

Title (en)  
WIRELESS LOCATION DETERMINATION USING SPATIAL SIGNATURE INFORMATION

Title (de)  
FUNKSTANORTSBESTIMMUNG MITTELS RÄUMLICHER SIGNATURINFORMATION

Title (fr)  
DETERMINATION DE POSITION DANS UN SYSTEME DE COMMUNICATION SANS FIL, AU MOYEN D'INFORMATIONS RELATIVES A DES SIGNATURES SPATIALES

Publication  
**EP 1058855 A1 20001213 (EN)**

Application  
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Abstract (en)  
[origin: WO0034799A1] A method for determining locations of mobile transmitters in a wireless communication system calculates a signature from signals received at an antenna array from the mobile, and matches the signature with calibrated signatures stored in a database to estimate the location of the mobile. The signature contains information characterizing the spatial channel between the mobile and the antenna array. An apparatus (112) implementing the method comprises an antenna array (116) and multi-channel receiver (118) for coherently receiving multi-dimensional signal vectors from a mobile transmitter. A processor (120) calculates a signal signature from the received signal vectors, which compared with calibrated signatures stored in a memory (122) to identify calibrated signatures that are similar to the calculated signature, and which corresponds to the likely locations of the mobile transmitter. Thus, the location of the transmitter can be accurately determined from the signals received at a single base station, even in a severe multipath environment.

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