



(51) International Patent Classification:

G01S 5/06 (2006.01) G01S 5/22 (2006.01)
G01S 1/20 (2006.01) G01S 3/46 (2006.01)

(21) International Application Number:

PCT/IL2014/050584

(22) International Filing Date:

30 June 2014 (30.06.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

227285 1 July 2013 (01.07.2013) IL

(71) Applicant: ELBIT SYSTEMS BMD AND LAND EW - ELISRA LTD. [IL/IL]; HaMerkava 29, P.O. Box 150, 5885118 Holon (IL).

(72) Inventors: BOKER, Eyal; 45 Carmel St, 48560 Rosh Hayin (IL). LEVY, Avinoam; 1b Smadar St., Apt 15, 52596 Ramat Gan (IL). GOLDREICH, Rami; 14 Ela St., 48560 Rosh Haayin (IL).

(74) Agent: ELIEZRI INTELLECTUAL PROPERTY, PATENT ATTORNEYS & LAW OFFICE; 3 Nirim St., Canada House, 6706038 Tel Aviv (IL).

(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, BN, 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, IR, IS, JP, KE, KG, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

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

(54) Title: MITIGATION OF MULTIPATH DISTORTIONS FOR TDOA-BASED GEOLOCATION

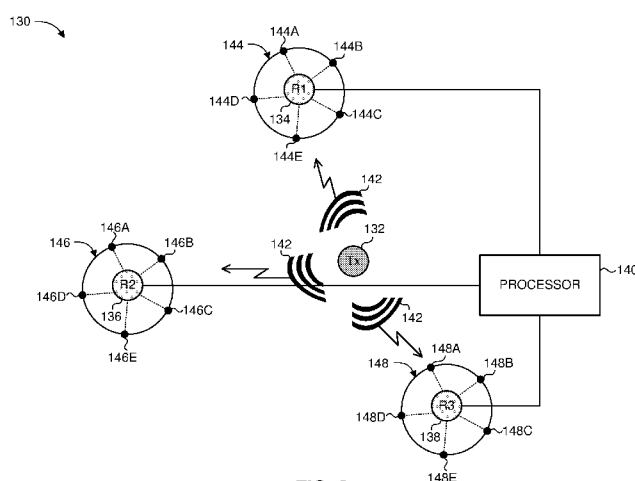


FIG. 3

(57) Abstract: Method and system for radiolocation of RF transmitter in the presence of multipath interference. RF receivers are spatially separated at known locations in a moderate multipath environment in the vicinity of the transmitter. Upon detection of a received active RF signal associated with the transmitter, the receivers are directed to acquire measurements of the detected RF signal. Each receiver obtains a sequence of measurements of the RF signal at different positions along a trajectory that provides multiple measurements at relative phase differences between the direct-path and the multipath reflections of the detected RF signal. The receivers may be repositioned automatically or manually, or prearranged or selectively deployed at fixed positions along the trajectory. TDOA measurements between pairs of receivers are calculated based on the obtained measurements, and are averaged to provide a respective updated TDOA measurement value for each receiver pair, which is used to determine the transmitter location.

