

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
10 July 2025 (10.07.2025)



(10) International Publication Number
WO 2025/146692 A1

(51) International Patent Classification:
G06V 10/82 (2022.01) *G05D 1/622* (2024.01)

(21) International Application Number:
PCT/IL2025/050016

(22) International Filing Date:
07 January 2025 (07.01.2025)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
309995 07 January 2024 (07.01.2024) IL

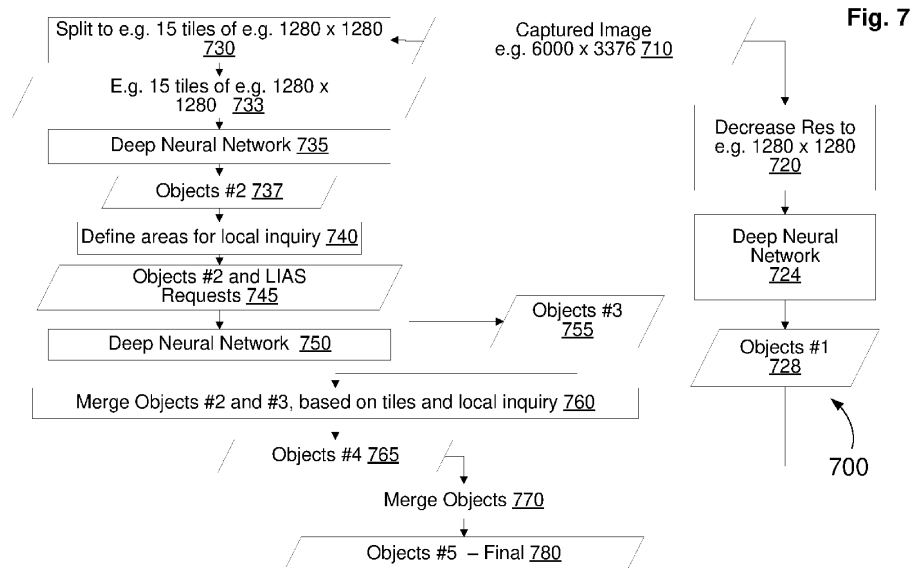
(71) Applicant: **ISRAEL AEROSPACE INDUSTRIES LTD.**
[IL/IL]; Ben-Gurion International Airport, 7010000 Lod (IL).

(72) Inventors: **GAL-ON, Itamar**; 4880500 Kibbutz Einat (IL). **HEROLD, Ariel**; 36 Haeshel Street, 46606 Herzliya (IL). **KREIMER, Evgeny**; 18 Abba Hillel Silver, Haifa 3269407 (IL).

(74) Agent: **KRASNA, Richard**; REINHOLD COHN GROUP, 26A HaBarzel St., 6971037 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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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, ST, SV, SY, TH,

(54) Title: USE OF HIGH-RESOLUTION IMAGES TO ENABLE ARTIFICIAL INTELLIGENCE IDENTIFICATION OF SHIPS



(57) Abstract: A method of object detection comprises: (A) receive image(s) captured by imaging device(s) mounted on a waterborne platform. They comprise object(s) which are located within a body of water; (B) perform the following: (i) a low-resolution detection process comprising: (1) receive reduced resolution image(s), generated by performing resolution reduction; (2) object detection, utilizing a neural network, obtaining detected object(s). (ii) a high-resolution detection process based on splitting of image(s) to image tiles, comprising: (1) receive a set of tiles, derived from the image(s). Each tile corresponds to a sub-section of the image(s). Spatial resolution of each tile is higher than the reduced spatial resolution of the reduced resolution image(s); (2) a tile-based detection of objects, on tiles, utilizing image tiles neural network(s), obtaining tile-based detected object(s); (iii) merge the detected object(s) at reduced resolution and the tiles-based object(s), obtaining a final set of detected objects.

[Continued on next page]

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UY, UZ, VC, VN,
WS, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, 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, ME, 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).

Published:

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