



Europäisches
Patentamt
European
Patent Office
Office européen
des brevets

SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 17 86 72 26

Classification of the application (IPC):
H04B 7/024, H04B 7/06, H04L 25/02, H04L 29/06, H04W 72/04

Technical fields searched (IPC):
H04B

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	ZTE CORPORATION ET AL: "On Qusai-Co-Location/Beam for NR MIMO", 01 October 2016 (2016-10-01)	1, 2, 8, 9, 15-17
Y	URL: http://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_86b/Docs/ [retrieved on 01 October 2016 (2016-10-01)] XP051159030 * paragraphs [0002], [3.2and4] *	3, 6, 10, 13
X	LG ELECTRONICS: "Discussion on transmit beam coordination and QCL for NR", 21 August 2016 (2016-08-21)	1, 2, 8, 9, 15-17
Y	URL: http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN1/Docs/ [retrieved on 21 August 2016 (2016-08-21)] XP051125633 * paragraph [QCLtypesandsignalling] * * paragraph [OtherQCLproperties] *	3, 6, 10, 13
Y	US 2016142189 A1 (SHIN WOORAM [KR] ET AL) 19 May 2016 (2016-05-19) * paragraphs [0132], [0171] *	3, 10
Y	CONVIDA WIRELESS: "Synchronization on Beamforming Initial Access Operations", 09 October 2016 (2016-10-09) URL: http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN1/Docs/ [retrieved on 09 October 2016 (2016-10-09)] XP051150384 * page 3, line 1 - line 15 *	6, 13

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 07 January 2020	Examiner Bauer, Frédéric
---------------------------	---	-----------------------------

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 17 86 72 26

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3, 8-10, 15-17

Claims 1-3, 8-10, 15, 16 and 17 refer to sending the at least one group of QCL beam information through radio resource control RRC signaling.

2. claims: 4, 11

Claims 4 and 11 refer to the QCL beam information being included in data resource mapping and QCL configuration information and/or non-zero power channel state information reference signal configuration information.

3. claims: 5, 12

Claims 5 and 12 refer to sending, through downlink control information, DCI, the QCL beam information.

4. claims: 6, 13

Claims 6 and 13 refer to the beam identifier information being beam synchronization signal identifier information.

5. claims: 7, 14

Claims 7 and 14 refer to a beam with the beam information being a reference signal for beam scanning, a beam reference signal, a reference signal for beam scanning, or a beam synchronization signal.

Only part of the further search fees have been paid within the fixed time limit. The present (supplementary) European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims: 1-3, 6, 8-10, 13, 15-17

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 07 January 2020	Examiner Bauer, Frédéric
---------------------------	---	-----------------------------

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 17 86 72 26

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 07-01-2020.
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2016142189	A1	19-05-2016	NONE