

(19) World Intellectual Property Organization
International Bureau



(10) International Publication Number
WO 2010/091424 A3

(43) International Publication Date
12 August 2010 (12.08.2010)

(51) International Patent Classification:
H04W 4/02 (2009.01) *H04L 29/08* (2006.01)

(21) International Application Number:
PCT/US2010/023664

(22) International Filing Date:
9 February 2010 (09.02.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/151,089 9 February 2009 (09.02.2009) US
12/702,159 8 February 2010 (08.02.2010) US

(71) Applicant (for all designated States except US): **QUALCOMM INCORPORATED** [US/US]; Attn: International IP Administration, 5775 Morehouse Drive, San Diego, CA 92121 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WACHTER, Andreas, K.** [DE/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **EDGE, Stephen, W.** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **BURROUGHS, Kirk, Allan** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US).

(74) Agent: **CHENG, Xue, Ming Jimmy**; Attn: International IP Administration, 5775 Morehouse Drive, San Diego, CA 92121 (US).

(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, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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, 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, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: TRIGGERED LOCATION SERVICES

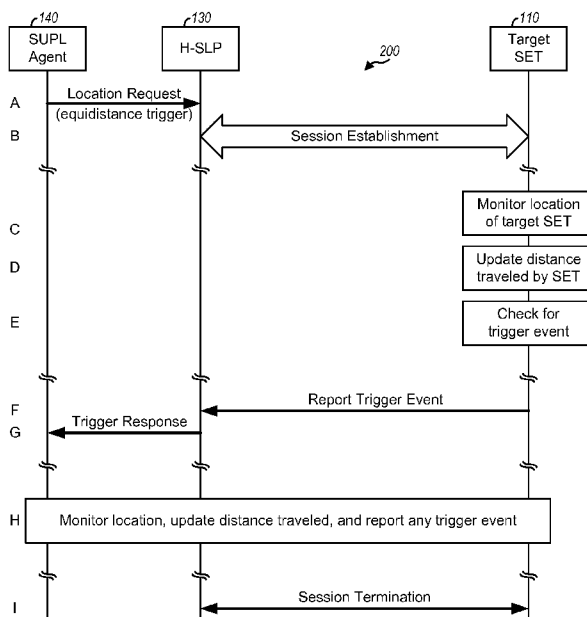


FIG. 2

(57) Abstract: Techniques for supporting triggered location services are described. In one design, at least one location related measurement for a terminal may be obtained and used to detect for a trigger event. For an equidistance triggered service, a trigger event may be declared if the distance traveled by the terminal exceeds a predefined distance. For a relative terminal to terminal triggered service, a trigger event may be declared if the terminal is inside or outside, or enters, or leaves a moving geographical target area defined by a reference terminal. For a velocity triggered service, a trigger event may be declared if the maximum velocity of the terminal exceeds a predefined velocity. For a time-distance-velocity combination triggered service, a trigger event may be declared based on distance traveled by the terminal, velocity of the terminal, and time since the last report. For all services, a report may be sent if a trigger event has occurred.

WO 2010/091424 A3



— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *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:
2 December 2010

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2010/023664

A. CLASSIFICATION OF SUBJECT MATTER

INV. H04W4/02 H04L29/08

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)

H04W H04L

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)

EPO-Internal, COMPENDEX, INSPEC, IBM-TDB, 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 2007/018408 A1 (LG ELECTRONICS INC [KR]; SHIM DONG-HEE [KR]) 15 February 2007 (2007-02-15) * abstract paragraph [0001] - paragraph [0254] figures 1-18	1-38
X	US 2007/182547 A1 (WACHTER ANDREAS [US] ET AL) 9 August 2007 (2007-08-09) * abstract paragraph [0003] - paragraph [0109] figures 1-19	1-38
X	US 2003/020623 A1 (CAO KEVIN TRUNG [DE] ET AL) 30 January 2003 (2003-01-30) * abstract paragraph [0001] - paragraph [0090] figures 1-6	1-38
	----- -/--	

 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

7 October 2010

Date of mailing of the international search report

18/10/2010

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

Körbler, Günther

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2010/023664

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 2 007 149 A1 (HUAWEI TECH CO LTD [CN]) 24 December 2008 (2008-12-24) * abstract paragraph [0001] - paragraph [0166] figures 1-9 -----	1-38
X	WO 2007/086702 A1 (LG ELECTRONICS INC [KR]; SHIM DONG-HEE [KR]; CHOI JAE-HYUK [KR]) 2 August 2007 (2007-08-02) * abstract paragraph [0001] - paragraph [0118] figures 1-8 -----	1-38
X	WO 2006/118401 A2 (LG ELECTRONICS INC [KR]; PARK EUN YOUNG [KR]; SIM DONG HI [KR]; HUH JI) 9 November 2006 (2006-11-09) * abstract page 3, line 5 - page 79, line 6 figures 1-17 -----	39-49
X	TIA/EIA: "Position Determination Service Standard for Dual Mode Spread Spectrum Systems; TIA/EIA/IS-801" 1 November 1999 (1999-11-01), Telecommunications Industry Association, TIA/EIA, XP017003091 * abstract whole section 3 -----	39-49
X	US 2008/218405 A1 (ECKHART COLIN JOHN [US]) 11 September 2008 (2008-09-11) * abstract paragraph [0004] - paragraph [0082] figures 1-11 -----	39-49

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/023664

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: 1-38

A method of supporting location services, comprising:
obtaining at least one location related measurement for a terminal, each location related measurement being for distance traveled by the terminal, or velocity of the terminal, or location of the terminal relative to a moving geographical target area; and
determining whether a trigger event has occurred based on the at least one location related measurement for the terminal.

2. claims: 39-49

A method of supporting location services, comprising:
sending a request by a first terminal for velocity of a second terminal; and
receiving the velocity of the second terminal at the first terminal.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2010/023664

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2007018408	A1	15-02-2007	NONE
		CA 2609148 A1	15-02-2007
		EP 1922826 A1	21-05-2008
		JP 2009505480 T	05-02-2009
		US 2010062752 A1	11-03-2010
		US 2010167757 A1	01-07-2010
		US 2010167759 A1	01-07-2010
US 2007182547	A1	09-08-2007	NONE
US 2003020623	A1	30-01-2003	NONE
		CA 2439375 A1	12-09-2002
		CN 1493064 A	28-04-2004
		EP 1374203 A1	02-01-2004
		JP 2004533739 T	04-11-2004
		TW 559742 B	01-11-2003
		WO 02071365 A1	12-09-2002
EP 2007149	A1	24-12-2008	NONE
		WO 2007107103 A1	27-09-2007
		CN 1859799 A	08-11-2006
		US 2009036142 A1	05-02-2009
WO 2007086702	A1	02-08-2007	NONE
WO 2006118401	A2	09-11-2006	NONE
		CA 2605776 A1	09-11-2006
		EP 1886523 A2	13-02-2008
US 2008218405	A1	11-09-2008	NONE
		CN 101627610 A	13-01-2010
		EP 2116013 A2	11-11-2009
		JP 2010522867 T	08-07-2010
		WO 2008108827 A2	12-09-2008