

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
14 May 2010 (14.05.2010)

(10) International Publication Number  
**WO 2010/052558 A3**

- (51) **International Patent Classification:**  
*G01S 5/14* (2006.01)      *G06T 7/00* (2006.01)  
*G01C 11/02* (2006.01)
- (21) **International Application Number:**  
PCT/IB2009/007354
- (22) **International Filing Date:**  
5 November 2009 (05.1.1.2009)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
61/1 11,346    5 November 2008 (05.1.1.2008)    US
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- (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, 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, 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, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, 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), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

— of inventorship (Rule 4.1.7(b))

**Published:**

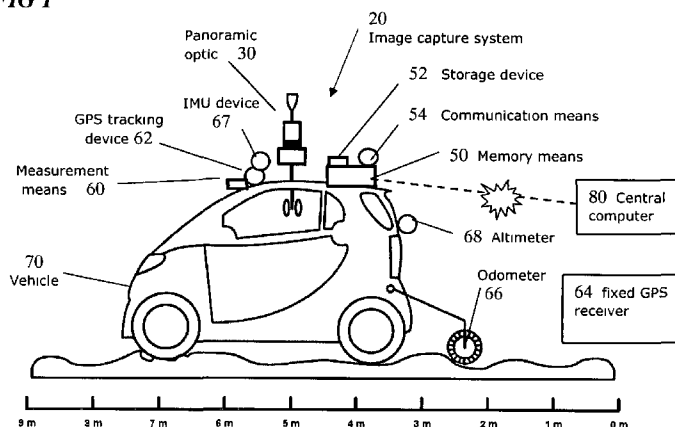
— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(K))

(88) **Date of publication of the international search report:**  
8 July 2010

(54) **Title:** SYSTEM AND METHOD FOR THE PRECISE INTEGRATION OF VIRTUAL OBJECTS TO INTERACTIVE PANORAMIC WALK-THROUGH APPLICATIONS

FIG 1



(57) **Abstract:** A system, apparatus and method for creating and broadcasting interactive panoramic walk-through applications includes a 2D image capture system having a holding device such as a vehicle equipped with a camera connected to a optic system providing near 360° field of view (catadioptric system), a memory device to store data including images and geographic coordinates information related to the images, a communication device to transfer data from the memory device to a computer, a fixation and stabilisation system connecting the camera to the holding device for aligning the camera perpendicular to the horizontal plane, a computer with logical device for performing image modification steps and optionally, 3D virtual images. The fixation and stabilisation system includes at least two, and ideally three, gyro-stabilization capsules each consisting of an enclosure and containing two gyroscopic devices.

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**INTERNATIONAL SEARCH REPORT**

International application No  
**PCT/IB2009/007354**

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. G01S5/14 G01C11/02 G06T7/00

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)  
**GOIS GOIC G06T**

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 practical, 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
Y	US 5 633 946 A (LACHINSKI THEODORE M [US] ET AL) 27 May 1997 (1997-05-27) column 2 , lines 10-45 column 3 , line 40 - column 4 , line 23 column 7 , line 30 - column 8 , line 34 column 9 , lines 8-19 column 17 , line 65 - column 18 , line 10 -----	1-6, 20-24
Y	JP 2003 344526 A (MITSUBISHI HEAVY IND LTD) 3 December 2003 (2003-12-03) the whole document -----	1-6, 20-24
A	US 2003/007668 A1 (KOTAKE DAISUKE [JP] ET AL) 9 January 2003 (2003-01-09) figure 14 columns 6,7 columns 94-115 paragraph [0121] -----	1-6, 20-24
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Further documents are listed in the continuation of Box C

See patent family annex

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 document 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  
"&" document member of the same patent family

Date of the actual completion of the international search

**8 March 2010**

Date of mailing of the international search report

20/05/2010

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**Bruinsma, Maarten**

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/IB2009/007354

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7 126 630 BI (LEE KUJIN [US] ET AL) 24 October 2006 (2006-10-24) col umn 7, line 11 - col umn 8, line 16; figures 3,5 -----	1-6, 20-24
A	US 2007/299604 AI (DIBERNARDO ENRICO [US] ET AL DI BERNARDO ENRICO [US] ET AL) 27 December 2007 (2007-12-27) paragraphs [0010] , [0011] , [0032] - [0036] , [0041] - [0042] , [0065] , [0066] -----	1-6, 20-24
A	wo 2008/128348 AI ( ILOOKABOUT INC [CA] ; HACK JEFFREY [CA] ) 30 October 2008 (2008-10-30) the whole document -----	1-6, 20-24
A	us 2002/090143 AI (ENDO TAKAAKI [JP] ET AL) 11 July 2002 (2002-07-11 ) figure 1 paragraphs [0028] - [0032] , [0046] - [0054] -----	1-6, 20-24
A	us 6 282 362 BI (MURPHY MICHAEL [US] ET AL) 28 August 2001 (2001-08-28) figure 2 col umn 14, line 35 - col umn 15, line 20 col umn 17, line 51 - col umn 20, line 58 -----	1-6, 20-24
A	EP 0 921 376 AI (MIXED REALITY SYSTEMS LAB INC [JP] CANON KK [JP] ) 9 June 1999 (1999-06-09) paragraphs [0055] - [0066] , [0088] - [0089] , [0100] - [0102] figures 1, 3,4,6, 7 -----	1-6, 20-24

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/IB2009/007354

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons

- 1  Claims Nos  
because they relate to subject matter not required to be searched by this Authority, namely
  
- 2  Claims Nos  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically
  
- 3  Claims Nos  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6 4(a)

## Box No III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows

see additional sheet

- 1  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
  
- 2  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees
  
- 3  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos
  
- 4  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims. It is covered by claims Nos  
1-6, 20-24

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation
- No protest accompanied the payment of additional search fees

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-6, 20-24

Method/device for annotating images with the average position from two or more GPS devices  
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2. claim: 7

Method/device for annotating images with position from GPS and IMU data  
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3. claims: 8-13

Method/device for correcting the position annotation of panoramic images using physical objects with known coordinates  
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4. claims: 14-15

Method/device for correcting the position annotation of images using identified loops in the path of a vehicle  
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5. claims: 16-19

Method/device for correcting the position annotation of images by manual operation of an operator  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No <b>PCT/IB2009/007354</b>
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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