



(51) International Patent Classification:

G01S 5/02 (2010.01) *G01S 5/14* (2006.01)
G01C 21/28 (2006.01) *H04W 64/00* (2009.01)

(21) International Application Number:

PCT/JP2011/004687

(22) International Filing Date:

24 August 2011 (24.08.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2010-202198 9 September 2010 (09.09.2010) JP

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

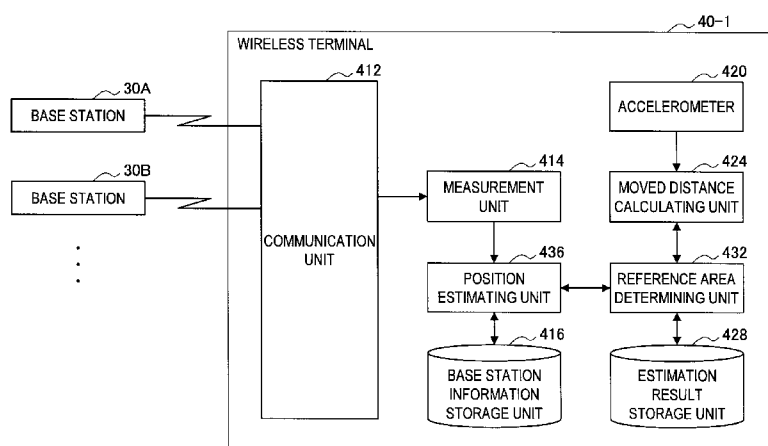
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: POSITION ESTIMATING APPARATUS, POSITION ESTIMATING METHOD, AND COMPUTER PROGRAM PRODUCT

[Fig. 5]



(57) Abstract: An apparatus, method and computer program storage device cooperate to provide a quality position estimation of a mobile communication device by determining a reference area. The reference area includes the position of the mobile communication device as well as a plurality of transmitters. Transmitters that are detected as being outside of the reference area are excluded from contributing to the position estimate. The reference area is centered at a standard position, which may be a previous position or a GPS based position, for example. The range of the reference area includes a component that considers the range of a transmitter, as well as a GPS error or an estimated move distance of the mobile communication device.