



- (51) **International Patent Classification:**
G01S 19/05 (2010.01) *G01S 19/21* (2010.01)
- (21) **International Application Number:**
PCT/US2013/042050
- (22) **International Filing Date:**
21 May 2013 (21.05.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/649,903 21 May 2012 (21.05.2012) US
61/800,332 15 March 2013 (15.03.2013) US
13/897,244 17 May 2013 (17.05.2013) 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, 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, PA, 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.
- (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,

[Continued on next page]

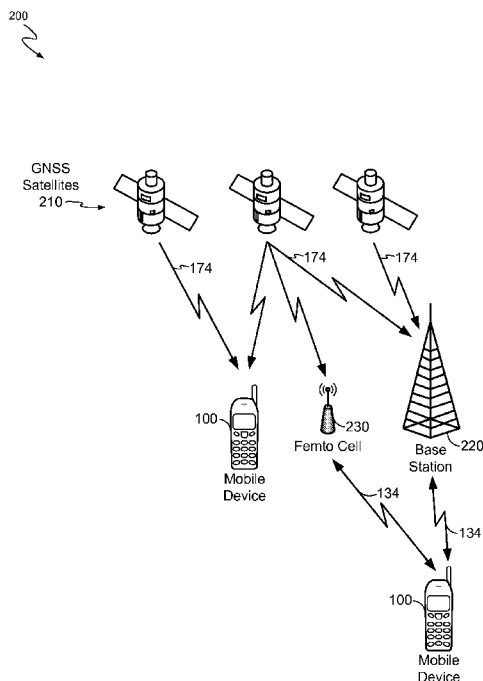
(54) **Title:** RADIO FREQUENCY INTERFERENCE AWARENESS ASSISTANCE DATA

FIG. 2A

(57) **Abstract:** Systems, methods, apparatuses, and computer-readable media for providing radio frequency interference (RFI) awareness assistance data to global navigation satellite system (GNSS) receivers are described. In some embodiments, a first method includes receiving at a location server RFI situational information. The first method further includes maintaining at least one time and location dependent database of an RFI situation. The first method further includes sending at least one assistance data message to at least one receiver including the RFI situational information. In another embodiment, a second method includes receiving RFI awareness assistance data from a location server. The second method further includes adapting a position location measurement according to the received RFI awareness assistance data. The second method further includes calculating a location of the receiver based at least in part on the adapted position location measurement.



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, ML, MR, NE, SN, TD, TG).

— *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))*

Published:

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

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

10 April 2014

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/042050

A. CLASSIFICATION OF SUBJECT MATTER INV. G01S19/05 G01S19/21 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) G01S		
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 2001/050630 A1 (FUJII TOMOHIRO [JP]) 13 December 2001 (2001-12-13)	25,26, 28-32, 34-38, 40-44, 46-51
Y	figures 2,7 paragraph [0055] - paragraph [0061] paragraph [0074] - paragraph [0079] paragraph [0085] paragraph [0089]	1-24,27, 33,39,45
Y	----- US 2006/234641 A1 (LAGROTTA RICHARD T [US]) 19 October 2006 (2006-10-19)	1-24
A	figure 1 paragraph [0005] - paragraph [0006] paragraph [0013] paragraph [0019] - paragraph [0023] ----- -/-	49-51
☒ 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 "&" document member of the same patent family		
Date of the actual completion of the international search 10 January 2014		Date of mailing of the international search report 26/02/2014
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 Hekmat, Taymoor

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2013/042050

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 2012/038512 A1 (GESWENDER CHRIS E [US] ET AL) 16 February 2012 (2012-02-16) paragraph [0026] - paragraph [0030]	27,33, 39,45 25,26, 28-32, 34-38, 40-44, 46-48
Y A	----- TRINKLE ET AL: "GPS interference mitigation; Overview and experimental results", PROCEEDINGS OF THE 5TH INTERNATIONAL SYMPOSIUM ON SATELLITE NAVIGATION TECHNOLOGY & APPLICATIONS CANBERRA, AUSTRALIA, MENAY / GPS SOCIETY, 1 January 2001 (2001-01-01), pages 1-14, XP007911320, ISBN: 978-1-86499-540-4 * page 4, section 2.2 "Post Correlation Techniques" *	27,33, 39,45 25,26, 28-32, 34-38, 40-44, 46-48
A	----- WO 2011/011118 A1 (TRUEPOSITION INC [US]; BULL JEFFREY F [US]; COHEN BENJAMIN H [US]; NOR) 27 January 2011 (2011-01-27) figures 1,7 paragraph [0052] paragraph [0059] - paragraph [0060] paragraph [0065] paragraph [0086] - paragraph [0101]	1-24, 49-51
A	----- US 7 864 109 B2 (NORMARK PER-LUDVIG [SE] ET AL) 4 January 2011 (2011-01-04) column 3, line 31 - line 37 column 7, line 20 - line 43 -----	25-48

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/042050

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: 1-24, 49-51

Detecting a GNSS interference signal in a network of base stations and sending a corresponding awareness assistance data to a mobile device.

2. claims: 25-48

Receiving a GNSS interference awareness assistance data from a location server and adapting the GNSS positioning method of the mobile receiver according to the received assistance data.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/042050

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