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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6:
H04M

(21) International Application Number: PCT/EP98/04077
(22) International Filing Date: 1 July 1998 (01.07.98)
(30) Priority Data:
9715236.7 18 July 1997 (18.07.97) GB


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(54) Title: TELECOMMUNICATIONS SYSTEMS

(57) Abstract

Telecommunications network apparatus (14) comprises subscriber storage means (146) for storing name information corresponding to specific caller identity information in response to a subscriber request, caller storage means (144) for storing the calling line identity of the last caller to the subscriber, and access means (146, 148) for providing, in response to a request from the subscriber, the stored name information corresponding to the stored identity information. The information can be provided, for example, in the form of a voice or text message. The system can thus provide an improved call return service.


Published
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TELECOMMUNICATIONS SYSTEMS

The present invention relates to telecommunications systems, in particular to systems which provide a call return service.

DESCRIPTION OF THE RELATED ART

Some telecommunications systems offer subscribers a call return service in which the subscriber can dial a short number to listen to an announcement of the number of the last caller to that subscriber. The last number is stored at the local exchange. The call can then easily be returned by the subscriber to the last caller.

However, such previously considered services are not particularly user friendly since the only message to be relayed to the subscriber requiring the call return service is the number of previous caller.

European Patent Application No. 0588101 discloses a system for storing voice mail messages, in which a calling party's actual name is attached to a stored voice mail type message, and is replayed to the subscriber during playback of the message.

This system suffers the disadvantage that it is complex since it requires a voice mail recording system to be in place. Also such a system must store the name information with the voice-mail message.

SUMMARY OF THE PRESENT INVENTION

It is thus an object of the present invention to provide a simple and convenient network system for communicating the name of the last caller to a subscriber.

According to a first aspect of the present invention there is provided a telecommunications network apparatus comprising subscriber storage means for storing name information corresponding to specific caller identity information in response to a subscriber request, caller storage means for storing the calling
line identity of the last caller to the subscriber, and access means for providing, in response to a request from the subscriber, the stored name information corresponding to the stored identity information.

According to a second aspect of the present invention, there is provided a method of providing caller information in a telecommunications network, the method comprising steps of:

- storing name information corresponding to specific caller identity information in response to a subscriber request;
- receiving a service request from the subscriber;
- obtaining calling line identity information of the last caller to that subscriber;
- obtaining the stored name information corresponding to that calling line identity information; and
- supplying the obtained name information to the subscriber.

The information is preferably provided in the form of a voice message, or could be in the form of a text message.

Thus, embodiments of the present invention can provide user-friendly and cost effective network call return services for subscribers.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 shows a schematic diagram of a telecommunications system;

Figure 2 shows a block diagram of node apparatus embodying the present invention; and

Figure 3 is a flowchart illustrating steps in operating the apparatus of Figure 2.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Figure 1 shows a schematic diagram of a telecommunications system 1 in which a caller 10 is connected to a subscriber 12 by way of network
connections 11 and 13 and node switching apparatus 14.

Figure 2 shows a block diagram of node apparatus 14 embodying the present invention. The node apparatus includes a service check unit 142 which is connected to receive a call return service request from the subscriber 12. A calling line identifier (CLI) store 144 is connected to receive the service request from the service check unit 142 and to receive calling line information from the last caller to call the subscriber 12. The CLI store 144 is connected to a name look-up unit 146, which in turn delivers its output to a speech message system 148. The speech message system 148 delivers voice messages to the subscriber 12.

Operation of the embodiment of the invention will now be described with reference to Figures 2 and 3. Before being able to use the service, the subscriber must store the names of one or more frequent callers, together with their respective CLIs. Then, in use, when one of those callers makes a call, the system is able to inform the subscriber of the caller’s name, and not merely of his or her CLI. The subscriber 12 invokes the call return service at step 32, for example by dialling a short number. The service check 142 operates (step 33) to check that the subscriber 12 has access to the enhanced call return service. If this is not the case then the subscriber is alerted and the service terminated.

When the subscriber 12 does have access to the enhanced call return service, then the service request is passed to the calling line identifier storage means 144. The CLI store 144 outputs the calling line identifier of the last caller to call the subscriber to a name look-up unit 146, (step 34). Moreover, as is conventional, the date and time of the last call may be stored with the CLI of the caller.

The name look-up unit is configured to store
subscriber-specific information relating to known CLIs and corresponding name data. The subscriber will store in the name look-up unit 146 name information for responding to known calling line identifier information.

In response to receiving the CLI information the name look-up unit 146 passes the required name information to the speech system 148 (step 35). The speech system 148 operates to deliver a voice message to the subscriber which includes the name information and the last call details.

The different units of the node apparatus 14 are not necessarily physically located in one location. For example, the CLI store 144 and name look-up unit 146 could be in physically different locations, and connected by standard signalling protocols. Specifically, it will probably be advantageous for the CLI store 144 to be located in the subscriber's local exchange, while a single home look-up unit 146 and speech system 148 may serve several local exchanges.

If no name corresponding to the CLI is stored in the name look-up unit then the number of the last caller is announced as usual.

In the preferred embodiment, the speech system stores voice messages recorded by the subscriber. However, the speech system may alternatively be based on an intelligent speech platform which is able to generate voice messages from a text input (i.e. the name of the caller), provided either direct by the subscriber or by the network operator in response to a request from the subscriber.

As a further alternative, the name information relating to the caller may be stored, and transmitted to the subscriber in the form of a text message. This may be particularly applicable in the case of a mobile subscriber, for example using mobile phone complying
with the GSM standard, in which case, instead of the CLI of the last caller being announced to the subscriber, the stored text identifying the caller may be transmitted as a SMS message.

It will be readily understood that the system embodying the present invention provides a more user-friendly way of supplying last caller information to a subscriber.
CLAIMS

1. Telecommunications network apparatus comprising subscriber storage means for storing name information corresponding to specific caller identity information in response to a subscriber request, caller storage means for storing the calling line identity of the last caller to the subscriber, and access means for providing, in response to a request from the subscriber, the stored name information corresponding to the stored identity information.

2. Apparatus as claimed in claim 1, wherein the name information is exclusively accessible and updatable by the subscriber concerned.

3. Apparatus as claimed in claim 1 or 2, wherein the stored name information is provided in the form of a voice message.

4. Apparatus as claimed in claim 1, 2 or 3, wherein the stored name information is provided in the form of a text message.

5. Apparatus as claimed in any one of the preceding claims, comprising a service check unit for receiving a service request from a subscriber and for confirming that the subscriber has access to the service, a calling line identity store for storing the last calling line identity of the last caller to the subscriber, which store is connected to receive the service request from the service check unit if the subscriber has access to the service, a name look-up unit for obtaining name data corresponding to the stored calling line identity, and a speech delivery system for receiving the name information from the name look-up unit and for supplying that information in the form of a voice message to the subscriber.

6. A method of providing caller information in a telecommunications network, the method comprising steps of:
storing name information corresponding to specific caller identity information in response to a subscriber request;

receiving a service request from the subscriber;

obtaining calling line identity information of the last caller to that subscriber;

obtaining the stored name information corresponding to that calling line identity information; and

supplying the obtained name information to the subscriber.

7. A method as claimed in claim 6, wherein the stored name information is exclusively obtainable by the subscriber.

8. A method as claimed in claim 6 or 7, wherein the obtained name information is supplied in the form of a voice message.

9. A method as claimed in claim 6 or 7, wherein the obtained name information is supplied in the form of a text message.

10. Telecommunications network apparatus substantially as hereinbefore described with reference to, and as shown in, Figures 2 and 3 of the accompanying drawings.

11. A method of providing caller information in a telecommunications network, substantially as hereinbefore described with reference to Figures 2 and 3 of the accompanying drawings.
START

INVoke CALL RETURN CALL

SERVICE CHECK

OBTAIN CLI INFORMATION

OBTAIN NAME INFORMATION

ANNOUNCE NAME + CALL INFORMATION

END

FIG. 3