



- (51) International Patent Classification:
H04W 4/00 (2009.01)
- (21) International Application Number:
PCT/US2015/059963
- (22) International Filing Date:
10 November 2015 (10.11.2015)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/078,324 11 November 2014 (11.11.2014) US
14/936,644 9 November 2015 (09.11.2015) US
- (71) Applicant: SHARP LABORATORIES OF AMERICA, INC. [US/US]; 5750 Northwest Pacific Rim Boulevard, Camas, Washington 98607 (US).
- (72) Inventors: NOGAMI, Toshizo; 620 SE 168th Avenue, Vancouver, Washington 98684 (US). YIN, Zhanping; 2104 SE 187th Avenue, Vancouver, Washington 98683 (US).
- (74) Agent: AUSTIN, Wesley L.; Austin Rapp & Hardman, 170 South Main Street, Suite 735, Salt Lake City, Utah 84101 (US).

- (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, 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, ST, SZ, TZ, 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, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

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

(88) Date of publication of the international search report:
13 October 2016

(54) Title: SYSTEMS AND METHODS FOR LICENSE ASSISTED ACCESS

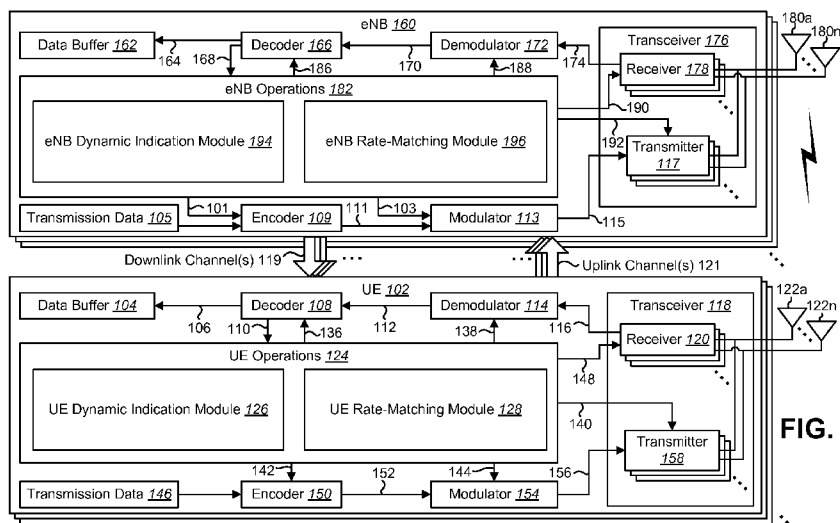


FIG. 1

(57) Abstract: A user equipment (UE) is described. The UE includes a higher layer processor configured to receive a radio resource control (RRC) message to specify subframes for a channel state information-reference signal (CSI-RS). The UE also includes a control channel receiver configured to monitor a first control channel and a second control channel in a subframe. The first control channel indicates whether the CSI-RS in the subframe is available for CSI measurement. The second control channel is a control channel of which detection indicates a transmission of a shared channel in the subframe. The UE further includes a shared channel receiver configured to receive the shared channel when the second control channel is detected.

WO 2016/077353 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 15/59963

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - H04W 4/00 (2015.01) CPC - H04W 28/04, H04W 72/04, H04L 5/0007 According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC(8): H04W 4/00 (2015.01) CPC: H04W 28/04, H04W 72/04, H04L 5/0007</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 370/329 (keyword limited - see terms below)</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatBase; GOOGLE; GoogleScholar; GooglePatents; Search Terms: user equipment, layer processor, radio resource control message, subframe, channel state, CSI, receiver, shared channel, RRC message, detect transmission of shared channel, serving cell, transmit, evolved node B, eNB, wireless, reference, consecutive</p>														
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 2014/0112300 A1 (Han et al.) 24 April 2014 (24.04.2014), entire document, especially; abstract, para. [0003], [0048], [0079]</td> <td>1 - 10</td> </tr> <tr> <td>Y</td> <td>US 2013/0039291 A1 (Blankenship et al.) 14 February 2013 (14.02.2013), entire document, especially; abstract, para. [0031], [0033], [0035], [0038], [0046], [0086], [0177]</td> <td>1 - 10</td> </tr> <tr> <td>A</td> <td>US 2014/0301299 A1 (Wu) 09 October 2014 (09.10.2014), entire document</td> <td>1 - 10</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2014/0112300 A1 (Han et al.) 24 April 2014 (24.04.2014), entire document, especially; abstract, para. [0003], [0048], [0079]	1 - 10	Y	US 2013/0039291 A1 (Blankenship et al.) 14 February 2013 (14.02.2013), entire document, especially; abstract, para. [0031], [0033], [0035], [0038], [0046], [0086], [0177]	1 - 10	A	US 2014/0301299 A1 (Wu) 09 October 2014 (09.10.2014), entire document	1 - 10
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.												
Y	US 2014/0112300 A1 (Han et al.) 24 April 2014 (24.04.2014), entire document, especially; abstract, para. [0003], [0048], [0079]	1 - 10												
Y	US 2013/0039291 A1 (Blankenship et al.) 14 February 2013 (14.02.2013), entire document, especially; abstract, para. [0031], [0033], [0035], [0038], [0046], [0086], [0177]	1 - 10												
A	US 2014/0301299 A1 (Wu) 09 October 2014 (09.10.2014), entire document	1 - 10												
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>														
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"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	"E" earlier application or patent but published on or after the international filing date	"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	"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)	"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	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed			
"A" document defining the general state of the art which is not considered to be of particular relevance	"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													
"E" earlier application or patent but published on or after the international filing date	"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													
"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)	"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													
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family													
"P" document published prior to the international filing date but later than the priority date claimed														
<p>Date of the actual completion of the international search 21 December 2015 (21.12.2015)</p>		<p>Date of mailing of the international search report 23 FEB 2016</p>												
<p>Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300</p>		<p>Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>												