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(58) Field of Search

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(54) **Handover procedure in a dual-mode telecommunications network**

(57) A dual mode terminal 20 comprises a combined mobile station 21 and a cordless telephone 22 and can communicate with both a base station of a mobile radio system and a base station (fixed part) of the cordless telephone system. Transfer of a call from the base station of the mobile radio system to a base station of the cordless telephone system takes place by a terminal-initiated set-up message transmitted (e.g. in response to a detected signal quality) via the mobile station section and the mobile radio system base station and via the cordless telephone section to the cordless telephone system base station. The set-up message includes the ID of the terminal and a call re-establishment indicator.

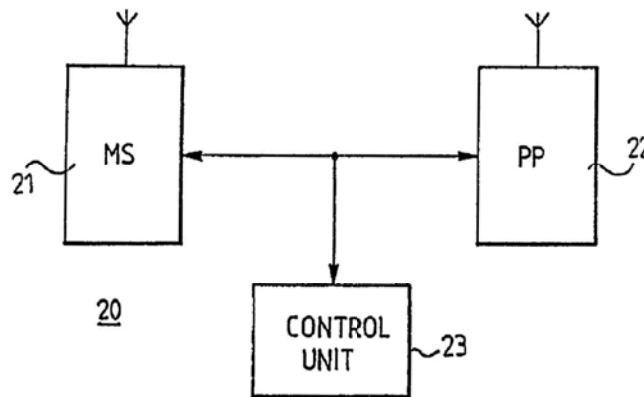


FIG. 2

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The print reflects an assignment of the application under the provisions of Section 30 of the Patents Act 1977.

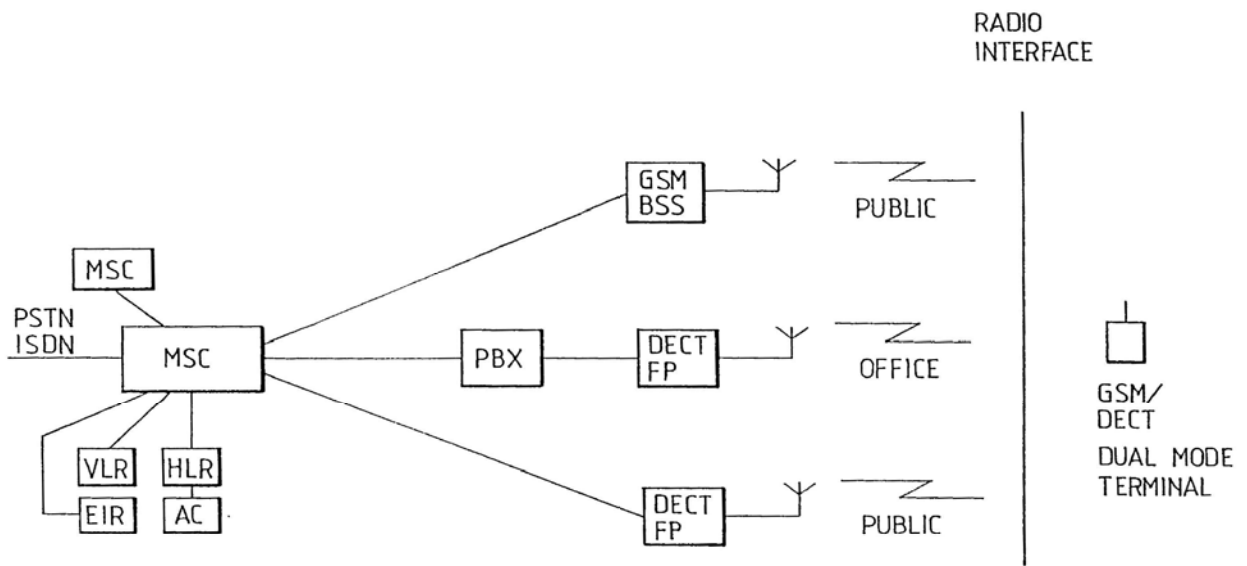


FIG. 1

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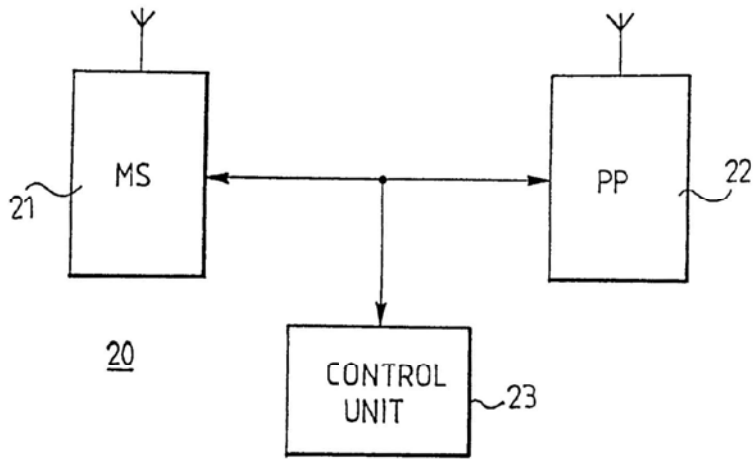


FIG. 2

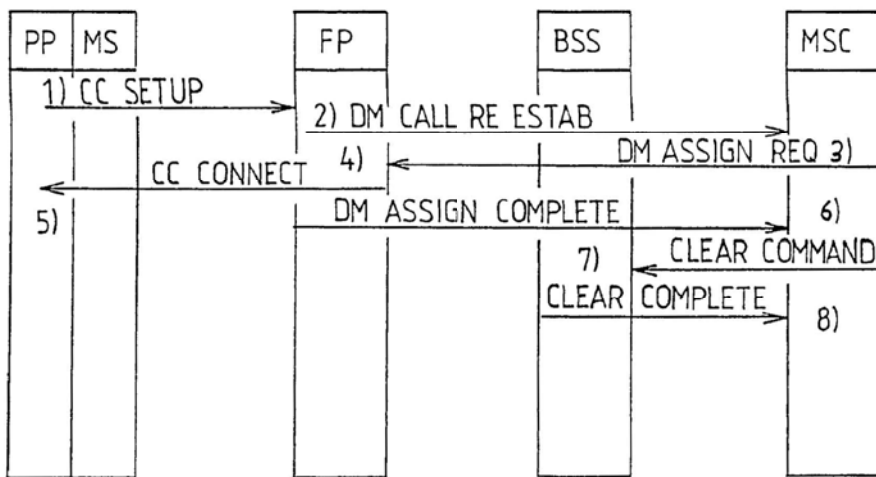


FIG. 3

Dual mode subscriber terminal and a handover procedure of the dual mode subscriber terminal in a mobile telecommunications network

5           The invention relates to a mobile telecommunications system including a fixed network comprising mobile exchanges, base stations for mobile stations, and cordless telephone base stations connected to and under control of said mobile exchanges. In particular, the present  
10 invention relates to a method for performing handover from the base stations for mobile stations to the cordless telephone base stations.

          Conventional cordless telephones operate as an extension to the Public Switched Telephone Network (PSTN). A  
15 cordless telephone system consists of a portable handset and a base station (a fixed part) connected to PSTN. The first cordless telephone systems were analog systems, such as CT1. Recently digital cordless telephone systems, such as CT2 and DECT (Digital European Cordless Telephone) have  
20 been introduced. When a cordless telephone is a subscriber of PSTN, it is accessed by dialing the telephone number associated with the fixed subscriber connection to which the base station is connected. Also the subscriber has access to the PSTN only via the home base station. In CT2  
25 and DECT, also a telepoint service is introduced, whereby a subscriber to the service can make calls away from home via a public base station. Also a common air interface for cordless telephones was introduced to facilitate roaming between systems and so to improve service coverage for the  
30 use.

          There has also been a proposal to combine a cordless telephone system with a cellular mobile telecommunications system to further improve the roaming capabilities by means of utilization of the mobility  
35 control of the cellular network. When combined with the

mobile telecommunications systems, the roaming of the cordless telephone handsets within the cordless telephone systems is fully supported. However, the cordless telephone handset is not able to utilize the more extensive radio coverage of the supporting cellular network or to perform handover to or from the cellular network. This disadvantage is due to several reasons.

5  
10 Firstly, the radio interfaces of cordless telephone systems and the mobile radio systems are usually incompatible.

15 Secondly, the handover procedures are different. In cordless telephone systems, the handover procedure is usually initiated by the portable terminal. More particularly, when a cordless telephone terminal considers it necessary to change from one base station to another, the terminal scans the frequency band and selects the appropriate base station for the handover. In most of the mobile telephone systems the handover is controlled by the network. The mobile station only measures the quality of the radio connection and forwards the measuring results to the fixed network. One of the network elements, for example a mobile exchange, makes a decision for handover on the basis of the obtained information.

20  
25 It is an object of the invention to provide a dual mode subscriber terminal capable to roam between a cordless telephone system and a mobile radio system supporting it.

30 It is another object of the invention to provide a method for performing handover from a mobile radio system to a cordless telephone system supported by said mobile telecommunications system.

35 One aspect of invention is, in a mobile telecommunications system including a fixed network comprising mobile exchanges, first base stations connected to said mobile exchanges, and second base stations of a cordless

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