

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference NOK253PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/FI2016/050510	International filing date (<i>day/month/year</i>) 08 July 2016 (08.07.2016)	(Earliest) Priority date (<i>day/month/year</i>) NONE
Applicant NOKIA TECHNOLOGIES OY		

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 43.6bis(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. 1

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/FI2016/050510

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

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)

IPC: H04W, H04L

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

FI, SE, NO, DK

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 8199728 B2 (KIM SOENG-HUN [KR] et al.) 12 June 2012 (12.06.2012) abstract; figs. 4, 9; col. 5 lines 23-53, col. 8 lines 8-17	1-30
X	WO 2010086156 A1 (PANASONIC CORP [JP]) 05 August 2010 (05.08.2010) abstract; page 10 line 5 – page 11 line 20	1-30
X	US 8254315 B2 (SUZUKI TAKASHI [JP] et al.) 28 August 2012 (28.08.2012) abstract; figs. 3, 4; col. 4 lines 3-16	1-30
A	US 2007248025 A1 (PHAN VINH V [FI] et al.) 25 October 2007 (25.10.2007) the whole document	1-30

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search

03 November 2016 (03.11.2016)

Date of mailing of the international search report

09 November 2016 (09.11.2016)

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INTERNATIONAL SEARCH REPORT
Information on Patent Family Members

International application No.
PCT/FI2016/050510

Patent document cited in search report	Publication date	Patent family members(s)	Publication date
US 8199728 B2	12/06/2012	US 8199728 B2 EP 1989794 A1 EP 1989794 B1 KR 20070089054 A KR 100879613 B1 WO 2007097544 A1	12/06/2012 12/11/2008 14/05/2014 30/08/2007 21/01/2009 30/08/2007
WO 2010086156 A1	05/08/2010	EP 2214435 A1	04/08/2010
US 8254315 B2	28/08/2012	US 8254315 B2 US 2012287912 A1	28/08/2012 15/11/2012
US 2007248025 A1	25/10/2007	EP 1987638 A2 WO 2007093879 A2	05/11/2008 23/08/2007

CLASSIFICATION OF SUBJECT MATTER

IPC
H04W 28/04 (2009.01)
H04W 28/06 (2009.01)
H04L 1/00 (2006.01)
H04L 1/18 (2006.01)