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Perez-Breva et al.

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(54) **LOCATION DETERMINATION USING RF FINGERPRINTING**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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Related U.S. Application Data

(63) Continuation of application No. 09/532,418, filed on Mar. 22, 2000, now Pat. No. 6,393,294, which is a continuation-in-part of application No. 09/158,296, filed on Sep. 22, 1998, now Pat. No. 6,269,246.

(51) Int. Cl.⁷ **H04Q 7/20**

(52) U.S. Cl. **455/456.1; 455/456.5**

(58) Field of Search 455/456, 457, 455/456.1-456.6; 342/357.01, 457

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Primary Examiner—Charles Appiah

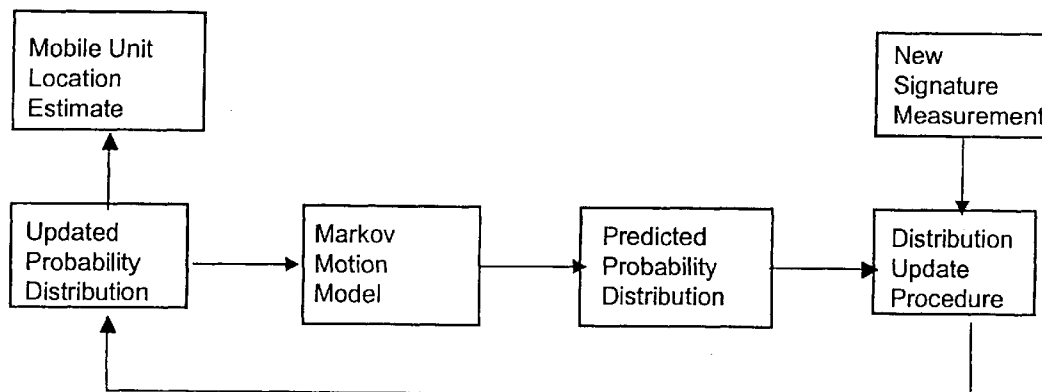
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(57) **ABSTRACT**

A method for determining the location of a mobile unit (MU) in a wireless communication system and presenting it to a remote party. The location of a remote MU is determined by comparing a snapshot of a predefined portion of the radio-frequency (RF) spectrum taken by the MU to a reference database containing multiple snapshots taken at various locations. The result of the comparison is used to determine if the MU is at a specific location. The comparison may be made in the MU, or at some other location situated remotely from the MU. In the latter case, sufficient information regarding the captured fingerprint is transmitted from the MU to the remote location. The database may be pre-compiled or generated on-line.

10 Claims, 10 Drawing Sheets



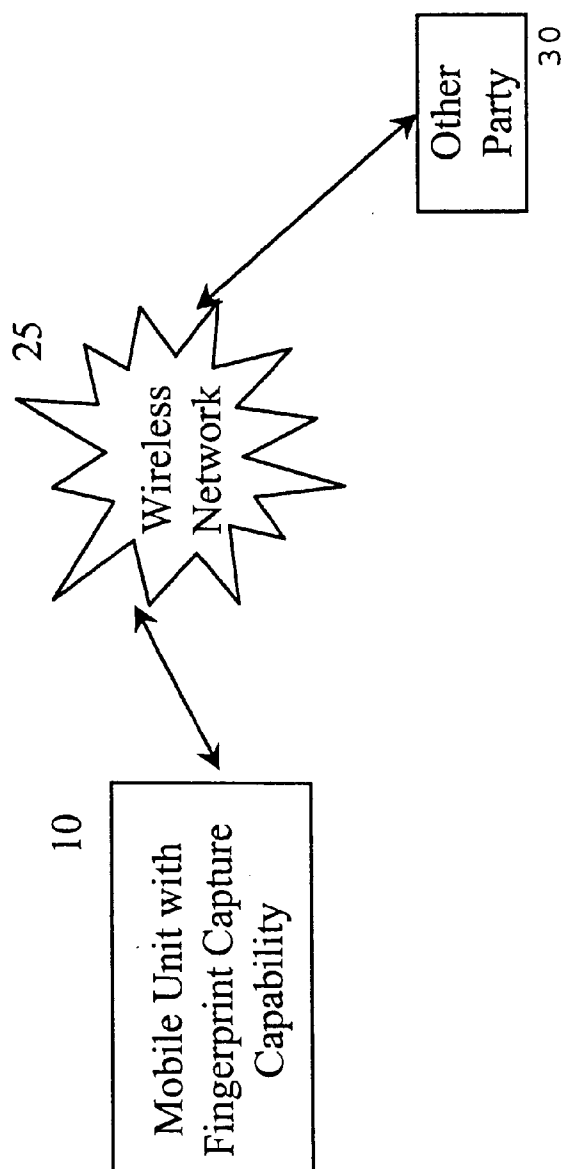


Fig. 1

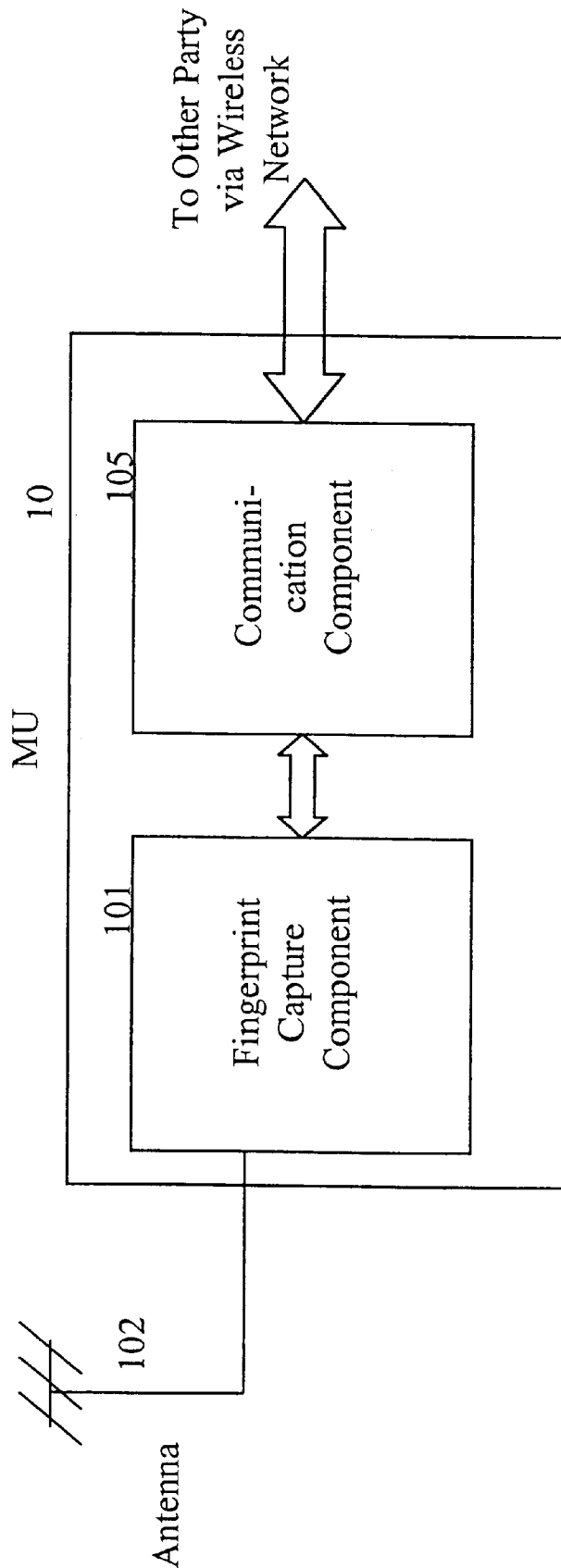


Fig. 2

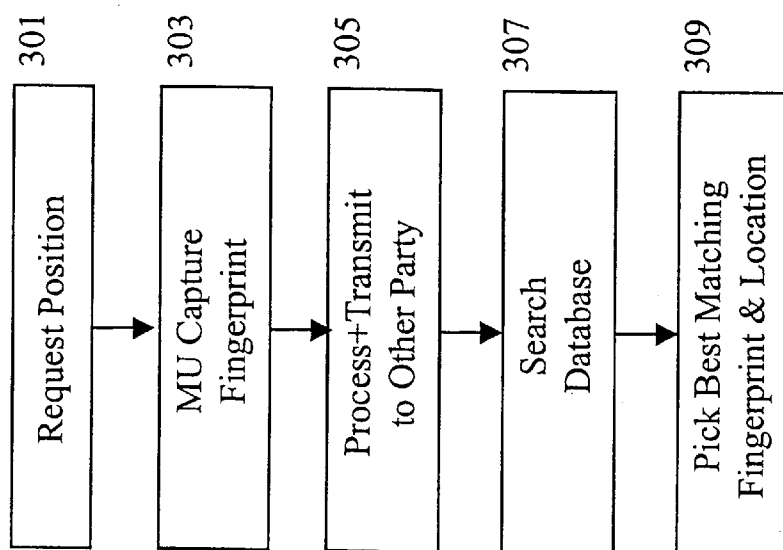
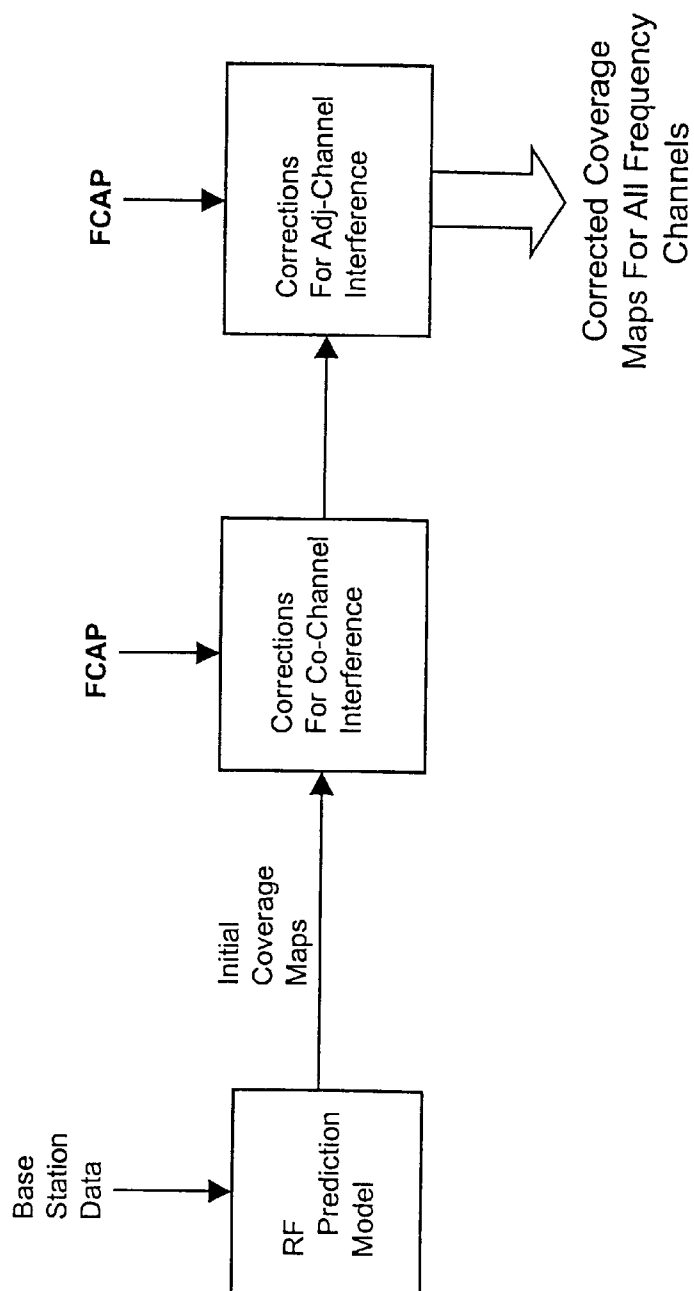


Fig. 3

**Fig. 4**

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