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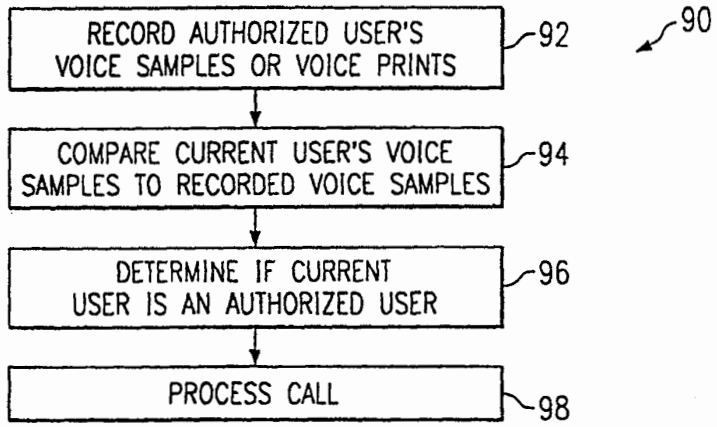
(54) Title: MOBILE STATION WITH VOICE RECOGNITION AUTHENTICATION

(57) Abstract

A wireless mobile station having voice recognition capabilities to determine authorized user of the mobile station. In the first embodiment, the mobile station is provided with a SIM card storing voiceprints of authorized users. A mobile station user provides voice samples which are compared against the voiceprints stored in the SIM card to determine a match before a call can be placed using the mobile station. In a second embodiment, voice samples of a current user are compared during a call in progress, and future calls are prevented until an authorized user is determined. An IN solution is also provided including voice recognition and authorization of mobile users placing calls or attempting to place calls over the wireless network.



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MOBILE STATION WITH VOICE RECOGNITION AUTHENTICATION

FIELD OF THE INVENTION

The present invention is generally related to communications networks including wireless telephony communication networks, and more particularly to wireless mobile stations including cellular telephones and the like.

BACKGROUND OF THE INVENTION

The infrastructure of wireless communication networks typically includes an originating network, a terminating network, and a communication link exchanging voice and data between these networks. The wireless communication network services multiple mobile stations via a radio frequency (RF) communication links. The wireless communication networks and mobile stations can be based on a variety of wireless standards including GSM, TDMA, CDMA, AMPS and D-AMPS.

Fraudulent use of mobile stations is a large problem faced by the wireless service providers and accounts for a significant portion of lost revenue. Costs associated with fraudulent use of the mobile stations is generally unrecoverable. To prevent the unauthorized use of mobile

stations, the communication network and/or the mobile stations can be provided with a variety of authentication mechanisms and protocols to insure that a mobile subscriber is an authorized user of a mobile station. In some schemes, authentication triplets are utilized whereby a mobile stations authenticates itself with the servicing network every time the mobile station enters service, i.e. at power up, or every time a mobile subscriber enters a new calling area. Coding techniques are also utilized to encrypt identification information of the mobile station including the mobile station's serial number and manufacturer number, which information is required to validate an authorized mobile station.

Other techniques to prevent unauthorized use of a mobile station include providing locking features of the mobile station itself. In this scheme, a code, such as a PIN number, is required to unlock the mobile station prior to use. This authorization scheme is effective as long as the mobile user consistently uses this feature, which is typically not the case of a typical mobile user. Thus, if the phone is left in the un-locked state, it can still be used by an unauthorized user.

There is desired an improved method to reduce or prevent fraudulent calls by a wireless mobile subscriber.

SUMMARY OF THE INVENTION

The present invention achieves technical advantages as a mobile station and wireless network having voice recognition features to ensure calls are made on the mobile station by only authorized users. Voice samples or voiceprints of a current mobile station user are compared to voiceprints of authorized users to verify authorized users of the particular mobile station. Several embodiments of the present invention are provided.

According to a first preferred embodiment of the present invention, voiceprints of authorized users are stored in a SIM card of the mobile station. Prior to making a call, a current user provides voice samples to the mobile station which are then compared with the voiceprints stored in the SIM card. If a match is found, the user is given an indication and allowed to proceed with the call. If a match is not found, the mobile station is disabled until a voice sample is provided and recognized. This authentication process can be required for each call, on a daily basis, or at power up, for example. The voice authentication process can be overridden with a personal identification number (PIN) number.

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