



- (51) International Patent Classification:
H04B 7/185 (2006.01) *H04B 7/204* (2006.01)
- (21) International Application Number:
PCT/US2017/049928
- (22) International Filing Date:
01 September 2017 (01.09.2017)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
201641031251 13 September 2016 (13.09.2016) IN
201644039659 21 November 2016 (21.11.2016) IN
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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.

(54) Title: NEIGHBOR CELL LIST IN A SATELLITE COMMUNICATION SYSTEM



FIG. 6



(57) Abstract: The disclosure relates in some aspects to enabling a user terminal (UT) to obtain information about nearby cells and any beams generated by nearby cells. For example, a network can send a neighbor cell list to UTs, where the list identifies the cells in that neighborhood and provides information about any beams generated by those cells. Thus, a UT can learn the neighboring beams/cells that the UT can reselect to if the current beam/cell becomes weak. In some aspects, the UE can learn the attitude (e.g., pitch, roll, yaw, or any combination thereof) profile of neighboring satellites as well as the pointing angles and the ON-OFF schedules of their beams. In some aspects, the UT can learn a start angle and a span for a satellite and use this information to identify a satellite the UT can reselect to if the current beam/cell becomes weak.

(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:

26 April 2018 (26.04.2018)

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2017/049928

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H04B7/185 H04B7/204
 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)

H04B

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, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 421 526 B1 (BANNO KOZO [JP]) 16 July 2002 (2002-07-16)	1,3,5,9, 10,13, 16,17, 19,21, 23,29-35
Y	abstract column 3, line 60 - column 4, line 52 column 5, line 61 - column 6, line 7 column 7, lines 1-9 claims 2-5 figures 1,4	2,7,8, 11,12, 14,15, 18,24,25
Y	----- WO 99/56408 A1 (HUGHES ELECTRONICS CORP [US]) 4 November 1999 (1999-11-04) abstract page 8, line 19 - page 11, line 2 figures 4,5 ----- -/--	2,18

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

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"O" document referring to an oral disclosure, use, exhibition or other means

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"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

26 February 2018

Date of mailing of the international search report

06/03/2018

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2017/049928

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 023 242 A (DIXON CHARLES STEPHEN [GB]) 8 February 2000 (2000-02-08) abstract column 5, line 62 - column 6, line 4 column 11, line 28 - column 14, line 37 column 17, line 36 - column 19, line 6 figures claims -----	7,11,14
Y	WO 96/10872 A1 (MOTOROLA INC [US]) 11 April 1996 (1996-04-11) abstract page 16, line 24 - page 20, line 22 figures claims -----	8,12,15
Y	WO 2009/051592 A1 (03B NETWORKS LTD; WYLER GREGORY T [US]) 23 April 2009 (2009-04-23) abstract page 12, lines 18-23 page 19, line 6 - page 21, line 2 figures claims -----	24,25
A	EP 0 774 843 A2 (GLOBALSTAR LP [US]) 21 May 1997 (1997-05-21) the whole document -----	1-3,5, 7-19,21, 23-35
A	US 5 559 806 A (KURBY CHRISTOPHER N [US] ET AL) 24 September 1996 (1996-09-24) the whole document -----	1-3,5, 7-19,21, 23-35

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2017/049928

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.:

1-3, 5, 7-19, 21, 23-35

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: 1-3, 5, 9, 10, 13, 16-19, 21, 23, 29-35

Allowing satellite reselection

2. claims: 4, 6, 20, 22, 36-81

Allowing the beam pointing

3. claims: 7, 8, 11, 12, 14, 15

Calculating the start and span angles

4. claims: 24-28

Providing further assistance information for the user terminal for cell reselection

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2017/049928

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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