

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 June 2006 (01.06.2006)

PCT

(10) International Publication Number
WO 2006/057000 A1

(51) International Patent Classification:

H01Q 1/18 (2006.01) **H01Q 3/10** (2006.01)
H01Q 3/08 (2006.01)

(21) International Application Number:

PCT/IL2005/001272

(22) International Filing Date:

29 November 2005 (29.11.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10/998,155 29 November 2004 (29.11.2004) US

(71) Applicant (for all designated States except US): **ELTA SYSTEMS LTD.** [IL/IL]; 100 Sderot Itzhak Hanasie, P.O.B. 330, 77102 Ashdod (IL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ILUZ, Zeev** [IL/IL]; 19/2 Revivim Street, 70800 Gan-Yavne (IL). **SAMSON, Claude** [IL/IL]; 3 Asavion Street, 76568 Rehovot (IL). **GAFNI, Amnon** [IL/IL]; 25 Sderot Chen, 76253 Rehovot (IL).

(74) Agent: **REINHOLD COHN AND PARTNERS**; P.O.B. 4060, 61040 Tel-Aviv (IL).

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

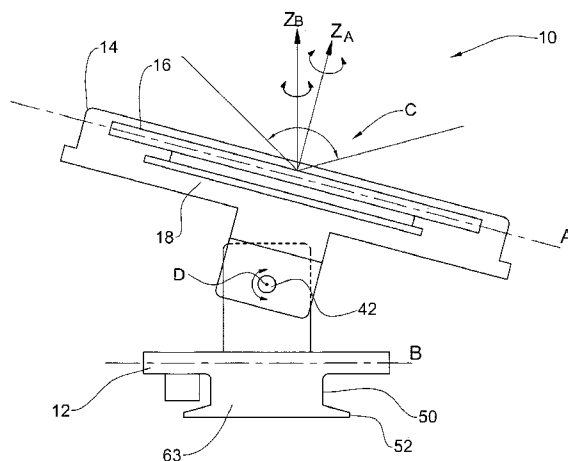
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PHASED ARRAY PLANAR ANTENNA FOR TRACKING A MOVING TARGET AND TRACKING METHOD



(57) Abstract: A phased array antenna system accommodating onto a platform for tracking a target moving relatively to the platform, the antenna system comprising a first planar active subsystem operable for receiving/transmitting an RF signal of a certain linear polarization direction and for selectively performing electronic scanning; a second, roll subsystem coupled to the active subsystem and operable for rotational movement of the active subsystem about a first axis perpendicular to a plane defined by the planar active subsystem; a third, elevation subsystem coupled to the second, roll subsystem and to a fourth azimuth subsystem, the azimuth subsystem defining a central axis of the antenna system and being operable for providing rotational movement of the first planar subsystem about the central axis, the elevation subsystem being configured to provide a certain angular orientation between the plane defined by the active subsystem and a plane defined by the azimuth subsystem, thereby allowing positioning the first planar active subsystem with respect to the target such that the linear polarization direction is substantially aligned with a linear polarization direction of RF radiation received and/or transmitted by the target.

WO 2006/057000 A1