(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 September 2014 (25.09.2014)

(51) International Patent Classification:
G06F 7/00 (2006.01)

(21) International Application Number:
PCT/US2014/010801

(22) International Filing Date:
9 January 2014 (09.01.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/837,088 15 March 2013 (15.03.2013) US

(71) Applicant: AUTOLIV ASP, INC. [US/US]; 3350 Airport Road, Ogden, UT 84405 (US).

(72) Inventor: DEMERLY, Jon, D.; 7415 Lovejoy Road, Byron, MI 48418 (US).

(74) Agent: LINGL, John, A.; Brinks Gilson & Lione, 524 South Main Street, Suite 200, Ann Arbor, MI 48104 (US).

(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, NL, 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).

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

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR INERTIAL SENSOR OFFSET COMPENSATION

(57) Abstract: The present invention, provides an improved method and system for compensation of inertial sensors. In one implementation a modified moving average is applied to provide dynamic offset compensation for an inertial sensor output that is calculated when a vehicle is in motion. Inertial sensors include a diverse classification of sensors used to measure angular velocity and linear acceleration, with varying levels of accuracy and range.
(88) Date of publication of the international search report:
26 February 2015
A. CLASSIFICATION OF SUBJECT MATTER
IPC(8)- G06F7/00 (2014.01 )
USPC - 701/29
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)
IPC(8) - G06F7/00, G01P21/00, G01C25/00, B60W40/00, G01C21/10 (2014.01 )
USPC - 701/29, 702/85, 701/220

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC - G01P21/00, B60T225/006, G01C25/005, B60G2400/104, B60G2800/702, (2014.02)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Orbit, Google Patents, Google Scholar.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 2012/0203488 A1 (Dusha) 09 August 2012 (09.08.2012), entire document</td>
<td>15, 21</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:
  "A" document defining the general state of the art which is not considered to be of particular relevance
  "E" earlier application or patent but published on or after the international filing date
  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  "O" document referring to an oral disclosure, use, exhibition or other means
  "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"K" document member of the same patent family

Date of the actual completion of the international search
16 April 2014

Date of mailing of the international search report
06 MAY 2014

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer:
Blaine R. Copenheaver
PCT Help Desk: 571-272-4300
PCT OSP: 571-272-7774