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- (71) **Applicant (for all designated States except US):** ISRAEL AEROSPACE INDUSTRIES LTD. [IL/IL]; Ben-Gurion International Airport, 70100 Lod (IL).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** KAGAN, Avraham [IL/IL]; 3 Rambam Street, 47235 Ramat-Hasharon (IL). BENISTY, Michael [IL/IL]; 3 Pnina Street, 60850 Shoam (IL).
- (74) **Agent:** REINHOLD COHN AND PARTNERS; P.O.B.13239, 61131 Tel Aviv (IL).
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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, 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, RW, 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.

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(54) **Title:** A SYSTEM AND METHOD FOR NORTH FINDING

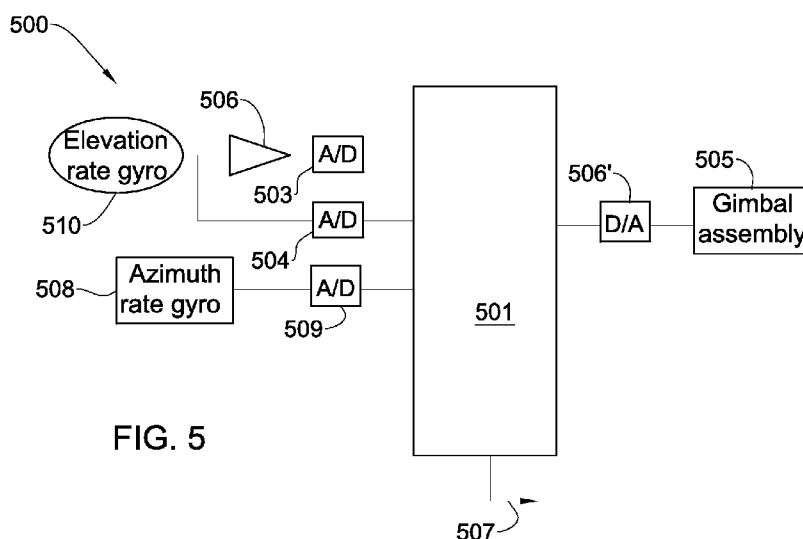


FIG. 5

(57) **Abstract:** A payload including a gimbal assembly and gyro assembly that includes a gyro assembly control associated with the gyro assembly and operable to trigger the gyro assembly to obtain deviation measurements and process the measurements in a first dynamic range for stabilizing the payload utilizing the gimbal assembly. The gyro assembly control is operable to trigger the gyro assembly to obtain instantaneous measurements and process the measurements in a second dynamic range having different sensitivity than the first dynamic range, for finding deviation of the payload from the magnetic north of the earth.

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/IL2011/050006

A. CLASSIFICATION OF SUBJECT MATTER  
INV. G01C21/18 G01C19/38  
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
G01C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 813 788 A (JOHNSTON J) 4 June 1974 (1974-06-04) abstract; claim 1; figure 1 column 1, line 29 - line 30 column 1, line 39 - line 41 column 1, line 45 - line 46 column 2, line 30 - line 33 column 2, line 40 - line 44 column 2, line 53 - line 56 column 3, line 46 - line 51 -----	1-17
X	GB 791 556 A (SPERRY RAND CORP) 5 March 1958 (1958-03-05) page 1, lines 10-12, 16-21, 43-47, 69-70 page 1, line 91 - page 2, line 1 page 2, line 58 - line 101 page 2, line 105 - line 124 ----- -/-	1-17



Further documents are listed in the continuation of Box C.



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Date of the actual completion of the international search

13 December 2012

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Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax: (+31-70) 340-3016

Authorized officer

Maria João Santos

## INTERNATIONAL SEARCH REPORT

International application No  
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 1 516 074 A (BODENSEEWERK GERAETETECH) 28 June 1978 (1978-06-28) the whole document -----	1-17
A	US 2 504 170 A (WONG LAN J) 18 April 1950 (1950-04-18) the whole document -----	1-17
A	GB 892 969 A (SPERRY GYROSCOPE CO LTD) 4 April 1962 (1962-04-04) the whole document -----	1-17

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3813788	A	04-06-1974	NONE	
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GB 791556	A	05-03-1958	NONE	
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GB 1516074	A	28-06-1978	DE 2609083 A1	08-09-1977
			FR 2354538 A1	06-01-1978
			GB 1516074 A	28-06-1978
-----				
US 2504170	A	18-04-1950	NONE	
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GB 892969	A	04-04-1962	NONE	
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