

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P109641PCT	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2017/044094	International filing date ( <i>day/month/year</i> ) 27 July 2017 (27-07-2017)	(Earliest) Priority Date ( <i>day/month/year</i> ) 30 September 2016 (30-09-2016)
Applicant  INTEL IP CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed  
 a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b.  This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c.  With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2.  **Certain claims were found unsearchable** (See Box No. II)

3.  **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant  
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant  
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 7  
 as suggested by the applicant  
 as selected by this Authority, because the applicant failed to suggest a figure  
 as selected by this Authority, because this figure better characterizes the invention
- b.  none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2017/044094

A. CLASSIFICATION OF SUBJECT MATTER  
INV. H04L1/08 H04L1/00  
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)  
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 practicable, search terms used)  
EPO-Internal, 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	EP 2 919 534 A1 (PANASONIC IP CORP AMERICA [US]) 16 September 2015 (2015-09-16) paragraph [0009] paragraph [0027] paragraph [0092] paragraph [0100] - paragraph [0109] paragraph [0208] - paragraph [0210] paragraph [0218] - paragraph [0221] figures 1,2, 13 ----- -/--	1-24

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
- "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 10 October 2017	Date of mailing of the international search report 19/10/2017
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 Nölle, Markus

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2017/044094

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>MEDIATEK INC: "Discussion on CSI report in coverage enhancement", 3GPP DRAFT; R1-140241 DISCUSSION ON CSI REPORT IN COVERAGE ENHANCEMENT, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; ; , vol. RAN WG1, no. Prague, Czech Republic; 20140210 - 20140214 9 February 2014 (2014-02-09), XP050735794, Retrieved from the Internet: URL:<a href="http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN/RAN1/Docs/">http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN/RAN1/Docs/</a> [retrieved on 2014-02-09] Section 1, 2, 3</p>	1,2,5,6, 11-13, 16-18, 21,23
X,P	<p>----- INTEL CORPORATION: "Repetition headroom reporting for FeMTC", 3GPP DRAFT; R4-167283 FEMTC REP HEADROOM, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE ; , vol. RAN WG4, no. Ljubljana, Slovenia; 20161010 - 20161014 30 September 2016 (2016-09-30), XP051165985, Retrieved from the Internet: URL:<a href="http://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_80Bis/Docs/">http://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_80Bis/Docs/</a> [retrieved on 2016-09-30] the whole document</p>	1-24
E	<p>----- WO 2017/160351 A1 (INTEL IP CORP [US]) 21 September 2017 (2017-09-21)  the whole document -----</p>	1-4,6, 11-13, 15,18, 21-24

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2017/044094

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
EP 2919534	A1	16-09-2015	EP 2919534 A1	16-09-2015
			JP 2017507610 A	16-03-2017
			US 2016330698 A1	10-11-2016
			WO 2015136866 A1	17-09-2015
-----				
WO 2017160351	A1	21-09-2017	NONE	
-----				