



(19) **United States**

(12) **Patent Application Publication**
Chambers et al.

(10) **Pub. No.: US 2003/0142654 A1**
(43) **Pub. Date: Jul. 31, 2003**

(54) **METHOD AND DEVICE FOR PROVIDING A COMMUNICATION SESSION**

(52) **U.S. Cl.** 370/338; 370/400; 370/328; 370/252

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(57) **ABSTRACT**

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A method and device for providing a communication or chat session with a plurality of users, in particular for mobile radio networks according to Global System for Mobile communication (GSM) or Universal Mobile Telecommunications System (UMTS) standards. A first user starts a General Packet Radio Service (GPRS) session requesting an Internet Protocol (IP) address at the network. The first user then sends an initiation message including the IP address to a plurality of other users which preferably are selected from a mobile station's telephone book. Addressed users also request IP addresses at the respective networks and send a reply including the respective IP address via GPRS to the first user. After receiving at least one reply, the first user activates a chat session and all participants can exchange messages, preferably text and images, via GPRS or another packet switched service.

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(21) **Appl. No.: 10/348,244**

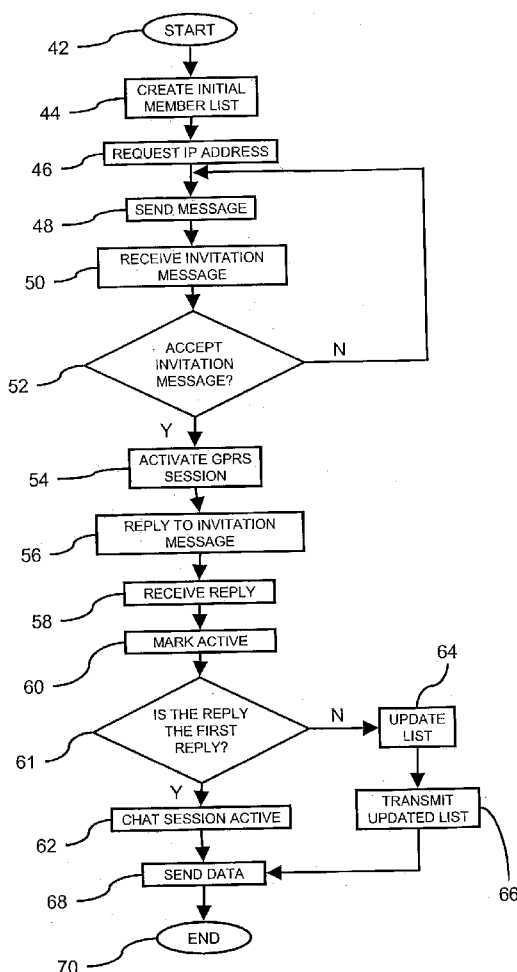
(22) **Filed: Jan. 21, 2003**

(30) **Foreign Application Priority Data**

Jan. 29, 2002 (EP) EP 02002167.1

Publication Classification

(51) **Int. Cl.⁷ H04Q 7/24**



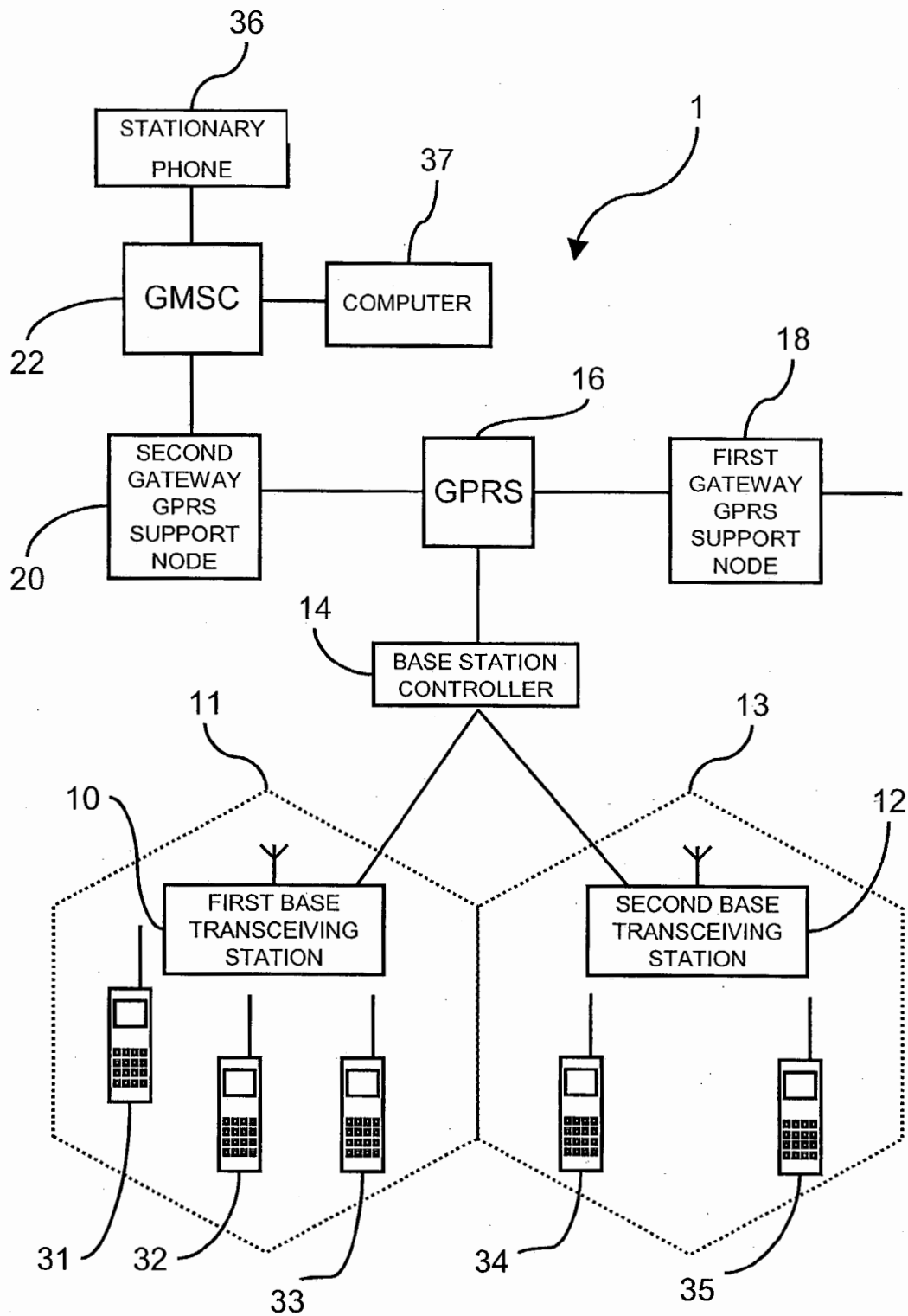


FIGURE 1

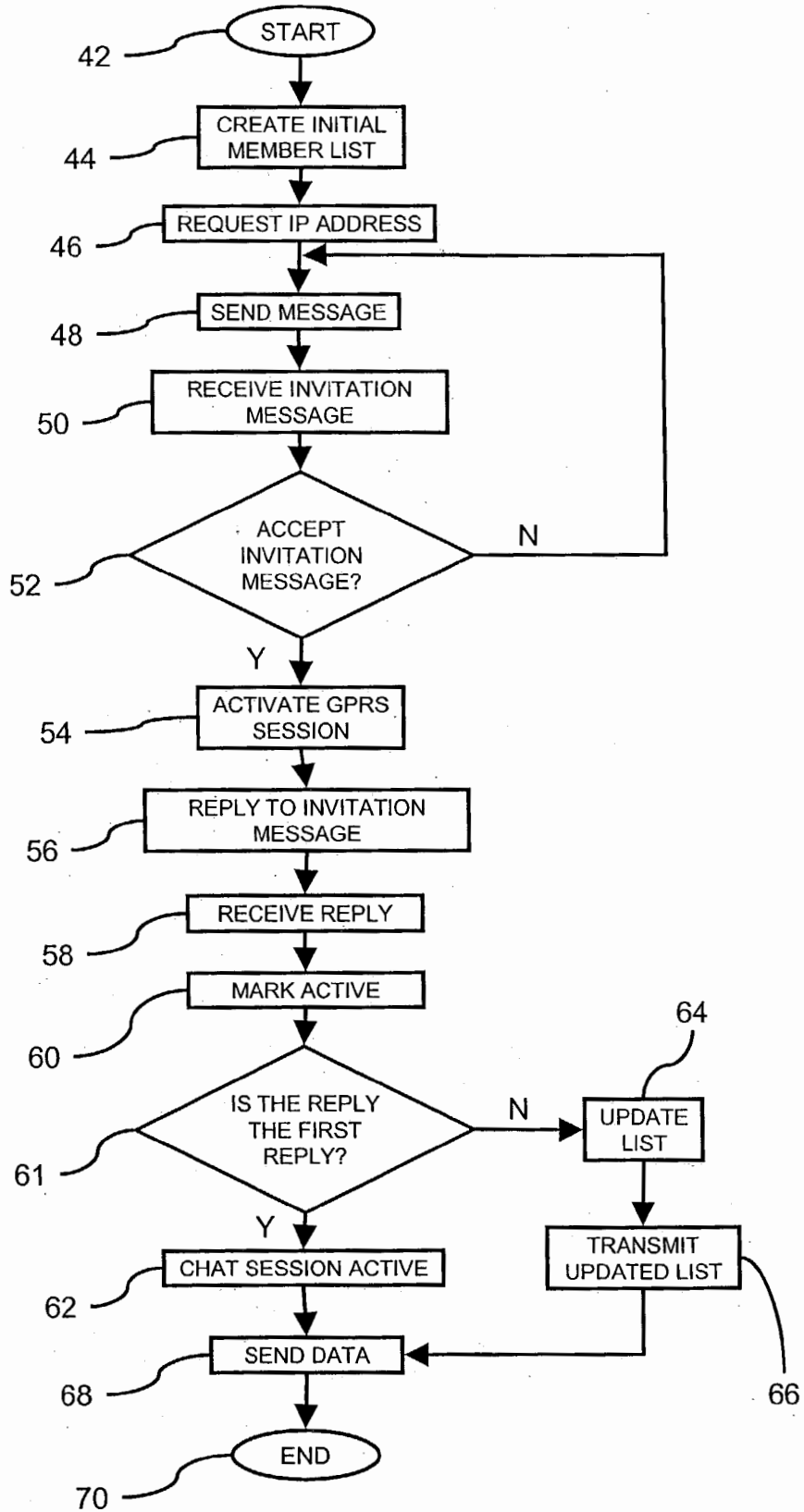


FIGURE 2

METHOD AND DEVICE FOR PROVIDING A COMMUNICATION SESSION

CROSS-REFERENCE TO FOREIGN APPLICATION

[0001] This application claims the benefit of EP Patent Application No. 02002167.1 entitled "Method and Device for Providing a Communication Session" to Michael J. Chambers, et al., filed on Jan. 29, 2002, which is incorporated herein by reference.

TECHNICAL FIELD OF THE INVENTION

[0002] The present invention is directed, in general, to communication systems and, more specifically, a method and device for providing a communication session in a communications system.

BACKGROUND OF THE INVENTION

[0003] The increase of competition between network operators of communications systems and the increase of telecommunication users particularly in the field of mobile communication has attributed to a nearly unappeasable demand for new and improved communication services. In today's information society, the interest in telecommunications in general and, in particular, digital mobile radio telecommunication is increasing for all types of text, speech or data transmission. Recently, exchanging text messages has especially become very popular.

[0004] Subscribers, or users, of Global System for Mobile communication (GSM) networks frequently use the GSM short message service (SMS) to communicate with their peer group. Presently, a user sends a SMS-message by selecting a respective menu item on a mobile phone, entering text, entering a telephone number of a recipient and sending the text using the SMS. On most mobile telephones, this procedure has to be repeated for each designated recipient even though the user may transmit the same text. Typically, the user reads a received SMS-message through a similar long and complicated procedure.

[0005] Though sending and receiving SMS-messages is popular, there are several deficiencies associated with the present operation. For example, the user cannot simultaneously see a received SMS-message and the text to be sent. Additionally, the user cannot send and receive a SMS-message simultaneously. A user, therefore, may have to remember the content of the received SMS-message to send a response. Even with these deficiencies, the cost of SMS can be expensive with a typical cost for transmitting a SMS-message at about 0.2 Euro.

[0006] Another deficiency associated with SMS is the restriction of 160 characters for each SMS-message. Additionally, the user may not receive a confirmation that the SMS-message was received or read by the recipient. Also, sending and receiving SMS-messages may be slowed since SMS-messages are routed via a server in a network backbone of a GSM-network. The server may slow the process by buffering or storing the SMS-message before being transmitted to the recipient.

[0007] The above mentioned deficiencies can make correspondence via SMS-messages disadvantageous not only for users but also for a network operator. This is especially

true when the correspondence includes the exchange of several subsequent SMS-messages between the users. The disadvantages may increase when more than two users try to communicate via SMS. Essentially, a simultaneous exchange of text is not possible.

[0008] Accordingly, what is needed in the art are improvements for communicating via text messages especially for sending and receiving text messages between multiple users.

SUMMARY OF THE INVENTION

[0009] To address the above-discussed deficiencies of the prior art, the present invention furnishes a method for providing a communication session with at least a first and second user of a communications system including at least a first and second terminal assigned to the first and second user, respectively. In one embodiment, the method includes transmitting an initiation message from the first terminal to the second terminal with the initiation message including a first address assigned to the first terminal. After receiving the initiation message, the second terminal transmits a first reply to the initiation message, which is received by the first terminal.

[0010] When the first user or initiator wants to start the communication session, the user first selects one or more other users, together defining a selected group of users. Selection input in the first terminal includes selecting one or more users from a phone book or manually typing one or more subscriber identifications or telephone numbers. When all chosen participants are selected, the initiation message, e.g., a SMS-message, including at least the first address of the first user is sent to each member of the group. Each member receiving the initiation message is enabled to decide whether to participate in the offered communication session. If so, the user requests an address and sends a reply including the address to the initiator. When receiving the reply the initiator terminal will automatically mark this replying user as active. With the first received reply, the session also becomes automatically active.

[0011] In another aspect, the present invention provides a method for transmitting a circuit switched message from a first terminal assigned to a first user of a communications system to second and third terminals having second and third users. This method includes providing via the first terminal an input by the first user for the circuit switched message and defining a group of users. The method further includes selecting a subscriber number for the second and third terminals and transmitting the message to the second and third terminals.

[0012] In yet another aspect, the present invention provides a device for use with a communications system including a means for storing an initiator address, a means for transmitting an initiation message to receiving terminals wherein the initiation message includes the initiator address and a means for receiving a reply message from the receiving terminals.

[0013] In yet still another aspect, the present invention furnishes a telecommunications network providing packet data protocol addressed service including a plurality of base transceiving stations, a plurality of base station controllers, at least a serving packet radio service support node and a device. The device includes a means for storing an initiator

address, a means for transmitting an initiation message to a receiving device wherein the initiation message includes the initiator address and a means for receiving a reply message from the receiving device.

[0014] The communication session initiated or provided by the present invention allows the users to exchange data, e.g., text or images, in a simple and inexpensive manner. In particular, the exchanged data can be received and transmitted simultaneously. Furthermore a communication session in real time may be enabled.

[0015] Therefore, the principles of the present invention serve several purposes such as providing a method and device for providing a communication session with improved capabilities in addition to avoiding the aforementioned disadvantages. A further object of the present invention is to provide a method and device which is suitable for a communication session with a plurality of users. Additionally, an object of the present invention is to provide a method and device which enables exchanging a large amount of data, e.g., text and/or images, in a convenient, inexpensive and fast manner. Another objective of the present invention is to provide a method and device which can be implemented in already existing communications systems, e.g., in GSM or Universal Mobile Telecommunications System (UMTS) networks. The present invention also has an objective to provide a method and device for providing a communication session wherein users with mobile and wirebound terminals can participate.

[0016] The foregoing has outlined, rather broadly, preferred and alternative features of the present invention so that those skilled in the art may better understand the detailed description of the invention that follows. Additional features of the invention will be described hereinafter that form the subject of the claims of the invention. Those skilled in the art should appreciate that they can readily use the disclosed conception and specific embodiment as a basis for designing or modifying other structures for carrying out the same purposes of the present invention. Those skilled in the art should also realize that such equivalent constructions do not depart from the spirit and scope of the invention in its broadest form.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] For a more complete understanding of the present invention, reference is now made to the following descriptions taken in conjunction with the accompanying drawings, in which:

[0018] **FIG. 1** illustrates a network diagram of an embodiment of a portion of a system architecture of a communications system constructed in accordance with the principles of the present invention; and

[0019] **FIG. 2** illustrates a flow diagram of a preferred embodiment of a method of providing a communication session in accordance with the principles of the of the present invention.

DETAILED DESCRIPTION

[0020] Referring initially to **FIG. 1**, illustrated is a network diagram of an embodiment of a portion of a system architecture of a communications system, generally designated **1**, constructed in accordance with the principles of the

present invention. The communications system **1** includes a first and a second cell **11**, **13**, a base station controller **14**, a serving General Packet Radio Service (GPRS) support node **16**, a first and a second gateway GPRS support node **18**, **20**, a gateway mobile switching centre (GMSC) **22**, a stationary telephone **36** and a computer **37**. The first cell **11** includes a first base transceiving station **10** and mobile phones **31**, **32**, **33**. The second cell **13** includes a second base transceiving station **12** and mobile phones **34**, **35**. One skilled in the pertinent art will understand that the aforementioned components are merely an exemplary portion of a telecommunications network with an operating network typically comprising a large plurality of each of these components.

[0021] The communications system **1** may be a packet switched service system such as with a General Packet Radio Service (GPRS). In a preferred embodiment, the communications system **1** or at least a portion of it may be a digital system including Global System for Mobile Communication (GSM) network or a Universal Mobile Telecommunications System (UMTS) network. Of course in other embodiments the communications system **1** may be another protocol based communications network that is text messaging enabled.

[0022] The first and second cell **11**, **13**, may be cells within a communications system such as a GSM or UMTS network that employ the first base transceiving station **10** and the second base transceiving station **12** to serve the respective mobile phones **31**, **32**, **33**, **34**, **35**. The first and second base transceiving station **10**, **12**, may be conventional base transceivers of a GSM or UMTS network which provide, for example, a wireless/wireline protocol conversion for data from/to the mobile phones **31**, **32**, **33**, **34**, **35**. The first and second base transceiving stations **10**, **12**, may be wirelined coupled to the base station controller **14** and wirelessly coupled to the respective mobile phones **31**, **32**, **33**, **34**, **35**, for example, via radio channels.

[0023] The mobile phones **31**, **32**, **33**, **34**, **35**, may be capable of employing a packet switched service such as GPRS. Preferably, each one of the mobile phones **31**, **32**, **33**, **34**, **35**, are capable of operating within a GSM or UMTS network. Of course, one skilled in the art will understand that other terminals capable of operating within a GSM or UMTS network may also be used instead of or in addition to the mobile phones **31**, **32**, **33**, **34**, **35**. The mobile phones **31**, **32**, **33**, **34**, **35**, may be conventional phones which include, for example, a keypad and a display. When using a telephone having a 10-button keyboard with multiple character occupancy, user convenience may be largely improved when a word recognition software or method adapted to such a 10-button keyboard is provided.

[0024] In some embodiments, the display of each mobile phone **31**, **32**, **33**, **34**, **35**, may be divided into two portions to allow entering its own text, or text to be transmitted, using a first portion and displaying incoming text in a second portion. For example, a top portion of the display may be used to enter text to be transmitted and a lower portion of the display may be used to display incoming text. When no text to be transmitted is being displayed, the whole screen may be used to display incoming text.

[0025] The base station controller **14**, the GPRS **16**, the first and second gateway GPRS supports nodes **18**, **20**, and the GMSC **22**, may be conventional devices that are inter-

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