(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(10) International Publication Number WO 2014/190337 A3

(43) International Publication Date 27 November 2014 (27.11.2014)

(51) International Patent Classification: G06N 99/00 (2010.01)

(21) International Application Number:

PCT/US2014/039466

(22) International Filing Date:

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

24 May 2013 (24.05.2013) 61/827,141 US 14/286,362 23 May 2014 (23.05.2014) US

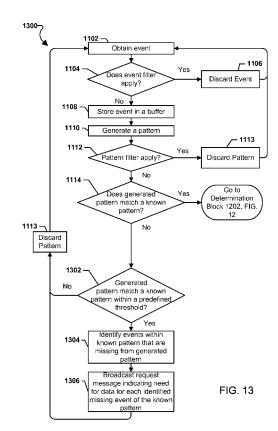
- (71) Applicant: QUALCOMM INCORPORATED [US/US]; ATTN: International IP Administration, 5775 Morehouse Drive, San Diego, California 92121-1714 (US).
- (72) Inventors: CANOY, Michael-David Nakayoshi; 5775 Morehouse Drive, San Diego, California 92121-1714 (US). KONERTZ, Anne Katrin; 5775 Morehouse Drive, San Diego, California 92121-1714 (US). CHAU, Kiet; 5775

Morehouse Drive, San Diego, California 92121-1714 (US). LAI, Kenchin; 5775 Morehouse Drive, San Diego, California 92121-1714 (US).

- Agents: HANSEN, Robert et al.; 11800 Sunrise Valley Drive, 15th Floor, Reston, Virginia 20191 (US).
- 24 May 2014 (24.05.2014) (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, IR, IS, JP, KE, KG, 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, 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, SZ, TZ,

[Continued on next page]

(54) Title: REQUESTING PROXIMATE RESOURCES BY LEARNING DEVICES



(57) Abstract: Various embodiments for a learning device to improve the performance of learned behaviors by requesting information from proximate devices within a decentralized system including a learning device method for generating, by the learning device, a first pattern based upon one or more obtained events, determining whether the first pattern exactly matches a known second pattern, determining whether the first pattern matches the second pattern within a predefined threshold in response to determining that the first pattern does not exactly match the second pattern, identifying a missing event of the second pattern in response to determining that the first pattern matches the second pattern within the predefined threshold, and broadcasting, by the learning device, a message requesting data related to the identified missing event. Data received in response to request messages may be used to recognize that the known second pattern is matched.



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, (88) Date of publication of the international search report: GW, KM, 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))
- 19 March 2015

Published:

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

INTERNATIONAL SEARCH REPORT

International application No PCT/US2014/039466

a. classification of subject matter INV. G06N99/00

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) G06N

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, INSPEC, WPI Data

C. DOCUME	ENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	US 2012/209796 A1 (VASHIST AKSHAY [US] ET AL) 16 August 2012 (2012-08-16) abstract; claims 1-12; figures 1-4 paragraph [0002] - paragraph [0037]	1-30
X	XIAOFENG WANG ET AL: "Decentralized Event-Triggered Broadcasts over Networked Control Systems", 22 April 2008 (2008-04-22), HYBRID SYSTEMS: COMPUTATION AND CONTROL; [LECTURE NOTES IN COMPUTER SCIENCE], SPRINGER BERLIN HEIDELBERG, BERLIN, HEIDELBERG, PAGE(S) 674 - 677, XP019101749, ISBN: 978-3-540-78928-4 page 674 - page 677, paragraph 4	1-30

Further documents are listed in the continuation of Box C.	X See patent family annex.			
"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)	"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			
"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	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 23 January 2015	Date of mailing of the international search report $04/02/2015$			
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 Volkmer, Markus			

1

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2014/039466

Category*	Citation of document with indication, where appropriate of the relevant page 2222	Polovant to alaim No
Category*	OBERMAISSER R ET AL: "Detection of Out-of-Norm Behaviors in Event-Triggered Virtual Networks", INDUSTRIAL INFORMATICS, 2007 5TH IEEE INTERNATIONAL CONFERENCE ON, IEEE, PI, 1 July 2007 (2007-07-01), pages 971-976, XP031161917,	Relevant to claim No.
	ISBN: 978-1-4244-0850-4 page 971 - page 976, left-hand column	

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2014/039466

Patent document cited in search report		Publication date	Paten mem	it family nber(s)	Publication date
US 2012209796	A1	16-08-2012	NONE		•