

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
28 February 2008 (28.02.2008)

PCT

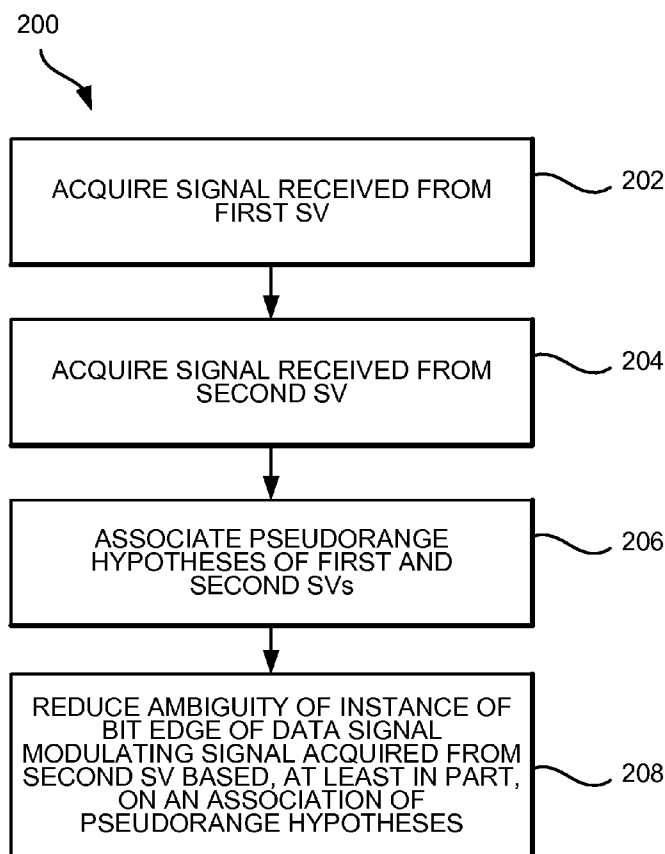
(10) International Publication Number
WO 2008/024939 A3

- (51) International Patent Classification: **G01S 1/00** (2006.01)
- (21) International Application Number: PCT/US2007/076690
- (22) International Filing Date: 23 August 2007 (23.08.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:

60/839,854	23 August 2006 (23.08.2006)	US
11/842,759	21 August 2007 (21.08.2007)	US
- (71) Applicant (for all designated States except US): **QUALCOMM Incorporated** [US/US]; Attn: International IP Administration, 5775 Morehouse Drive, San Diego, California 92121 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **PON, Rayman Wai** [US/US]; 5775 Morehouse Drive, San Diego, California
- 92121 (US). **FARMER, Dominic Gerard** [US/US]; 5775 Morehouse Drive, San Diego, California 92121 (US).
- (74) Agents: **BACHAND, Richard A.** et al.; Attn: International IP Administration, 5775 Morehouse Drive, San Diego, California 92121 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, 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,

[Continued on next page]

(54) Title: SYSTEM AND/OR METHOD FOR REDUCING AMBIGUITIES IN RECEIVED SPS SIGNALS



(57) Abstract: The subject matter disclosed herein relates to a system and method for resolving ambiguities associated with signals received from space vehicles (SVs) in a satellite navigation system.

WO 2008/024939 A3



FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL,
PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

(88) Date of publication of the international search report:
22 May 2008

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/076690

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01S1/00

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)
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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004/063763 A (GLOBAL LOCATE INC [US]) 29 July 2004 (2004-07-29) paragraph [0086] - paragraph [0091]	8,9, 12-16, 21,25, 26,30
X	WO 99/44073 A (ERICSSON INC [US]) 2 September 1999 (1999-09-02) page 5, line 7 - line 17 page 9, line 24 - line 29 page 11, line 4 - page 14, line 14	17-19, 22,27, 28,31-39
X	WO 01/53849 A (ERICSSON INC [US]) 26 July 2001 (2001-07-26) page 18, line 14 - page 19, line 7 ----- -/--	17-19, 22,27, 28,31-39

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

3 March 2008

Date of mailing of the international search report

10/03/2008

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Hekmat, Taymoor

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/076690

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 146 349 A (NOKIA MOBILE PHONES LTD [FI] NOKIA CORP [FI]) 17 October 2001 (2001-10-17) paragraph [0032] - paragraph [0037] paragraph [0040]	17-19, 22, 27, 28, 31

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/076690

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 allsearchable 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.

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

1. claims: 1-31 and 37-39

Reducing the ambiguity of the phase of the bit edge of data signal modulating a first signal based on associating the information comprised in the first and in a second signal.

2. claims: 32-36

Performing pre-detection integration to acquire a navigational signal over an interval of the navigation signal based on estimated timing of a bit-edge of the data signal.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/076690

Patent document cited in search report	A	Publication date	EP	Patent family member(s)	Publication date
WO 2004063763	A	29-07-2004	EP	1581820 A1	05-10-2005
WO 9944073	A	02-09-1999	AU	2491099 A	15-09-1999
			BR	9908287 A	31-10-2000
			CN	1292094 A	18-04-2001
			EE	200000494 A	15-02-2002
			EP	1057041 A1	06-12-2000
			US	6075987 A	13-06-2000
WO 0153849	A	26-07-2001	AU	3288401 A	31-07-2001
			CN	1419654 A	21-05-2003
			EP	1254378 A1	06-11-2002
			US	6295023 B1	25-09-2001
EP 1146349	A	17-10-2001	FI	20000697 A	25-09-2001
			US	2001033627 A1	25-10-2001