UNDER CFR 1.313(c)(2)

Application No : 17243401

Filed : 28-Apr-2021

Attorney Docket No : GETFL-01001DIV3

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed November 9, 2021, to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED**.

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 2647 for processing of the request for continuing examination under 37 CFR 1.114 .

Office of Petitions

Electronic Acknowledgement Receipt	
EFS ID:	44243140
Application Number:	17243401
International Application Number:	
Confirmation Number:	4808
Title of Invention:	TELEPHONE NETWORK SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Ivan Zhidov
Customer Number:	43490
Filer:	Stuart James West
Filer Authorized By:	
Attorney Docket Number:	GETFL-01001DIV3
Receipt Date:	09-NOV-2021
Filing Date:	28-APR-2021
Time Stamp:	18:59:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$750
RAM confirmation Number	E2021A9I59034715
Deposit Account	503203
Authorized User	Stuart West
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges) 37 CFR 1.19 (Document supply fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	ePetition Request Form	petition-request.pdf	39857	no	2
			96b5f25788d8dec22e6de19be4fbac3073e70ac5		
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	20211109-RCE-GETFL-01001DIV3.pdf	1322420	no	3
			45e95dc7a5ee8303a27a88e53c46400475b3e8ad		
Warnings:					
Information:					
3	Quick Path Information Disclosure Statement	20211109-QPIDSRequest-GETFL-01001DIV3.pdf	201863	no	2
			0ac258e959d7c3cac84ad8459d8ec41560db4e4d		
Warnings:					
Information:					
4	Foreign Reference	WO2007049943-GETFL-01001DIV3.pdf	4352489	no	41
			6b83bd68b51ec9527fc67d71533cbcbcd3f2add2		
Warnings:					
Information:					
5	Foreign Reference	WO2007131269-GETFL-01001DIV3.pdf	7099897	no	72
			f6c49a4a2c81df06397ca45863ca68ece93015fd		
Warnings:					
Information:					
6	Non Patent Literature	GoogleVoiceConnectingYourTelephone to the 21st Century-GETFL-01001DIV3.pdf	128993	no	5
			df1a28edbf184365548ee95ba2888abeae7dbf1c		
Warnings:					
Information:					

7	Transmittal Letter	20211108-IDSCover-GETFL-01001DIV3.pdf	182749	no	4
			37fddcd91535a6ee081f8463095f9927b0aed8950		
Warnings:					
Information:					
8	Foreign Reference	GB2454886A-GETFL-01001DIV3.pdf	1903087	no	38
			c1be55960b34e17b86a20c17a2baff798a442117		
Warnings:					
Information:					
9	Non Patent Literature	OneNumbertoRuleThemAllMIT TechnologyReview-GETFL-01001DIV3A.pdf	1402019	no	10
			119e176c8255c2655bdd4ca155873886595b79c9e		
Warnings:					
Information:					
10	Non Patent Literature	SuperUser-GETFL-01001DIV3A.pdf	191918	no	3
			82cdb3a36bacbfcd3d382ff40ea662b247427e4		
Warnings:					
Information:					
11	Non Patent Literature	TheSessionInitiationProtocolProvidingAdvancedTelephonyServicesAcrossTheInternet-GETFL-01001DIV3A.pdf	648832	no	17
			8d280c5ecc78ddb5d9263fb91f564d5bdb62259		
Warnings:					
Information:					
12	Information Disclosure Statement (IDS) Form (SB08)	20211108-IDS-GETFL-01001DIV3A.pdf	1118341	no	6
			2f24eb952ebd28c79ff05011edb0f3df862d9139		
Warnings:					
Information:					
13	Fee Worksheet (SB06)	fee-info.pdf	30061	no	2
			769380a49c92bc8e06d1c1dfb5959d2273810ce5		
Warnings:					
Information:					
Total Files Size (in bytes):			18622526		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web		PTO/SB/140 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)	
Application Number	17243401	
Filing Date	28-Apr-2021	
First Named Inventor	Ivan Zhidov	
Art Unit	2647	
Examiner Name		
Attorney Docket Number	GETFL-01001DIV3	
Title	TELEPHONE NETWORK SYSTEM AND METHOD	
An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary. APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c). A grantable petition requires the following items: (1) Petition fee; and (2) One of the following reasons: (a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable; (b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or (c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).		
Petition Fee		
☒ Small Entity ☐ Micro Entity ☐ Regular Undiscounted		
Reason for withdrawal from issue		

☐ One or more claims are unpatentable ☒ Consideration of a request for continued examination (RCE) (List of Required Documents and Fees) ☐ Applicant hereby expressly abandons the instant application (any attorney/agent signing for this reason must have power of attorney pursuant to 37 CFR 1.32(b)).	
RCE request, submission, and fee. I certify, in accordance with 37 CFR 1.4(d)(4) that : ☐ The RCE request ,submission, and fee have already been filed in the above-identified application on ☒ Are attached.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ☒ An attorney or agent registered to practice before the Patent and Trademark Office who has been given power of attorney in this application. ☐ An attorney or agent registered to practice before the Patent and Trademark Office, acting in a representative capacity. ☐ A sole inventor ☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ☐ A joint inventor; all of whom are signing this e-petition	
Signature	/Stuart J. West/
Name	Stuart J. West
Registration Number	43258

Electronic Patent Application Fee Transmittal				
Application Number:		17243401		
Filing Date:		28-Apr-2021		
Title of Invention:		TELEPHONE NETWORK SYSTEM AND METHOD		
First Named Inventor/Applicant Name:		Ivan Zhidov		
Filer:		Stuart James West		
Attorney Docket Number:		GETFL-01001DIV3		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
PETITION FEE-37CFR 1.17(H) (GROUP II)	2464	1	70	70
RCE- 1ST REQUEST	2801	1	680	680
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				750



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :70972

Sale Accounting Date:11/15/2021

Sale Item Reference Number
17243401

Effective Date
11/09/2021

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I2021AE634320772	1806	SUBMISSION- INFORMATION DISCLOSURE STMT	\$260.00	Deposit Account

REQUEST FOR REFUND

Reference # (Patent #, Application #, Trademark Serial #, Registration #, etc.)	Title of Invention or Mark Information	
17243401	TELEPHONE NETWORK SYSTEM AND METHOD	
Attorney Docket # (if applicable)	Payment Date (mm/dd/yyyy)	Refund Request Amount
GETFL-01001DIV3	11/15/2021	\$ 260.00
Refund Option (Select one)		
☒ If approved, issue the refund to the account associated with the original payment.		
☐ If approved, and the original payment was a check, issue the refund to deposit account # _____.		
☐ If approved, and the original payment was a check, issue the refund as a U.S. Treasury check.		
Reason for Refund Request <i>Refund requests must generally be filed within 2 years of payment date (37 CFR 1.26 and 2.209)</i>		
☐ Duplicate Payment ☒ No Fee Due ☒ Office Error		
☐ Small Entity Later Established* (*must be filed within 3 months of payment date, 37 CFR 1.28) ☐ Other _____		
Rationale (Supporting documentation may be submitted with this form)		
IDS was submitted with declaration that no cited reference was known to the Applicant or their attorney within 90 days prior to the submission of the IDS. Moreover, the fee was charged as a large entity, when the Applicant is qualified as a Small Entity. Thus, even if the fee were due (which is disputed), the amount charged to the deposit amount is incorrect.		

Requester's Information

Company or Firm Name (if applicable)		
West & Associates, A PC		
Address Line 1	City	State/Region
3050 Citrus Circle, Suite 207	Walnut Creek	CA
Address Line 2 (if applicable)	Country	Zip/Postal Code
	US	94598
Email Address (You will receive an acknowledgment of receipt only if you provide a valid email address)		Phone Number
patent@westpatentlaw.com		925.262.2220
Requester's Name		Registration Number (if applicable)
Stuart J. West		43258
Signature		Date (mm/dd/yyyy)
/Stuart J. West/		11/17/2021

Submit online: [EFS-Web](#) (registered users only; select "Request for Refund" from the document description menu), or
Fax to: 571-273-6500, or
Mail to: Mail Stop 16, Director of the U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450

Electronic Acknowledgement Receipt	
EFS ID:	44303500
Application Number:	17243401
International Application Number:	
Confirmation Number:	4808
Title of Invention:	TELEPHONE NETWORK SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Ivan Zhidov
Customer Number:	43490
Filer:	Stuart James West
Filer Authorized By:	
Attorney Docket Number:	GETFL-01001DIV3
Receipt Date:	17-NOV-2021
Filing Date:	28-APR-2021
Time Stamp:	12:18:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Refund Request	20211117- Refund_Request_Form- GETFL-01001DIV3.pdf	747927 6f82d8c80971c735820080a59e7bb952148 43f35	no	1
Warnings:					

Information:	
Total Files Size (in bytes):	747927
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :69564

Refund Accounting Date:11/19/2021

Effective Date	Sale Item Reference Number	Refund Total
11/09/2021	17243401	\$260.00

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method	Account Number
I2021AID45372198	1806	SUBMISSION- INFORMATION DISCLOSURE STMT	\$260.00	DA	503203



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :69564

Sale Adjustment Accounting Date:11/19/2021

Effective Date	Sale Accounting Date	Sale Item Reference Number
11/09/2021	11/19/2021	17243401

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I2021AID45372198	1806	SUBMISSION- INFORMATION DISCLOSURE STMT	\$260.00	DA



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :69564

Sale Accounting Date:11/19/2021

Sale Item Reference Number
17243401

Effective Date
11/09/2021

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I2021AID47382235	2806	SUBMISSION- INFORMATION DISCLOSURE STMT	\$130.00	Deposit Account

REQUEST FOR REFUND

Reference # (Patent #, Application #, Trademark Serial #, Registration #, etc.)		Title of Invention or Mark Information	
17243401		TELEPHONE NETWORK SYSTEM AND METHOD	
Attorney Docket # (if applicable)	Payment Date (mm/dd/yyyy)	Refund Request Amount	
GETFL-01001DIV3	11/22/2021	\$ 130.00	
Refund Option (Select one)			
☒ If approved, issue the refund to the account associated with the original payment.			
☐ If approved, and the original payment was a check, issue the refund to deposit account # _____.			
☐ If approved, and the original payment was a check, issue the refund as a U.S. Treasury check.			
Reason for Refund Request <i>Refund requests must generally be filed within 2 years of payment date (37 CFR 1.26 and 2.209)</i>			
☐ Duplicate Payment		☒ No Fee Due	
☐ Small Entity Later Established* (*must be filed within 3 months of payment date, 37 CFR 1.28)		☒ Office Error	
☐ Other _____			
Rationale (Supporting documentation may be submitted with this form)			
IDS was submitted with declaration that no cited reference was known to the Applicant or their attorney within 90 days prior to the submission of the IDS. Therefore, no fee should be due. A large entity fee was charged on 11/15/2021. Applicant is qualified as a Small Entity. On 11/19/2021 a reimbursement of \$260 was deposited, reversing the large entity charge. However, a small entity fee of \$130 was charged on 11/19/2021. Because the IDS was submitted with declaration of no known cited reference within 90 days prior to submission, no fee should be due.			

Requester's Information

Company or Firm Name (if applicable)		
West & Associates, A PC		
Address Line 1	City	State/Region
3050 Citrus Circle, Suite 207	Walnut Creek	CA
Address Line 2 (if applicable)	Country	Zip/Postal Code
	US	94598
Email Address (You will receive an acknowledgment of receipt only if you provide a valid email address)		Phone Number
patent@westpatentlaw.com		925.262.2220
Requester's Name		Registration Number (if applicable)
Stuart J. West		43258
Signature		Date (mm/dd/yyyy)
/Stuart J. West/		11/22/2021

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Electronic Acknowledgement Receipt	
EFS ID:	44341267
Application Number:	17243401
International Application Number:	
Confirmation Number:	4808
Title of Invention:	TELEPHONE NETWORK SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Ivan Zhidov
Customer Number:	43490
Filer:	Stuart James West
Filer Authorized By:	
Attorney Docket Number:	GETFL-01001DIV3
Receipt Date:	22-NOV-2021
Filing Date:	28-APR-2021
Time Stamp:	14:37:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Refund Request	11222021-Refund_Request_Form-GETFL-01001DIV3.pdf	680502	no	1
			143bdcc1373bcab457d79bb6f143d29ebe0945c8		
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Sale Adjustment Accounting Date:12/07/2021

Effective Date	Sale Accounting Date	Sale Item Reference Number
11/09/2021	12/07/2021	17243401

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I2021B7C06091499	2806	SUBMISSION- INFORMATION DISCLOSURE STMT	\$130.00	DA



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Effective Date	Sale Item Reference Number	Refund Total
11/09/2021	17243401	\$130.00

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3	4808
43490	7590	12/09/2021		
WEST & ASSOCIATES, A PC 3050 CITRUS CIRCLE SUITE 207 WALNUT CREEK, CA 94598			EXAMINER HUYNH, NAM TRUNG	
			ART UNIT	PAPER NUMBER
			2647	
			NOTIFICATION DATE	DELIVERY MODE
			12/09/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DOCKET@WESTPATENTLAW.COM
PATENT@WESTPATENTLAW.COM
STUARTJAMESWEST@COMCAST.NET

Corrected Notice of Allowability	Application No. 17/243,401	Applicant(s) Zhidov et al.	
	Examiner Nam T Huynh	Art Unit 2647	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to QPIDS filed on 2021 November 9.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-12. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some* c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material ____	7. ☐ Other ____
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____	

/NAM T HUYNH/ Primary Examiner, Art Unit 2647	
--	--

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

Receipt date 11/09/21

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
	1	5673299		1997-09-30	Fuller et al.		
	2	6282574		2001-08-28	Voit		
	3	6445694		2002-09-03	Swartz		
	4	6633562		2003-10-14	Boyd et al.		
	5	7068668		2006-06-27	Feuer		
	6	7860785		2010-12-28	Delinsky et al.		
	7	8275107		2012-09-25	Srinivasan		
	8	8306201		2012-11-06	Borislow et al.		

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /N.T.H/

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	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

	9	8472606		2013-06-25	Helbling et al.	
	10	8576995		2013-11-05	Marghescu et al.	
	11	8804931		2014-08-12	Petrack et al.	
	12	8817619		2014-08-26	Lai	
	13	8817669		2014-08-26	Walker et al.	
	14	8819129		2014-08-26	Cyriac et al.	
	15	9332128		2016-05-03	Backhaus et al.	
	16	9332408		2016-05-03	Lowman et al.	
	17	9332425		2016-05-03	Backhaus et al.	
	18	9942406		2018-04-10	Walker et al.	
	19	10542395		2020-01-21	Backhaus et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
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	Attorney Docket Number	GETFL-01001DIV3

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	1	20040203565	A1	2004-10-14	Chin et al.	
	2	20100128857	A1	2010-05-27	Logan	
	3	20100177662	A1	2010-07-15	Meincke et al.	
	4	20120282903	A1	2012-11-08	Rabra et al.	
	5	20130295899		2012-05-07	Philip Lowman	
	6	20140362742	A1	2014-12-11	MARTINEZ et al.	

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	1	2454886	GB	A	2009-05-27	Jeffrey Wilson		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

2	2007049943	WO	A1	2007-05-03	Jwa, Jeong-woo		
3	2007131269	WO	A1	2007-11-22	Cantoni, Antonio		

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	AUTHOR: SUPERUSER, What are the Internet Workings of the Google Voice captured at https://superuser.com/questions/325891/what-are-the-internal-workings-of-google-voice , posted August 2011, August 2011, internet publication	
	2	BENJAMIN E. JOHNSON, Google Voice: Connecting Your Telephone to the 21st Century, Computers Libr. 21, 2010 WLN 28403479, Computer in Libraries, Information Today, Inc., Jun 2010, June 1, 2010, Volume 30, Issue 5	
	3	H. SCHULZRINNE et al., The Session Initiation Protocol: Providing Advanced Telephony Services Across the Internet, Bell Labs Technical Journal, October-December 1998 Journal, December 1998	
	4	JOHN BRANDON, One Number to Rule Them All - MIT Technology Review captured at https://www.technologyreview.com/2009/04/02/214463/one-number-to-rule-them-all/ posted April 2, 2009, MIT Technology Review, April 2, 2009, MIT Technology Review, internet publication	

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EXAMINER SIGNATURE

Examiner Signature	/NAM T HUYNH/	Date Considered	11/29/2021
--------------------	---------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /N.T.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Stuart J. West/	Date (YYYY-MM-DD)	2021-11-09
Name/Print	Stuart J. West	Registration Number	43258

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3	4808
43490	7590	12/13/2021		
WEST & ASSOCIATES, A PC 3050 CITRUS CIRCLE SUITE 207 WALNUT CREEK, CA 94598			EXAMINER HUYNH, NAM TRUNG	
			ART UNIT	PAPER NUMBER
			2647	
			NOTIFICATION DATE	DELIVERY MODE
			12/13/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DOCKET@WESTPATENTLAW.COM
PATENT@WESTPATENTLAW.COM
STUARTJAMESWEST@COMCAST.NET

<i>Applicant-Initiated Interview Summary</i>	Application No. 17/243,401	Applicant(s) Zhidov et al.		
	Examiner Nam T Huynh	Art Unit 2647	AIA (First Inventor to File) Status Yes	Page 1 of 2

All Participants (applicant, applicants representative, PTO personnel)	Title	Type
Nam T Huynh	Primary Examiner	Telephonic
Teffaney Ebert	Paralegal Intern	

Date of Interview: 06 December 2021

Issues Discussed:

Other

Applicant informed Examiner the following:

IDS was submitted with declaration that no cited reference was known to the Applicant or their attorney within 90 days prior to the submission of the IDS. As a result, no fees are due.

The following has occurred:

- Attorney deposit account was wrongly charged \$260 as a large entity while the Applicant is qualified as a small entity on 11/15/2021.
 - A request for refund was filed on 11/15/2021 with the rationale being that the IDS was submitted with declaration that no cited reference was known to the Applicant or their attorney within 90 days prior to the submission of the IDS.
 - A call was made by attorney's office to the Office of Finance on 11/19/2021.
 - A refund to attorney deposit account of \$260 was made on 11/19/2021.
 - Attorney deposit account was again wrongly charged \$130 as a small entity on 11/19/2021.
 - Attorney's office again called the Office of Finance on 11/19/2021 and was told the Finance Office did not have the authority to reverse the charge.
 - Attorney's office was told to contact the Examiner, and that the Examiner would contact the Office of Finance giving permission to refund the attorney's deposit account if request for refund was valid.
- As of today 12/06/2021, attorney deposit account was still overcharged and a request for refund for \$130 has been filed.

Examiner informed Applicant that the Examiner does not have authority to give permission for a refund as was advised by the Office of Finance. Examiner advised Applicant to wait until the request for refund filed 11/22/21 is processed before further action is taken.

/NAM T HUYNH/ Primary Examiner, Art Unit 2647	
Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04 Please further see: MPEP 713.04 Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b) 37 CFR § 1.2 Business to be transacted in writing	

<i>Applicant-Initiated Interview Summary</i>	Application No. 17/243,401	Applicant(s) Zhidov et al.		
	Examiner Nam T Huynh	Art Unit 2647	AIA (First Inventor to File) Status Yes	Page 2 of 2

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17243401
	Filing Date	2021-04-28
	First Named Inventor	Ivan Zhidov
	Art Unit	2647
	Examiner Name	HUYNH, NAM TRUNG
	Attorney Docket Number	GETFL-01001DIV3

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	2	20100128857	A1	2010-05-27	Logan	
	3	20100177662	A1	2010-07-15	Meincke et al.	
	4	20120282903	A1	2012-11-08	Rabra et al.	
Change(s) applied to document, /T.W./ 12/13/2021	5	20130295899		~~2012-05-07~~ 11/2013	Philip Lowman	
	6	20140362742	A1	2014-12-11	MARTINEZ et al.	

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	1	2454886	GB	A	2009-05-27	Jeffrey Wilson		



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	04/28/2021	Ivan Zhidov	GETFL-01001DIV3	4808
43490 7590 12/14/2021 WEST & ASSOCIATES, A PC 3050 CITRUS CIRCLE SUITE 207 WALNUT CREEK, CA 94598			EXAMINER HUYNH, NAM TRUNG	
			ART UNIT 2647	PAPER NUMBER
			NOTIFICATION DATE 12/14/2021	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENT@WESTPATENTLAW.COM
DOCKET@WESTPATENTLAW.COM
STUARTJAMESWEST@COMCAST.NET



United States Patent and Trademark Office

Office of the Chief Financial Officer

December 07, 2021

WEST & ASSOCIATES, A PC
Attn: STUART WEST
3050 CITRUS CIRCLE,
SUITE 207
WALNUT CREEK, CA 94598

Dear Sir/Madam,

The United States Patent and Trademark Office (USPTO) has reviewed your refund request for Reference Number 17243401 - Refund Request ID **REFND-20211123-96488**. Below is the current status of your refund request assigned to the following processing area: Office of Patent Examination Support Services

Fee code	Decision	Decision Reason(s)	Refund Amount
2806	Approved	No Fee Due	\$130.00

Generally, approved refunds will be issued in the form that the original payment was provided. You will receive a separate decision letter for any additional fee codes assigned to other processing areas, if applicable. Decisions may be subject to change if an error is identified.

For questions related to this decision, contact the Case Resolution Team at (571) 272-1720 or case.resolution@USPTO.GOV.

Thank you,
Refund Branch



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :C46472

Refund Accounting Date:12/15/2021

Effective Date	Sale Item Reference Number	Refund Total
11/09/2021	17243401	\$680.00

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method	Account Number
I2021BEA18192534	2801	RCE- 1ST REQUEST	\$680.00		*****2004



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Document Code:WFEE

User :C46472

Sale Adjustment Accounting Date:12/15/2021

Effective Date	Sale Accounting Date	Sale Item Reference Number
11/09/2021	12/15/2021	17243401

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I2021BEA18192534	2801	RCE- 1ST REQUEST	\$680.00	



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/243,401	01/04/2022	11218585	GETFL-01001DIV3	4808

43490 7590 12/15/2021
WEST & ASSOCIATES, A PC
3050 CITRUS CIRCLE
SUITE 207
WALNUT CREEK, CA 94598

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional inventors):

Ivan Zhidov, Chickasha, OK;
Peter Rinfret, Nantucket, MA;
Sunir Kochhar, Oro Valley, AZ;

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Flypsi, Inc., Bedford, TX;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO.	DATE FILED 1/5/2022	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF FLYPSI, INC (D/B/A FLYP)		DEFENDANT DIALPAD, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,667,770	5/30/2017	FLYPSI, INC
2 10,051,105	8/14/2018	FLYPSI, INC
3 10,334,094	6/25/2019	FLYPSI, INC
4 11,012,554	5/18/2021	FLYPSI, INC
5 11,218,585	1/4/2022	FLYPSI, INC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:22-cv-00031	DATE FILED 1/10/2022	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF FLYPSI, INC (D/B/A FLYP)		DEFENDANT GOOGLE, LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,667,770	5/30/2017	FLYPSI, INC
2 10,051,105	8/14/2018	FLYPSI, INC
3 10,334,094	6/25/2019	FLYPSI, INC
4 11,012,554	5/18/2021	FLYPSI, INC
5 11,218,585	1/4/2022	FLYPSI, INC

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DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy