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(54) Title: WIRELESS USER POSITION UPDATE USING INFRASTRUCTURE MEASUREMENTS

(57) Abstract

A method and apparatus for tracking the position of a mobile unit (300) in a mobile radio communication system using information from earth-orbiting satellites and information received from the infrastructure of the system, wherein the infrastructure consists of equipment (400) associated with transmitting and receiving voice or data traffic to and from the mobile phone (300). An initial position of the mobile unit (300) is calculated using measurements from earth-orbiting satellites. A positional difference between the initial position and a current position of the mobile station (300) is estimated using range measurements between the mobile unit (300) and the infrastructure (400). An accuracy value is next determined for the estimated positional measurement, and the accuracy value is compared to a threshold to determine whether the estimated positional measurement has an acceptable accuracy. If so the initial position of the mobile unit (300) is updated using the estimated positional measurement and the process is repeated using only range measurements between the mobile unit (300) and the infrastructure, otherwise a new initial position is determined from the earth-orbiting satellites and the process is repeated.

