



(51) International Patent Classification:

G01C 21/32 (2006.01) G06F 17/30 (2006.01)
G01C 21/34 (2006.01)

(21) International Application Number:

PCT/IB2018/000646

(22) International Filing Date:

30 May 2018 (30.05.2018)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/512,311 30 May 2017 (30.05.2017) US
15/892,899 09 February 2018 (09.02.2018) 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, 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, 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, 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).

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:

07 February 2019 (07.02.2019)

(54) Title: SYSTEMS AND METHODS FOR SAFE ROUTE DETERMINATION

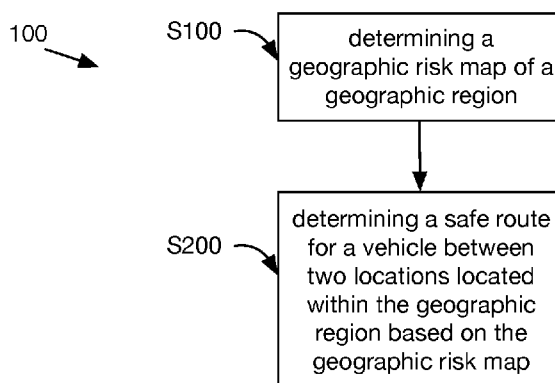


FIGURE 1

(57) Abstract: A method for safe route determination, including determining a geographic risk map for a geographic region, wherein the geographic risk map is determined based on a vehicle event dataset aggregated from a plurality of vehicles enabled with an onboard vehicle system, and automatically determining a route between two locations in the geographic region based on the geographic risk map.



INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2018/000646

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01C21/32 G01C21/34 G06F17/30
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 G06F G08G

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 2015/160024 A1 (FOWE JAMES ADEYEMI [US]) 11 June 2015 (2015-06-11) paragraphs [0023], [0024], [0038] - [0042], [0016] -----	1,3,4
A	US 2013/253809 A1 (JONES ANDREW R [US] ET AL) 26 September 2013 (2013-09-26) paragraphs [0004], [0019] - [0022], [0108] - [0110] -----	1-6
A	US 2016/049075 A1 (SATO AYA [JP] ET AL) 18 February 2016 (2016-02-18) paragraphs [0004], [0010], [0013], [0052], [0056], [0057], [0060] ----- -/-	1-6



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 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

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Date of the actual completion of the international search

25 September 2018

Date of mailing of the international search report

03/12/2018

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2018/000646

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/247852 A1 (KORTGE JAMES M [US] ET AL) 2 November 2006 (2006-11-02) paragraphs [0031], [0032], [0044], [0045], [0046] -----	1-3
X	US 2015/260531 A1 (EHSANI POUYA JOHNATHON [US] ET AL) 17 September 2015 (2015-09-17) paragraphs [0006], [0010], [0024], [0053], [0054]; figure 2 -----	1,3,5,6

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2018/000646

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2015160024	A1	11-06-2015	NONE
US 2013253809	A1	26-09-2013	NONE
US 2016049075	A1	18-02-2016	JP 5805128 B2 04-11-2015 JP 2014191774 A 06-10-2014 US 2016049075 A1 18-02-2016 WO 2014157367 A1 02-10-2014
US 2006247852	A1	02-11-2006	CN 1854686 A 01-11-2006 DE 102006017563 A1 09-11-2006 US 2006247852 A1 02-11-2006
US 2015260531	A1	17-09-2015	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2018/000646

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

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

Safest route determining weights

2. claim: 7

Safest route defining the risk score for each set of spatial route

3. claim: 8

Safest route detecting near-collision events

4. claim: 9

Safest route filtering candidate routes according to user input

5. claims: 10-20

Safest route collecting and aggregating the information about the near-collision event and of the collision events by means of a plurality of vehicles and of aggregating them in a remote server as a geographic risk map
