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MacDonald

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[54] **METHOD AND APPARATUS FOR DETERMINING THE LOCATION OF A MOBILE TELEPHONE**

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[57] **ABSTRACT**

A method and apparatus for determining the location of a mobile telephone within the serving area of a mobile telephone system are disclosed. A mobile switching center analyzes the calling mobile telephone number and called telephone number to determine if a location function is required. Upon initiation of the location function by the mobile switching center, a mobile location module calculates a location estimate of the mobile telephone. The mobile location module receives a list of signal strengths received by the mobile telephone from cell site antennas within the serving area. The distance between the mobile telephone and a plurality of cell site antennas is calculated using a technique which reduces the error component of the calculated distances. These reduced error distances are used to geometrically determine an estimate of the location area within the serving area of a mobile telephone system.

36 Claims, 5 Drawing Sheets

