

Nicolas Vargas

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1) Family number: 53653683 (US2013107704A)

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Title: DYNAMIC SPECIAL SUBFRAME ALLOCATION

Abstract: Source: US2013107704A [EN] A base station transmits a message to wireless devices in connected mode. The message comprises an initial subframe allocation bitmap indicating an initial plurality of subframes including an initial plurality of special subframes. After an increase in the number of wireless devices or traffic load by an amount greater than a load value, the base station transmits a second message. The second message comprises an updated subframe allocation bitmap indicating a second plurality of subframes including an updated plurality of special subframes. The updated plurality of special subframes includes a smaller number of special subframes than the initial plurality of special subframes.

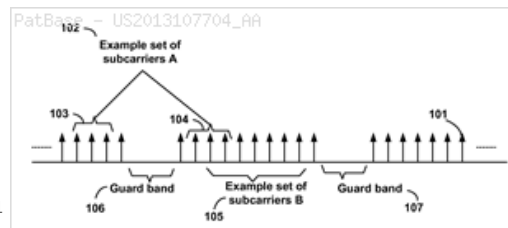
Classifications:

International (IPC 8-9): G01R31/08 H04B7/26 H04H20/33 H04H20/42 H04J11/00 H04L27/26 H04L29/06 H04L5/00 H04L5/14 H04W16/06 H04W16/32 H04W24/00 H04W24/02 H04W24/06 H04W24/10 H04W28/08 H04W28/10 H04W4/00 H04W4/06 H04W52/14 H04W52/34 H04W52/60 H04W56/00 H04W72/04 H04W72/12 (Advanced/Invention);

H04L5/00 H04W16/06 H04W24/10 H04W48/12 H04W52/24 H04W84/04 H04W88/02 H04W88/08 (Advanced/Non-invention)

CPC: H04W16/06 H04W48/12 H04W52/244 H04L5/0048 H04L27/2601 H04W24/00 H04W24/06 H04W16/32 H04W52/346 H04W72/0486 H04W72/1252 H04B7/2656 H04L5/0023 H04L5/0073 H04L5/0094 H04W24/02 H04W24/10 H04W84/045 H04J11/00 H04L5/14 H04L5/005 H04W72/0413 H04H20/33 H04W88/085 H04W72/1226 H04W88/02 H04W56/001 H04W88/08 H04H20/42 H04L69/22 H04W52/143 H04L5/0007 H04W72/042 H04W52/60 H04W72/0446 Y02B60/50 Y02D70/00

US: 1/1 370/230 370/252 370/280 370/312 370/328 370/329 370/350 370/433 375/130



Family:

Publication number	Publication date	Application number	Application date
EP2771999 A2	20140903	EP20120812742	20121029
EP2879320 A1	20150603	EP20140197792	20121029
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Priority:

EP20120812742	20121029	US20110553183P	20111029	US20110553184P	20111029
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Probable Assignee: COMCAST CABLE COMMUNICATIONS LLC

Assignee(s): (std): COMCAST CABLE COMM LLC ; DINAN ESMAEL HEJAZI ; OFINNO TECH LLC ; OFINNO TECHNOLOGIES LLC

Assignee(s): COMCAST CABLE COMMUNICATIONS LLC

Inventor(s): (std): DINAN ESMAEL HEJAZI

Agent(s): PATENTANWALTE WESTPHAL MUSSGNUG AND PARTNER; WESTPHAL MUSSGNUG AND PARTNER
PATENTANWALTE MBB; ESMAEL; DAVID; BANNER AND WITCOFF 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 DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT HW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR 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 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

2) Family number: 52663290 (US2013003577A)

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Title: COMMUNICATION STATE TRANSITIONING CONTROL

Abstract: Source: US2013003577A [EN] Embodiments of the present disclosure describe devices, methods, computer-readable media and systems configurations for managing state transitions of communication circuitries in wireless networks. Embodiments manage radio resource control (RRC) state transitions and/or discontinuous reception (DRX) state transitions. Other embodiments may be described and/or claimed.

Classifications:

International (IPC 8-9): G06F12/02 G06F15/16 G06F3/06 G06F9/44 G08B21/00 G08C17/00 G11C16/02 H04B1/38 H04B15/00 H04B15/02 H04B7/00 H04B7/005 H04B7/02 H04B7/024 H04B7/04 H04B7/0413 H04B7/0417 H04B7/0456 H04B7/06 H04B7/26 H04H20/71 H04J H04J11/00 H04J3/00 H04J99/00 H04L1/00 H04L1/02 H04L1/06 H04L12/18 H04L12/70 H04L12/709 H04L12/891 H04L25/02 H04L27/26 H04L27/34 H04L27/36 H04L29/06 H04L29/08 H04L5/00 H04L5/14 H04M11/08 H04N21/2343 H04N21/61 H04N21/647 H04N21/845 H04W16/02 H04W16/16 H04W24/00 H04W24/08 H04W28/04 H04W28/06 H04W28/10 H04W36/00 H04W36/14 H04W36/16 H04W4/00 H04W4/06 H04W4/08 H04W4/14 H04W4/18 H04W48/00 H04W48/12 H04W48/16 H04W48/18 H04W52/00 H04W52/02 H04W52/04 H04W52/10 H04W52/14 H04W52/24 H04W52/32 H04W52/36 H04W52/46 H04W52/54 H04W56/00 H04W60/00 H04W68/00 H04W68/02 H04W72/00 H04W72/02 H04W72/04 H04W72/06 H04W72/08 H04W72/10 H04W72/12 H04W76/00 H04W76/02 H04W76/04 H04W76/06 H04W8/00 H04W8/02 H04W8/08 H04W8/18 H04W80/00 H04W80/02 H04W80/08 H04W80/10 H04W84/04 H04W88/02 H04W88/06 H04W88/08 H04W92/02 H04W92/10 H04W92/14 H04W92/20 (Advanced/Invention); H04L1/00 H04L12/18 H04L25/02 H04L27/36 H04W24/08 H04W28/10 H04W36/14 H04W48/12 H04W52/24 H04W52/32 H04W52/36 H04W52/54 H04W84/04 (Advanced/Non-invention); H04B H04J H04L H04W (Subclass/Invention)

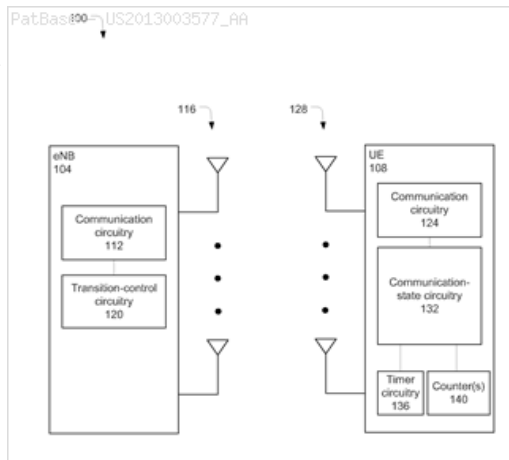
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US: 1/1 370/252 370/254 370/280 370/281 370/311 370/312 370/328 370/329 370/330 370/390 375/219 375/261 375/267 375/295 375/298 375/300 375/305 375/320 455/422.1 455/436 455/450 455/452.1 455/466 455/517 455/73 709/217 711/103

Family:

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Inventor(s): SHAO CHENG WANG ; PUNEET JAIN ; ALI TAHA KOC ; FWU JONG KAE SUNNYVALE ; CHOU JOEY SCOTTSDALE ; OYMAN OZGUR SAN JOSECA ; VANNITHAMBY RATH PORTLAND ; KOC ALI HILLSBORO ; GUPTA MARUTI PORTLAND ; JAIN PUNEET HILLSBORO ; KOC ALL TAHA HILLSBORO ; NIU HUANING MILPITAS ; LI QINGHUA SAN RAMON

Agent(s): FISHER ADAMS KELLY PTY LTD; FISHER ADAMS KELLY CALLINANS; SMART AND BIGGAR; RICHES MCKENZIE AND HERBERT LLP; HUFTON DAVID ALAN; JENNINGS VINCENT LOUIS; HGF LTD; ISERN JORGE; LEHMANN MARIA ISABEL; DR BELINDA ROSALINA SH LLM; EITAN MEHULAL AND SADOT; OHNUKI SHINSUKE; ITOH TADAHIKO; ITOH TADASHIGE; RYUKA IP LAW FIRM; SCHWABE WILLIAMSON AND WYATT PC; ALPINE TECHNOLOGY LAW GROUP LLC; THORPE NORTH AND WESTERN LLP; SCHWEGMAN LUNDBERG AND WOESSNER PA; BLAKELY SOKOLOFF TAYLOR AND ZAFMAN LLP; THORPE NORTH AND WESTERN; MAKI NATHAN R; BURRELL CHARLES A; MADDEN ROBERT B ET AL; HAYMOND ALEX W; KACVINSKY JOHN F; MCCRACKIN ANN M ET AL; TROP TIMOTHY N; CHINA PATENT AGENT; COOL KENNETH ET AL; COOL KENNETH J ET AL; OSBORNE DAVID W ET AL; KACVINSKY JOHN F ET AL; PARKER WESLEY E 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 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 IS IT JP KE KG KM KN KP KR 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 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

Title: CHANNEL QUALITY INDICATOR METHOD

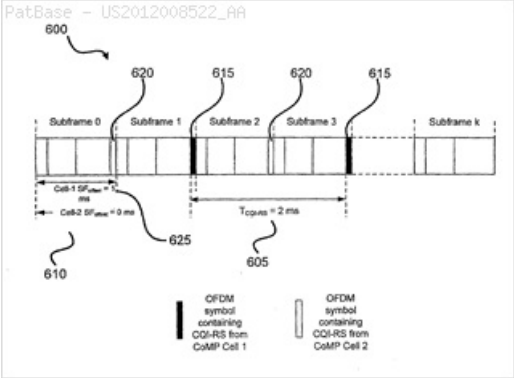
Abstract: Source: US2012008522A [EN] The disclosed a method will work with future versions of LTE-A, be backwards compatible, and alleviate interference to signals for basic system operation. The method includes generating one or more **Reference Signals** associated with the one or more Channel Quality Indicators, and includes **mapping** the one or more Channel Quality Indicator-**Reference Signals** to the last **symbol** of the second slot of the one or more **subframes**.

Classifications:

International (IPC 8-9): C12N1/15 C12N1/19 C12N1/21 C12N15/09 C12N15/11 C12N5/10 C12Q1/68 H04B7/02 H04B7/04 H04B7/06 H04B7/26 H04J1/00 H04J11/00 H04J13/16 H04J3/00 H04J3/16 H04L1/00 H04L27/26 H04L5/00 H04L5/14 H04W16/14 H04W24/00 H04W24/10 H04W28/04 H04W28/06 H04W28/16 H04W4/00 H04W72/04 H04W72/06 H04W88/00 (Advanced/Invention); H04W16/14 (Advanced/Non-invention); H04W24/00 (Core/Invention)

CPC: H04L5/14 H04J3/1694 C12Q1/6876 C12N15/11 C12Q1/68 Y10T436/143333 H04L1/0026 H04L1/0028 H04L5/0016 H04L5/0035 H04L5/0048 H04L5/0053 H04W16/14 H04W24/10 H04B7/022 H04B7/024 H04B7/0632 H04L5/0051 H04B7/0639 H04B7/0413 H04L27/2601 H04L27/2607 H04W28/044 H04W72/0446 H04L5/0057 H04W74/085

European: H04L1/00A9B H04L1/00A9F H04L5/00C1B H04L5/00C5 H04L5/00C6B H04W24/10 T04L5/00A3A T04L5/00C6 T04W16/14
US: 1/1 370/235 370/252 370/252P 370/280 370/281 370/328 370/329 436/94



Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: LENOVO INNOVATIONS HONG KONG LTD

Assignee(s): (std): LENOVO INNOVATIONS LTD HONG KONG ; LENOVO INNOVATIONS LTD HONGKONG ; NG BOON LOONG ; NEC CORP ; LIFE TECHNOLOGIES CORP

Assignee(s): NEC CORP7-1, SHIBA 5-CHOMEMINATO-KU108-8001TOKYOJP ; LENOVO INNOVATIONS HONG KONG LTD ; LENOVO INNOVATIONS HONG KONG LTD979 KING'S ROAD23RD FLOORLINCOLN HOUSETAOKO PLACEQUARRY BAYHK

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Inventor(s): NG BOON LOONGAU ; NG BOON LOONG MULGRAVE

Agent(s): SMART AND BIGGAR; GLAWE DELFS MOLL PARTNERSCHAFT MBB VON PATENT U RECHTSANWAELTEN; GLAWE DELFS MOLL; DE ELZABURU ALBERTO; MARUYAMA TAKAO; MIYAZAKI TERUO ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT RO RS RU 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

4) Family number: 52077928 (US2013265904A)

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Title: DIFFERENTIATING FIXED DEVICES FROM MOBILE DEVICES IN MOBILE BROADBAND NETWORKS

Abstract: Source: US2013265904A [EN] Fixed devices may be distinguished from mobile devices in a broadband wireless network. Fixed devices may be given an identifier that identifies the device as a fixed device.

Classifications:

International (ipc 8-9): G06F15/16 H04B17/00 H04B5/00 H04B7/04 H04B7/0456 H04B7/06 H04B7/26 H04J11/00 H04J3/00 H04L1/00 H04L12/26 H04L12/721 H04L25/02 H04L25/03 H04L27/26 H04L29/06 H04L5/00 H04L5/14 H04N21/643 H04W16/00 H04W16/14 H04W16/32 H04W24/00 H04W24/02 H04W24/10 H04W28/04 H04W28/08 H04W36/00 H04W36/04 H04W36/12 H04W36/14 H04W36/22 H04W4/00 H04W48/10 H04W48/12 H04W48/16 H04W48/20 H04W52/02 H04W52/08 H04W52/10 H04W52/14 H04W52/18 H04W52/24 H04W52/28 H04W52/40 H04W52/50 H04W56/00 H04W68/00 H04W68/02 H04W72/00 H04W72/04 H04W72/08 H04W74/00 H04W74/08 H04W76/02 H04W76/06 H04W84/04 H04W88/02 H04W88/06 H04W88/08 H04W88/10 H04W88/16 H04W92/20 (Advanced/Invention); H04B7/02 H04L25/03 H04L5/00 H04W16/32 H04W24/10 H04W28/04 H04W48/20 H04W52/14 H04W72/00 H04W74/08 H04W76/06 H04W84/04 H04W88/02 H04W88/08 H04W92/20 (Advanced/Non-invention)

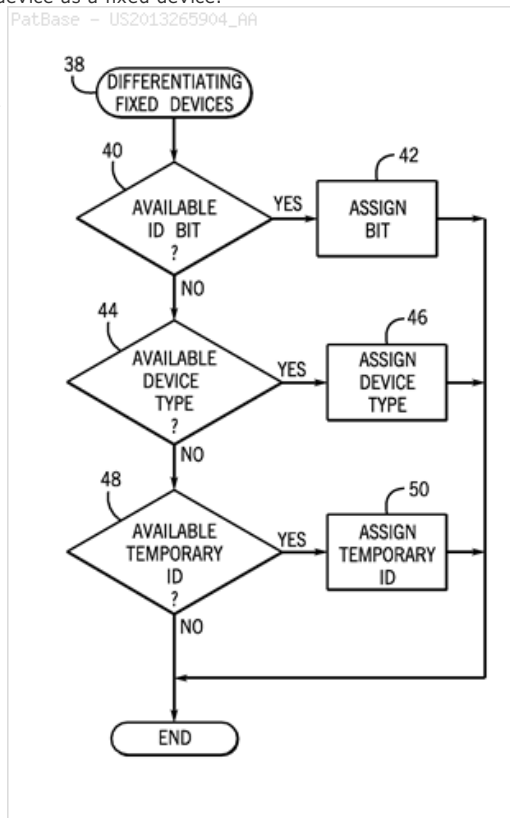
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European: H04B7/04M7R H04B7/06C1F1Q H04B7/06C1F3C H04L25/02C1A H04L25/03B9 T04L25/03B11M T04L25/03B17C T04L25/03B7E5 T04W24/10 T04W28/04N T04W72/00 T04W88/02 T04W88/08 T04W92/20

US: 1/1 370/235 370/252 370/280 370/281 370/311 370/312 370/328 370/329 370/330 370/336 455/434 455/522 709/219

Family:

Publication number	Publication date	Application number	Application date
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YIN HUIJUN ; ZHANG YUJIAN ; ZHU JING ; ZHU YUAN ; ZHU YUAN Y ; A KE ; BOLOTIN ILYA
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DAVYDOV ALEXEI ; DAVYDOV ALEXEI VLADIMIROVICH ; DAVYDOV ALEXEI VLADIMIROVICH ; ETEMAD
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FWU JONG KAE JK

Inventor(s):

Agent(s): HUFTON DAVID ALAN; JENNINGS VINCENT LOUIS; HGF LTD; HARRISON GODDARD FOOTE LLP;
LEHMANN MARIA ISABEL; SCHWEGMAN LUNDBERG AND WOESSNER PA; ALPINE TECHNOLOGY LAW
GROUP LLC; THORPE NORTH AND WESTERN LLP; OBSHESTVO S OGRANICHENNOI
OTVETSTVENNOSTJU SOJUZPATENT; COOL KENNETH J; CURTIN JOSEPH P; COOL KENNETH; OSBORNE
DAVID W ET AL; MCCRACKIN ANN M ET AL; TROP TIMOTHY N ET AL; TROP TIMOTHY N; MADDEN
ROBERT B ET AL; MADDEN ROBERT B REG NO 57 521 ET AL; KACVINSKY JOHN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU
CY CZ DE 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
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5) Family number: 48532771 (US2012257553A)

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Title: METHOD AND APPARATUS FOR **TRANSMITTING REFERENCE SIGNAL** IN WIRELESS COMMUNICATION SYSTEM

Abstract: Source: US2012257553A [EN] The present invention relates to a method and an apparatus for **transmitting a reference signal** by a base station in a wireless communication system. The base station generates a channel state information (CSI) **reference signal** (RS) for each of a plurality of layers, performs **mapping** the plurality of CSI-RSs to a resource element set constituted by a plurality of resource elements (REs) in a **subframe** and **transmits the subframe** with the plurality of **mapped** CSI-RSs. The plurality of resource elements constituting the resource element set are resource elements that are arranged with constant subcarrier spacing in two neighboring orthogonal frequency division multiplexing (**OFDM**) **symbols**, and the **subframe** has an extended cyclic prefix (CP) structure including 12 **OFDM symbols**.

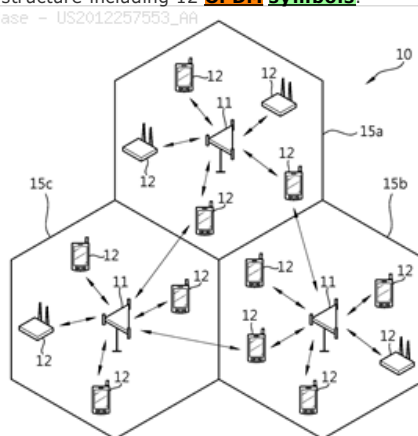
Classifications:

International (IPC 8-9): H04B7/04 H04B7/06 H04B7/26 H04J11/00
H04J13/00 H04J3/00 H04J99/00 H04L27/26 H04L5/00 H04L5/14
H04W72/04 (Advanced/Invention);

H04L25/02 H04L25/03 (Advanced/Non-invention)
IPC: H04L5/0023 H04L5/0026 H04L5/0048 H04L5/0053 H04L5/0057
H04L5/0073 H04L5/0082 H04L5/1469 H04L25/0226 H04L27/2613
H04L2025/03426 H04L2025/03802 H04L5/22 H04L27/2611
H04L27/2643 H04B7/0626 H04J3/00 H04J11/0053 H04W72/042
H04L5/14 H04W72/0406

European: H04J11/00F2A H04L5/00C5 T04L5/00A3C T04L5/00C6
US: 1/1 370/280 370/329

PatBase - US2012257553_HH



Family:

Publication number	Publication date	Application number	Application date
AU2010298845 AA	20110331	AU20100298845	20100927
AU2010298845 BB	20140213	AU20100298845	20100927
AU2010298845 BH	20140227	AU20100298845	20100927
CA2775479 AA	20110331	CA20102775479	20100927
CA2775479 C	20170228	CA20102775479	20100927
CN102687421 A	20120919	CN201080051701	20100927
CN102687421 B	20151125	CN201080051701	20100927
EP2469738 A2	20120627	EP20100819068	20100927
EP2469738 A4	20140806	EP20100819068	20100927
IN00995KN2012 A	20130208	IN2012KN00995	20120425
JP2013506337 T2	20130221	JP20120530786T	20100927
JP5886747 B2	20160316	JP20120530786T	20100927
KR101367570 B1	20140226	KR20100093216	20100927
KR20110033974 A	20110404	KR20100093216	20100927
US2012257553 AA	20121011	US20100498273	20100927
US2015289249 AA	20151008	US20150746479	20150622
US2017127390 AA	20170504	US20170402887	20170110
US9083482 BB	20150714	US20100498273	20100927
US9572137 BB	20170214	US20150746479	20150622
WO11037427 A2	20110331	WO2010KR06543	20100927
WO11037427 A3	20111013	WO2010KR06543	20100927

Priority:

KR20100093216 20100927	US20090246154P 20090927	US20100323881P 20100414
US20100361435P 20100705	US20100498273 20100927	US20120498273 20120627
WO2010KR06543 20100927	US20150746479 20150622	US20170402887 20170110

Probable Assignee: LG ELECTRONICS INC

Assignee(s): (std): CHUNG JAE HOON ; HAN SEUNG HEE ; LEE MOON IL ; LG ELECTRONICS INC ; MOON SEONG HO ; NOH MIN SEOK ; MOON SUNG HO

Inventor(s): (std): CHUNG JAE HOON ; HAN SEUNG HEE ; LEE II MOON ; LEE MOON IL ; MOON SUNG HO ; NOH MIN SEOK ; SEOK NOH MIN ; IL LEE MOON ; HOON CHUNG JAE ; HO MOON SUNG ; HEE HAN SEUNG

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; HERBERT SMITH FREEHILLS; FPA PATENT ATTORNEYS PTY LTD; SMART AND BIGGAR; CABINET PLASSERAUD; BIRCH STEWART KOLASCH AND BIRCH LLP; YANG MOON OCK

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP 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 PE PG PH PL PT RO RS RU 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

6) Family number: 44866135 (US2011194412A) © PatBase

Title: METHOD AND APPARATUS FOR WIRELESS RESOURCE ALLOCATION FOR RELAY IN WIRELESS COMMUNICATION SYSTEM

Abstract: Source: US2011194412A [EN] A method of allocating a radio resource for a relay station in a wireless communication system is disclosed. The method comprise allocating a relay zone to the relay station in a **subframe** and **transmitting** a relay control channel to the relay station by using the relay zone, wherein the **subframe** comprises a plurality of orthogonal frequency division multiplexing (**OFDM**) **symbols** in a time domain and a plurality of subcarriers in a frequency domain, wherein the **subframe** is divided into a user zone used by a user equipment in a cell and the relay zone used by the relay station, and wherein the relay zone comprises some of the plurality of subcarriers. According to the present invention, a **subframe** structure provides backward compatibility with a legacy wireless communication system. A relay station can effectively find a radio resource allocated to the relay station, thereby decreasing a decoding time.

Classifications:

International (IPC 8-9): G01R31/08 H04B7/04 H04B7/14 H04B7/15 H04B7/26 H04J1/00 H04J11/00 H04J3/00 H04J99/00 H04L1/18 H04L12/26 H04L27/26 H04L27/28 H04L5/00 H04W16/24 H04W16/26 H04W16/28 H04W28/26 H04W4/00 H04W40/00 H04W48/12 H04W56/00 H04W72/00 H04W72/04 H04W92/00 (Advanced/Invention); H04B7/04 H04B7/14 H04B7/216 H04J11/00 H04K1/10 H04L1/00 H04L1/18 H04L27/26 H04L5/00 H04W48/08 H04W56/00 H04W72/04 H04W84/18 H04W88/04 H04W92/12 (Advanced/Non-invention); H04B7/04 H04B7/26 H04J11/00 H04L1/16 H04L27/26 H04W16/00 H04W48/00 H04W72/00 (Core/Invention)

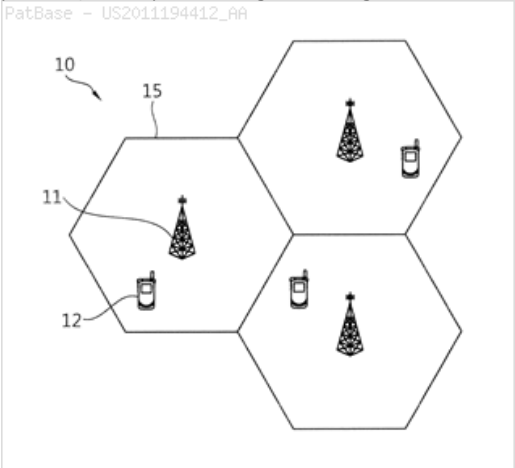
CPC: H04L1/1812 H04W84/047 H04L1/0026 H04L1/1854 H04W72/0406 H04L5/0044 H04W28/26 H04W48/08 H04W72/042 H04W88/04 H04W92/12 H04W72/04 H04W72/044 H04B7/15542 H04L5/0048 H04W72/0453 H04W72/0446 H04W84/18 H04B7/0417 H04B1/76 H04L27/2611 H04B7/14 H04L27/26 H04W84/08 H04W48/12 H04B7/0413 H04L5/0023 H04L5/0037 H04L5/005 H04L5/0051 H04L5/0007 H04L5/0094 H04B7/155 H04L5/0053 H04L27/2602 H04W56/00 H04B7/15507 H04L27/2601 H04B7/2606

European: H04B7/155 H04B7/155C H04B7/26B2 H04L1/18D H04L27/26M1 H04L5/00A2A1 H04L5/00A3C H04L5/00C2 H04L5/00C5A H04L5/00C5B H04L5/00C6 H04L5/00E2 H04W28/26 H04W48/12 H04W72/04 T04B7/04M T04B7/26B2 T04L1/00A9B T04L1/18R7 T04L27/26M1 T04L5/00C4 T04L5/00C6 T04L5/00E2 T04W48/08 T04W56/00 T04W72/04F T04W72/04F4 T04W72/04H T04W72/04H2 T04W84/04C4 T04W88/04 T04W92/12

US: 1/1 370/241 370/241P 370/279 370/280 370/280P 370/281 370/281S 370/315 370/315P 370/315S 370/329 370/329P 370/329S 370/330 370/334 370/338 370/338S 370/342 370/436 375/260 375/260S 455/450 455/450P 455/452.1

Family:

Publication number	Publication date	Application number	Application date
CN102224686 A	20111019	CN200980147328	20091001
CN102224686 B	20150722	CN200980147328	20091001
CN102422559 A	20120418	CN201080020284	20100507
CN102422559 B	20151014	CN201080020284	20100507
CN105119651 A	20151202	CN201510574257	20100507
EP2334134 A2	20110615	EP20090818021	20091001
EP2334134 A4	20160629	EP20090818021	20091001
EP2346188 A2	20110720	EP20090818009	20091001
EP2346188 A4	20160629	EP20090818009	20091001
EP2429096 A2	20120314	EP20100772276	20100507
EP2429096 A4	20170712	EP20100772276	20100507
IN01581KN2011 A	20110812	IN2011KN01581	20110418
IN01764KN2011 A	20110902	IN2011KN01764	20110429
IN03708KN2011 A	20160826	IN2011KN03708	20110907
IN04534KN2011 A	20160826	IN2011KN04534	20111104
JP2012503922 T2	20120209	JP20110528956T	20091001
JP2012504894 T2	20120223	JP20110530000T	20091001
JP5184703 B2	20130417	JP20110528956T	20091001
JP5367829 B2	20131211	JP20110530000T	20091001
KR101221289 B1	20130121	KR20117006062	20091001
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KR20100099655 A	20100913	KR20100016308	20100223
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KR20110014101 A	20110210	KR20100073365	20100729
KR20110059717 A	20110603	KR20117006062	20091001
KR20110074747 A	20110701	KR20117007331	20091001
US2011194412 AA	20110811	US20090809048	20091001
US2011194523 AA	20110811	US20090122033	20091001
US2011244873 AA	20111006	US20090121936	20091001
US2012033588 AA	20120209	US20090128296	20091110



US2012063386 AA	20120315	US20100319032	20100507
US2012140726 AA	20120607	US20100388969	20100802
US2013336197 AA	20131219	US20130925633	20130624
US2017134084 AA	20170511	US20170415416	20170125
US8477633 BB	20130702	US20090809048	20091001
US8599782 BB	20131203	US20090128296	20091110
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US8842639 BB	20140923	US20090121936	20091001
US8855072 BB	20141007	US20100388969	20100802
US9185699 BB	20151110	US20130925633	20130624
US9584215 BB	20170228	US20100319032	20100507
WO10038999 A2	20100408	WO2009KR05646	20091001
WO10038999 A3	20100624	WO2009KR05646	20091001
WO10039003 A2	20100408	WO2009KR05650	20091001
WO10039003 A3	20100722	WO2009KR05650	20091001
WO10039011 A2	20100408	WO2009KR05668	20091001
WO10039011 A3	20100715	WO2009KR05668	20091001
WO10053339 A2	20100514	WO2009KR06594	20091110
WO10053339 A3	20100812	WO2009KR06594	20091110
WO10128816 A2	20101111	WO2010KR02903	20100507
WO10128816 A3	20110217	WO2010KR02903	20100507
WO11016653 A2	20110210	WO2010KR05070	20100802
WO11016653 A3	20110616	WO2010KR05070	20100802

Priority:

CN201080020284	20100507	KR20090089529	20090922	US20080101679P	20081001
US20080113210P	20081110	KR20100042766	20100507	KR20100073365	20100729
US20080122417P	20081215	US20080121531P	20081210	US20090155127P	20090224
US20080117944P	20081125	US20090122033	20091001	US20090128296	20091110
US20090156886P	20090303	US20090121936	20091001	US20090231028P	20090804
US20090232774P	20090810	US20090157173P	20090303	US20090235673P	20090820
US20090176491P	20090508	US20090233839P	20090814	WO2009KR05650	20091001
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WO2009KR05668	20091001	WO2009KR06594	20091110	WO2010KR02903	20100507
WO2010KR05070	20100802	WO2010KR01144	20100224		

Probable Assignee: LG ELECTRONICS INC

Assignee(s): (std): CHUNG JAE HOON ; HAN SEUNG HEE ; IHM BIN CHUL ; KIM SO YEON ; KO HYUN SOO ; LEE MOON IL ; KWON YEONG HYEON ; MOON SUNG HO ; LG ELECTRONICS INC ; KOO JA HO ; MOON SUNGHO ; LEE II MOON ; LEE MOON II ; MOON SEUNG HO ; PARK KYU JIN ; NOH MIN SEOK

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Inventor(s): CHO HANGYU ; PARK KYUJIN

Agent(s): GUNZELMANN RAINER; FRENKEL MATTHIAS ALEXANDER; LEE HONG DEGERMAN KANG AND WAIMEY; MORGAN LEWIS AND BOCKIUS LLP; DENTONS US LLP; KIM YONG IN ET AL; YANG MOON OCK

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY NZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU 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

7) Family number: 44152557 (US2009323664A)

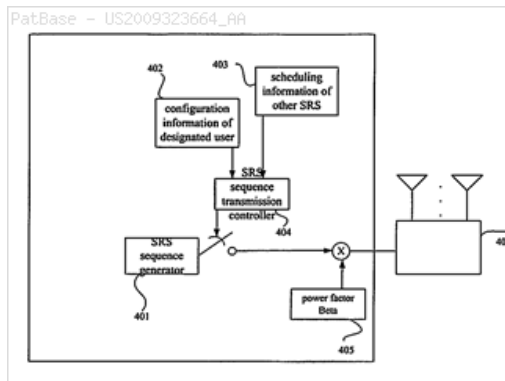
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Title: METHOD FOR **TRANSMITTING** A SOUNDING **REFERENCE SIGNAL** IN A LTE **TDD** SYSTEM

Abstract: Source: US2009323664A [EN] A method for **transmitting** an uplink Sounding **Reference Signal** (SRS) by a Long Term Evolution (LTE) User Equipment (UE). The UE receives information indicating an SRS **transmission**, generates an SRS, and **transmits** the SRS in two **OFDM symbol** in a half-frame or frame, if the information indicates that a period of SRS **transmission** is 2 ms.

Classifications:

International (IPC 8-9): H04B1/707 H04B1/7163 H04B1/7183 H04B1/76 H04B7/005 H04B7/204 H04B7/26 H04J1/00 H04J11/00 H04J3/00 H04L25/02 H04L27/01 H04L27/26 H04L27/28 H04L5/00 H04L5/14 H04W28/18 H04W4/00 H04W72/02 H04W72/04 (Advanced/Invention); H04B1/00 H04B7/26 H04J1/00 H04L27/26 (Core/Invention)
International (IPC 1-7): H04B7/26
CPC: H04L5/0048 H04L5/14 H04L5/0007 H04L5/0051 H04L27/2611
European: H04L27/26M1R1 H04L5/00C5B T04L5/00A2A1
US: 370/280 370/328 370/343 370/344 370/344P 370/345 375/260 375/260S



Family:

Publication number	Publication date	Application number	Application date
CN101615928 A	20091230	CN2008010134019	20080722
CN101615928 B	20160518	CN2008010134019	20080722

DE602009030290 D1	20150513	DE200960030290T	20090625
DE602009041776 D1	20161124	DE200960041776T	20090625
EP2139151 A2	20091230	EP20090163705	20090625
EP2139151 A3	20120523	EP20090163705	20090625
EP2139151 B1	20150401	EP20090163705	20090625
EP2720400 A1	20140416	EP20140150749	20090625
EP2720400 B1	20161012	EP20140150749	20090625
ES2604124 T3	20170303	ES20140150749T	20090625
IN04873KN2010 A	20110218	IN2010KN04873	20101221
JP2011526117 T2	20110929	JP20110516123T	20090624
JP2014112971 A2	20140619	JP20140057861	20140320
JP5508410 B2	20140528	JP20110516123T	20090624
JP5889942 B2	20160322	JP20140057861	20140320
RU2010152825 A	20120627	RU20100152825	20090624
RU2013155824 A	20150627	RU20130155824	20131216
RU2510575 C2	20140327	RU20100152825	20090624
RU2641665 C2	20180119	RU20130155824	20131216
US2009323664 AA	20091231	US20090491792	20090625
US2012327860 AA	20121227	US20120602965	20120904
US2016013907 AA	20160114	US20150864253	20150924
US8259700 BB	20120904	US20090491792	20090625
US9787447 BB	20171010	US20120602965	20120904
WO09157699 A2	20091230	WO2009KR03381	20090624
WO09157699 A3	20100415	WO2009KR03381	20090624

Priority:

CN200810124888	20080625	CN200810134019	20080722	EP20090163705	20090625
JP20110516123	20090624	JP20110516123T	20090624	EP20140150749	20090625
WO2009KR03381	20090624	US20090491792	20090625	US20120602965	20120904
US20150864253	20150924				

Probable Assignee: SAMSUNG ELECTRONICS CO LTD

Assignee(s): (std): BEIJING SAMSUNG COMMUNICATION TECHNOLOGY RESEARCH ; BEIJING SAMSUNG COMMUNICATION TECHNOLOGY RESEARCH INST ; LI XIAOQIANG ; LI YINGYANG ; SAMSUNG ELECTRONICS CO LTD ; SAMSUNG ELECTRONICS LTD ; SAMSUNG ELEKTRONIKS KO LTD

Assignee(s): SAMSUNG ELEKTRONIKS KO ; SAMSUNG ELECTRONICS CO LTD SUWON SI ; SAMSUNG ELECTRONICS ; SAMSUNG EHLEKTRONIKS KO ; SAMSUNG ELECTRONICS CO

Inventor(s): (std): LI INJAN ; LI INYAN ; LI SJAOTSJAN ; LI SYAOTSYAN ; LI XIAOQIANG ; LI YINGYANG ; YINGYANG LI ; XIAOQIANG LI

Inventor(s): LI YINGYANG SUWON SI ; LI XIAOQIANG SUWON SI

Agent(s): GULDE AND PARTNER PATENT U RECHTSANWALTSKANZLEI MBB; KETELAARS MAARTEN F J M; NEDERLANDSCH OCTROOIBUREAU; CARPINTERO MARIO; OOO YURIDICHESKAYA GORODISSKIJ I PARTNER Y FA; FARRELL LAW FIRM LLP; FARRELL LAW FIRM PC; YOON DONG YOL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

8) Family number: 56035036 (US2014086111A)

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Title: METHODS AND DEVICES FOR **TRANSMITTING** AND RECEIVING SYNCHRONOUS CHANNELS AND BROADCASTING CHANNELS

Abstract: Source: US2014086111A [EN] A method for multiplexing synchronous signals on specific **OFDM symbols** to form P-SCH and the S-SCH channels is provided. The present application further discloses a method for **transmitting** P-BCH.

Classifications:

International (IPC 8-9): H04J11/00 H04L27/26 H04L5/00 H04L5/14

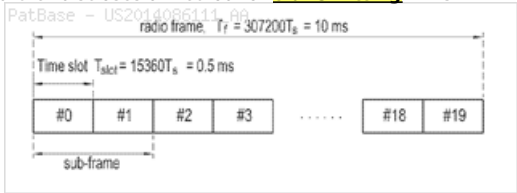
H04W56/00 H04W72/04 (Advanced/Invention);

H04W72/00 (Advanced/Non-invention)

CPC: H04W72/0446 H04W56/00 H04L5/001 H04L5/0048 H04L5/0053

H04L5/0082 H04L5/143 H04W72/00

US: 370/280 370/281 370/336



Family:

Publication number	Publication date	Application number	Application date
CN103686987 A	20140326	CN201210365116	20120926
US2014086111 AA	20140327	US20130038157	20130926
US9736836 BB	20170815	US20130038157	20130926
WO14054867 A1	20140410	WO2013KR08622	20130926

Priority:

CN201210365116 20120926

Probable Assignee: SAMSUNG ELECTRONICS CO LTD

Assignee(s): (std): BEIJING SAMSUNG COMM TECH RES ; BEIJING SAMSUNG COMMUNICATION TECHNOLOGY RESEARCH INST ; SAMSUNG ELECTRONICS CO LTD ; BEIJING SAMSUNG TELECOM R AND D CT

Assignee(s): SAMSUNG ELECTRONICS CO ; BEIJING SAMSUNG COMMUNICATION TECHNOLOGY RESEARCHCO ; BEIJING SAMSUNG TELECOM R AND D CENTER

Inventor(s): (std): LI YINGYANG ; SUN CHENGJUN

Agent(s): FARRELL LAW FIRM PC; LEE KEON JOO

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 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 IS IT JP KE KG KM KN KP KR 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

9) Family number: 54328266 (US2014334408A)

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Title: METHOD FOR **MAPPING** CONTROL CHANNEL RESOURCES, BASE STATION, AND USER EQUIPMENT

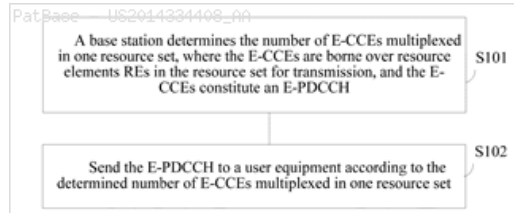
Abstract: Source: US2014334408A [EN] Embodiments of the present invention provide a method for **mapping** control channel resources, a base station, and a user equipment. The method for **mapping** control channel resources includes: determining, by a base station, the number of E-CCEs multiplexed in one resource set, where the E-CCEs are borne over REs for **transmission** in the resource set, and the E-CCEs constitute an E-PDCCH; sending the E-PDCCH to a user equipment according to the determined number of E-CCEs multiplexed in one resource set; and receiving, by the user equipment, the E-PDCCH, and obtaining the number of E-CCEs multiplexed in one resource set. The embodiments of the present invention apply to a resource **mapping**.

Classifications:

International (IPC 8-9): H04L5/00 H04W72/04
H04W72/12 (Advanced/Invention)

CPC: H04L5/0053 H04W72/042 H04L5/0094

US: 370/329



Family:

Publication number	Publication date	Application number	Application date
CA2860708 AA	20140707	CA20122860708	20121226
CN103200687 A	20130710	CN201210146516	20120511
CN103200687 B	20160914	CN201210146516	20120511
CN106788929 A	20170531	CN201610654254	20120511
EP2793525 A1	20141022	EP20120864745	20121226
EP2793525 A4	20141217	EP20120864745	20121226
EP2793525 B1	20170621	EP20120864745	20121226
EP3288211 A1	20180228	EP20170171900	20121226
US2014334408 AA	20141113	US20140326669	20140709
WO13104253 A1	20130718	WO2012C087503	20121226

Priority:

CN201210004648 20120109 CN201210146516 20120511 WO2012C087503 20121226
EP20120864745 20121226

Probable Assignee: HUAWEI TECHNOLOGIES CO LTD

Assignee(s): (std): HUAWEI TECH CO LTD

Assignee(s): HUAWEI TECHNOLOGIES CO ; HUAWEI TECHNOLOGIES CO LTD ; ZHOU MINGYU ; XIA LIANG ; HUAWEI TECHNOLOGIES CO LTD;HUAWEI ADMINISTRATION BUILDINGBANTIAN, LONGGANG DISTRICTSHENZHEN 518129GUANGDONGCN ; LIU KUNPENG ; GAO CHI

Inventor(s): (std): ZHOU MINGYU ; XIA LIANG ; LIU KUNPENG ; GAO CHI

Inventor(s): ZHOU MINGYUCN ; XIA LIANGCN ; LIU KUNPENG CN ; GAO CHICN

Agent(s): SMART AND BIGGAR; MAIWALD PATENTANWALTS GMBH

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 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 IS IT JP KE KG KM KN KP KR 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 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

10) Family number: 45946715 (US2010172291A)

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Title: DUAL BASE STATIONS FOR WIRELESS COMMUNICATIONS SYSTEMS

Abstract: Source: US2010172291A [EN] A network apparatus comprises a controller to determine a first base station for **transmitting** data and to determine a second different base station for receiving data. In one embodiment, the network apparatus further comprises a transceiver to **transmit** data to the first base station while associated with the second base station. The transceiver is operable to receive data from the second base station while associated with the first base station.

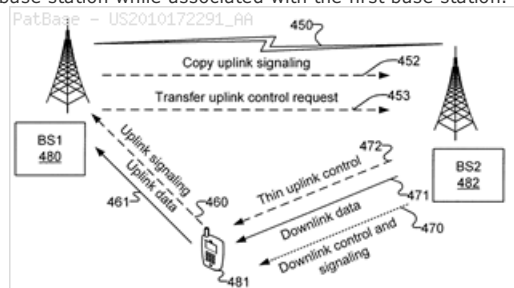
Classifications:

International (IPC 8-9): G06F11/14 H01Q3/26 H04B1/00 H04B1/713 H04B1/715 H04B7/02 H04B7/04 H04B7/06 H04B7/10 H04B7/14 H04B7/216 H04B7/26 H04J11/00 H04J11/00 H04J13/00 H04J13/02 H04J13/06 H04J99/00 H04L1/00 H04L1/08 H04L1/16 H04L1/18 H04L27/00 H04L27/26 H04L29/06 H04L7/00 H04W16/26 H04W16/28 H04W28/04 H04W28/06 H04W28/08 H04W36/00 H04W36/04 H04W36/08 H04W36/22 H04W36/24 H04W36/26 H04W48/12 H04W48/16 H04W48/20 H04W52/02 H04W52/48 H04W72/00 H04W72/04 H04W76/00 H04W88/02 H04W88/08 H04W88/10 (Advanced/Invention);

H01Q3/26 H04B1/713 H04B7/04 H04B7/06 H04B7/14 H04B7/26 H04J11/00 H04L1/18 H04L27/26 H04L5/00 H04L5/04 H04L7/00 H04W28/08 H04W36/08 H04W36/26 H04W48/12 H04W48/20 H04W76/02 H04W88/02 H04W88/08 (Advanced/Non-invention); H04B1/00 H04B7/04 H04J11/00 H04J13/02 H04L1/16 H04L27/00 H04W16/00 H04W28/02 H04W36/00 H04W48/00 H04W72/00 H04W76/00 H04W88/00 (Core/Invention); H04W (Subclass/Invention)

International (IPC 1-7): H04J13/02 H04J13/06

CPC: H04L1/1812 H04L1/1854 H04L1/1887 H04W36/22 H04W36/30 H04J13/00 H04L69/22 H04W48/08 H04L1/0079



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H04W52/0209 H04W72/0426 H04B7/0452 H04B7/0465 H04B7/0626 H04B7/0639 H04L5/0007 H04L5/0037 H04B7/0632
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US: 1/1 361/695P 370/208 370/252 370/328 370/328P 370/329 370/329P 370/330 370/330P 370/331 370/342 370/342P
370/344 375/132 375/132S 375/256 375/260 375/267 375/286 375/295 375/295P 375/316 375/316S 375/346 415/119S
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714/E11.113S

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EP2382729 A4	20170621	EP20100726845	20100105	
EP2382820 A2	20111102	EP20100726848	20100105	
EP2382839 A2	20111102	EP20100726855	20100105	
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KR20110104544 A	20110922	KR20117018254	20100105	
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US8239723 BB	20120807	US20090512253	20090730
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US9001783 BB	20150407	US20090494145	20090629
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WO10078602 A2	20100708	WO2010US20168	20100105
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Priority:

CN201080010367	20100105	EP20100726859	20100105	US20090142582P	20090105
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Probable Assignee: INTEL CORP

Assignee(s): (std): AHMADI SASSAN ; DAVDOV ALEXEI ; DAVYDOV ALEXEI ; INTEL CORP ; LI GUANGJIE ; LIN XINTIAN E ; LI QINGHUA ; LIU XIAOFENG ; MOHANTY SHANTIDEV ; KIM HONGSEOK ; SUN HONGMEI ; WANG JIACHENG ; ZHU YUAN ; ZHOU FENG ; ZHENG SHANSHAN ; YANG XIANGYING ; VENKATACHALAM MUTHAIAH ; YIN HUJUN ; XU CHANGLONG ; ZHANG SENJIE ; ZHENG HONGMING ; ZHANG YUJIAN

Assignee(s): INTEL KORPOREJSHN

Inventor(s): (std): KIM HONGSEOK ; LI GUANGJIE ; LI QINGHUA ; LI TSINKHUA ; LIN XINTIAN E ; LIU XIAOFENG ; MOHANTY SHANTIDEV ; MUTHAIAH VENKATACHALAM ; QINGHUA LI ; SASSAN AHMADI ; SENJIE ZHANG ; SHANSHAN ZHENG ; SHANTIDEV MOHANTY ; DAVDOV ALEXEI ; DAVYDOV ALEXEI ; GUANGJIE LI ; HONGMING ZHENG ; HONGSEOK KIM ; HUJUN YIN ; AHMADI SASSAN ; ALEXEI DAVYDOV ; SUN HONGMEI ; VENKATACHALAM MUTHAIAH ; WANG JIACHENG ; XIANGYING YANG ; XU CHANGLONG ; YANG XIANGYING ; YIN HUJUN ; YUJIAN ZHANG ; ZHANG SENJIE ; ZHENG HONGMING ; ZHENG SHANSHAN ; ZHOU FENG ; ZHU YUAN ; ZHANG YUJIAN ; LI GUANTSZE ; KIM HONG SEOK ; DAVYDOV ALEKSEJ VLADIMIROVICH ; CHZHEHN SHAN SHAN ; CHZHEHN KHUNMIN ; CHZHAN SEHN TSZE

Inventor(s): SUN' KHUNMEHJ ; CHZHU JAN ; IN' KHUTSZJUN' ; SJUJ CHANLUN

Agent(s): BENSON CHRISTOPHER; HGF LTD; HUFTON DAVID ALAN; LEHMANN MARIA ISABEL; RYUKA IP LAW FIRM; INTEL/BSTZ, BLAKELY SOKOLOFF TAYLOR AND ZAFMAN LLP; TROP PRUNER AND HU PC; KACVINSKY LLC, C/O CPA GLOBAL; KACVINSKY LLC C O CPA GLOBAL; INTEL C O CPA GLOBAL CORP; CARRIE A BOONE PC C O CPA GLOBAL; COOL PATENT PC; JOSEPH P; CARRIE A BOONE PC; KENNETH A; KACVINSKY DAISAK BLUNI PLLC; THORPE NORTH AND WESTERN LLP; ALPINE TECHNOLOGY LAW GROUP LLC; VINCENT LESTER J ET AL; BOONE CARRIE A ET AL; KACVINSKY JOHN ET AL; TROP TIMOTHY N ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT RO RS RU 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

11) Family number: 45901708 (US2012026935A)

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Title: METHOD FOR DETECTING HARQ/NACK FEEDBACK SIGNAL FROM REPEATER

Abstract: Source: US2012026935A [EN] Disclosed is a repeater apparatus for detecting a downlink HARQ ACK/NACK feedback signal from a base station. An RF (Radio Frequency) unit receives specific channel configuration information which includes offset information indicating the starting point of a specific channel to which said HARQ ACK/NACK feedback signal is **transmitted** from the base station and the position of the specific channel allocated for an exclusive use of said repeater apparatus within said specific channel from said start point, and receives the HARQ ACK/NACK feedback signal from said base station for an uplink **transmission** of said repeater. The processor detects said specific channel allocated for exclusive use of the repeater apparatus based on said received specific channel configuration information thereby decoding said received HARQ ACK/NACK feedback signal.

Classifications:

International (IPC 8-9): H04B7/14 H04B7/155 H04B7/26 H04H20/71

H04J11/00 H04J3/00 H04L1/00 H04L1/16 H04L1/18 H04L27/26

H04L5/00 H04W4/00 H04W4/06 H04W72/04

H04W88/08 (Advanced/Invention);

H04B1/713 H04B7/00 H04B7/14 H04J11/00 H04L1/00 H04L1/16

H04L1/18 H04W72/04 (Advanced/Non-invention);

H04B7/14 H04B7/26 H04W88/00 (Core/Invention)

CPC: H04L1/0003 H04B7/00 H04L1/0009 H04L1/1861 H04L5/0094

H04L1/1854 H04L2001/0097 H04J4/00 H04W72/0406 H04L5/0032

H04L5/0087 H04B7/15542 H04J3/00 H04L27/26 H04W84/08

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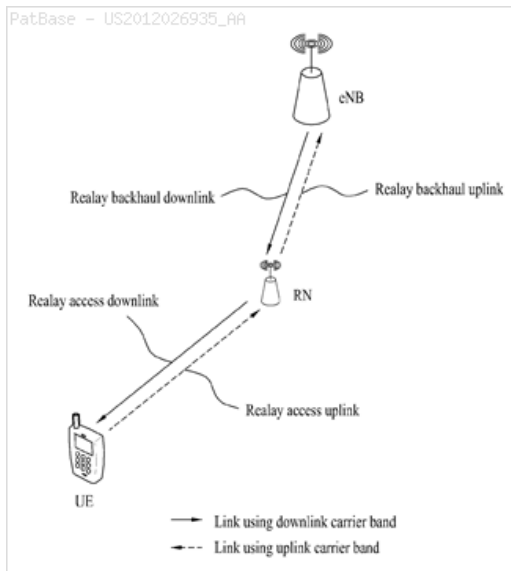
European: H04B7/155 H04B7/26B2 H04L1/00A1M H04L1/00A5

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T04B1/713 T04L1/00T11 T04L1/18R11

US: 370/312 370/312P 370/315 370/315P 370/315S 370/328

370/329 370/341

**Family:**

Publication number	Publication date	Application number	Application date
CN102265530 A	20111130	CN200980152530	20091224
CN102265530 B	20160601	CN200980152530	20091224
CN102396176 A	20120328	CN201080016991	20100419
CN102396176 B	20150715	CN201080016991	20100419
CN102484526 A	20120530	CN201080037389	20100628
CN102484526 B	20141224	CN201080037389	20100628
EP2372927 A2	20111005	EP20090835302	20091224
EP2372927 A4	20160601	EP20090835302	20091224
EP2448147 A2	20120502	EP20100792375	20100628
EP2448147 A4	20160601	EP20100792375	20100628
IN02707KN2011 A	20120113	IN2011KN02707	20110629
IN02878KN2011 A	20120127	IN2011KN02878	20110711
IN04166KN2011 A	20120706	IN2011KN04166	20111010
KR101549025 B1	20150902	KR20117013724	20091224
KR101635888 B1	20160704	KR20100061084	20100628
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KR20100115320 A	20101027	KR20100035916	20100419
KR20110000538 A	20110103	KR20100061084	20100628
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KR20110104497 A	20110922	KR20117013724	20091224
US2012026935 AA	20120202	US20100260256	20100419
US2012099518 AA	20120426	US20100380457	20100628
US2012113884 AA	20120510	US20090142266	20091224
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WO10151093 A2	20101229	WO2010KR04183	20100628
WO10151093 A3	20110331	WO2010KR04183	20100628

Priority:

KR20100035916	20100419	KR20100061084	20100628	US20080140619P	20081224
US20090148373P	20090129	US20090170109P	20090417	US20090142266	20091224
US20090186663P	20090612	US20090219383P	20090623	US20090220594P	20090626
US20090171086P	20090421	US20090222094P	20090630	US20090222901P	20090702
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WO2009KR07790	20091224	WO2010KR02426	20100419	WO2010KR04183	20100628

Probable Assignee: LG ELECTRONICS INC**Assignee(s):** (std): CHO HAN GYU ; CHO HAN KYU ; CHUNG JAE HOON ; KWON YEON HYEON ; KWON YEONG HYEON ; LG ELECTRONICS INC ; MOON SUNG HO ; PARK KYU JIN ; MOON SEONG HO**Inventor(s):** (std): HO MOON SUNG ; HOON CHUNG JAE ; HYEON KWON YEONG ; JIN PARK KYU ; PARK KYU JIN ; MOON SUNG HO ; KWON YEONG HYEON ; CHUNG JAE HOON ; CHO HAN KYU ; KWON YEON HYEON ; GYU CHO HAN ; CHO HAN GYU**Agent(s):** KATERLE AXEL; GUNZELMANN RAINER; LEE HONG DEGERMAN KANG AND WAIMEY; DENTONS US LLP; KIM YONG IN ET AL**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT RO RS RU 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

Title: METHOD AND APPARATUS FOR **TRANSMITTING** HARQ INDICATION INFORMATION

Abstract: Source: US2015305059A [EN] A method and an apparatus for **transmitting** Hybrid Automatic Repeat reQuest (HARQ) indication information are provided. The method includes **transmitting**, by a UE, uplink data on a Physical Uplink Shared CHannel (PUSCH) according to scheduling of a base station; detecting, by the UE, a new UpLink (UL) grant and enhanced Physical HARQ Indication CHannel (ePHICH) information of the base station for the uplink data according to a synchronous HARQ timing relationship, wherein ePHICH resources used for bearing the ePHICH information are **mapped** to a portion of time-frequency resources of a distributed enhanced Physical Downlink Control CHannel (ePDCCH) set; and if the UL grant is not detected, the UE retransmitting the uplink data or not **transmitting** the uplink data according to an indication of the ePHICH information.

Classifications:

International (IPC 8-9): H04J11/00 H04L1/00 H04L1/18 H04L27/26

H04L5/00 H04W72/12 H04W72/14 (Advanced/Invention)

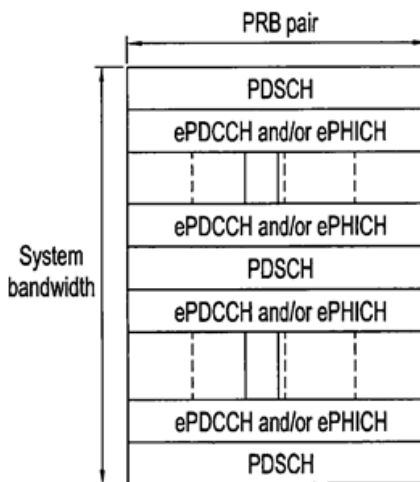
CPC: H04W72/1278 H04W72/14 H04L27/2613 H04L1/1812

H04L1/0026 H04L1/1861 H04L1/1887 H04L5/0048 H04L5/0053

H04L5/0055

US: 370/329

PatBase - US2015305059_AA



Family:

Publication number	Publication date	Application number	Application date
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US2015305059 AA	20151022	US20130439586	20131104
US9826546 BB	20171121	US20130439586	20131104
WO14069958 A1	20140508	WO2013KR09902	20131104

Priority:

CN201210432121 20121102 WO2013KR09902 20131104

Probable Assignee: SAMSUNG ELECTRONICS CO LTD

Assignee(s): (std): BEIJING SAMSUNG COMM TECH RES ; BEIJING SAMSUNG COMMUNICATION TECHNOLOGY RESEARCH INST ; SAMSUNG ELECTRONICS CO LTD

Assignee(s): BEIJING SAMSUNG COMMUNICATION TECHNOLOGY RESEARCHCO ; SAMSUNG ELECTRONICS CO

Inventor(s): (std): LI YINGYANG ; SUN CHENGJUN ; ZHENG NAIZHENG

Agent(s): NEDERLANDSCH OCTROOIBUREAU; FARRELL LAW FIRM PC; LEE KEON JOO

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 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 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

Title: METHOD AND APPARATUS FOR PERFORMING HARQ PROCESS IN WIRELESS COMMUNICATION SYSTEM

Abstract: Source: US2011211522A [EN] A method of performing hybrid automatic repeat request (HARQ) by a source station in a wireless communication system is provided. The method includes: **transmitting** data to a destination station at a **transmission** start time; receiving an acknowledgment (ACK) or negative-acknowledgement (NACK) signal for the data from the destination station after a first **transmission** time interval elapses from the **transmission** start time; and upon receiving the NACK signal, retransmitting the data after a second **transmission** time interval elapses from the **transmission** start time, wherein the second **transmission** time interval is one **transmission** time interval selected from a plurality of predetermined **transmission** time intervals. Accordingly, the wireless communication system can perform a heterogeneous HARQ process in which an HARQ period, an ACK/NACK **transmission** start time, and the like are different.

Classifications:

International (IPC 8-9): H04B7/14 H04B7/155 H04B7/26 H04J11/00

H04L1/00 H04L1/16 H04L1/18 H04L27/26 H04L5/00 H04W4/06

H04W72/04 H04W88/02 H04W88/04 (Advanced/Invention);

H04J11/00 H04L1/00 H04L1/16 H04L1/18 H04W88/02 (Advanced/Non-invention);

H04B7/14 H04L1/16 H04L27/26 (Core/Invention)

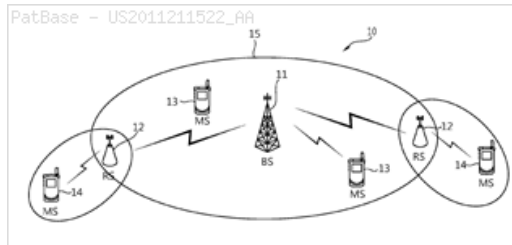
CPC: H04L1/1887 H04L1/0026 H04L1/1671 H04L1/1812 H04L1/1822

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H04B7/155 H04B7/2606 H04L5/0007 H04L5/0053 H04L5/0094

H04L27/2602 H04L27/26

European: H04B7/155 H04B7/26B2 H04L1/18H H04L1/18R11
H04L1/18T7 H04L27/26M1 H04L5/00A2A1 H04L5/00A2A11
H04L5/00C6 H04L5/00C6A H04L5/00C6B H04L5/00E2 T04L1/00A9B
T04L1/16F15 T04L1/18D
US: 370/216 370/279 370/312 370/312P 370/315 370/315P 370/328
370/328S 370/329 370/341



Family:

Publication number	Publication date	Application number	Application date
CN102342035 A	20120201	CN201080010321	20100224
CN102342035 B	20140716	CN201080010321	20100224
EP2352249 A2	20110803	EP20090823846	20091030
EP2352249 A4	20141105	EP20090823846	20091030
EP2405592 A2	20120111	EP20100748910	20100224
EP2405592 A4	20170426	EP20100748910	20100224
KR101215690 B1	20121226	KR20117007333	20091030
KR20110067025 A	20110620	KR20117007333	20091030
US2011211522 AA	20110901	US20090126918	20091030
US2011317610 AA	20111229	US20100254445	20100224
US2017104519 AA	20170413	US20160385591	20161220
US8867430 BB	20141021	US20090126918	20091030
US9553655 BB	20170124	US20100254445	20100224
WO10050766 A2	20100506	WO2009KR06319	20091030
WO10050766 A3	20100805	WO2009KR06319	20091030
WO10101366 A2	20100910	WO2010KR01144	20100224
WO10101366 A3	20101125	WO2010KR01144	20100224

Priority:

KR20100016308 20100223 US20080110546P 20081031 US20090156886P 20090303
US20090176491P 20090508 US20090233839P 20090814 US20090126918 20091030
WO2009KR06319 20091030 WO2010KR01144 20100224 US20100254445 20100224
US20110254445 20110901 US20160385591 20161220

Probable Assignee: LG ELECTRONICS INC

Assignee(s): (std): CHO HAN GYU ; CHO HANGYU ; CHUNG JAE HOON ; HAN SEUNG HEE ; KIM SO YEON ; LG ELECTRONICS INC ; KWON YEONG HYEON ; PARK KYU JIN ; PARK KYUJIN ; MOON SUNGHO ; MOON SUNG HO ; MOON SEONG HO

Inventor(s): (std): CHO HANGYU ; CHUNG JAE HOON ; HAN SEUNG HEE ; HANGYU CHO ; HOON CHUNG JAE ; HYEON KWON YEONG ; KIM SO YEON ; KWON YEONG HYEON ; KYUJIN PARK ; MOON SUNGHO ; PARK KYU JIN ; PARK KYUJIN ; SUNGHO MOON ; MOON SUNG HO ; CHO HAN GYU

Agent(s): KATERLE AXEL; GUNZELMANN RAINER; MORGAN LEWIS AND BOCKIUS LLP; LEE HONG DEGERMAN KANG WAIMEY; YANG MOON OCK

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TN TT TZ UA UG US UZ VC VN ZA ZM ZW

14) Family number: 53800189 (US2014247808A)

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Title: METHOD AND APPARATUS FOR ENHANCING SYNCHRONIZATION IN A HETEROGENEOUS NETWORK

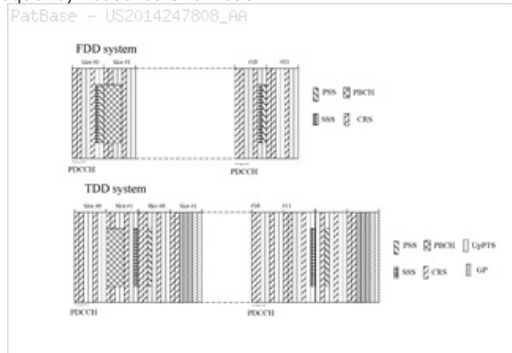
Abstract: Source: US2014247808A [EN] A method and apparatus for enhancing synchronization in a heterogeneous network, including **transmitting** an auxiliary synchronization signal by a base station in a pico cell, a **transmission** interval of the auxiliary synchronization signal being 10 ms or 5 ms, and the auxiliary synchronization signal being located in a 0th **subframe** and/or a 5th **subframe** of each **transmission** frame; and notifying by the base station to user equipment in a cell range extension (CRE) region to detect the auxiliary synchronization signal, so that the user equipment performs **symbol** synchronization and frame synchronization in accordance with the auxiliary synchronization signal in accessing to the pico cell, and high-layer signaling indication and a auxiliary synchronization signal are combined, user equipment in a CRE region of the pico cell may obtain synchronization, thereby not only ensuring compatibility but also satisfying requirements of the system performance with a relatively low time frequency resource overhead.

Classifications:

International (IPC 8-9): H04B7/26 H04J11/00 H04L27/26 H04L5/00 H04W16/32 H04W24/02 H04W36/04 H04W36/20 H04W56/00 H04W72/04 (Advanced/Invention)

CPC: H04W56/00 H04W24/02 H04W36/20 H04L5/003 H04W56/0015 H04L5/0035 H04L27/2655 H04L27/2692 H04J11/0076 H04B7/2656 H04J2211/005

US: 370/328 370/329 370/331



Family:

Publication number	Publication date	Application number	Application date
CN103891231 A	20140625	CN201180074307	20111118

EP2782306 A1	20140924	EP20110875607	20111118
EP2782306 A4	20151209	EP20110875607	20111118
JP2014533902 T2	20141215	JP20140541500T	20111118
KR20140094565 A	20140730	KR20147013788	20111118
US2014247808 AA	20140904	US20140279454	20140516
WO13071509 A1	20130523	WO2011C82393	20111118

Priority:

US20140279454 20140516 WO2011C82393 20111118 WO2011C82393 20111118

Probable Assignee: FUJITSU LTD

Assignee(s): (std): FUJITSU LTD ; LI HONGCHAO ; WANG YI ; ZHOU HUA ; ZHANG YUANTAO ; ZHANG YI

Assignee(s): FUJITSU LIMITED

Inventor(s): (std): LI HONGCHAO ; WANG YI ; ZHANG YI ; ZHANG YUANTAO ; ZHOU HUA

Agent(s): SCHULTES STEPHAN; ITOH TADAHIKO; ITOH TADASHIGE; BEIJING SANYOU INTELLECTUAL PROPERTY AGENCY LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT QA RO RS RU RW 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

15) Family number: 47904157 (US2012076063A)

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Title: SINGLE FREQUENCY MULTICAST BROADCASTING NETWORK **SUBFRAME**, METHOD AND DEVICE FOR SENDING USER DATA CHANNEL

Abstract: Source: US2012076063A [EN] The present invention discloses a multicast broadcast single frequency network **subframe**. The multicast broadcast single frequency network **subframe** is used as a physical resource of a user **transmission** data channel; in the multicast broadcast single frequency network **subframe**, except **symbols** of a physical downlink control channel, other **symbols** adopt the same cyclic prefix as **subframe** 0 in a local cell. The present invention also discloses a user data channel **transmission** method and device, and a user physical resource determining device. By using the **subframe**, the **transmission** method and device, and the determining device, the performance of the LTE-A system can be improved.

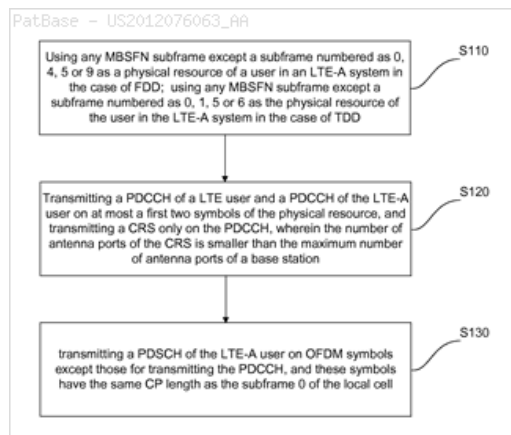
Classifications:

International (IPC 8-9): H04B7/26 H04H20/71 H04J11/00 H04L27/26 H04L5/00 H04W28/16 H04W4/06 (Advanced/Invention); H04L5/00 H04W72/00 (Advanced/Non-invention)

CPC: H04L27/2607 H04L5/0007 H04L5/003 H04L5/0035 H04W72/005 H04B7/024 H04L1/0006

European: H04L27/26M1G1 H04L5/00A2A1 H04L5/00C1B T04L5/00C T04W72/00B

US: 370/312 370/312P 370/329



Family:

Publication number	Publication date	Application number	Application date
CN101931599 A	20101229	CN200910142233	20090623
CN101931599 B	20130807	CN200910142233	20090623
EP2429140 A1	20120314	EP20090846403	20091119
EP2429140 A4	20161228	EP20090846403	20091119
JP2012529794 T2	20121122	JP20120514319T	20091119
JP5655066 B2	20150114	JP20120514319T	20091119
KR101343528 B1	20131219	KR20117029325	20091119
KR20120017445 A	20120228	KR20117029325	20091119
US2012076063 AA	20120329	US20090257858	20091119
US8842594 BB	20140923	US20090257858	20091119
WO10148604 A1	20101229	WO2009C8075035	20091119

Priority:

CN200910142233 20090623 WO2009C8075035 20091119

Probable Assignee: ZTE CORP

Assignee(s): (std): BI FENG ; JIANG JING ; SUN YUNFENG ; ZTE CORP

Inventor(s): (std): BI FENG ; FENG BI ; JIANG JING ; JING JIANG ; SUN YUNFENG ; YUNFENG SUN

Agent(s): KLING SIMONE; OPPEDAHL PATENT LAW FIRM LLC; CHINA PAT INTELLECTUAL PROPERTY OFFICE

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: APPARATUS AND METHOD FOR INDICATING SYNCHRONIZATION SIGNALS IN A WIRELESS NETWORK

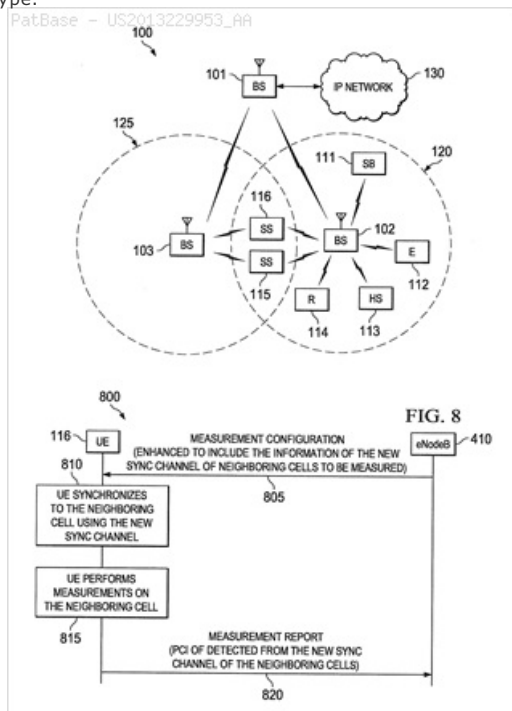
Abstract: Source: US2013229953A [EN] A base station in a heterogeneous network is configured to communicate with a plurality of base stations via a backhaul link and configured to communicate with a plurality of subscriber stations. The base station includes a **transmit** path configured to **transmit** data, **reference signals**, synchronization signals and control elements to at least one of the plurality of subscriber stations. The base station also includes processing circuitry configured to map primary synchronization signals (PSS) and secondary synchronization signals (SSS) onto each of a carrier of a first carrier type and a carrier of a second carrier type. The PSS and SSS on the second carrier type are **mapped** onto different time locations than in the first carrier type. In addition, the PSS/SSS are **mapped** onto consecutive resource elements (REs) on each of the carrier of the first type and the carrier of the second type.

Classifications:

International (IPC 8-9): H04B7/26 H04J11/00 H04L27/26 H04L5/00 H04W72/04 (Advanced/Invention)

CPC: H04W72/0426 H04L5/005 H04L5/001 H04L5/0023 H04L5/0035 H04L5/0073

US: 370/280 370/281 370/329

**Family:**

Publication number	Publication date	Application number	Application date
EP2745438 A1	20140625	EP20120824428	20120816
EP2745438 A4	20150422	EP20120824428	20120816
KR20140065398 A	20140529	KR20147004912	20120816
US2013229953 AA	20130905	US20120572183	20120810
WO13025069 A1	20130221	WO2012KR06534	20120816

Priority:

US20110524144P 20110816 US20110565874P 20111201 US20120600414P 20120217
 US20120646084P 20120511 US20120572183 20120810 WO2012KR06534 20120816

Probable Assignee: SAMSUNG ELECTRONICS CO LTD

Assignee(s): (std): NAM YOUNG HAN ; NG BOON LOONG ; SAMSUNG ELECTRONICS CO LTD ; ZHANG JIANZHONG

Assignee(s): SAMSUNG ELECTRONICS CO

Inventor(s): (std): NAM YOUNG HAN ; NG BOON LOONG ; ZHANG JIANZHONG

Agent(s): NEDERLANDSCH OCTROOIBUREAU; KWON HYUK ROK 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 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT QA RO RS RU RW 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

Title: METHOD AND APPARATUS FOR PERFORMING INTERFERENCE COORDINATION IN WIRELESS COMMUNICATION SYSTEM

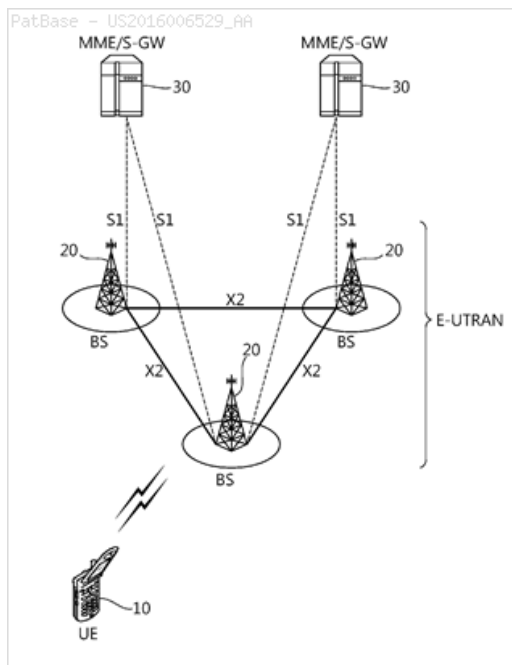
Abstract: Source: US2016006529A [EN] A method for and apparatus for performing interference coordination in a wireless communication system is provided. A wireless device may **transmit** measurement results on neighboring cells; receive information of grouping of the neighboring cells based on the measurement results; and receive a signal to be applied with a different sub-band, a **subframe** shift, or a Orthogonal frequency division multiplexing (**OFDM**) **symbol** shift according to the information of grouping from each cell of the neighboring cells.

Classifications:

International (IPC 8-9): H04B7/04 H04B7/26 H04J11/00 H04W24/02 (Advanced/Invention)

CPC: H04J11/0056 H04L5/001 H04J11/005 H04B7/0417 H04W24/02 H04L5/0044

US: 370/329



Family:

Publication number	Publication date	Application number	Application date
CN105075159 A	20151118	CN201480017500	20140324
CN105075159 B	20180410	CN201480017500	20140324
US2016006529 AA	20160107	US20140771466	20140324
WO14148875 A1	20140925	WO2014KR02448	20140324

Priority:

US20130804191P 20130322	US20130807735P 20130402	US20130809411P 20130407
US20130815242P 20130423	WO2014KR02448 20140324	US20140771466 20140324

Probable Assignee: LG ELECTRONICS INC

Assignee(s): (std): LG ELECTRONICS INC

Inventor(s): (std): AHN JOON KUI ; HWANG DAE SUNG ; KIM KI JUN ; SEO HAN BYUL ; YANG SUCK CHEL ; YI YUN JUNG ; YI YUNJUNG ; YANG SUCKCHEL ; SEO HANBYUL ; KIM KIJUN ; HWANG DAESUNG ; AHN JOONKUI

Agent(s): S AND IP PATENT AND LAW FIRM

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 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 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

18) Family number: 43838857 (US2011026627A)

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Title: METHOD OF TRANSMITTING MIDAMBLE

Abstract: Source: US2011026627A [EN] A method of transmitting a midamble for channel estimation of multiple antennas performed by a base station in a system having segregated uplink and downlink frequency bands is provided. The method includes transmitting midamble information indicating presence of the midamble within a downlink frame to a user equipment (UE), and transmitting the midamble on a single downlink subframe among at least one downlink subframe included in the downlink frame or on a common zone to the UE by using the multiple antennas. A scheduling overhead of a base station and other overheads can be reduced by decreasing the number of transmissions of a midamble on one downlink frame, and thus limited radio resources can be effectively used.

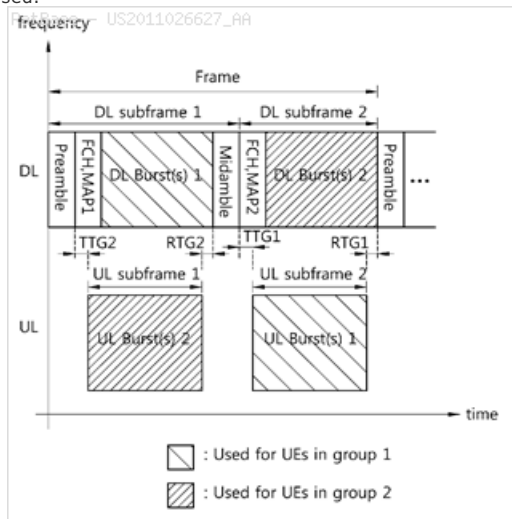
Classifications:

International (IPC 8-9): H04B7/02 H04B7/26 H04L1/02 H04L27/26 H04L27/28 H04L5/22 (Advanced/Invention); H04B7/02 H04B7/26 H04L27/26 H04L5/22 (Advanced/Non-invention); H04B7/02 H04B7/26 H04L27/26 H04L5/00 (Core/Invention)

CPC: H04L5/0007 H04L5/0023 H04L5/0048 H04L5/0092 H04L5/14 H04B7/0404 H04L27/2601

European: H04L5/00A2A1 H04L5/00C5 H04L5/00E1 H04L5/14 T04L5/00A3C

US: 375/260 375/260P 375/267



Family:

Publication number	Publication date	Application number	Application date
KR101449031 B1	20141013	KR20080032937	20080410
KR20090107592 A	20091014	KR20080032937	20080410
US2011026627 AA	20110203	US20090936394	20090403
US8428172 BB	20130423	US20090936394	20090403
WO09125946 A2	20091015	WO2009KR01732	20090403
WO09125946 A3	20091230	WO2009KR01732	20090403

Priority:

KR20080032937 20080410 WO2009KR01732 20090403

Probable Assignee: LG ELECTRONICS INC

Assignee(s): (std): CHUN JIN YOUNG ; IHM BIN CHUL ; KO HYUN SOO ; LEE MOON IL ; LEE WOOK BONG ; LG ELECTRONICS INC

Inventor(s): (std): LEE WOOK BONG ; IHM BIN CHUL ; CHUN JIN YOUNG ; LEE MOON IL ; KO HYUN SOO

Agent(s): LEE HONG DEGERMAN KANG AND WAIMEY; YANG MOON OCK

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW