FORM 2

The Patent Act 1970

(39 of 1970)

&

The Patent Rules, 2005

(See Section 10 and Rule 13)

COMPLETE SPECIFICATION

TITLE OF THE INVENTION

A method and a mobile phone for making an outgoing call through another mobile phone

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The following specification particularly describes the invention and the manner in which it is to be performed: -

Technical field

[0001] The disclosed subject matter in general relates to hand held device used for communication. The disclosed subject matter in particular relates to making an outgoing call by a first handheld device through a second hand held device.

Background

[0002] The hand held devices used for communication like mobile phone, PDAs, tablets or any other device use services of a network /service provider. The handheld device is always in communication with a base station of a network to which it is subscribed. The handheld device will be able to make and receive calls to other handheld devices as long as the signal from the network is available. Once the signal from the network to which the handheld device is subscribed, is not available, then the handheld device will not be able to make or receive calls.

[0003] Some known arts disclose routing the call from a handheld device through Internet. Some known arts disclose routing through a landline phone.

[0004] The prior art WO2006128382A1 discloses a method for automatically selecting mobile or fixed network by multimode radio voice terminal. In this method, when calling or receiving a telephone, the multimode radio voice terminal automatically selects mobile or fixed network based on a pre-set calling rule. The multimode radio voice terminal has a default call network. When deciding to initiate or answer a phone call, the multimode radio voice terminal judges to transmit through the default mobile network or the default fixed network.

[0005] However, if there is no landline phone or if there is no internet, the prior arts do not provide any solution.

[0006] Under such scenarios, the user of the mobile phone who needs to make a call is put at inconvenience.

[0007] The disclosed subject matter addresses the above issues.

Summary

[0008] The subject matter is defined in the independent claims. Further details are defined in the dependent claims.

[0009] The subject matter discloses a method of initiating an outgoing call from a first mobile phone through a second mobile phone. The method is performed by the first mobile phone. The method comprises receiving, from a user, a subscriber number of a destination mobile phone to which an outgoing call needs to be initiated. The method comprises determining a network to which the first mobile phone is subscribed, is not available or the signal strength is below a predefined threshold for initiating the outgoing call through the network. The method comprises scanning for available mobile phones in an accessible range. The method comprises detecting the second mobile phone within an accessible range. The method comprises determining whether the second mobile phone has given authorization to the first mobile phone to initiate outgoing calls through the second mobile phone. The method comprises sending a message to the second mobile phone to initiate an outgoing call to the destination mobile phone, on determining that the second mobile phone has given authorization to the first mobile phone to initiate outgoing calls through the second mobile phone. The method comprises waiting for one of connection of the outgoing call with the destination mobile phone or disconnection of the outgoing call by the destination mobile phone or reception of a busy tone.

[0010] The subject matter discloses a first mobile phone for initiating a call through a second mobile phone. The first mobile phone comprises a processor, a memory coupled to the processor, the processor (200a) configured to perform the above method.

[0011] The subject matter discloses method of initiating an outgoing call on behalf of a first mobile phone, the method performed by a second mobile phone. The method comprises receiving a message from the first mobile phone to initiate an outgoing call to a subscriber number of a destination mobile phone, the message comprising a subscriber number of the destination phone. The method comprises determining that the first mobile phone is authorized to initiate outgoing calls through the second mobile phone. The method comprises verifying whether any incoming or outgoing call is in progress. The method comprises initiating an outgoing call to the subscriber number of the destination phone and sending the subscriber number of the first mobile phone to the destination phone as the calling number, on verifying that there is no outgoing call or an incoming call in progress. The method comprises performing one of connecting the first mobile phone and the destination phone for a conversation, when the user of the destination mobile phone picks up the call; or disconnecting the call when the user of the destination phone disconnects the call; or sending a busy tone to the first mobile phone when the destination phone is busy.

[0012] The subject matter discloses a second mobile phone for initiating an outgoing call on behalf of a first mobile phone. The second mobile phone comprises a processor, a memory coupled to the processor, the processor (200b) configured to perform above method.

[0013] Brief description of the drawings

[0014] The detailed description is described with reference to the accompanying figures. In the figures, similar reference numerals are used throughout the drawings to reference like features and components.

Figure 1 illustrates a context under which the first mobile phone and the second mobile phone work, according an embodiment

Figure 2A illustrates a block diagram of the first mobile phone, according to an embodiment

Figure 2B illustrates a block diagram of the second mobile phone, according to an embodiment

Figures 3A and 3B illustrates further details of the first mobile phone and second mobile phone

Figure 4A and 4B a tables T1 and T2 stored in first mobile phone and second mobile phone respectively

Figure 5 illustrates a method of making an outgoing call by a first mobile phone through a second mobile phone, according to an embodiment

Figure 6 illustrates a method of initiating an outgoing call by a second mobile phone on behalf of the first mobile phone, according to an embodiment

Detailed description

[0015] The subject matter now will be described with exemplary embodiments. However, the claimed subject matter may be embodied in many different forms and should not be construed as limited to the embodiments described herein. These embodiments are provided only as examples so that this disclosure is clear and concise.

[0016] Only the details/components required to describe the claimed subject matter in specific, are disclosed in this document. The details/components which are commonly known or understood by people skilled in the art may not be covered in this document.

[0017] In this document some terms may be used interchangeably. The ‘handheld device’, ‘mobile phone’, ‘phone’ may be used interchangeably. The terms ‘initiating a call’, ‘making a call’ are used interchangeably. The ‘first mobile phone’ and ‘second mobile phone’ are referred collectively as mobile phones or individually as mobile phone. The first mobile phone and second mobile phone are

referred as first phone and second phone respectively. The terms ‘network’ and ‘signal from the network’ may be used interchangeably.

[0018] Typically, in the prior arts the mobile phone displays a message as ‘Network not available’ when a user tries to make/initiate a call and the network is not available.

[0019] The subject matter discloses a method to make a call from a first mobile phone through a second mobile phone, when there is no network available to which the first mobile phone has a subscription or the signal from that network is below a predefined threshold. When the user initiates an outgoing call, if the network is not available, the first mobile phone scans for a second mobile phone, in the surroundings, which is authorized to make calls on behalf of the first mobile phone, using at least one of a Bluetooth connection, a LAN connection or a Wi-Fi connection. If such a second mobile phone is found, the first mobile phone places a request to the second mobile phone to make a call by providing the subscriber number of a destination mobile phone. The second mobile phone initiates an outgoing call to the destination mobile phone and also sends the subscriber number of the first mobile phone to the destination mobile phone, as the calling subscriber number.

[0020] The term ‘mobile phone’ is referred as ‘phone’ hence forth. The term ‘phones’ refers collectively to the first mobile phone and a second mobile phone.

[0021] Figure 1 illustrates a context in which the first phone and the second phone work.

[0022] The first phone 102 is in communication with the first tower 104 through the first network 106. Here the network refers to the signal transmitted between the first phone 102 and the first tower 104. The first phone 102 has subscription/registered with the service provider of the first tower 104. The second phone 108 is in communication with the second tower 110 through the network 112.

The second phone 108 has subscription/registered with the service provider of the second tower 110. The first service provider may be different from the second service provider.

[0023] Single towers 104 and 110 are shown to represent two different networks. However, a network may comprise multiple towers covering different areas. Hence a call may be routed using multiple towers or using satellite communication. In general, when the phone is not able to receive signal from the tower, it is referred as network not available.

[0024] In the figure 1 it is symbolically shown that there is no signal on the first network 106 where the first phone 102 is located presently. It is also assumed that the first and second phones 102, 108 are in an accessible range where direct communication between the two phones can be established using Bluetooth or WLAN or Wi-Fi connection. The accessible range is the one where two Bluetooth devices can establish connection.

[0025] The first and second phones 102, 108 may authorize each other to make an outgoing call on behalf of other when the network of other mobile phone is not available. This is done through pairing and authorizing each other to make calls through the other.

[0026] Also shown in figure 1 is a destination mobile phone 114 to which the first phone 102 wants to make a call. The destination mobile phone 114 is referred as destination phone 114.

[0027] Figure 2A and 2B illustrate block diagrams of the first phone 102 and second phone 108 implementing the subject matter, according to an embodiment. The first phone 102 and the second phone 108 are identical and comprise identical components like, processors 200a, 200b; memory 202a, 202b; input output interfaces 204a , 204b; transceiver 206a, 206b; wireless unit, for example a Bluetooth unit 208a, 208b and detection module 210a, 210b. In an embodiment, the

wireless unit is a Bluetooth unit. In an embodiment, the wireless unit is a WLAN unit or a Wi-Fi unit. The second phone 108 is identical to first phone 102 and functions same way.

[0028] The processors 200a, 200b may comprise one or more of central processing units (CPU), graphical processing units (GPU), digital signal processors (DSP), application specific integrated circuits (ASIC), a controller, field programmable gate arrays (FPGA), or any other hardware device, a firmware device, or any combination of these. The processors 200a, 200b are configured using their control registers, input output ports, firmware, input output interfaces 204a and 204b etc. to perform the operations described herein.

[0029] In an embodiment, the memory 202a, 202b comprise one or more volatile and non-volatile memory components which are capable of storing data and instructions to be executed.

[0030] The input output interfaces 204a, 204b may comprise input ports and output ports, connected to keyboard, display and other input output devices of the respective phones 102, 108.

[0031] The transceivers 206a, 206b comprises required circuits like Radio frequency circuits, amplifiers, power circuits, antennas etc.

[0032] Bluetooth connectivity is a wireless form of radio communication designed for transferring data over short-range distances between different types of devices. Bluetooth works using radio signals on the 2.4 GHz frequency.

[0033] Detection module 210a detects whether the network 106 is available. This is achieved by monitoring the signal from the network 106. When the first phone 102 is on, the first phone 102 continuously monitors the signal from the tower 104. The detection module 210a detects, using Bluetooth unit 208a, whether any authorized mobile phone, example, second phone 108, is in accessible range to

make an outgoing call when the network 106 is not available. The detection module may be implemented using hardware, firmware and software combination. The hardware comprises the input ports of the processor 200a, 200b and other circuitry to detect signal from the towers 104, 110.

[0034] Figure 3A and 3B illustrate other modules of the first phone 102 and the second phone 108. Shown in figure 3 are a user input module 300a, 300b, a determining module 302a, 302b and a communication module 304a, 304b. The user input modules 300a of first pone 102 and second phone 108, after pairing with each other, display message to the users of the first phone 102 and second phone 108 on the displays of respective mobile phones 102 and 108, whether the paired phones can make calls through each other. The options are displayed as 'Yes' and 'No'. If the user presses 'Yes', the identification of the authorized phone and the authorization status are stored in a Tables 'T1' and 'T2' in first mobile phone 102 and second phone 108 respectively, the tables are shown in figure 4. The authorization status is stored as 'Yes' if the user presses on 'Yes' or stored as 'No' if the user presses on 'No'.

[0035] The determining module 302a and 302b determine whether the second phone 108 has authorized the first mobile phone 102 to make calls through the second mobile phone 108 when the network of first mobile phone 102 is not available.

[0036] The communication modules 304a, 304b send and receives the data, messages, subscriber number of the destination phone 114, between the first mobile phone 102 and second mobile phone 108.

[0037] Figure 4 illustrates the tables T1 and T2 stored in the first and second mobile phones 102 and 108 respectively. The tables T1 and T2 are collectively referred as tables T and individually as table T. The tables T contain the identification of the mobile phones as a label/name, for example 'Friend', 'Mom' etc., their subscriber numbers and their authorization status. The authorization status is set as 'Yes' if the

particular mobile phone is allowed to make outgoing calls through the other phone being referred. The authorization status is set as 'No' if the particular mobile phone is not allowed to make outgoing calls through the other phone being referred. The list of phones which are authorized and the authorization status is stored in both the phones 102, 108, so that both the phones 102, 108 know and allow/dis-allow to make phone calls through them accordingly.

[0038] The working of the subject matter is described with respect to figure 1-4.

[0039] When the user of the first phone 102 initiates a call to the destination phone 114 by dialing a subscriber number of the destination phone 114, the detection module 210a checks whether the network 106 to which the first mobile phone 102 has a subscription, is available or the signal strength of the network is above a pre-defined threshold. If the network 106 is available or the signal strength of the network is above a pre-defined threshold, the outgoing call is placed using the network 106. The pre-defined threshold is prior stored or hardcoded in the firmware.

[0040] If the network 106 is not available, the detection module 210a scans for any available phone in the accessible range, using the Bluetooth unit 208a. The detection module 210a detects the second phone 108 in the accessible range and pairs with it.

[0041] Once the pairing is complete, the determination module 302a in the first phone 102 checks in its table 'T' whether the second phone 108 has already authorized the first phone 102 to make an outgoing call through the second phone 108. This is done by reading the list of phones in the table T, which have authorized the first phone 102 to make an outgoing call through them. If the second phone 108 has not authorized the first phone 102 to make an outgoing call through it, the communication module 304a sends a request for an authorization from the second phone 108 to make an outgoing call. A message is displayed on the second phone 108 showing that first phone 102 is asking for authorization to make an outgoing

call. The user has option to approve or reject the request. Once the user of the second phone approves the request by pressing 'Yes' on display, the authorization is sent to first phone 102. The authorization is stored in table T in both phones 102, 108 for future use.

[0042] Once it is confirmed that the second phone 102 has authorized the first phone 108 to place a call through the second phone 108, the determining module 302a in the first phone 102 sends a message requesting the second phone 108 to make an outgoing call to the subscriber number of the destination phone 114, when the network 106 is not available or the signal strength of network 106 is below a pre-defined threshold. The message comprises the request code i.e. to initiate a call, and the subscriber number of the destination phone 114.

[0043] The second phone 108 receives the message through the communication module 304b. The determination module 302b in the second phone 108 decodes the message code as request to initiate a call. The determination module 302b determines from the table 'T' that the first phone 102 is authorized to make an outgoing call through the second phone 108. The determination module 302b retrieves the subscriber number of the destination phone 114 from the message, dials the subscriber number of the destination phone 114 and also sends the subscriber number of the first phone 102 as the calling number to the destination phone 114. The subscriber number of the first phone 102 is displayed on the display of the destination phone 114 as the calling number. When the destination phone114 starts ringing, the ringing tone is sent to the first phone 102, by the second phone 108.

[0044] If the user of the destination phone 114 picks the call, the call is connected between the destination phone 114 and the first phone 102, the second phone 108 acting as a gateway.

[0045] If the user of the destination phone 114 rejects the call, the rejected tone is passed to the first phone 102 by the second phone 108.

[0046] If the destination phone 114 is busy, the busy tone is passed to the first phone 102 by the second phone 108.

[0047] The detection module 210, the user input modules 300a and 300b, the determination module 302a-302b, the communication module 304a-304b may be developed using any of the languages like, C, C++, embedded C, JAVA etc.

[0048] Tools and technologies:

Android Studio, Java or Kotlin programming language, Android Software Development Kit, Android Native Development Kit, Wi-Fi or Bluetooth module, Message Queuing Telemetry Transport, MQTT broker.

[0049] Android SDK: Software development kit for tools and libraries for developing Android apps.

[0050] Android NDK: A software development kit that provides tools and libraries for developing native code for Android apps

[0051] Different Application Programming Interface, APIs, like Nearby Connections API may be used to search, establish connection and transfer data between Android devices. Within the Nearby Connections API, the function startDiscovery () function may be used to discover other mobile phones. Once other phones are discovered, the function requestConnection () is used to request a connection. The connection request is accepted through acceptConnection () or rejected through rejectConnection () by other phones. Once the connection is accepted, the two devices can exchange data. Also the JAVA APIs like navigator.bluetooth.requestDevice may be used to discover, connect and transfer data between the android devices like mobile phones 102, 108.

[0052] Figure 5 discloses a method 500 of making a call through a second mobile phone 108 according to an embodiment. The method 500 is performed by a first mobile phone 102.

[0053] Step 502 discloses receiving, from a user, a subscriber number of a destination phone 114, to which an outgoing call needs to be initiated.

[0054] Step 504 discloses determining a network 106 to which the first phone 102 is subscribed, is not available or the signal strength is below a predefined threshold for making the outgoing call through the network 106.

[0055] Step 506 discloses scanning for available mobile phones.

[0056] Step 508 discloses detecting the second mobile phone 108.

[0057] Step 510 discloses determining whether the second mobile phone 108 has given authorization to the first mobile phone 102 to initiate outgoing calls through the second mobile phone 108.

[0058] Step 512 discloses sending a message to the second mobile phone 108 to initiate an outgoing call to the destination mobile phone 114, on determining that the second mobile phone 108 has given authorization to the first mobile phone 102 to initiate outgoing calls through the second mobile phone 108.

[0059] Step 514 discloses receiving: connection of the outgoing call with the destination mobile phone 114; or disconnection of the outgoing call by the destination mobile phone 114; or a busy tone. Receiving connection of the outgoing call from first phone 102 with the destination mobile phone 114 is to start conversation.

[0060] When the call is connected the user of the first phone 102 makes the conversation with the destination phone 114. The first phone 102 treats the call as

if the call went through the network 106. The destination phone 114 treats the call as if the call came directly from the first phone 102.

[0061] When the call ends or the user of the destination mobile phone 114 rejects the call, the call is disconnected.

[0062] If the second phone 108 or the destination phone 114 is busy, a busy tone is transmitted to the first phone 102 by the second phone 108 and the user of the first phone hears the busy tone at the first phone 112.

[0063] The method 500 further discloses that determining that the network (106) is not available or the signal strength of the network (106) is below a pre-defined threshold for initiating the outgoing call, comprises: measuring, by a detection module (210a) of the first mobile phone (102), the signal strength of the network (106); and analyzing the measured signal strength to determine that the network (106) is not available or the measured signal strength is below the predefined threshold for initiating the outgoing call.

[0064] The method 500 discloses that detecting the second mobile phone (108), comprises establishing a communication with the second mobile phone (108) using a Bluetooth unit 208a, by sending a connection request and receiving a connection accepted message.

[0065] The method 500 discloses that determining that the second mobile phone has given authorization to the first mobile phone (102) to initiate outgoing calls through the second mobile phone (108), comprises, determining that the identification of the second mobile phone (108) is available in a table T1 and the authorization status is set as ‘Yes’ in the table.

[0066] Figure 6 illustrates a method 600 of initiating an outgoing call on behalf of the first mobile phone 102, according to an embodiment. The method 600 is performed by the second phone 108.

[0067] Step 602 discloses receiving a message from the first mobile phone 102 to initiate an outgoing call to a subscriber number of a destination mobile phone 114, the message comprising a message and the subscriber number of the destination phone (114).

[0068] Step 604 discloses determining that the first mobile phone 102 is authorized to initiate outgoing calls through the second mobile phone 108.

[0069] Step 606 discloses verifying whether any incoming or outgoing call is in progress.

[0070] Step 608 discloses initiating an outgoing call to the subscriber number of the destination phone 114 and sending the subscriber number of the first mobile phone 102 to the destination phone 114 as the calling number, on verifying that there is no outgoing call or an incoming call in progress.

[0071] Step 610 discloses performing one of connecting the first mobile phone 102 and the destination phone 114 for a conversation, when the user of the destination mobile phone 114 picks up the call; disconnecting the call when the user of the destination phone 114 disconnects the call; or sending a busy tone to the first mobile phone 102 when the destination phone 114 is busy.

[0072] The method 600 discloses that determining whether the first mobile phone (102) is authorized to initiate outgoing calls through the second mobile phone 108, comprises: verifying the identification of the first mobile phone 102 is present in a table T2 containing entries of authorized mobile phones allowed to initiate calls through the second mobile phone 108 and the authorization status is set as ‘Yes’ for the first mobile phone 102 the table.

[0073] The method 600 discloses that verifying whether any incoming or outgoing call in the second mobile phone 108 is in progress comprises, verifying that a

transceiver 206b of the second mobile phone is not transmitting or receiving any signals.

[0074] The subject matter provides various technical advantages, some are described below:

[0075] The first phone 102 makes use of the existing infrastructure like, second phone 108, the second network 112 to make outgoing calls. This improves the overall efficiency of the system where first phone 102, first tower 104, first network 106, second phone 108, second tower 110, second network 112, third phone 114 are involved.

[0076] The user of the first phone 102 is able to make outgoing calls when the network 106 to which the first phone 102 is subscribed to, is not available. This provides the user of the first phone 102 a continued service without interruption.

[0077] The subject matter uses the second phone 108 to make calls from the first phone 102, when the signal strength from the first network 106 is below the pre-define threshold, to make an outgoing call. This eliminates interruption in service, call drops etc. in the absence of the proposed subject matter.

Reference numerals and their description:

100	Context under which the first phone and second phone work
102	First phone
104	First tower
106	First network
108	Second phone
110	Second tower
112	Second network
114	Destination phone
200	Processor
202	Memory
204	Input output interfaces
206	Transceiver
208	Bluetooth unit
210a, 210b	Detection modules
300a, 300b	User input modules
302a, 302b	Determination modules
304a, 304b	Communication modules

We claim:

1. A method (500) of initiating an outgoing call of a first mobile phone (102) through a second mobile phone 108, the method performed by the first mobile phone (102), the method (300) comprising:

    receiving (502), from a user, a subscriber number of a destination mobile phone (114) to which the outgoing call needs to be initiated;

    determining (504), whether at least one network (106) to which the first mobile phone (102) is subscribed, is not available or its signal strength is below a predefined threshold, for initiating the outgoing call through the network (106);

    scanning (506) for available mobile phones;

    detecting (508) at least one second mobile phone (108);

    determining (510) whether the second mobile phone (108) has given authorization to the first mobile phone (102) to initiate outgoing calls through the second mobile phone (108);

    sending (512) a message to the second mobile phone (108) to initiate an outgoing call to the destination mobile phone (114), on determining that the second mobile phone (108) has given authorization to the first mobile phone (102) to initiate outgoing calls through the second mobile phone (108), the message comprising a subscriber number of the destination phone (114); and

    receiving (514) at the first mobile phone (102), at least one of:

        connection of the outgoing call with the destination mobile phone (114); or

        disconnection of the outgoing call by the destination mobile phone (114); or

        a busy tone.

2. The method (500) as claimed in claim 1, wherein determining that the network (106) is not available or the signal strength of the network (106) is below a pre-defined threshold for initiating the outgoing call, comprises:

    measuring, by a detection module (210a) of the first mobile phone (102), the signal strength of the network (106); and

analyzing the measured signal strength to determine that the network (106) is not available or the measured signal strength is below the predefined threshold for initiating the outgoing call.

3. The method (500) as claimed in claim 1, wherein, detecting the second mobile phone (108), comprises establishing a communication with the second mobile phone (108) using a Bluetooth unit 208a, by sending a connection request and receiving a connection accepted message.

4. The method (500) as claimed in claim 1, wherein determining that the second mobile phone has given authorization to the first mobile phone (102) to initiate outgoing calls through the second mobile phone (108) comprises determining that the identification of the second mobile phone (108) is available in a table T1 and the authorization status is set as 'Yes' in the table.

5. A method (600) of initiating an outgoing call on behalf of a first mobile phone (102), the method performed by a second mobile phone (108), the method (400) comprising:

receiving (602) a message from the first mobile phone (102) to initiate an outgoing call to a subscriber number of a destination mobile phone (114), the message comprising the subscriber number of the destination phone (114);

determining (604) that the first mobile phone (102) is authorized to initiate outgoing calls through the second mobile phone (108);

verifying (606) whether any incoming or outgoing call is in progress in the second mobile phone ();

initiating (608) an outgoing call to the subscriber number of the destination phone (114) and sending the subscriber number of the first mobile phone (102) to the destination phone (114) as the calling number, on verifying that there is no outgoing call or an incoming call in progress in the second mobile phone (); and

performing (610) one of:

connecting the first mobile phone (102) and the destination phone (114) for a conversation, when the user of the destination mobile phone (114) picks up the call;

disconnecting the call when the user of the destination phone (114) disconnects the call; or

sending a busy tone to the first mobile phone (102) when the destination phone (114) is busy.

6. The method (600) as claimed in claim 5, wherein determining whether the first mobile phone (102) is authorized to initiate outgoing calls through the second mobile phone (108), comprises:

verifying the identification of the first mobile phone (102) is present in a table T2 containing entries of authorized mobile phones allowed to initiate calls through the second mobile phone (108) and the authorization status is set as 'Yes' for the first mobile phone (102) the table.

7. The method (600) as claimed in claim 5, wherein verifying whether any incoming or outgoing call is in progress in the second mobile phone 108 comprises, verifying that a transceiver (206b) of the second mobile phone is not transmitting or receiving any signals.

8. A first mobile phone (102) for initiating a call through a second mobile phone (108), the first mobile phone (102) comprising:

a processor (200a);

a memory (202a) coupled to the processor (200a);

a user input module (300a) to:

receive, from a user, a subscriber number of a destination mobile phone (114) to which an outgoing call needs to be initiated;

a determination module (302a) to:

determine that the network (106) to which the first mobile phone (102) is subscribed, is not available or the signal strength of the network (106) is below a predefined threshold for initiating the outgoing call through the network (106);

a detection module (210a) to:

scan for any available mobile phones;

detect the second mobile phone (108) which has given authorization to the first mobile phone (102) to initiate outgoing calls through the second mobile phone (108);

and

a communication module (304a) to

send a message to the second mobile phone (108) to initiate an outgoing call to a the destination mobile phone (114), on detection that the second mobile phone (108) has given authorization to the first mobile phone (102) to initiate outgoing calls through the second mobile phone (108); and

wait for at least one of:

connection of the outgoing call with the destination mobile phone (114);

disconnection of the outgoing call by the destination mobile phone (114); and

reception of a busy tone.

9. The first mobile phone (102) as claimed in claim 8, comprising a table 'T1' where the list of other phones who have authorized the first mobile phone (102) to make calls through the other phones is stored, along with the authorization status.

10. A second mobile phone (108) for initiating an outgoing call on behalf of a first mobile phone (102), the second mobile phone (108) comprising:

a processor (200b);

a memory (202b) coupled to the processor (200b);

a communication module (304b) to:

receive a message from the first mobile phone (102) to initiate an outgoing call to a subscriber number of a destination mobile phone (114), the message comprising a subscriber number of the destination phone (114);

and a determination module (302b) to:

determine that the first mobile phone (102) is authorized to initiate outgoing calls through the second mobile phone (108);

verify whether any incoming or outgoing call is in progress in the second mobile phone (108);

initiate an outgoing call to the subscriber number of the destination phone (114) and send the subscriber number of the first mobile phone (102) to the destination phone (114)

as the calling number, on verifying that there is no outgoing call or an incoming call in progress; and

perform one of:

connecting the first mobile phone (102) and the destination phone (114) for a conversation, when the user of the destination mobile phone (114) picks up the call;

disconnecting the call when the user of the destination phone (114) disconnects the call; or

send a busy tone to the first mobile phone (102) when the destination phone (114) is busy.

11. The second mobile phone (108) as claimed in claim 10, comprising a table ‘T2’ where the list of other phones who can make calls through the second mobile phone (108) is stored, along with the authorization status.

12. The second mobile phone (108) as claimed in claim 11, wherein the respective authorization status is stored as ‘Yes’ for other mobile phones, when other mobile phones can make calls through the second mobile phone (108).

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IN/PA Number: 1935
Date: 23rd August, 2025

ABSTRACT

TITLE: A method and a mobile phone for making an outgoing call through another mobile phone

The subject matter discloses a method 400 and a first phone 102 for making an outgoing call through a second phone 108 when the network 106 to which the first phone is subscribed to, is not available. The first phone 102 pairs with the second phone 108 which has given authorization to the first phone 102 to initiate outgoing calls using the second phone 108. The first phone 102 sends a message to the second phone to initiate an outgoing call to a destination phone 114. The second phone 108 initiates the outgoing call to the destination phone 114. When the user of the destination phone 114 picks the call, the second phone 108 connects the first phone 102 and the destination phone 114 for a conversation.

To be published with figure 5