

1) Family number: 56035072 (US2014086173A)

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Title: METHODS, SYSTEMS AND APPARATUSES FOR OPERATION IN LONG-TERM EVOLUTION SYSTEMS

Priority: US20120706122P 20120926 US20130753375P 20130116 US20130807952P 20130403
US20130863090P 20130807 US20130036327 20130925 WO2013US61617 20130925
US20150263592P 20151204 US20160393607 20161229 US20190571507 20190916

Family:	Publication number	Publication date	Application number	Application date
	EP2901640 A2	20150805	EP20130776623	20130925
	JP2015536097 T2	20151217	JP20150534620T	20130925
	TW201429202 A	20140716	TW20130134525	20130925
	TW201731251 A	20170901	TW20160140026	20161202
	TWI580235 B	20170421	TW20130134525	20130925
	US2014086173 AA	20140327	US20130036327	20130925
	US2017111884 AA	20170420	US20160393607	20161229
	US2020084748 AA	20200312	US20190571507	20190916
	US9553701 BB	20170124	US20130036327	20130925
	US10420066 BB	20190917	US20160393607	20161229
	WO14052412 A2	20140403	WO2013US61617	20130925
	WO14052412 A3	20140912	WO2013US61617	20130925
	WO17096121 A1	20170608	WO2016US64551	20161202

Probable Assignee: INTERDIGITAL PATENT HOLDINGS INC

Assignee(s):(std): IDAC HOLDINGS INC ; INTERDIGITAL PATENT HOLDINGS ; INTERDIGITAL PATENT HOLDINGS INC

Inventor(s):(std): BALA ERDEM ; BELURI MIHAELA C ; DEMIR ALPASLAN ; LEE MOON IL ; NAYEB NAZAR SHAHROKH ; PELLETIER GHYSLAIN ; PRAGADA RAVIKUMAR V ; SADEGHI POURIYA ; STERN BERKOWITZ JANET ; STERN BERKOWITZ JANET A ; SUN LI HSIANG ; TAMAKI NOBUYUKI ; TOOHER J PATRICK

Agent(s): KARLSSON MONA; TANI AND ABE PC; JULIAN F; SANTOS JULIAN F; SANTOS JULIAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): H04B7/06 H04J11/00 H04L27/26 H04L29/02 H04L5/00 H04L5/26 H04L7/00 H04L7/04 H04W48/10 H04W68/02 H04W72/04 H04W8/22 (Advanced/Invention); H04L5/14 H04W72/00 (Advanced/Non-invention)

CPC: H04L27/2636 H04B7/0617 H04L27/2613 H04L27/2692 H04B7/0408 H04L5/001 H04L5/0023 H04L5/005 H04L5/0092 H04L27/2649 H04W72/005 H04L5/003 H04L5/14 H04W68/02 H04W72/042 H04W72/048

US class: 1/1 370/328 370/329

[Classification Explorer](#)

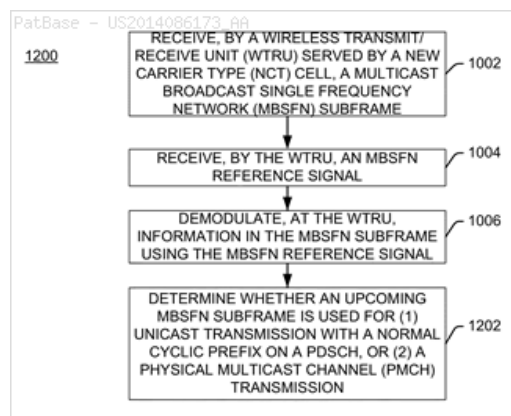
Cited documents: WOWO2012104635, WOWO2012051303, WOWO2011120030, WOWO2011097767, WOWO2010125769, WOWO2010016726, WOWO2009072956, WO15109153 A1, WO12104635 A1, WO12051303 A1, WO11120030 A1, WO11097767 A1, WO10125769 A1, WO10016726 A2, WO09072956 A1, US9253782 BB, US9204373 BB, US8995395 BB, US8929306 BB, US8837362 BB, US8577342 BB, US8553645 BB, US8315273 BB, US2014357272 AA, US2014086173 AA, US2014010183 AA, US2013223395 AA, US2013170438 AA, US2013083753 AA, US2013044664 AA, US2013039299 AA, US2012327894 AA, US2012307774 AA, US2012252472 AA, US2012172063 AA, US2012099515 AA, US2012044910 AA, US2011176530 AA, US2011026450 AA, US2010311349 AA, US2010260081 AA, US2010202382 AA, US2010014468 AA, US2009318170 AA, US2009259910 AA, US2009196261 AA, US2009170426 AA, US2009052376 AA, US2009029710 AA, US2008287129 AA, US2008259912 AA, US2008130519 AA, US2008095088 AA, US2006146861 AA, US2005286495 AA, US2004005870 AA, US2004000587 AA, TW2012188837, TW2012188837 A, JP2015523767 T2, JP2014526159 T2, JP2014504835 T2, JP2012523773 T2, JP2011511509 T2, EP2369883 A1, EP2278830 A1, EP2071882 A2, CN102036301 A, CN101026799 A,

Forward Citations: WO19217786, WO19036231, WO19013986, WO18226859, WO18204665, WO18196306, WO18144781, WO18063678, WO18034833, WO17219241, WO17196406, WO17172858, WO17172194, WO17155599, WO17138847, WO17045188, WO17023354, WO16073927, WO16071010, WO15171318, WO15117375, US9998964, US9998960, US9949279, US9948443, US9930672, US9888431, US9867211, US9860890, US9814023, US9806898, US9768971, US9743324, US9723613, US9712262, US9655131, US9641371, US9560600, US9497673, US9485052, US9474007, US9473965, US9462559, US9461790, US9386534, US9307521, US9294256, US8982853, US2018368193, US2018317112, US2018279268, US2018124743, US2018091341, US2018063770, US2018054837, US2017325204, US2017318605, US2017288888, US2017280404, US2017180952, US2017164407, US2017150533, US2017079009, US2017064613, US2017048809, US2017048784, US2017041904, US2017013615, US2016345247, US2016330761, US2016330680, US2016330633, US2016278054, US2016255523, US2016227472, US2016219613, US2016205669, US2016192394, US2016191287, US2016135187, US2016127140, US2016095048, US2016088594, US2016081094, US2016073303, US2016073239, US2016057562, US2016050680, US2016020879, US2015381378, US2015373628, US2015358094, US2015341908, US2015271691, US2015264618, US2015222399, US2015215929, US2015181610, US2015131516, US2015124708, US2015003405, US2014254564, US2014211695, US2014204888, US2014119266, US10680772, US10674385, US10645660, US10645632, US10638344, US10631174, US10624132, US10616893, US10602484, US10582482, US10581547, US10568008, US10567990, US10555264, US10548112, US10531496, US10531492, US10531326, US10517083, US10517009, US10505689, US10499298, US10484841, US10477441, US10462839, US10447517, US10447446, US10440672, US10439741, US10420066, US10368296, US10341977, US10327225, US10327198, US10278184, US10278120, US10257850, US10251138, US10219243, US10219173, US10218527, US10178631, US10178568, US10165549, US10149323, US10142904, US10117170, US10111224, US10111066, US10075952, US10070271, US10064080, US10039145, US10039089, US10038529, US10034226, TWI571147, KR20160132054, KR101988093, JP6496037, JP6447898, JP6292530, JP2018515952, JP2018511989, JP2018067972, JP2016529806, JP2016507954, EP3541102, EP3346751, EP3216158, EP3188518,

EP3175653, CN109906591, CN109219113, CN108601068, CN108601068, CN107409348, CN107113781, CN106888069, CN106888069, CN106664517, CN106535245, CN106535245, CN105794272, CN105794272, CN105101449, CN105101449, CN105101282,

Abstract:

Methods, systems and apparatuses for operation in long-term evolution (LTE) systems are provided, including a method implemented by a wireless transmit/receive unit (WTRU) served by a cell, where an enhanced physical broadcast channel (ePBCH) may be sent by the cell and may include basic information for WTRU control. The method may include receiving, by the WTRU, the ePBCH, and demodulating the ePBCH based on a demodulation reference signal (DMRS). In some embodiments, demodulating the ePBCH may be based on any of: a primary synchronization signal (PSS), a secondary synchronization signal; and a cell-specific reference signal (CRS), as well. Also provided is a method implemented by a WTRU in a vicinity of a dormant cell. The method may include any of: receiving, from a dormant cell, a signal; receiving, from a serving cell, a trigger to initiate measurement of one or more dormant cells; and measuring the signal.



2) Family number: 67134082 (US2019081743A)

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Title: ASYNCHRONOUS RETRANSMISSION PROTOCOL

Priority: EP20160000761 20160401 EP20160164097 20160406 WO2017EP57649 20170331

Family:	Publication number	Publication date	Application number	Application date
	EP3226456 A1	20171004	EP20160164097	20160406
	EP3226456 B1	20200603	EP20160164097	20160406
	EP3437229 A1	20190206	EP20170714240	20170331
	JP2019516281 T2	20190613	JP20180550700T	20170331
	US2019081743 AA	20190314	US20170090464	20170331
	WO17167944 A1	20171005	WO2017EP57649	20170331

Probable Assignee: PANASONIC IP CORP AMERICA

Assignee(s):(std): PANASONIC IP CORP AMERICA

Assignee(s): PANASONIC INTELLECTUAL PROPERTY OF AMERICA CORP

Inventor(s):(std): BASU MALICK PRATEEK ; GOLITSCHKE EDLER VON ELBWART ALEXANDER ; LOEHR JOACHIM

Agent(s): GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; NEMETHOVA OLIVIA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): H04L1/16 H04L1/18 H04L29/08 H04L5/00 H04W28/04 H04W4/70 H04W52/02 H04W72/04 H04W72/12 H04W76/27 H04W76/28 (Advanced/Invention)

CPC: H04W52/02 H04W72/1289 Y02D70/1242 Y02D70/1244 Y02D70/1246 Y02D70/1262 Y02D70/21 Y02D70/24 H04L1/1812 H04L5/0055 H04W4/70 H04W72/042 H04W76/27 H04W76/28 H04W80/02 H04L1/1851 H04L1/1874 H04L1/1883 H04L1/1887 H04W52/0216

US class: 1/1

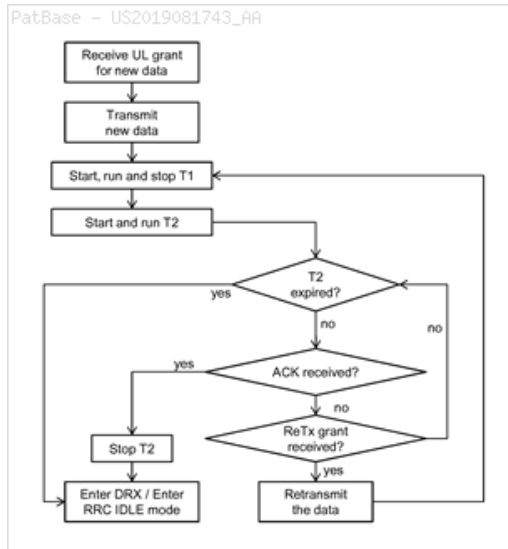
[Classification Explorer](#)

Cited documents: WO14073799 A1, WO14073799 A1, WO12062668 A1, WO12062668 A1, US2014254538 AA, US2014254538 AA, US2013223307 AA, US2013223307 AA,

Forward Citations: WO19194941, US2019045437, US10687278, US10362626, EP3310121, EP3310121,

Abstract:

The present disclosure relates to transmitting data over a physical uplink shared channel in a wireless communication system by using an asynchronous hybrid automatic repeat request, HARQ. An exemplary apparatus comprises a first timer configured to start upon uplink data transmission and stop after a first predetermined time; a second timer configured to start upon stop of the first timer and to stop after a second predetermined time; a receiver for receiving downlink control information including a positive acknowledgement for uplink new data transmission or retransmission, the receiver being configured to perform the receiving only when the first timer is stopped and the second timer is running, wherein the second timer is further configured to stop upon receiving the positive acknowledgement. Moreover, an apparatus for receiving the data and transmitting the control channel is provided as well as the corresponding transmitting and receiving method.



3) Family number: 73045335 (WO19019960A1)

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Title: BASE STATION, USER EQUIPMENT, AND RELATED METHOD

Priority: CN201710626984 20170727 WO2018CN096596 20180723

Family:

Publication number	Publication date	Application number	Application date
■ CN109309555 A	20190205	CN201710626984	20170727
■ EP3661094 A1	20200603	EP20180837879	20180723
■ TW201911909 A	20190316	TW20180119898	20180608
■ WO19019960 A1	20190131	WO2018CN096596	20180723

Probable Assignee: SHARP KK

Assignee(s):(std): LIU RENMAO ; SHARP CORP ; SHARP KK

Inventor(s):(std): CHANG NING JUAN ; CHANG NINGJUAN ; LIU REN MAO ; LIU RENMAO ; ZHANG CHONG MING ; ZHANG CHONGMING

Agent(s): MUELLER HOFFMANN AND PARTNER; CHINA SCIENCE PATENT AND TRADEMARK AGENT LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): H04L29/02 H04L5/00 H04W48/12 H04W52/02 H04W72/00 (Advanced/Invention)

CPC: H04L5/00 H04W72/00 H04L5/0007 H04L5/0053

[Classification Explorer](#)

Cited documents: WO15190883 A1, US2017202054 AA, CN106792792 A, CN104244380 A, CN103220690 A, CN102036346 A,

Abstract:

Provided is a method in a user equipment (UE). The method comprises: determining a time domain position of physical wakeup signaling, the physical wakeup signaling being used for waking up a UE, so as to detect a subsequent narrowband physical downlink control channel (NPDCCH); and detecting physical wakeup signaling from a base station at the determined time domain position, wherein the determination of the time domain position comprises: determining a starting subframe or an ending subframe for the physical wakeup signaling and the number of subframes for the physical wakeup signaling.



4) Family number: 75593355 (WO19158446A1)

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Title: WAKE_UP SIGNAL CANDIDATE INDICATOR INDICATEUR DE CANDIDAT DE SIGNAL DE REVEIL

Priority: EP20180157017 20180215

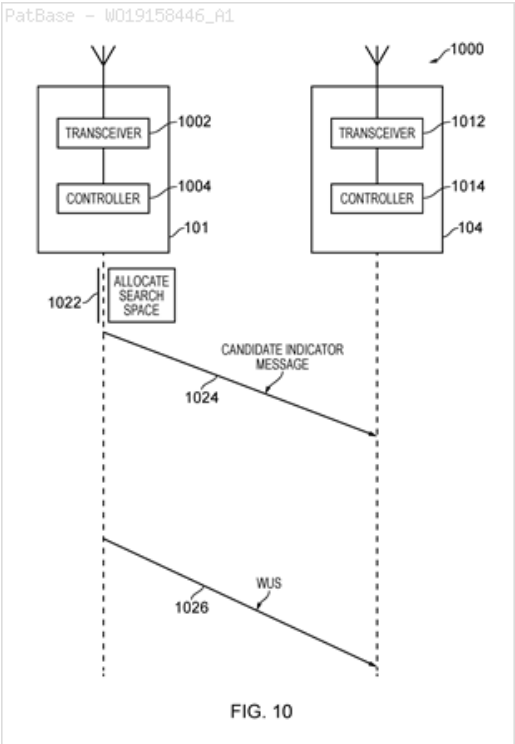
Family:

Publication number	Publication date	Application number	Application date
■ WO19158446 A1	20190822	WO2019EP53180	20190208

Probable Assignee: SONY CORP

Assignee(s):(std): SONY CORP ; SONY EUROPE LTD
Inventor(s):(std): BEALE MARTIN WARWICK ; WONG SHIN HORNG
Agent(s): DEVILE JONATHAN
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): H04W68/02 (Advanced/Invention)
CPC: H04W68/025
[Classification Explorer](#)
Cited documents: WO17162813 A1, US2012275364 AA, EP2621242 A1, EP17202451, EP17201748, EP17193861, EP17169821,

Abstract:
A wake-up signal being for providing an indication to one or more of the communications devices that they should receive a paging message in one or more of a plurality of temporally spaced paging occasions, and transmitting a candidate indicator message to the one or more communications devices in advance of the wake-up signal search space, the candidate indicator message indicating one or more characteristics of the wake-up signal by which the wake-up signal may be transmitted as one or more candidates, wherein the one or more candidates are to be searched for detection of the wake-up signal by the one or more communication devices.



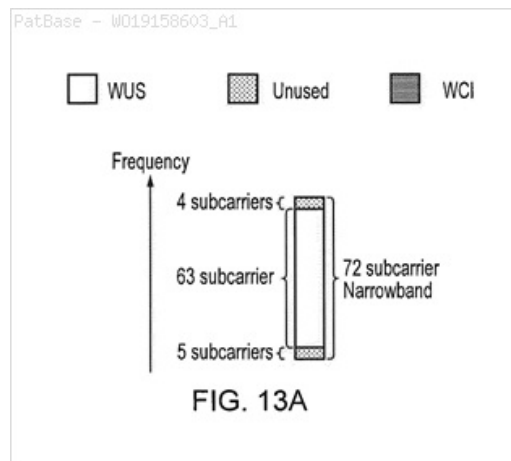
5) Family number: 75593410 (WO19158603A1) © PatBase

Title: UNUSED PORTION OF RADIO RESOURCES
Priority: EP20180157021 20180215
Family:

Publication number	Publication date	Application number	Application date
WO19158603 A1	20190822	WO2019EP53583	20190213

Probable Assignee: SONY CORP
Assignee(s):(std): SONY CORP ; SONY EUROPE LTD
Inventor(s):(std): BEALE MARTIN WARWICK ; WONG SHIN HORNG
Agent(s): DEVILE JONATHAN
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): H04W68/02 (Advanced/Invention)
CPC: H04W68/025
[Classification Explorer](#)
Cited documents: EP2621242 A1, EP2453710 A1, EP17186065,

Abstract:
A wake-up signal being for providing an indication to one or more of the communications devices (UEs) that they should receive a paging message in one or more of a plurality of paging occasions, and transmitting a candidate indicator message to the one or more UEs in an unused portion of radio resources of the wireless access interface that is allocated for signals other than the candidate indicator message, the candidate indicator message indicating one or more characteristics of the wake-up signal by which the wake-up signal may be transmitted as one or more candidates, wherein the one or more candidates are to be searched for detection of the wake-up signal by the one or more UEs.



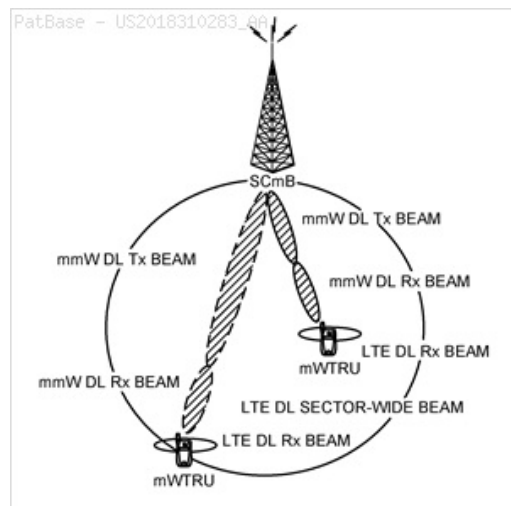
6) Family number: 65708436 (US2018310283A)

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Title:	DOWNLINK CONTROL CHANNEL DESIGN AND SIGNALING FOR BEAMFORMED SYSTEMS																												
Priority:	US20150253599P 20151110		US20160775028 20161110		WO2016US61324 20161110																								
Family:	<table><tr><th>Publication number</th><th>Publication date</th><th>Application number</th><th>Application date</th></tr><tr><td> EP3375126 A1</td><td>20180919</td><td>EP20160805927</td><td>20161110</td></tr><tr><td> JP2019503149 T2</td><td>20190131</td><td>JP20180543301T</td><td>20161110</td></tr><tr><td> TW201728207 A</td><td>20170801</td><td>TW20160136515</td><td>20161109</td></tr><tr><td> US2018310283 AA</td><td>20181025</td><td>US20160775028</td><td>20161110</td></tr><tr><td> WO17083514 A1</td><td>20170518</td><td>WO2016US61324</td><td>20161110</td></tr></table>					Publication number	Publication date	Application number	Application date	 EP3375126 A1	20180919	EP20160805927	20161110	 JP2019503149 T2	20190131	JP20180543301T	20161110	 TW201728207 A	20170801	TW20160136515	20161109	 US2018310283 AA	20181025	US20160775028	20161110	 WO17083514 A1	20170518	WO2016US61324	20161110
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Probable Assignee:	IDAC HOLDINGS INC																												
Assignee(s):(std):	IDAC HOLDINGS INC																												
Inventor(s):(std):	BELURI MIHAELA C ; DEENOO YUGESWAR ; DENG TAO ; LEE MOON IL ; PAN KYLE JUNG LIN ; PRAGADA RAVIKUMAR V ; STERN BERKOWITZ JANET A																												
Agent(s):	MEISSNER BOLTE PARTNERSCHAFT MBB; TANI AND ABE PC; ROCCIA VINCENT J ET AL																												
Designated states:	AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW																												
International class (IPC 8-9):	H04B7/02 H04B7/08 H04L1/16 H04L27/26 H04L5/00 H04L5/22 H04W16/28 H04W48/12 H04W72/04 H04W88/02 (Advanced/Invention)																												
CPC:	H04L5/0007 H04L5/0069 H04W72/042 H04W72/046 H04L5/0048 H04L5/0053																												
US class:	1/1 370/329																												
Classification Explorer																													
Cited documents:	US2014177607 AA, US2013058285 AA,																												
Forward Citations:	WO19179317, WO19174745, WO19143128, WO19060760, WO19032242, WO19018232, WO18083551, WO18029364, US2019081684, US2018279318, US2018227959, US2018206132, US2018198657, US2017289910, US2017289907, US10694438, US10681633, US10644852, US10608721, US10601621, US10582514, US10582397, US10560851, US10547429, US10531384, US10523478, US10523476, US10511373, US10477602, US10469229, US10375671, US10374679, US10374666, US10356778, US10084582, TWI679858, EP3432484.																												

Abstract:

Transmit and/or receive beamforming may be applied to the control channel transmission/reception, e.g., in mmW access link system design. Techniques to identify candidate control channel beams and/or their location in the subframe structure may provide for efficient WTRU operation. A framework for beam formed control channel design may support varying capabilities of mBs and/or WTRUs, and/or may support time and/or spatial domain multiplexing of control channel beams. For a multi-beam system, modifications to reference signal design may discover, identify, measure, and/or decode a control channel beam. Techniques may mitigate inter-beam interference. WTRU monitoring may consider beam search space, perhaps in addition to time and/or frequency search space. Enhancements to downlink control channel may support scheduling narrow data beams. Scheduling techniques may achieve high resource utilization, e.g., perhaps when large bandwidths are available and/or WTRUs may be spatially distributed.



7) Family number: 71792437 (US2020092808A)

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Title: TERMINAL DEVICE, INFRASTRUCTURE EQUIPMENT, WIRELESS TELECOMMUNICATIONS SYSTEM AND METHODS

Priority: EP20170169835 20170505 WO2018EP61179 20180502

Family:	Publication number	Publication date	Application number	Application date
	CN110583052 A	20191217	CN201880029661	20180502
	EP3603222 A1	20200205	EP20180719606	20180502
	KR20200003812 A	20200110	KR20197032609	20180502
	US2020092808 AA	20200319	US20180610525	20180502
	WO18202693 A1	20181108	WO2018EP61179	20180502

Probable Assignee: SONY CORP

Assignee(s):(std): SONY CORP ; SONY EUROPE LTD ; SONY MOBILE COMMUNICATIONS INC ; SONY MOBILE COMMUNICATIONS JAPAN INC

Assignee(s): WONG INNOVATIONS LTD

Inventor(s):(std): BEALE MARTIN WARWICK ; MARTIN BRIAN ALEXANDER ; MAZLOUM NAFISEH ; PRIYANTO BASUKI ; WONG SHIN HORNG

Agent(s): D YOUNG AND CO LLP; JACKSON JONATHAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

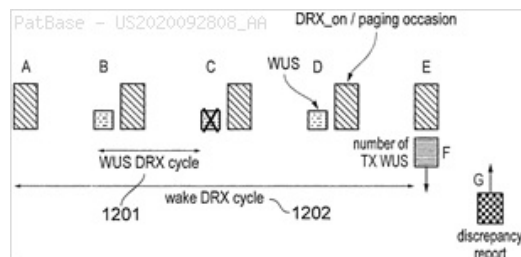
International class (IPC 8-9): H04W24/10 H04W28/04 H04W52/02 (Advanced/Invention)

CPC: H04W24/10 Y02D70/24 H04W52/0235 H04W52/02 H04W52/0216 H04W28/04

[Classification Explorer](#)

Abstract:

A terminal device for use with a wireless telecommunications system, the terminal device configured to attempt to receive or to transmit a first signal during one or more of a plurality of predetermined time periods in response to determining that one or more second signals indicating, respectively, that the one or more of the plurality of predetermined time periods should be used for the attempted reception or transmission of a first signal have been received by the transceiver; determine a characteristic associated with the one or more second signals; and to control the transceiver to receive a third signal from the infrastructure equipment or to transmit a third signal to the infrastructure equipment, the third signal comprising information on the basis of which it is determinable whether or not a predetermined condition associated with the characteristic associated with the one or more second signals has been met.



8) Family number: 69657438 (US2018131425A)

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Title: METHOD AND APPARATUS FOR USER EQUIPMENT BEAMFORMING OPERATION IN A WIRELESS COMMUNICATION SYSTEM

Priority: US20160417690P 20161104 US20170724097 20171003

Family:	Publication number	Publication date	Application number	Application date
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EP3319244 A1	20180509	EP20170194482	20171003
US2018131425 AA	20180510	US20170724097	20171003
US10686504 BB	20200616	US20170724097	20171003

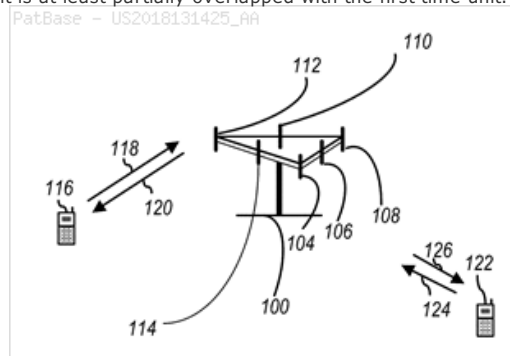
Probable Assignee: ASUSTEK COMP INC
Assignee(s):(std): ASUSTEK COMP INC
Assignee(s): ASUSTEK COMPUTER INC
Inventor(s):(std): GUO YU HSUAN ; LI MING CHE ; LIN KO CHIANG
Agent(s): HOFER AND PARTNER PATENTANWAELE MBB; BLUE CAPITAL LAW FIRM PC
Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
International class (IPC 8-9): H04B7/06 H04B7/08 H04J3/00 H04L5/00 H04W24/08 H04W72/04 H04W72/12 (Advanced/Invention); H04W88/02 (Advanced/Non-invention)
CPC: H04B7/0695 H04B7/088 H04B7/0617 H04B7/0626 H04L5/0055 H04W24/08 H04W72/046 H04W72/1284 H04W88/02
US class: 1/1 370/252

[Classification Explorer](#)

Cited documents: WO16134532, WO16069193, WO15149273 A1, WO14104800 A1, US9717084 BB, US9413503 BB, US9167597 BB, US6490261 BA, US2019230602 AA, US2019215783 AA, US2018375619 AA, US2018302916 AA, US2018242317 AA, US2017215198 AA, US2017013565 AA, US2016286568 AA, US2016254892 AA, US2014314014 AA, US2014293947 AA, US2013322280 AA, US2013223251 AA, US10271288 BB, US10117188 BB, EP2824849,
Forward Citations: WO19222876, US2018309487, US10581504, US10432284, US10425901, US10382114, US10218422, EP3651535,

Abstract:

Methods and apparatuses for user equipment beamforming operation in a wireless communication system. In one method, a user equipment receives a first configuration or a first scheduling to request the UE to perform a first Uplink (UL) transmission on a first UE beam, wherein the first UL transmission is to be performed in a first time unit. The UE receives a second configuration or a second scheduling to request the UE to perform a second UL transmission on a second UE beam, wherein the second UL transmission is to be performed in a second time unit. The UE performs the first UL transmission on the first UE beam and drops the second UL transmission on the second UE beam if the second time unit is at least partially overlapped with the first time unit.



9) Family number: 65807611 (US2018375623A)

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Title: TERMINAL DEVICE, COMMUNICATION METHOD, AND INTEGRATED CIRCUIT
Priority: JP20150227483 20151120 WO2016JP81313 20161021
Family:

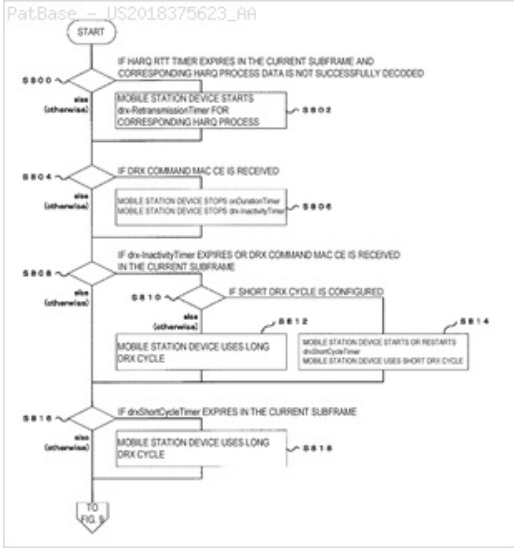
Publication number	Publication date	Application number	Application date
CN108476471 A	20180831	CN201680064721	20161021
CO20180005811 A2	20180620	CO20180005811	20180605
EP3379868 A1	20180926	EP20160866094	20161021
EP3379868 A4	20190703	EP20160866094	20161021
JP2019012868 A2	20190124	JP20150227483	20151120
US2018375623 AA	20181227	US20160776416	20161021
US10389493 BB	20190820	US20160776416	20161021
WO17086092 A1	20170526	WO2016JP81313	20161021

Probable Assignee: SHARP KK
Assignee(s):(std): SHARP CORP ; SHARP KK
Inventor(s):(std): AIBA TATSUSHI ; SUZUKI SHOICHI ; YOKOMAKURA KAZUNARI ; UEMURA KATSUNARI ; YAMADA SHOHEI ; AIBA TATESHI ; KAMIMURA KATSUNARI
Inventor(s): SHOICHI SUZUKI ; TATSUSHI AIBA ; KATSUNARI UEMURA ; KAZUNARI YOKOMAKURA ; SHOHEI YAMADA
Agent(s): JUAN CARLOS CUESTA QUINTERO; MUELLER BORE AND PARTNER PATENTANWAELE PARTG MBB; KEATING AND BENNETT LLP; NISHIZAWA KAZUYOSHI ET AL
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): H04L1/18 H04W28/04 H04W52/02 H04W72/04 H04W76/28 (Advanced/Invention)
CPC: H04L1/1851 H04L1/189 H04W28/04 H04W52/02 H04W72/04 Y02D70/1262 Y02D70/21 Y02D70/24 H04L1/1812 H04L1/1883 H04W72/042 H04W76/28 Y02D70/00
US class: 1/1 370/329

[Classification Explorer](#)

Cited documents: WO16144055 A1, US2017134124 AA, US2017118747 AA, US2016262118 AA, US2016165539 AA, JP2015227483 A2, EP3266267 A1,

Abstract:
A terminal device and a base station device efficiently communicate with each other. The terminal device includes a transmission unit configured to repeatedly transmit uplink control information including at least one CQI using a plurality of PUCCHs in a plurality of subframes, in a case where uplink control information is transmitted in the PUCCH in an initial subframe included in the plurality of subframes, based on whether the uplink control information includes an HARQ-ACK, (i) the uplink control information is transmitted using the PUCCH in a first subframe included in the plurality of subframes, or (ii) the uplink control information is not transmitted in the first subframe included in the plurality of subframes.



10) Family number: 73173652 (WO19030337A1) © PatBase

Title: WAKE-UP SIGNAL
Priority: EP20170186065 20170811 WO2018EP71659 20180809
Family:

Publication number	Publication date	Application number	Application date
EP3665882 A1	20200617	EP20180749403	20180809
WO19030337 A1	20190214	WO2018EP71659	20180809

Probable Assignee: SONY CORP
Assignee(s):(std): SONY CORP ; SONY EUROPE LTD
Inventor(s):(std): ATUNGSIRI SAMUEL ASANGBENG ; BEALE MARTIN WARWICK ; SHARMA VIVEK ; WONG SHIN HORNG
Agent(s): D YOUNG AND CO LLP; DEVILE JONATHAN
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): H04J13/00 H04L27/26 H04W52/02 (Advanced/Invention)
CPC: H04L27/2613 H04J13/0022 H04J13/0062 H04L27/2655 H04W52/0216 H04W52/0219 H04W52/0229
[Classification Explorer](#)
Cited documents: US2017026221 AA, US2017026220 AA, US2017026219 AA, EP17169577,
Forward Citations: WO20074454,

Abstract:
A method of operating a first infrastructure equipment in a wireless communications system is provided. The wireless communications system comprises the first infrastructure equipment, a second infrastructure equipment and a communications device. The method comprises receiving a command from the second infrastructure equipment comprising an indication that a downlink message for the communications device to decode should be transmitted by the first infrastructure equipment and that a wake-up signal should be transmitted by the first infrastructure equipment to the communications device in advance of transmitting the downlink message, and transmitting the wake-up signal to the communications device in advance of transmitting the downlink message to provide the communications device with an indication that the downlink message for the communications device to decode will be transmitted, wherein the wake-up signal comprises a preamble formed by a plurality of Orthogonal Frequency Division Multiplexed, OFDM, symbols, each of the OFDM symbols being modulated with a reference sequence, and wherein one or more of the OFDM symbols are transmitted having been shifted in frequency with respect to successive others of the OFDM symbols.

