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(71) Applicant: **COMMSCOPE TECHNOLOGIES LLC**
[US/US]; 1100 CommScope Place SE, Hickory, North Carolina 28602 (US).

(72) Inventors: **SHANMUGARAJU, Naveen**; c/o CommScope Technologies LLC, 1100 CommScope Place SE, Hickory, North Carolina 28602 (US). **BAPAT, Anil**; c/o CommScope Technologies LLC, 1100 CommScope Place SE, Hickory, North Carolina 28602 (US).

(74) Agent: **BRIGGS, Eric N.**; Fogg & Powers LLC, 4600 W 77th Street, Suite 305, Minneapolis, Minnesota 55435 (US).

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(54) Title: DYNAMIC QUANTIZED SIGNATURE VECTOR SELECTION FOR A CLOUD RADIO ACCESS NETWORK

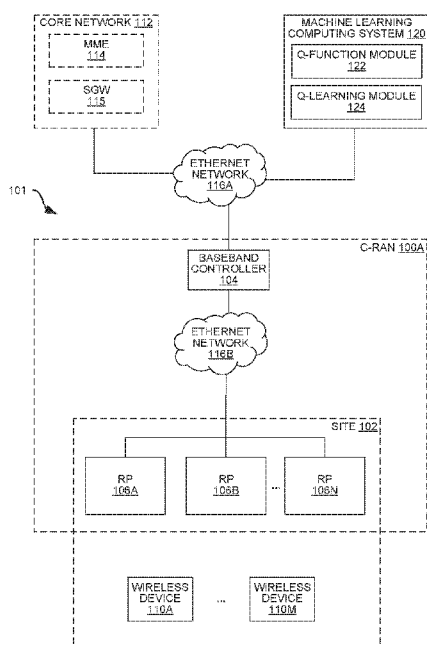


FIG. 1A

(57) Abstract: A communication system is disclosed. The communication system includes a plurality of radio points, each configured to exchange radio frequency (RF) signals with a plurality of wireless devices at a site. The communication system also includes a baseband controller communicatively coupled to the plurality of radio points. The communication system also includes a machine learning computing system communicatively coupled to the baseband controller. The machine learning computing system is configured to determine an expected average throughput associated with each of a plurality of global quantized signature vectors (QSVs), using a Q-function approximation, based on a current state of the communication system. The communication system is also configured to select a global QSV associated with a highest expected average throughput.



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A. CLASSIFICATION OF SUBJECT MATTER**H04W 24/02(2009.01)i, H04W 24/08(2009.01)i, H04L 12/26(2006.01)i, H04W 88/18(2009.01)i, G06N 20/00(2019.01)i**

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 24/02; G06N 5/04; H04B 7/04; H04L 1/16; H04L 1/18; H04L 12/24; H04L 12/26; H04L 12/751; H04W 72/04; H04W 24/08; H04W 88/18; G06N 20/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: Q-function approximation, global quantized signature vector (QSV), expected average throughput, current state, communication system, radio point, baseband controller

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2018-0205501 A1 (AT&T INTELLECTUAL PROPERTY I, L.P.) 19 July 2018 paragraphs [0025]-[0033]; claim 1; and figure 2	1-20
A	US 2016-0183248 A1 (HUANING NIU et al.) 23 June 2016 paragraphs [0030]-[0038]; and figure 2	1-20
A	US 2015-0332145 A1 (CISCO TECHNOLOGY, INC.) 19 November 2015 paragraphs [0036]-[0090]; and figures 4A-7	1-20
A	US 2018-0234302 A1 (QUALCOMM INCORPORATED) 16 August 2018 paragraphs [0048]-[0117]; and figures 2-5	1-20
A	'Experiential Networked Intelligence (ENI); ENI use cases', ETSI GR ENI 001 V1.1.1, April 2018 sections 5.3.2-5.3.2.2.7	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

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International Application Division
Korean Intellectual Property Office
189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea

Facsimile No. +82-42-481-8578

Authorized officer

YANG, Jeong Rok

Telephone No. +82-42-481-5709



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Information on patent family members

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