

ABSTRACT

RADIOTELEPHONE LOCATING AND HANDOFF USING ALTERNATIVE CRITERIA

In a cellular mobile radiotelephone system having a plurality of cells providing radio coverage by a plurality of base stations and having a plurality of mobile stations, the location of a mobile station with respect to cell boundaries is identified using measurements, performed at the mobile station or at selected cells, of transmissions from the cells or transmissions from the mobile station. When a cell is found that meets a specified standard with respect to a call connection in progress according to a first radio-signal criterion, a handoff candidate cell is selected according a second different radio-signal criterion. When no cell is found that meet the specified standard, a cell is selected according to the first radio-signal criterion. Handoff to the selected cell is attempted if that cell is not presently handling that call. More particularly, the first radio-signal criterion may be signal strength and the second radio-signal criterion may be path loss. When a cell is found that meets the signal-strength criterion, the cell is determined to have sufficient signal strength margin so that the path loss criterion may be used instead. As mentioned above, use of the path loss criterion has the advantages of conserving power, reducing interference, and allowing effective cell boundaries to remain fixed. When no cell is found that meets the signal-strength criterion, the call connection is determined to be signal-strength limited such that the signal strength criterion is used to select the cell having the greatest signal strength.

FIGURE 1e