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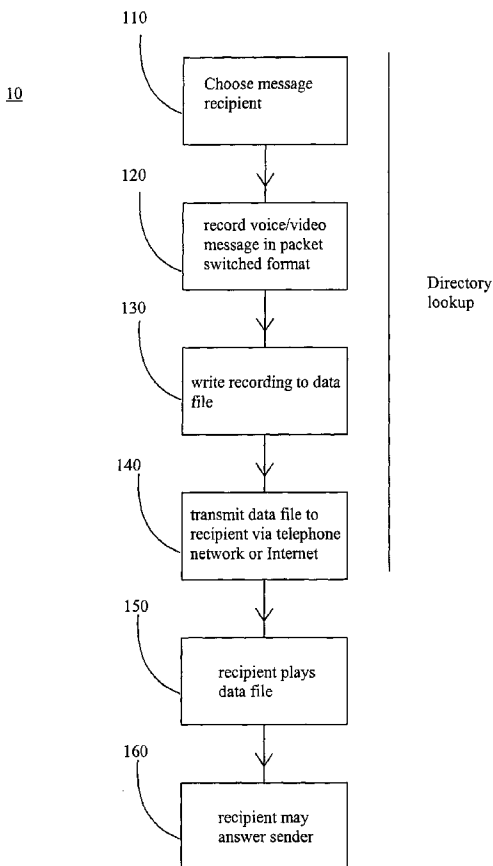
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(54) Title: VOICEMAIL SHORT MESSAGE SERVICE METHOD AND MEANS AND A SUBSCRIBER TERMINAL



(57) Abstract: The invention relates to a voicemail short messaging method (10, 20, 30) and means and a subscriber terminal (500). In particular it concerns a method and means for instantaneous packet switched voicemail between Internet compatible computers, personal digital assistants, telephones and mobile stations. In particular the inventive subscriber terminal (500) concerns a hardware and a software setup that allows the combined use of audio and/or video devices (550) with both the normal cellular or fixed telephony network (520) and with an Internet connection (510). The inventive subscriber terminal (500) allows the flexible use of both the Internet and telephony network with numerous advantages, one of which is the inventive voicemail short messaging method under study. The inventive voicemail messaging method (10), comprising at least one subscriber terminal is characterised by server independence.



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## **Voicemail Short Message Service method and means and a subscriber terminal**

The invention relates to a voicemail short messaging method and means and a subscriber terminal. In particular it concerns a method and means for instantaneous  
5 voice mail between Internet compatible computers, personal digital assistants, telephones and mobile stations. In particular the inventive subscriber terminal concerns a hardware and a software setup that allows the combined use of audio and/or video devices with both the normal cellular or fixed telephony network and with an Internet connection.

10

Prior art packet switched voicemail features methods where the voicemail is delivered between GPRS and/or UMTS mobile stations. The voicemail messages are sent to an IP-address or an ISDN address. One prior art packet switched voicemail method is described in the WO 00/02367 publication, which is taken here as  
15 reference.

20

Prior art subscriber terminals typically do not allow the seamless interplay of the same audio and/or video devices with both the Internet connection and the telephony network connection. For example, WAP- compatible mobile phones lack the facility to use the telephony audio devices when browsing the Internet.

25

The prior art has several disadvantages. Firstly the prior art method is only applicable for sending voicemail between a limited number of devices, i.e. mobile stations. Second, the use of IP-address or ISDN-address is conceptually difficult. It is also  
25 technologically difficult, especially in cases where the receiver does not have a permanent IP-address, but rather a dynamic one. Thirdly, a specific voicemail central server is an essential requirement for the prior art method. This introduces unnecessary network hardware.

30

Prior art mobile subscriber terminals do not allow the use of audio features with the Internet connection. This limits the facility to arrange IP conferences, make Internet

calls, operate hyperlinks and send and reproduce packetized audio/video data, such as voicemail, seamlessly.

The purpose of the invention is to remove the aforementioned disadvantages.

5 The present inventive method allows voicemail to be sent directly to telephone numbers in a flexible manner from both software applications and mobile stations. The inventive method and means allows instantaneous voicemail to be sent and received from and to any Internet compatible device on the basis of the telephone number of that device, or other directory information of that device. There will only  
10 be an optional need for a central server storing the messages.

IP-conferences and Internet calls maybe arranged with the telephony audio devices in accordance with the inventive subscriber terminal. Likewise, voice hyperlinks are easy to operate with the same audio devices. The transmission, reception and reproduction  
15 of packet switched voice mail will also be seamless with the subscriber terminal in accordance with the invention.

In addition, the purpose of the invention is to introduce a favourable inventive user interface and method for exchanging voicemail seamlessly and instantaneously  
20 between IP-addresses, email-addresses, telephone numbers, and/or ISDN addresses.

Most or all of the aforementioned advantages of the invention are preferably implemented with a special exemplary embodiment of the invention, in which a recipient is chosen from the electronic phone book of a mobile station by pressing a  
25 button. The button is held down as the message is being dictated. The dictation is recorded in packet switched format to a data file on the mobile station or on a server in the network or on the Internet, in which case there will be a communications connection open to the server from the mobile station. Once the button is released the recording is finished and the data file will be sent to the recipient. Compression and  
30 cryptography methods may be employed with the data file and/or the packet stream. The data file may be sent either to the telephone number of the recipient directly, or to an IP-address of the recipient through the Internet by a variety of transmission

protocols, such as TCP-, IP-, UDP-, H323-, HTTP- SMS-, MMS- or any other protocol or message delivery service. The IP-address of the recipient may be found from a central lookup server on the basis of the telephone number of the recipient, name or other information. Likewise, the telephone number may be found on the basis  
5 of the IP-address or other information related to the recipient by querying the lookup server.

Once the data file has been received, it can be played immediately at the mobile station of the recipient by pressing a button. The user may also reply to the voicemail  
10 immediately with another recording. If the recipient mobile station cannot be reached, the message may be stored on a central server in the network or on the Internet for an indefinite time. If the receiving terminal is unable to play the recorded format, it may also be adapted on the central server to a suitable packet switched data format, or alternatively it can be played down the phone line to the recipient through a voice or a  
15 data connection.

In some preferable embodiments the voice message is streamed to the recipient through the Internet in real time, and the receiver may play it in real time.

In some embodiments the subscriber terminal is a virtual software telephone in a PC.  
20 This software is preferably compatible to communicate with the mobile stations directly. The communication with the messages outlined here is faster than with contemporary SMS-messages, emails or telephone calls as the user neither has to write the messages with an often limited keyboard, nor has to wait for the recipient to answer on the other end. Very fast voicemail “ping-ball” is made possible by the  
25 outlined preferred embodiment of the invention.

Most or all of the aforementioned advantages of the invention are preferably implemented with a special exemplary embodiment of the inventive subscriber terminal, in which the audio and video software of the subscriber terminal has the  
30 ability to control both the Internet and normal telephony network connections. This allows the arrangement of IP-conferences by a setup signal that is transmitted through the telephony network. This allows seamless transmission; reception and processing

of packet switched voicemail between both mobile stations, PCs and other terminals. The inventive software allows seamless IP-conferences between PC's and mobile stations. It also allows the efficient deployment of voice hyperlinks from the subscriber terminal. In some preferable embodiments it also allows least cost routing.

5 Choices of whether to form IP-conferences or route through a normal telephony carrier can be made on the basis of economic and quality of service (QoS) criteria with this inventive subscriber terminal and related software, in some preferable embodiments.

10 A voicemail messaging method, comprising at least one subscriber terminal, **characterised** by the steps of,

- choosing at least one message recipient or a group,
- recording at least one voice/video message,
- writing at least one recording to at least one data file,

15 - transmitting at least one data file to at least one recipient via telephony network or the Internet,

A voicemail messaging method, comprising at least one subscriber terminal, **characterised** by the steps of,

- 20
- choosing at least one message recipient or a group,
  - recording at least one voice/video message,
  - streaming data packets to at least one recipient via telephony network or the Internet,
  - at least one recipient receives and/or reassembles packet stream,

25

A voicemail messaging method, comprising at least one subscriber terminal, **characterised** by the steps of,

- choosing at least one message recipient,
  - recording at least one voice/video message,
- 30
- writing at least one recording to at least one data file,
  - decomposing at least one data file into IP- packets,
  - streaming packets to at least one recipient via telephony network or the Internet.

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