



(51) International Patent Classification:

G01C 21/36 (2006.01) G05D 1/00 (2006.01)
G06T 7/10 (2017.01) G05D 1/02 (2020.01)
G01C 21/00 (2006.01)

(21) International Application Number:

PCT/EP2020/051634

(22) International Filing Date:

23 January 2020 (23.01.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10 2019 102 388.2
30 January 2019 (30.01.2019) DE

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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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, 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, 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).

(54) Title: MAP AND METHOD FOR CREATING A MAP

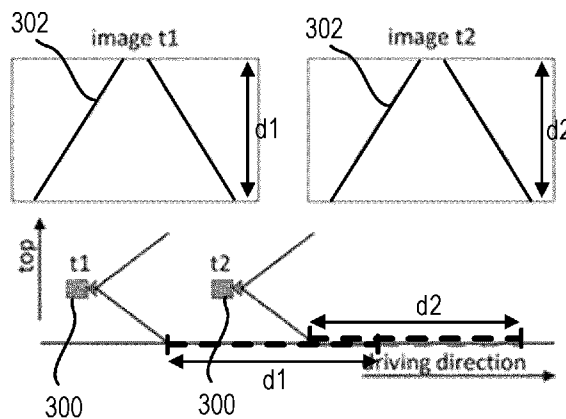


FIG 8

(57) Abstract: A method comprises capturing at least two images with an image unit, wherein each of the at least two images is captured from a different position of the image unit, wherein a first section of the surroundings of the image unit is captured by each of the at least two images, and wherein a section of an elongated landmark is captured in the first section, and generating at least two observation planes, wherein each observation plane is essentially orthogonal to the elongated landmark and crosses the elongated landmark at a certain point



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(h))*

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

17 September 2020 (17.09.2020)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2020/051634

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01C21/36 G06T7/10 G01C21/00 G05D1/00 G05D1/02
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 G06T G05D

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	WO 2018/200522 A1 (MOBILEYE VISION TECHNOLOGIES LTD [IL]) 1 November 2018 (2018-11-01) paragraphs [0306], [0307], [0314] - [0316]; figures 2A, 20, 21 -----	1-9
X	US 2018/188060 A1 (WHEELER MARK DAMON [US] ET AL) 5 July 2018 (2018-07-05) paragraphs [0160], [0161]; figures 29, 31-36 -----	1-9
X	WO 2018/142900 A1 (FUJITSU LTD [JP]) 9 August 2018 (2018-08-09) paragraphs [0005], [0027], [0037], [0075], [0085] ----- -/--	10-15,17

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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 13 August 2020	Date of mailing of the international search report 19/08/2020
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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 Philipp, Martine
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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2020/051634

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2018/027206 A1 (REIFICATION INC [US]) 8 February 2018 (2018-02-08) paragraphs [0056], [0217], [0218], [0220]; figures 1A, 1B -----	10-14, 16,18
X	YAN ZHIXIN ET AL: "Dense Visual SLAM with Probabilistic Surfel Map", IEEE TRANSACTIONS ON VISUALIZATION AND COMPUTER GRAPHICS, IEEE SERVICE CENTER, LOS ALAMITOS, CA, US, vol. 23, no. 11, 29 September 2017 (2017-09-29), pages 2389-2398, XP011661510, ISSN: 1077-2626, DOI: 10.1109/TVCG.2017.2734458 [retrieved on 2017-09-28] whole document, in particular sections 2.2 and 5.3; figures 3, 4, 6 -----	10-16, 18-20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2020/051634

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.:

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: 1-9

determination of elongated landmarks, like lane-lines, using an image unit

2. claims: 10-20

updating of a global map

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2020/051634

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
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				WO 2018200522 A1		01-11-2018

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