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 A4 20040901 (EN)

Application

EP 99956612 A 19991019

Priority

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- US 23125699 A 19990115
- US 27565599 A 19990324

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.

IPC 1-7

G01S 3/02

IPC 8 full level

G01S 1/02 (2010.01); **G01S 5/02** (2010.01); **H04W 64/00** (2009.01)

CPC (source: EP US)

G01S 1/026 (2013.01 - EP); **G01S 5/021** (2013.01 - EP); **G01S 5/02521** (2020.05 - EP US); **H04W 64/00** (2013.01 - EP); G01S 5/0215 (2013.01 - EP US)

Citation (search report)

- No further relevant documents disclosed
- See references of WO 0034799A1

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WO 0034799 A1 20000615; AU 1318300 A 20000626; CA 2320480 A1 20000615; EP 1058855 A1 20001213; EP 1058855 A4 20040901; IL 137702 A0 20011031; JP 2002532691 A 20021002

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