

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 December 2007 (06.12.2007)

PCT

(10) International Publication Number
WO 2007/139597 A3

(51) International Patent Classification:

G01S 13/04 (2006.01)

(21) International Application Number:

PCT/US2007/003365

(22) International Filing Date: 8 February 2007 (08.02.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/356,997 17 February 2006 (17.02.2006) US

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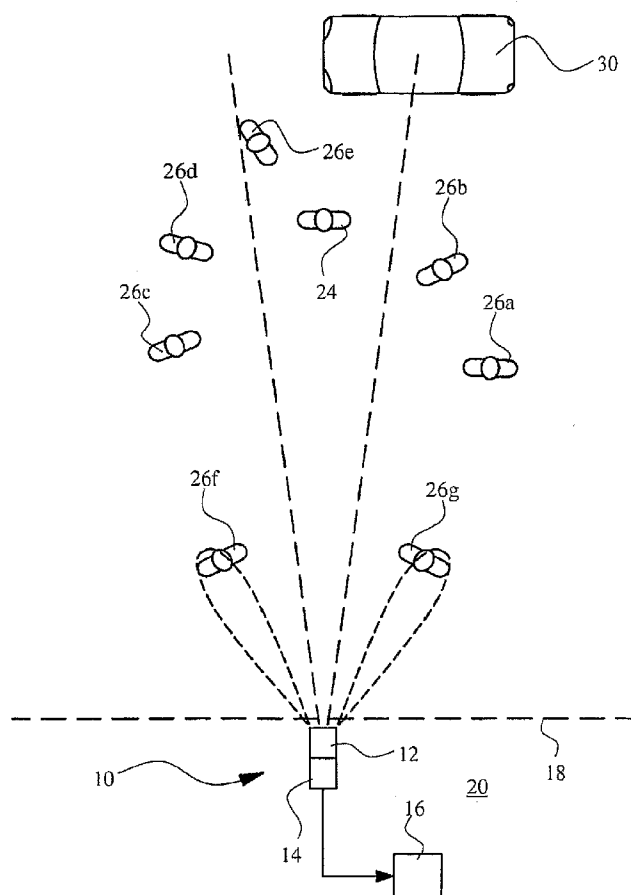
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,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

[Continued on next page]

(54) Title: RADAR APPARATUS AND PROCESSING METHOD FOR DETECTING HUMAN CARRIED EXPLOSIVE DEVICES



(57) Abstract: A linear FM pulse radar with Doppler processing of co-polarized and cross-polarized radar return signals isolates the target echo signal content associated with a moving pedestrian to provide high quality target echo data for standoff HCE detection based on polarimetric signature analysis. Baseband co-polarized and cross-polarized radar return signals are repeatedly and coherently integrated across numerous successive radar return pulses to create co-polarized and cross-polarized range vs. velocity (Doppler) data maps. The co-polarized data map is used to identify a moving pedestrian, and co-polarized and cross-polarized data subsets corresponding to the identified pedestrian are extracted and subjected to polarization signature analysis to determine if the pedestrian is bearing explosive devices. Low pass filtering of the of the baseband co-polarized and cross-polarized radar return signals prior to integration provides range aliasing to reject signal content associated with objects beyond the unambiguous range of the radar apparatus.



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).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

Published:

— *with international search report*

(88) Date of publication of the international search report:

10 April 2008