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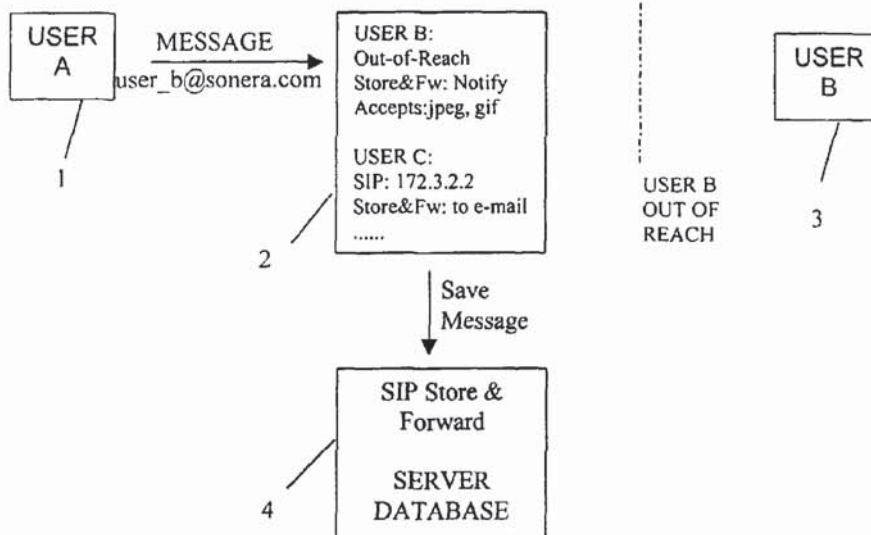
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(54) Title: METHOD AND SYSTEM PROVIDING A MESSAGING SERVICE



(57) Abstract: The invention is directed to an instant messaging method and communication system comprising one or more network elements, wherein a connection from one to another network element can be established using a protocol which allows the sending of one or more messages from the one to the another network element as part of one or more protocol words. The protocol includes a protocol portion allowing a network element to specify whether or not the message is to be stored in case it cannot be promptly delivered to the another network element. The protocol portion preferably is part of the protocol header. The protocol may be a Session Initiation Protocol (SIP), and the message can be contained in an Invite request sent from the sending equipment to the receiving equipment.



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*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.*

## METHOD AND SYSTEM PROVIDING A MESSAGING SERVICE

## 5 FIELD OF THE INVENTION

The invention relates to a communication method and system implementing a messaging service

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## BACKGROUND OF THE INVENTION

Several networks provide messaging services which allow messages to be sent from one to another network terminal without necessity of actually initiating a call. For instance, a plurality of GSM networks support a short message service (SMS) which permits the transmission of short messages. A more recent development is the multimedia messaging service (MMS) which allows the transmission not only of text messages but also of pictures and the like. Both these SMS and MMS are store-and-forward messaging services which necessitate additional network elements (e.g. SMSC, Short Message Service Center) and dedicated protocols such as specified in ETSI TS 23.040.

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Moreover, the Internet provides a direct user-to-user messaging for chatting or instant messaging (e.g. using Instant Messaging/Presence Protocol IMPP). Further, the Internet offers a store-and-forward messaging, e.g. e-mail service (POP3 "Post Office Protocol, version 3" or IMAP4 "Internet Message Access Protocol, Version 4").

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Presently, some instant messaging services are either based on existing standards, or are proprietary solutions such as AOL instant messaging service. Some requirements of future instant messaging services are defined in IETF RFC 2778 and

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RFC 2779. The instant messaging service requests both sender and receiver to be on-line and registered to the instant messaging server. When the receiver is e.g. not reachable, no instant message can be delivered.

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For establishing a bidirectional connection between a caller and a callee, several call control protocols such as SIP (Session Initiation Protocol, see e.g. RFC 2543 and RFC 2543bis) are proposed. SIP may not only be used as a call control protocol but also offers the possibility of being used as instant messaging service. For instance, the SIP INVITE message can be used to carry content payloads (MIME types such as JPEG) inside one protocol message without the need of actually setting-up a voice-over-IP (VoIP) call. Other SIP message types (e.g. INFO) may also be used and new message types may be defined for this purpose. Note that the INVITE message is a signalling message. As an example, a user A may include the following MIME-payloads into one INVITE message for the user B:

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- image/jpeg (e.g. to send a picture)
  - audio/midi (e.g. for playing a sound clip).

All such information fits into one SIP message.

Fig. 3 shows one example of using the INVITE message as a messaging possibility. The names and numbers of the messages shown in Fig. 3 are as defined in RFC 2543. First, user A sends an INVITE message (F1) to user B which message includes the payload. User B responds by returning "100 Trying" (F2), "180 Ringing" (F3), and "200 OK" (F4), which confirms receipt of the message. User A then sends a "BYE" message (F5), to user B which acknowledges this message by returning "200 OK" (F6).

35 SIP-based messaging provides the advantage of being usable without need of any new network elements and is therefore cheap, and may possibly replace other messaging services.

However, for performing this SIP-based messaging, both sender and receiver must be "on-line", i.e. user B must be actually reachable.

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## SUMMARY OF THE INVENTION

The present invention aims at providing a messaging service which can easily be implemented without need of new network elements, and which offers enhanced messaging possibilities.

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The present invention provides a method and/or system as defined in any one of the claims. Further, the invention provides network element adapted to perform the necessary functions.

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In accordance with one aspect of the invention, the instant messaging service is enhanced by providing a storing capability for messages. When the intended receiver of the message is presently unable to receive the message because he is e.g. not on-line, busy and/or not reachable by the network, e.g. by the proxy server of the receiving user, because of any other reason, the message may be stored.

This saving of the message enables its later delivery to the receiving user when this user is able to receive the message, e.g. after re-attachment to the network. No connection for bi-directional communication needs to be established.

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The protocol normally used for initiating a connection enabling e.g. a bi-directional communication between a call originating equipment and a call terminating equipment thus serves the further purpose of indicating whether or not transmitted instant messages are to be stored in case of impossibility of direct delivery. The protocol allowing

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