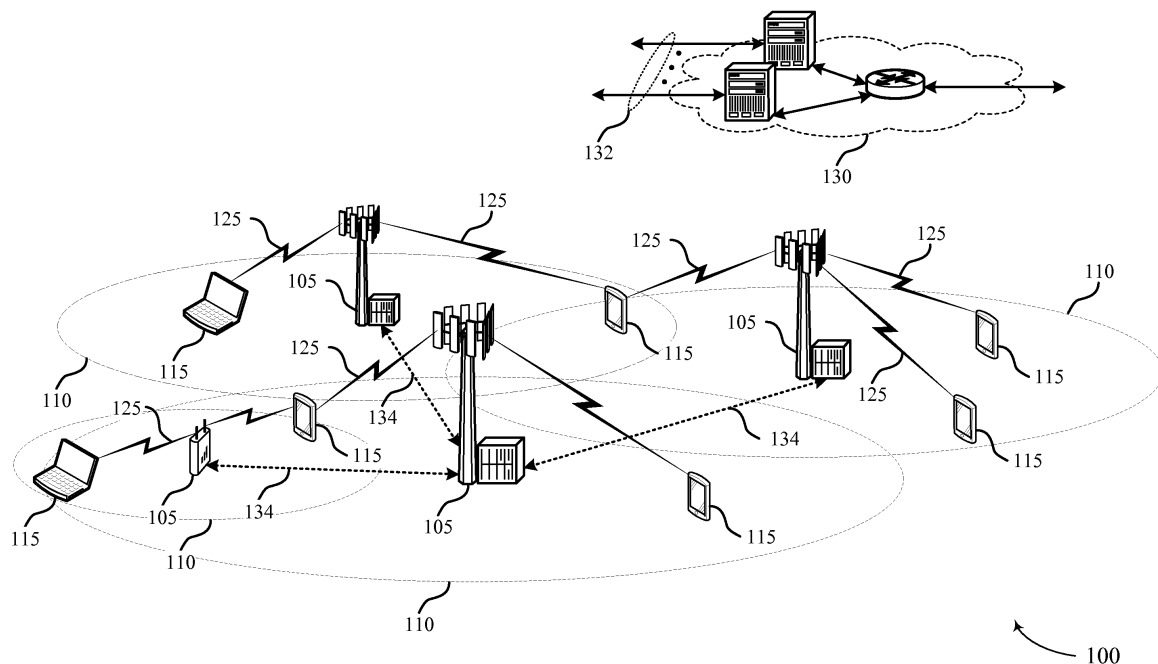


25 Documents

Publication numbers	Title	Current assignees
CA2962104 A1	Flexible multiplexing and feedback for variable transmission time intervals	QUALCOMM
IN201727009529 A	Flexible multiplexing and feedback for variable transmission time intervals	QUALCOMM
US20160205679 A1	Control information feedback for ecc on pcell	QUALCOMM
US20160226650 A1	Low latency in time division duplexing	QUALCOMM
WO2017197218 A1	Multiple transmission time interval coexistence	QUALCOMM
US20160234857 A1	Parallel low latency awareness	QUALCOMM
US20160128095 A1	Variable length transmission time intervals (tti)	QUALCOMM
US20160113008 A1	Transmission preemption control for enhanced component carriers	QUALCOMM
US20160255594 A1	Power control and power headroom for component carrier	QUALCOMM
US20150085720 A1	Reduced delay harq process timeline for fdd-tdd carrier aggregation	QUALCOMM
US20150085718 A1	Simplified fdd-tdd carrier aggregation	QUALCOMM
US20160270109 A1	Low latency uplink acknowledgement channel waveform design	QUALCOMM
US20160036581 A1	Techniques for indicating a frame format for transmissions using unlicensed radio frequency spectrum bands	QUALCOMM
US20160233999 A1	Efficient ack/nack transmission	QUALCOMM
WO2014110692 A1	Hybrid reconfiguration methods and apparatus for tdd adaptation	QUALCOMM
WO2014179979 A1	SIGNALING OF ENHANCED POWER CONTROL FOR eIMTA INTERFERENCE MITIGATION	QUALCOMM
WO2016195862 A1	Low latency under time division duplex and flexible frequency division duplex	QUALCOMM
US20160134405 A1	Reducing processing time for low latency transmission and reception	QUALCOMM
WO2017184426 A1	Techniques for acknowledgment of transmissions in a wireless communication system	QUALCOMM
US20170048886 A1	Reiterated downlink grant design for multiple transmission time interval grant support in ecc	QUALCOMM
US20160128028 A1	Two-stage pdcch with dci flag and dci format size indicator	QUALCOMM
US20160119920 A1	Dynamic uplink/downlink frame structure for enhanced component carriers	QUALCOMM
WO2014180318 A1	DUAL THRESHOLD BASED CELL CLUSTERING INTERFERENCE MITIGATION FOR eIMTA	QUALCOMM

Publication numbers	Title	Current assignees
US20180132244 A1	Techniques and apparatuses for configuring a common uplink portion in new radio	QUALCOMM
CA2842702 A1	Allocating physical hybrid arq indicator channel (PHICH) resources	QUALCOMM

Images



CA2962104	A1	2016-04-28	CA2962104
US20160119948	A1	2016-04-28	US20160119948
WO2016064544	A1	2016-04-28	WO201664544
AU2015337025	A1	2017-03-30	AU2015337025
IL251018	A	2017-04-30	IL-251018
SG11201701984U	A	2017-05-30	SG11201701984U
BR112017008260	A1	2017-05-30	BR112017008260
KR20170074884	A	2017-06-30	KR20170074884
VN53166	A	2017-07-25	VN-53166
MX2017005233	A	2017-07-26	MX2017005233
PH12017500514	A1	2017-08-07	PH12017500514
CN107078881	A	2017-08-18	CN107078881
EP3210330	A1	2017-08-30	EP3210330
JP2017533653	A	2017-11-09	JP2017533653
BR112017008260	A2	2017-12-26	BR112017008260
CL2017000963	A1	2017-12-29	CL0963201700



Methods, systems, and devices for wireless communication are described. A base station may employ a multiplexing configuration based on latency and efficiency considerations. The base station may transmit a resource grant, a signal indicating the length of a downlink (DL) transmission time interval (TTI), and a signal indicating the length of a subsequent uplink (UL) TTI to one or more user equipment (UEs). The base station may dynamically select a new multiplexing configuration by, for example, setting the length of an UL TTI to zero or assigning multiple UEs resources in the same DL TTI. Latency may also be reduced by employing block feedback, such as block hybrid automatic repeat request (HARQ) feedback. A UE may determine and transmit HARQ feedback for each transport block (TB) of a set of TBs, which may be

based on a time duration of a downlink TTI.

Inventors

DAMNJANOVIC JELENA

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Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-04-28

2016-04-28

2016-04-28

2017-03-30

2017-04-30

2017-05-30

2017-05-30

2017-06-30

2017-07-25

2017-07-26

2017-08-07

2017-08-18

2017-08-30

2017-11-09

2017-12-26

2017-12-29

Family 2/25 - FAMPAT - ©Questel

Title

(IN201727009529)

Flexible multiplexing and feedback for variable transmission time intervals

Publication data including kind & date

[IN201727009529](#) A 2017-05-05 IN201727009529



Abstract

(IN201727009529)

Methods systems and devices for wireless communication are described. A base station may employ a multiplexing configuration based on latency and efficiency considerations. The base station may transmit a resource grant a signal indicating the length of a downlink (DL) transmission time interval (TTI) and a signal indicating the length of a subsequent uplink (UL) TTI to one or more user equipment (UEs). The base station may dynamically select a new multiplexing configuration by for example setting the length of an UL TTI to zero or assigning multiple UEs resources in the same DL TTI. Latency may also be reduced by employing block feedback such as block hybrid automatic repeat request (HARQ) feedback. A UE may determine and transmit HARQ feedback for each transport block (TB) of a set of TBs which may be based on a time duration of a downlink TTI.

Inventors

Jelena DAMNJANOVIC

Taesang YOO

Siddhartha MALLIK

Aleksandar DAMNJANOVIC

Arumugam CHENDAMARAI KANNAN

Srinivasan VAJAPEYAM Madhavan

DurgaPrasad MALLADI

Yongbin WEI

Tao LUO

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

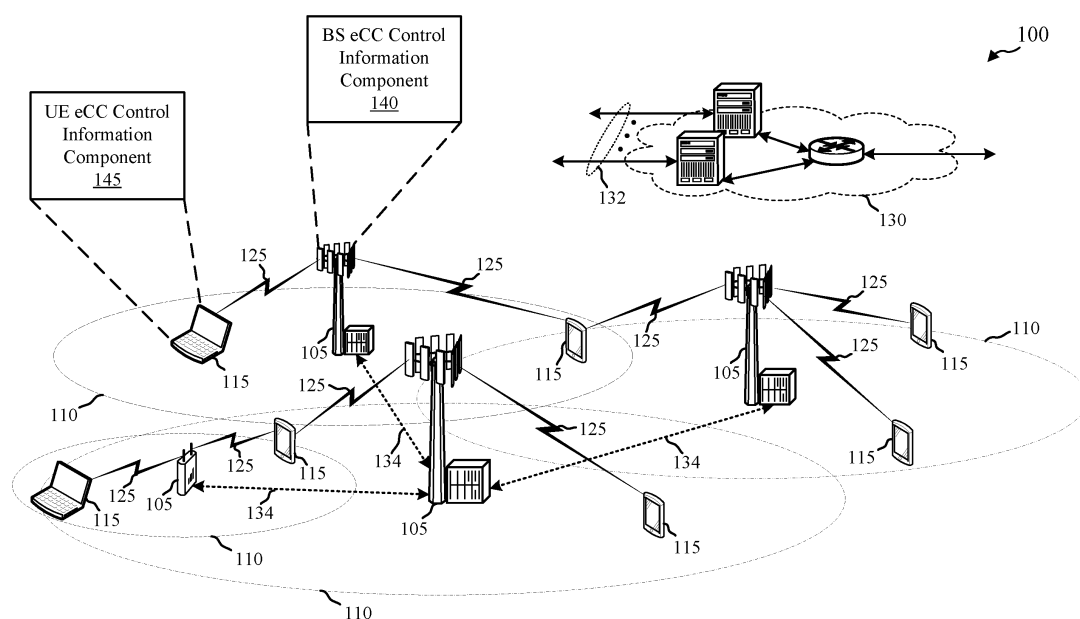
2017-05-05

Family 3/25 - FAMPAT - ©Questel

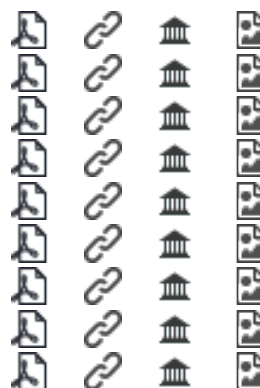
Title

(EP3245750)

Control information feedback for ecc on pcell

Images**Publication data including kind & date**

US20160205679	A1	2016-07-14	US20160205679
WO2016114938	A1	2016-07-21	WO2016114938
IN201747018396	A	2017-06-02	IN201747018396
KR20170103798	A	2017-09-13	KR20170103798
BR112017014939	A1	2017-09-19	BR112017014939
CN107210867	A	2017-09-26	CN107210867
EP3245750	A1	2017-11-22	EP3245750
JP2018505601	A	2018-02-22	JP2018505601
BR112017014939	A2	2018-03-13	BR112017014939

**Abstract**

(EP3245750)

Described herein are methods, systems, and apparatus for communicating control information over a primary component

carrier (PCell). In one example, a method for wireless communication is described that includes communicating using an enhanced component carrier (eCC) on at least a secondary component carrier (SCell) in a carrier aggregation (CA) configuration. The method may also include using a PCell for control information pertaining to communications on the eCC. The control information may be channel state information (CSI) or acknowledgment/negative-acknowledgment (ACK/NACK) feedback information.

Inventors

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QUALCOMM

Publication dates

2016-07-14

2016-07-21

2017-06-02

2017-09-13

2017-09-19

2017-09-26

2017-11-22

2018-02-22

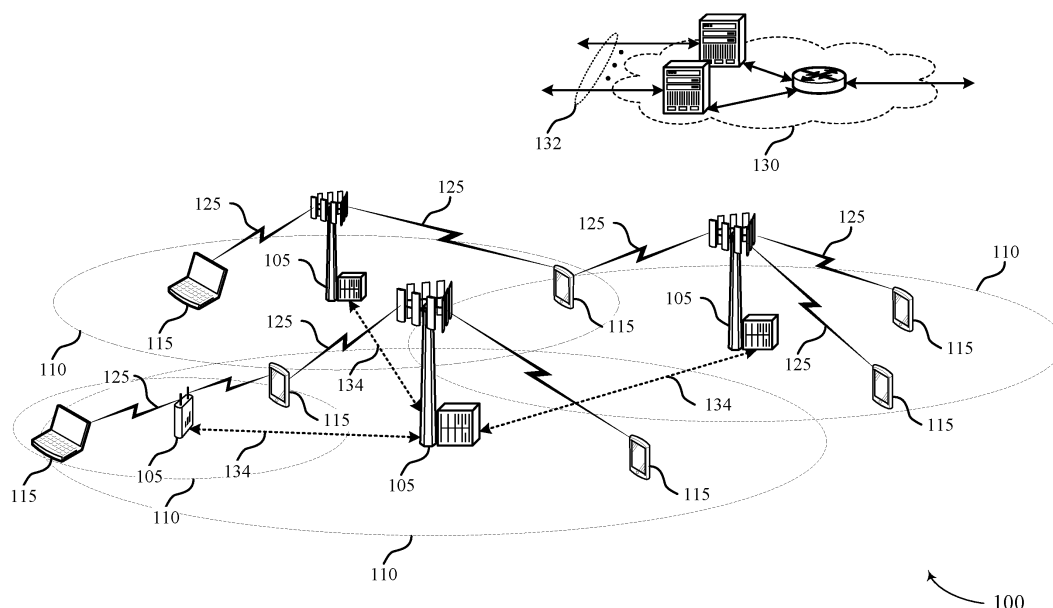
2018-03-13

Family 4/25 - FAMPAT - ©Questel

Title

(EP3251275)

Low latency in time division duplexing

Images**Publication data including kind & date**[US20160226650](#)

A1 2016-08-04

US20160226650



WO2016122845	A1	2016-08-04	WO2016122845				
TW201631925	A	2016-09-01	TW201631925				
BR112017016329	A1	2017-08-08	BR112017016329				
CN107210891	A	2017-09-26	CN107210891				
KR20170110599	A	2017-10-11	KR20170110599				
IN201727021669	A	2017-12-01	IN201727021669				
EP3251275	A1	2017-12-06	EP3251275				
BR112017016329	A2	2018-04-03	BR112017016329				
JP2018510534	A	2018-04-12	JP2018510534				
US10110363	B2	2018-10-23	US10110363				

Abstract

(EP3251275)

Methods, systems, and devices for wireless communication are described. A wireless system utilizing one or more time-division duplexing (TDD) configured carriers may utilize a dual transmission time interval (TTI) structure (e.g., at the subframe level and symbol-level). The symbol level TTIs may be referred to as low latency (LL) TTIs, and may be organized within LL subframes. A LL subframe may be a subframe that is scheduled for transmissions in one direction (e.g., uplink or downlink, according to a TDD configuration) and may include multiple LL symbols scheduled for both uplink (UL) and downlink (DL) transmissions. Guard periods may be scheduled between adjacent LL symbols that have opposite directions of transmission to enable user equipment (UEs) to transition from receiving mode to transmit mode (or vice versa). The LL subframes may be transparent to receiving devices that do not support LL operations.

Inventors

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LUO TAO

WANG MICHAEL MAO

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-08-04

2016-08-04

2016-09-01

2017-08-08

2017-09-26

2017-10-11

2017-12-01

2017-12-06

2018-04-03

2018-04-12

2018-10-23

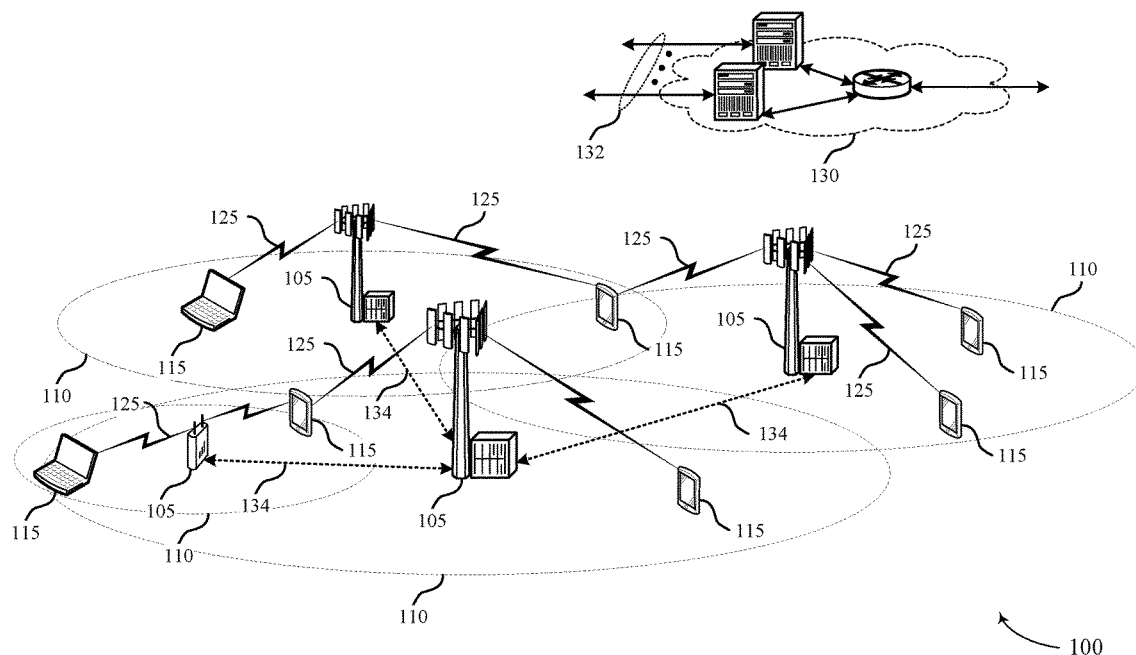
Family 5/25 - FAMPAT - ©Questel

Title

(WO2017197218)

Multiple transmission time interval coexistence

Images



Publication data including kind & date

CA3019960	A1	2017-11-16	CA3019960
US20170332401	A1	2017-11-16	US20170332401
WO2017197218	A1	2017-11-16	WO2017197218



Abstract

(WO2017197218)

Methods, systems, and devices for wireless communication are described. Different transmission time interval (TTI) durations may be supported and configured to coexist with one another. A set of TTIs with a relatively short duration may overlap in time with longer duration TTIs. Boundaries of TTIs with a relatively short duration may be configured to align with boundaries of relatively longer duration TTIs. For example, TTIs that are a Long Term Evolution (LTE) subframe, an LTE slot, and a duration of two LTE symbol periods may be supported. Two-symbol period TTIs may align with or be embedded within slot-duration TTIs, which, in turn, may align with or be embedded within a subframe. In some examples, one or more symbol periods of a subframe may be designated as a gap between two-symbol TTIs within the subframe, or such symbols may be merged with a two-symbol TTI within the subframe.

Inventors

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Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2017-11-16

2017-11-16

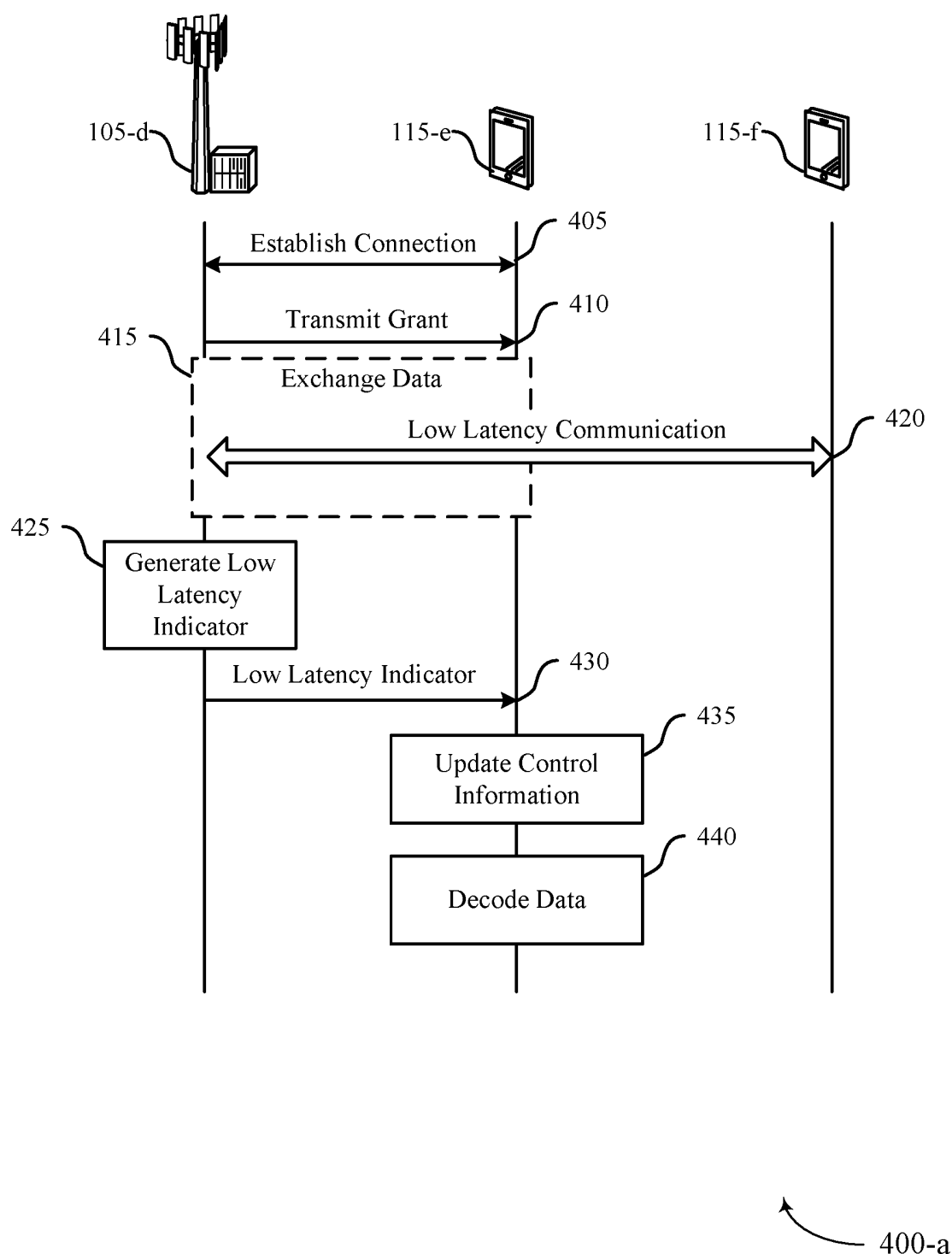
2017-11-16

Family 6/25 - FAMPAT - ©Questel

Title

(EP3254400)

Parallel low latency awareness

Images**Publication data including kind & date**

US20160234857	A1	2016-08-11	US20160234857
WO2016126398	A1	2016-08-11	WO2016126398
IN201747021939	A	2017-07-07	IN201747021939
BR112017016844	A1	2017-08-29	BR112017016844
CN107210902	A	2017-09-26	CN107210902
KR20170113567	A	2017-10-12	KR20170113567



EP3254400	A1	2017-12-13	EP3254400				
BR112017016844	A2	2018-03-27	BR112017016844				
JP2018511203	A	2018-04-19	JP2018511203				
US10104683	B2	2018-10-16	US10104683				

Abstract

(EP3254400)

Methods, systems, and devices for wireless communication are described. A receiving device may detect a signal associated with low latency transmissions and decode a non-low latency communication accordingly. The receiving device may receive an indicator from a transmitting device that indicates where and when low latency communications occur. The indication may specify frequency resources or symbols used by the low latency communication. The indicator may be transmitted during the same subframe as the low latency communication, at the end of a subframe, or during a subsequent subframe. The receiving device may use the indicator to mitigate low latency interference, generate channel estimates, and reliably decode the non-low latency communication. In some cases, the interfering low latency communication may occur within the serving cell of the receiving device; or the interfering low latency communication may occur in a neighboring cell.

Inventors

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Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-08-11

2016-08-11

2017-07-07

2017-08-29

2017-09-26

2017-10-12

2017-12-13

2018-03-27

2018-04-19

2018-10-16

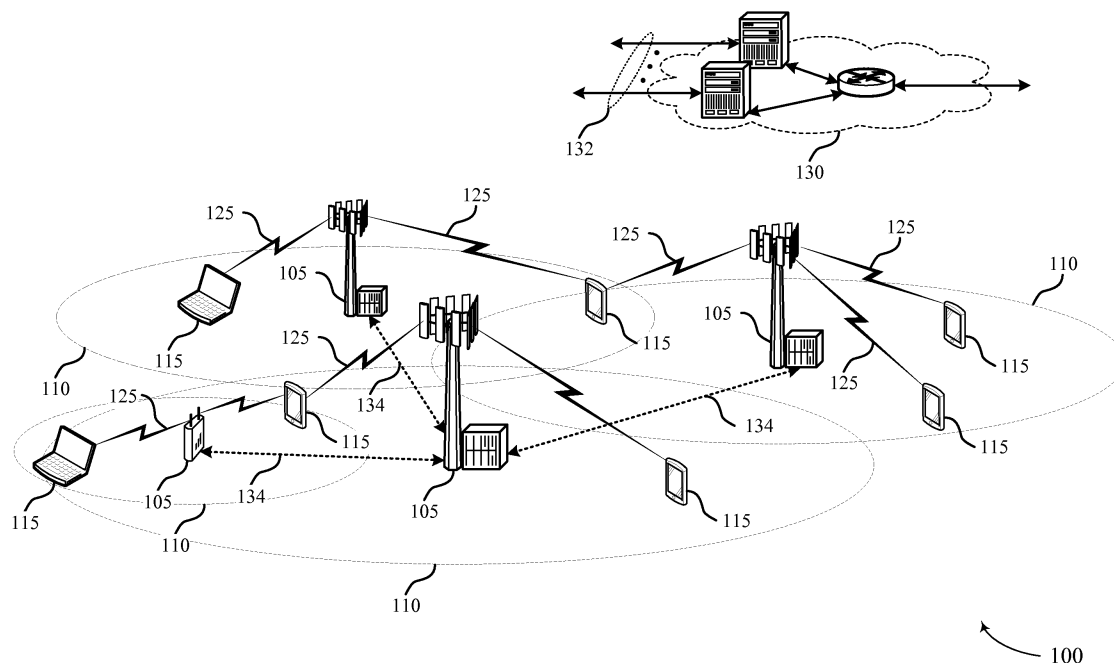
Family 7/25 - FAMPAT - ©Questel

Title

(EP3213573)

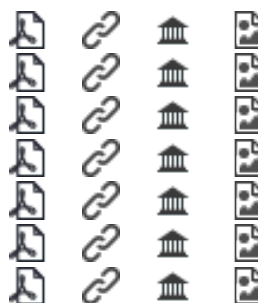
Variable length transmission time intervals (tti)

Images



Publication data including kind & date

US20160128095	A1	2016-05-05	US20160128095
WO2016069141	A1	2016-05-06	WO201669141
IN201727009958	A	2017-05-26	IN201727009958
KR20170077134	A	2017-07-05	KR20170077134
CN107113831	A	2017-08-29	CN107113831
EP3213573	A1	2017-09-06	EP3213573
JP2017537523	A	2017-12-14	JP2017537523



Abstract

(EP3213573)

Methods, systems, and apparatuses for enabling and utilizing variable length transmission time intervals (TTI) are described. Latency for communications between base stations and user equipment (UEs) may be reduced by flexibly and dynamically adapting to data traffic needs. TTI for a given UE may be dynamically adjusted according to UE or system requirements and the configuration of uplink and downlink TTI. A base station may utilize dynamic grants to schedule resources within a system. A UE may receive a grant in a first portion of a variable TTI. The UE may determine a duration of the variable TTI based on the grant, and the UE may communicate accordingly. The UE may receive a subsequent grant in the variable TTI— either in the first portion or another portion— and may respond or alter its operation accordingly.

Inventors

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VAJAPEYAM MADHAVAN SRINIVASAN

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-05-05

2016-05-06

2017-05-26

2017-07-05

2017-08-29

2017-09-06

2017-12-14

DAMNJANOVIC ALEKSANDAR

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Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-04-21

2016-04-21

2017-03-30

2017-04-25

2017-06-16

2017-06-20

2017-08-18

2017-08-23

2017-11-24

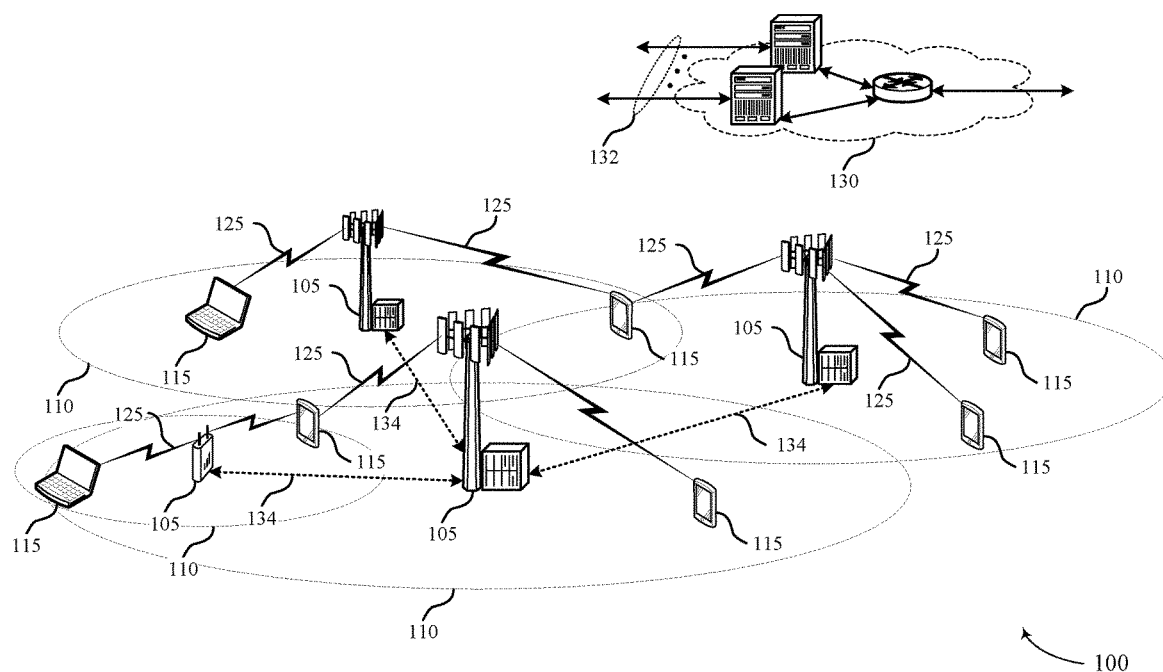
2017-12-19

Family 9/25 - FAMPAT - ©Questel

Title

(EP3262873)

Power control and power headroom for component carrier

Images**Publication data including kind & date**

US20160255594	A1	2016-09-01	US20160255594
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WO2016137816	A2	2016-09-01	WO2016137816
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TW201635826	A	2016-10-01	TW201635826
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WO2016137816	A3	2016-10-20	WO2016137816
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US9749970			
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	B2	2017-08-29	US9749970				
BR112017018353	A1	2017-09-05	BR112017018353				
CN107251619	A	2017-10-13	CN107251619				
KR20170118761	A	2017-10-25	KR20170118761				
IN201727023718	A	2017-11-10	IN201727023718				
EP3262873	A2	2018-01-03	EP3262873				
TWI620457	B	2018-04-01	TWI620457				
BR112017018353	A2	2018-04-17	BR112017018353				
JP2018511984	A	2018-04-26	JP2018511984				
JP6328858	B2	2018-05-23	JP6328858				
KR101899406	B1	2018-09-18	KR101899406				
CN107251619	B	2018-09-25	CN107251619B				

Abstract

(EP3262873)

Methods, systems, and devices for wireless communication are described. A user equipment (UE) may coordinate power utilization across component carriers (CCs) with different transmission time interval (TTI) configurations. For example, the UE may reserve a portion of the transmit power for a CC with a reduced TTI length (e.g., an enhanced CC (eCC)). In other examples, the UE may dynamically allocate power between CCs with overlapping uplink periods. That is, the UE may borrow power allocated to one CC to transmit on an eCC. The UE may use a prioritization scheme to determine the transmit power for each CC. In some cases, the UE may send a power headroom report based on the power level of the eCC. The power headroom may be a virtual power headroom based on predicted eCC transmission power, or an actual power headroom based on uplink scheduling.

Inventors

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GAAL PETER

CHEN WANSHI

YOO TAESANG

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-09-01

2016-09-01

2016-10-01

2016-10-20

2017-08-29

2017-09-05

2017-10-13

2017-10-25

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2018-01-03

2018-04-01

2018-04-17

2018-04-26

2018-05-23

2018-09-18

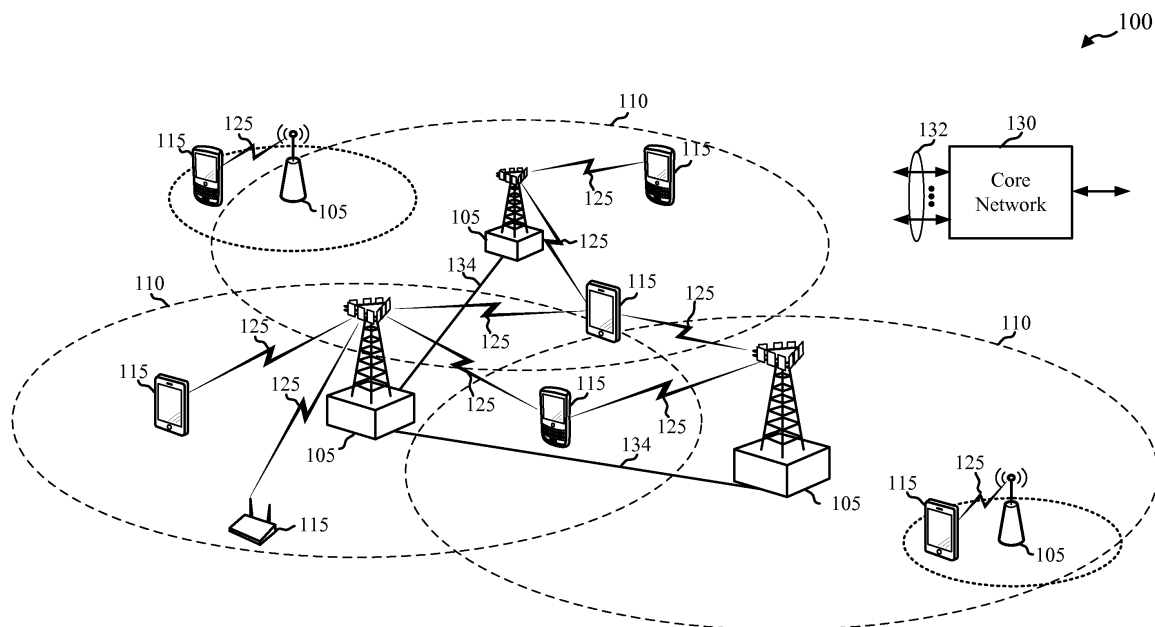
2018-09-25

Family 10/25 - FAMPAT - ©Questel

Title

(EP3050240)

Reduced delay harq process timeline for fdd-tdd carrier aggregation

Images**Publication data including kind & date**

US20150085720	A1	2015-03-26	US20150085720
WO2015048404	A1	2015-04-02	WO201548404
BR112016006592	A1	2016-04-05	BR112016006592
CN105580304	A	2016-05-11	CN105580304
KR20160064153	A	2016-06-07	KR20160064153
EP3050240	A1	2016-08-03	EP3050240
IN201647005365	A	2016-08-31	IN201647005365
JP2016533653	A	2016-10-27	JP2016533653
BR112016006592	A2	2017-08-01	BR112016006592

**Abstract**

(EP3050240)

Methods, systems, and devices for multi-carrier scheduling in wireless communications networks. The described techniques may be employed to minimize hybrid automatic repeat requests (HARQ) delay in a wireless communications network utilizing one or more TDD component carriers and one or more FDD component carriers. Scheduling of TDD uplink (UL) and downlink (DL) may be determined based on an FDD component carrier. A number of HARQ processes may be determined for a TDD component carrier based on DL/UL configuration of the TDD component carrier. Scheduling may include overwriting certain HARQ transfers. The described techniques may apply to any TDD DL/UL configuration.

Inventors

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Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2015-03-26

2015-04-02

2016-04-05

2016-05-11

2016-06-07

2016-08-03

2016-08-31

2016-10-27

2017-08-01

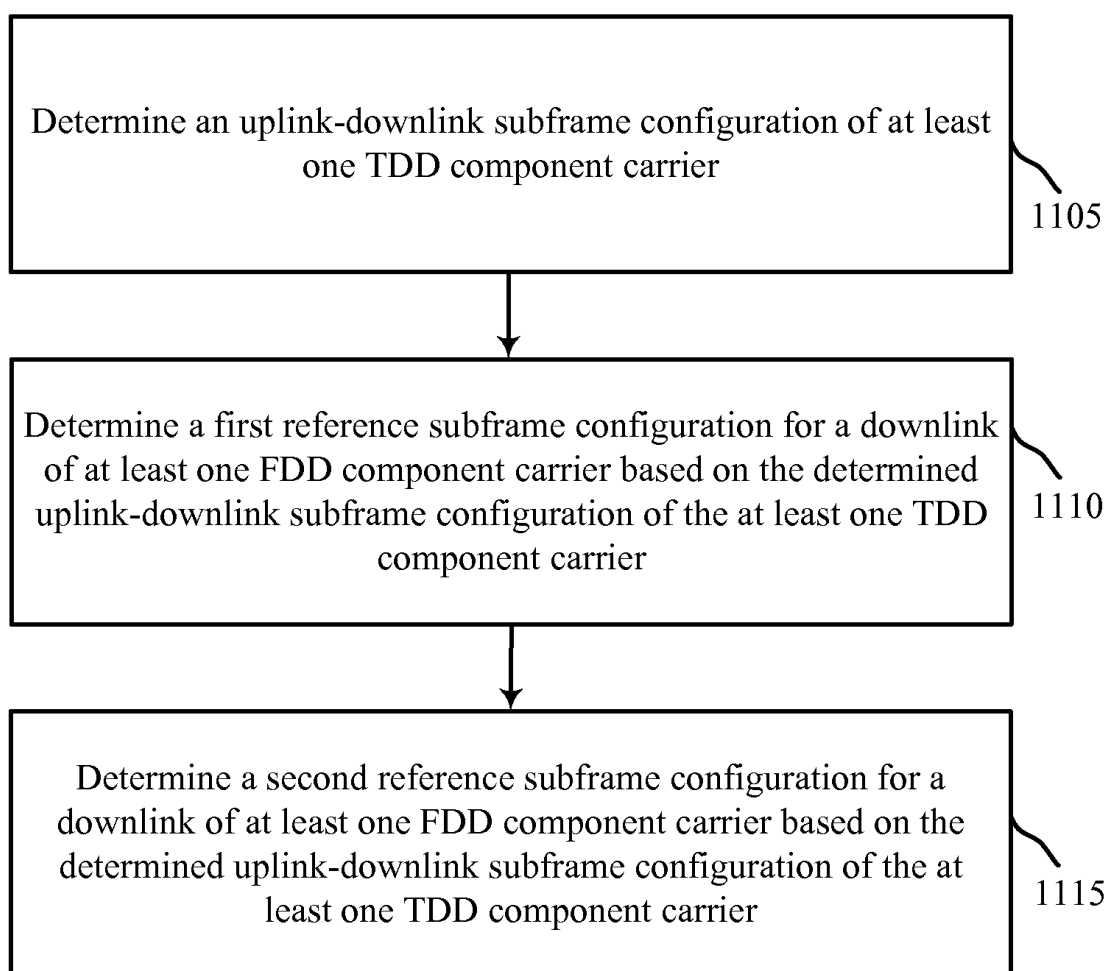
Family 11/25 - FAMPAT - ©Questel

Title

(EP3050224)

Simplified fdd-tdd carrier aggregation

Images

1100
**Publication data including kind & date**

US20150085718	A1	2015-03-26	US20150085718
CA2922189	A1	2015-04-02	CA2922189
WO2015048262	A1	2015-04-02	WO201548262
BR112016006571	A1	2016-05-10	BR112016006571
CN105580293	A	2016-05-11	CN105580293
KR20160064152	A	2016-06-07	KR20160064152



IN201627005493	A	2016-07-22	IN201627005493				
EP3050224	A1	2016-08-03	EP3050224				
JP2016536829	A	2016-11-24	JP2016536829				
US9584284	B2	2017-02-28	US9584284				
BR112016006571	A2	2017-08-01	BR112016006571				
JP6208337	B2	2017-10-04	JP6208337				
KR101802852	B1	2017-11-29	KR101802852				
CA2922189	C	2018-06-19	CA2922189				

Abstract

(EP3050224)

Methods, systems, and devices are described for multi-carrier communications involving one or more TDD component carriers and one or more FDD component carriers in a wireless communications network. Some described embodiments are directed to systems and methods for multi-carrier communications for a half-duplex device. The described methods, systems, and devices may simplify multi-carrier communications, such as the determination of hybrid automatic repeat request (HARQ) and/or scheduling timing with FDD + TDD carrier aggregation.

Inventors

CHEN WANSI

GAAL PETER

DAMNJANOVIC JELENA

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2015-03-26

2015-04-02

2015-04-02

2016-05-10

2016-05-11

2016-06-07

2016-07-22

2016-08-03

2016-11-24

2017-02-28

2017-08-01

2017-10-04

2017-11-29

2018-06-19

Family 12/25 - FAMPAT - ©Questel

Title

(EP3269063)

Low latency uplink acknowledgement channel waveform design

Images

	A	2017-11-17	IN201727027715				
KR20170126905	A	2017-11-20	KR20170126905				
CN107431582	A	2017-12-01	CN107431582				
EP3269063	A1	2018-01-17	EP3269063				
US9955497	B2	2018-04-24	US9955497				
BR112017019548	A2	2018-05-02	BR112017019548				
JP2018513593	A	2018-05-24	JP2018513593				

Abstract

(EP3269063)

Method, systems, and devices are described for low latency, robust acknowledgement reporting in a wireless communication system. A receiving device may receive a transmission in the transmission time interval (TTI), the transmission may include one or a plurality of symbols. The receiving device may identify an uplink acknowledgement channel configuration based on the format of the TTI. The receiving device may send an acknowledgement message to the sending device on the uplink acknowledgement channel according to the uplink acknowledgement channel configuration.

Inventors

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SMEE JOHN EDWARD

GAAL PETER

ZENG WEI

Latest standardized assignees - inventors removed

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Publication dates

2016-09-15

2016-09-22

2017-08-24

2017-09-26

2017-11-17

2017-11-20

2017-12-01

2018-01-17

2018-04-24

2018-05-02

2018-05-24

Family 13/25 - FAMPAT - ©Questel

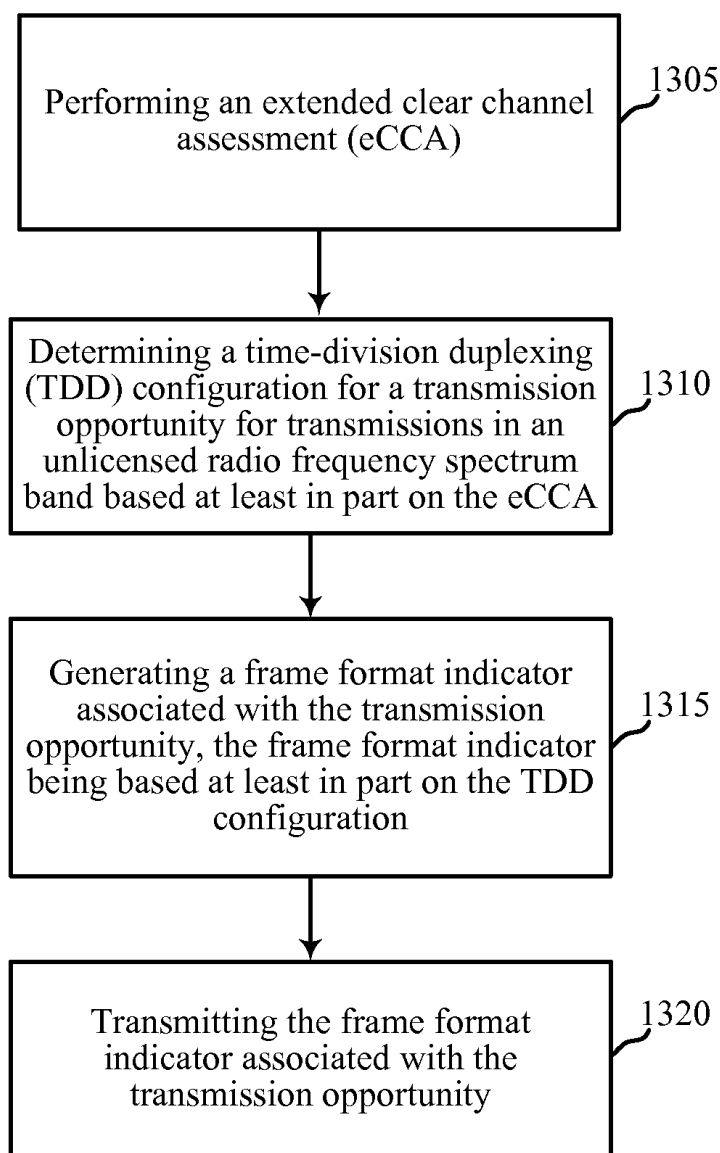
Title

(EP3178283)

Techniques for indicating a frame format for transmissions using unlicensed radio frequency spectrum bands

Images

1300

**Publication data including kind & date**

US20160036581	A1	2016-02-04	US20160036581
WO2016022303	A1	2016-02-11	WO201622303
US9509486	B2	2016-11-29	US9509486
AU2015298597	A1	2017-02-02	AU2015298597
BR112017002123	A1	2017-02-21	BR112017002123
KR20170039667	A	2017-04-11	KR20170039667
CN106576365	A	2017-04-19	CN106576365
IN201647044420	A	2017-05-05	IN201647044420
EP3178283	A1	2017-06-14	EP3178283



[JP2017531349](#)

A 2017-10-19 JP2017531349

[BR112017002123](#)

A2 2017-11-21 BR112017002123

**Abstract**

(EP3178283)

The present disclosure, for example, relates to one or more techniques for indicating a frame format for transmissions using unlicensed radio frequency spectrum bands. A UE may receive, from a base station, a frame format indicator associated with a transmission opportunity for transmissions in an unlicensed radio frequency spectrum band. The UE may determine a time-division duplexing (TDD) configuration for the transmission opportunity based at least in part on the frame format indicator.

Inventors

YERRAMALLI SRINIVAS

LUO TAO

CHEN WANSI

ZHANG XIAOXIA

MALLADI DURGA PRASAD

WEI YONGBIN

GAAL PETER

DAMNJANOVIC ALEKSANDAR

XU HAO

PATEL SHIMMAN ARVIND

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-02-04

2016-02-11

2016-11-29

2017-02-02

2017-02-21

2017-04-11

2017-04-19

2017-05-05

2017-06-14

2017-10-19

2017-11-21

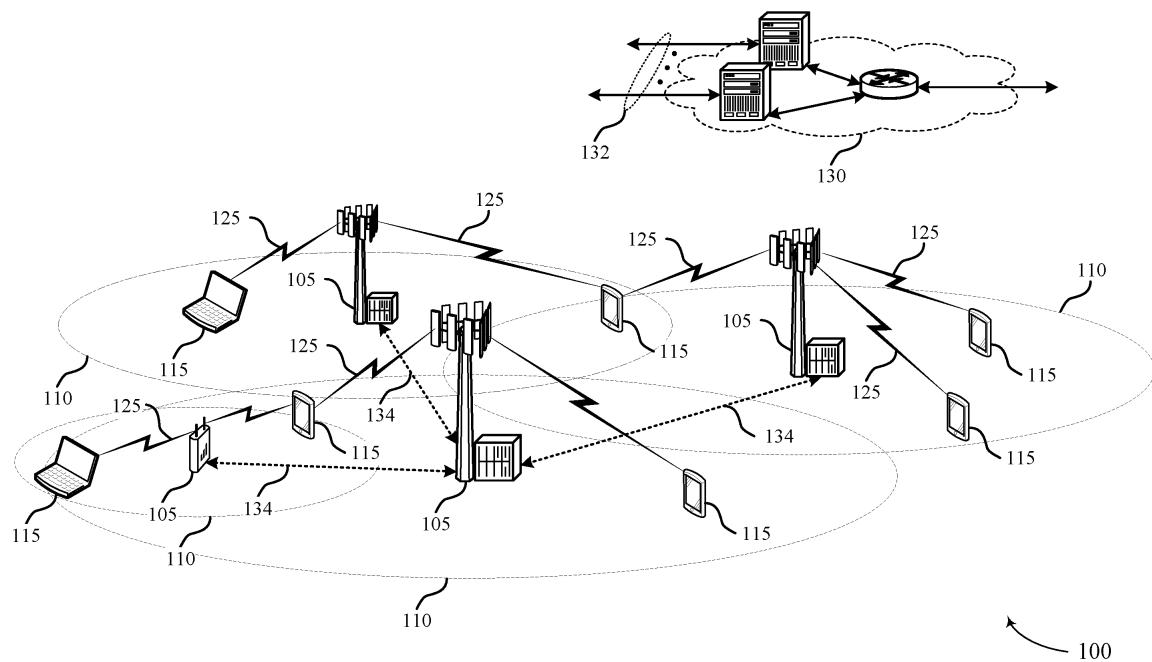
Family 14/25 - FAMPAT - ©Questel

Title

(EP3254392)

Efficient ack/nack transmission

Images



Publication data including kind & date

US20160233999	A1	2016-08-11	US20160233999
WO2016126653	A1	2016-08-11	WO2016126653
TW201635748	A	2016-10-01	TW201635748
IN201747021937	A	2017-07-07	IN201747021937
BR112017016848	A1	2017-08-15	BR112017016848
CN107210866	A	2017-09-26	CN107210866
KR20170115049	A	2017-10-16	KR20170115049
EP3254392	A1	2017-12-13	EP3254392
BR112017016848	A2	2018-03-27	BR112017016848
JP2018509814	A	2018-04-05	JP2018509814



Abstract

(EP3254392)

Methods, systems, and devices are described for wireless communication. Wireless devices may exchange data using Medium Access Control (MAC) layer units known as transport blocks which may include a number of code blocks (CBs). A receiving device may attempt to decode each CB and send acknowledgement (ACK) and negative-acknowledgment (NACK) feedback to the transmitting device based on the whether each CB was successfully decoded. The receiving device may determine a format from two or more available formats for transmitting the ACK/NACK feedback. The format for the ACK/NACK feedback may be determined based at least in part on a number of CBs received and a number of CBs that have a NACK feedback. ACK/NACK feedback may be provided on an individual CB basis, or for bundles of CBs. The transmitting device may perform blind decoding of the received feedback to determine the ACK/NACK format and CBs that have NACK feedback.

Inventors

CHENDAMARAI KANNAN ARUMUGAM
 YOO TAESANG
 MALLIK SIDDHARTHA
 DAMNJANOVIC JELENA

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-08-11

2016-08-11

2016-10-01

2017-07-07

2017-08-15

2017-09-26

2017-10-16

2017-12-13

2018-03-27

2018-04-05

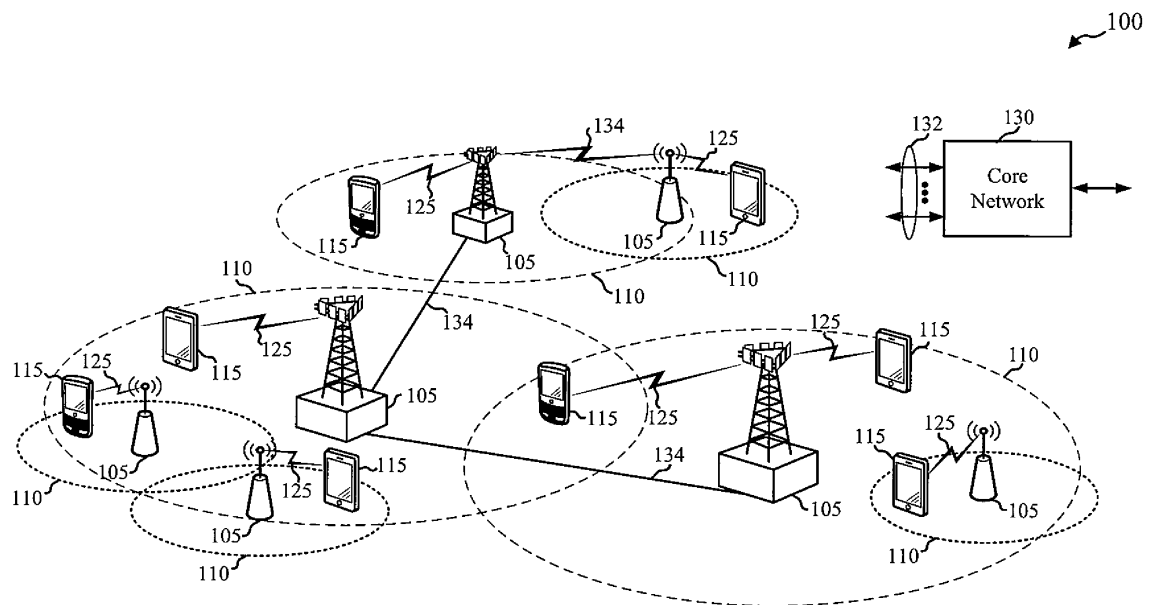
Family 15/25 - FAMPAT - ©Questel

Title

(EP2946627)

Hybrid reconfiguration methods and apparatus for tdd adaptation

Images



Publication data including kind & date

WO2014110692	A1	2014-07-24	WO2014110692				
WO2014110981	A1	2014-07-24	WO2014110981				
CN104938016	A	2015-09-23	CN104938016				
KR20150110604	A	2015-10-02	KR20150110604				
EP2946627	A1	2015-11-25	EP2946627				
US20150341927	A1	2015-11-26	US20150341927				
JP2016507978	A	2016-03-10	JP2016507978				
IN3652/CHENP/2015	A	2016-07-01	IN2015CN03652				
EP2946627	A4	2016-12-14	EP2946627				
US9826528	B2	2017-11-21	US9826528				
JP6359564	B2	2018-07-18	JP6359564				

Abstract

(EP2946627)

ABSTRACT OF THE DISCLOSURE Methods, systems, and devices are described for reconfiguring a user equipment (UE) to operate in a reconfigured TDD UL-DL configuration. An initial uplink- downlink (UL-DL) configuration for TDD

communication may be provided for communication between an e Node B and a UE. One or more subframes within each frame transmitted using the initial UL-DL configuration may be identified as flexible subframes. The identification of flexible subframes may permit the identification of timing for HARQ transmissions that does not change when a reconfiguration takes place. A different UL-DL configuration may be transmitted to the UE, in which at least one flexible subframe is to be changed from an uplink subframe to a downlink subframe. The different UL-DL configuration may be transmitted by, for example, a pseudo-uplink grant to the UE, which indicates that the UE is to reconfigure one or more flexible subframes from uplink to downlink transmission.

Inventors

WEI CHAO

WANG NENG

FENG MINGHAI

HOU JILEI

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2014-07-24

2014-07-24

2015-09-23

2015-10-02

2015-11-25

2015-11-26

2016-03-10

2016-07-01

2016-12-14

2017-11-21

2018-07-18

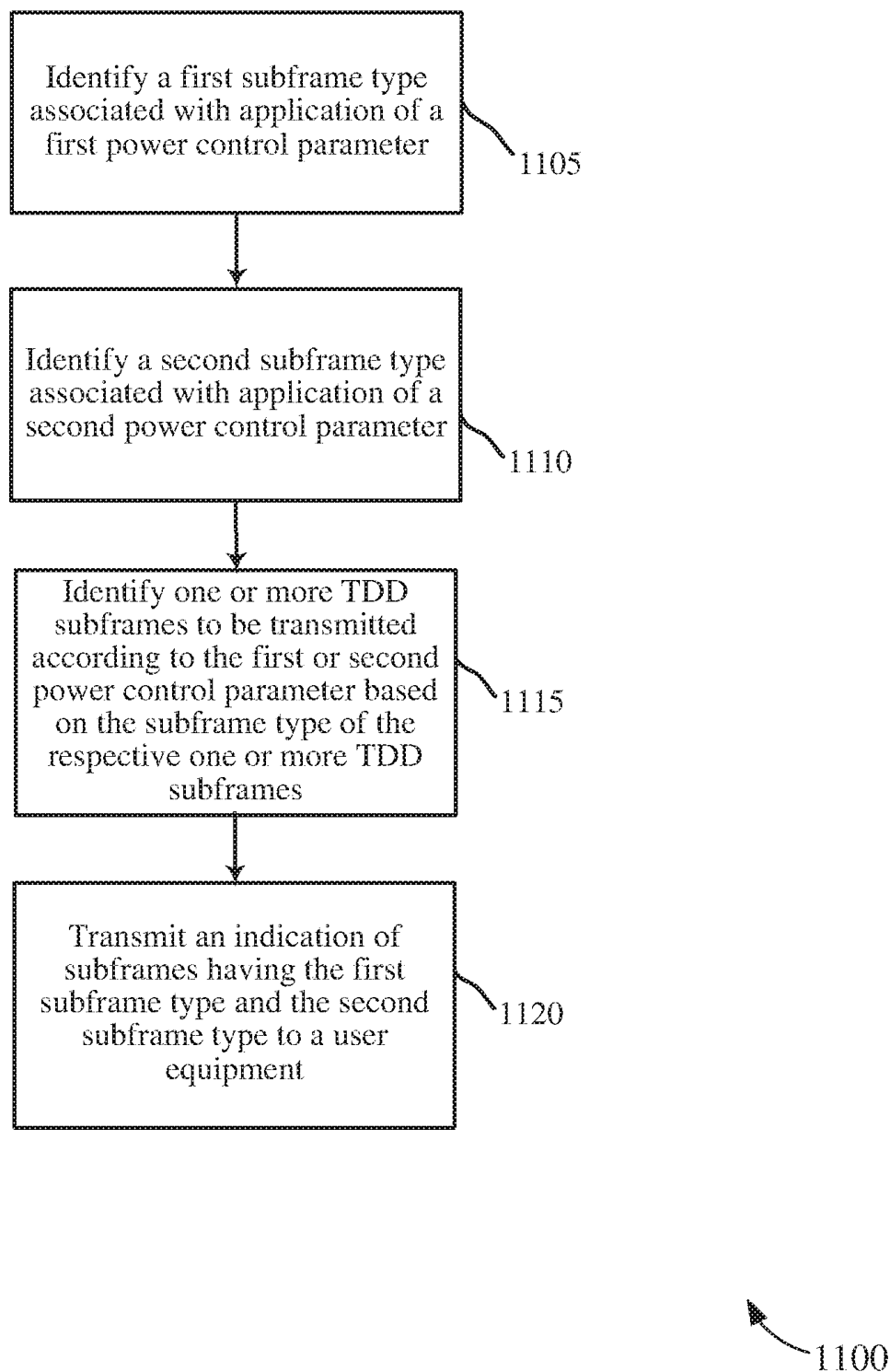
Family 16/25 - FAMPAT - ©Questel

Title

(EP2995137)

SIGNALING OF ENHANCED POWER CONTROL FOR eIMTA INTERFERENCE MITIGATION

Images



Publication data including kind & date

WO2014179979	A1	2014-11-13	WO2014179979				
WO2014180344	A1	2014-11-13	WO2014180344				
CN105191440	A	2015-12-23	CN105191440				
KR20160008567	A	2016-01-22	KR20160008567				
US20160066288	A1	2016-03-03	US20160066288				
EP2995137	A1	2016-03-16	EP2995137				
IN6016/CHENP/2015	A	2016-07-01	IN2015CN06016				
JP2016521512	A	2016-07-21	JP2016521512				
EP2995137	A4	2016-12-14	EP2995137				

[US10111188](#)

B2 2018-10-23 US10111188

Abstract

(EP2995137)

Methods, systems, and devices are described for interference mitigation in a time-division duplex (TDD) wireless communication system. First and second subframe types may be identified for TDD subframes to be transmitted using the system. Different power control parameters associated with each subframe type may be identified based on transmission directions in neighboring cells for the particular subframes. One or more TDD subframes to be transmitted may be identified as a first or second subframe type, and power control may be applied to the transmitted subframes according to the power control parameter associated with the subframe type. The identification of subframes and power control parameters to be applied to each type of subframe may be transmitted, for example, to a user equipment (UE). The information may be transmitted to a UE, for example, via radio resource control (RRC) signaling or via a physical layer control channel.

Inventors

FENG MINGHAI

WANG NENG

WEI CHAO

HOU JILEI

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2014-11-13

2014-11-13

2015-12-23

2016-01-22

2016-03-03

2016-03-16

2016-07-01

2016-07-21

2016-12-14

2018-10-23

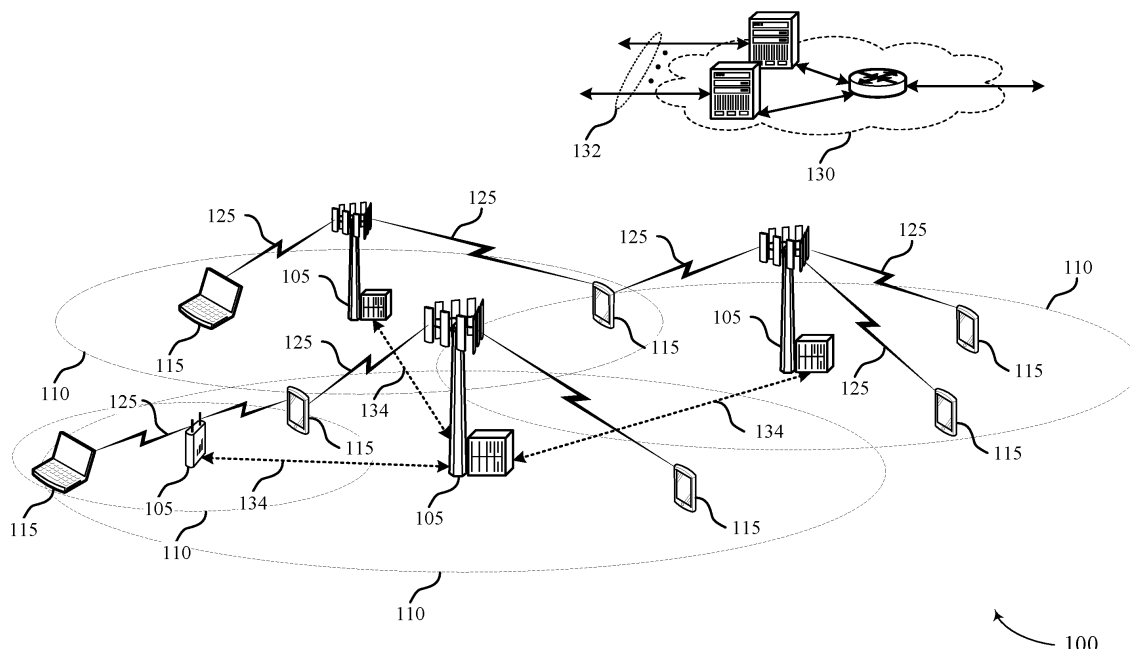
Family 17/25 - FAMPAT - ©Questel

Title

(WO2016195862)

Low latency under time division duplex and flexible frequency division duplex

Images



Publication data including kind & date

US20160360550	A1	2016-12-08	US20160360550
WO2016195862	A1	2016-12-08	WO2016195862



Abstract

(WO2016195862)

Methods, systems, and devices for wireless communication are described. A user equipment (UE) may operate in a system that supports operation with transmission time intervals (TTIs) of different durations. The UE may monitor for a grant during a first TTI and may determine the communication direction of a second TTI based on a received grant. The UE may re-determine the communication direction of the second TTI based, for example, on an explicit indication. In some examples, the UE may adapt uplink scheduling timing based on the indicator. In some examples, a UE may communicate in one direction during a TTI of a first duration and may communicate in a different direction during a TTI of the second duration that is within the TTI of the first duration.

Inventors

CHEN WANSI
 PATEL SHIMMAN ARVIND
 GAAL PETER
 WEI YONGBIN
 XU HAO
 WANG MICHAEL MAO
 MALLADI DURGA PRASAD

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-12-08
 2016-12-08

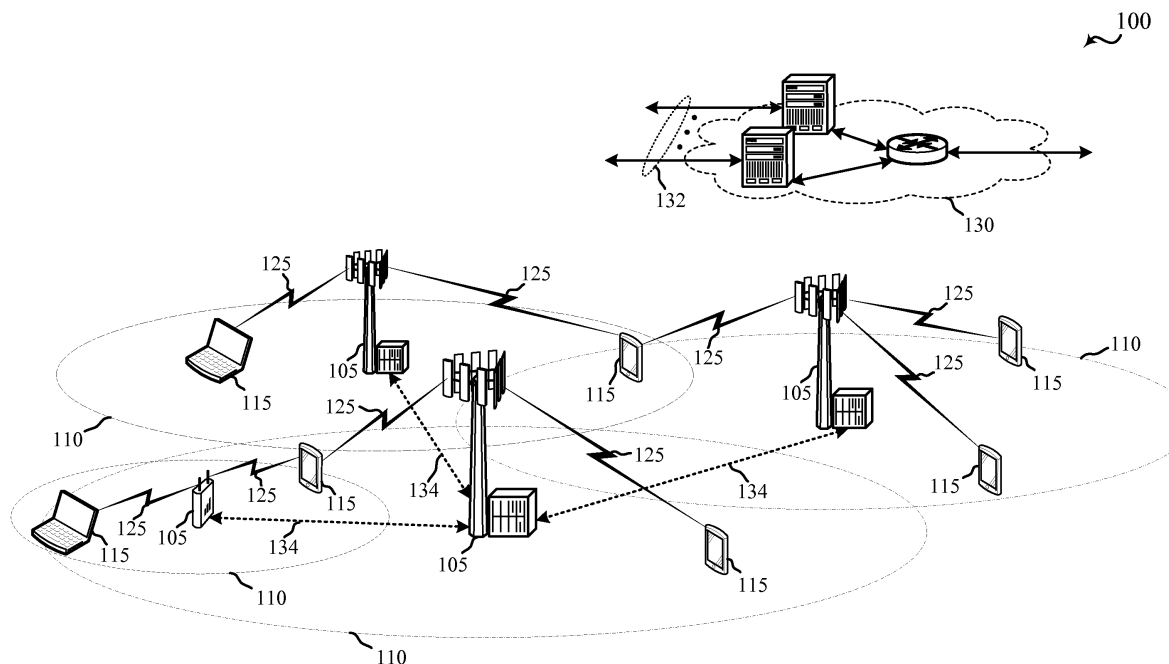
Family 18/25 - FAMPAT - ©Questel

Title

(EP3216148)

Reducing processing time for low latency transmission and reception

Images



Publication data including kind & date

US20160134405	A1	2016-05-12	US20160134405
WO2016073570	A1	2016-05-12	WO201673570
AU2015343173	A1	2017-04-13	AU2015343173
IN201727010884	A	2017-05-26	IN201727010884
BR112017009546	A1	2017-05-30	BR112017009546
KR20170083035	A	2017-07-17	KR20170083035
CN107078849	A	2017-08-18	CN107078849
EP3216148	A1	2017-09-13	EP3216148
BR112017009546	A2	2018-01-02	BR112017009546
JP2018501744	A	2018-01-18	JP2018501744



Abstract

(EP3216148)

Techniques are provided for reduction of processing requirements for portions of a received transmission relative to processing requirements for other portions of the same transmission. Different coding schemes may be employed for portions of a data transmission. In some examples, a tail portion of a data transmission may use a coding scheme that had reduced processing requirements relative to other portions of the data transmission. The reduced processing requirements may allow a receiver to generate an acknowledgment of receipt relatively quickly, which may reduce latency for acknowledging receipt of a transmission.

Inventors

LUO TAO

YOO TAESANG

ZHANG XIAOXIA

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-05-12

2016-05-12

2017-04-13

2017-05-26

2017-05-30

2017-07-17

2017-08-18

2017-09-13

2018-01-02

2018-01-18

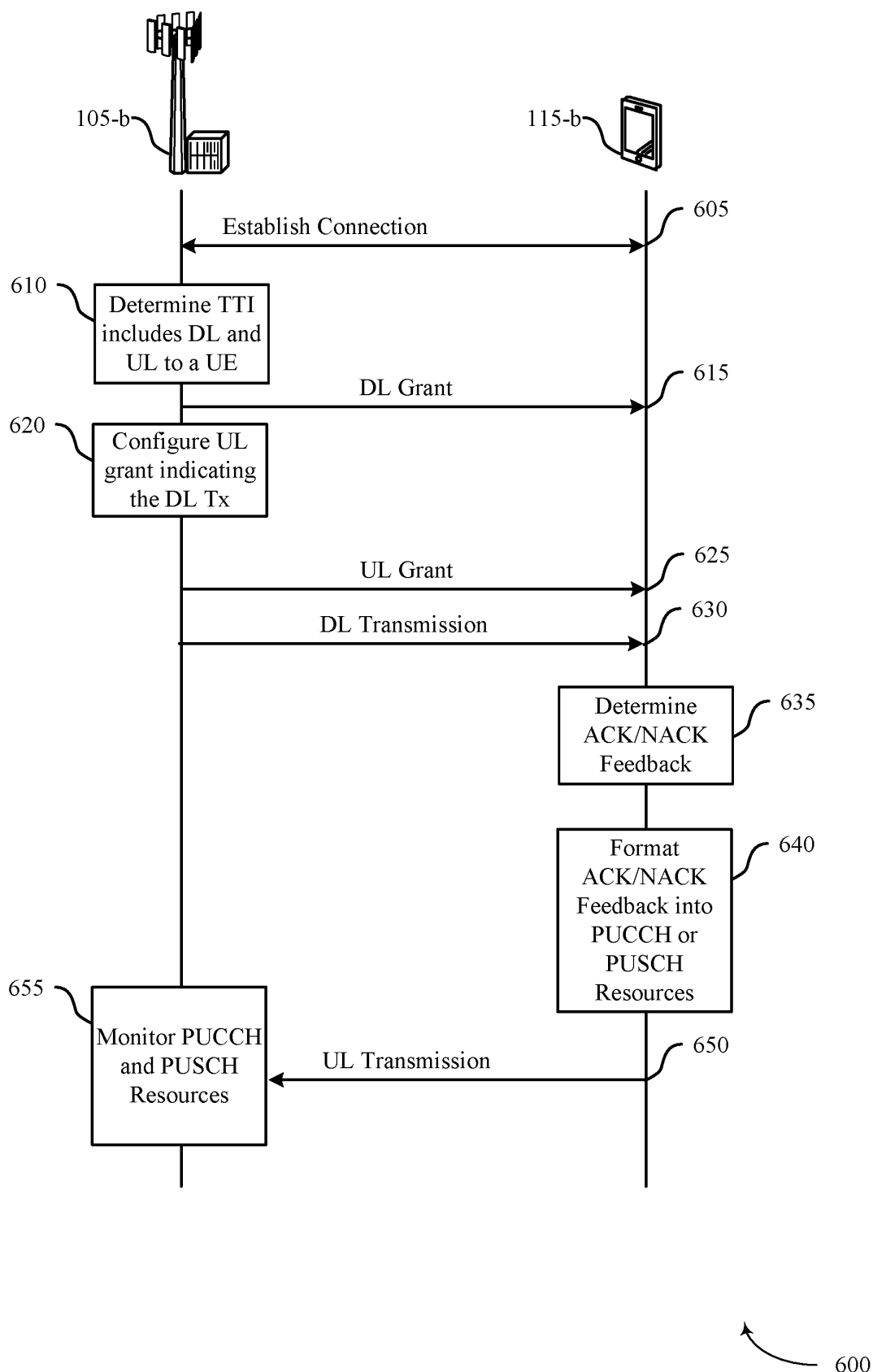
Family 19/25 - FAMPAT - ©Questel

Title

(WO2017184426)

Techniques for acknowledgment of transmissions in a wireless communication system

Images

**Publication data including kind & date**

[US20170310426](#) A1 2017-10-26 US20170310426

[WO2017184426](#) A1 2017-10-26 WO2017184426

**Abstract**

(WO2017184426)

A base station may provide both an uplink grant and a downlink grant in a same transmission time interval (TTI), and may provide an indication in the uplink grant that the TTI includes the downlink grant. A user equipment (UE) that receives the

uplink grant may provide feedback using identified feedback resources in an uplink shared channel, and other uplink transmissions may be rate matched around the feedback resources in the uplink shared channel. A base station receiving the feedback may monitor the feedback resources to determine whether the downlink grant or one or more of the downlink transmissions were successfully received at the UE. A base station, in some examples, may monitor different sets of resources to determine whether certain of the uplink grant, downlink grant, downlink transmissions associated with the downlink grant, or any combinations thereof, have been successfully received at the UE.

Inventors

FAN ZHIFEI

ZHANG XIAOXIA

YOO TAESANG

SUN JING

MONTJO JUAN

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2017-10-26

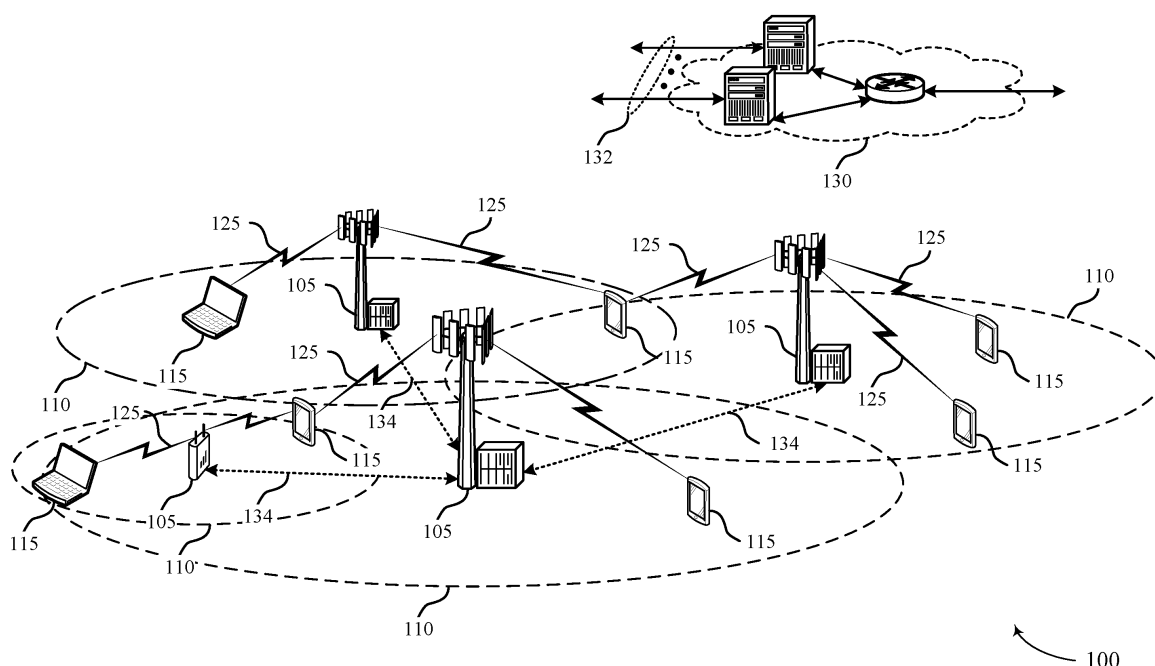
2017-10-26

Family 20/25 - FAMPAT - ©Questel

Title

(EP3335354)

Reiterated downlink grant design for multiple transmission time interval grant support in ecc

Images**Publication data including kind & date**

US20170048886	A1	2017-02-16	US20170048886
WO2017030689	A1	2017-02-23	WO2017030689
CN107925543	A	2018-04-17	CN107925543
EP3335354	A1	2018-06-20	EP3335354

**Abstract**

(EP3335354)

Enhanced robustness for downlink burst transmissions using reiterated grants. A user equipment (UE) may receive multiple transmissions during multiple (e.g., consecutive, etc.) transmission time intervals (TTIs) as part of a downlink burst from a

base station, where at least some of the TTIs may include an iteration of a grant and a data transmission. The grants may contain some common control information for TTIs of the downlink burst, as well as an indicator of how many TTIs come before and after. The UE may identify preceding and subsequent TTIs in the downlink burst by decoding any of the grant iterations. If the UE identifies a previous transmission that has not been buffered, it may send a negative acknowledgement to the base station. If the previous transmission has been buffered, the UE may decode the previous transmission based at least in part on the current grant iteration.

Inventors

SUN JING

LUO TAO

YOO TAESANG

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2017-02-16

2017-02-23

2018-04-17

2018-06-20

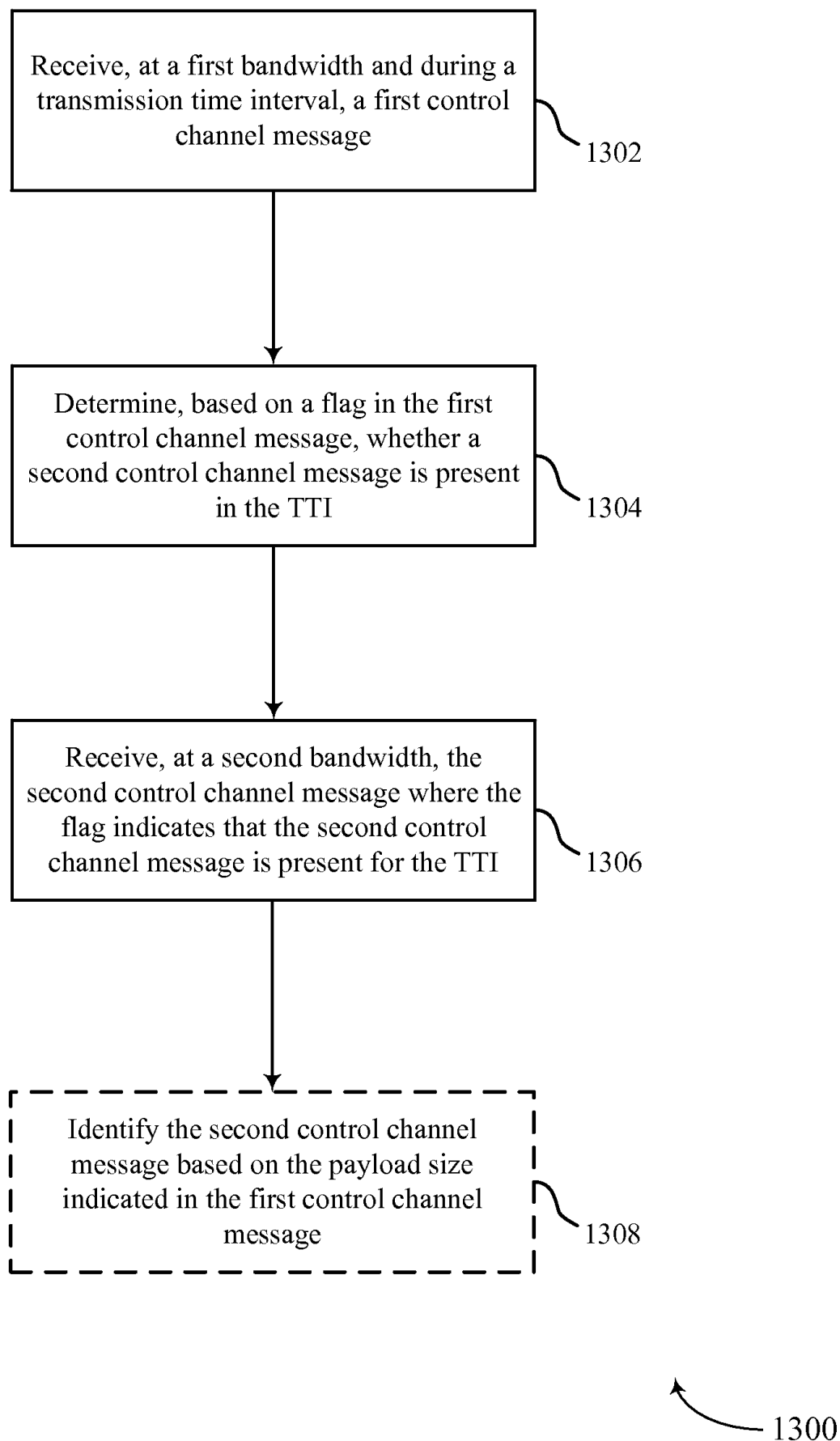
Family 21/25 - FAMPAT - ©Questel

Title

(EP3213446)

Two-stage pdcch with dci flag and dci format size indicator

Images

**Publication data including kind & date**

US20160128028	A1	2016-05-05	US20160128028
WO2016069270	A1	2016-05-06	WO201669270
AU2015339822			



	A1	2017-04-13	AU2015339822				
IN201727010048	A	2017-05-26	IN201727010048				
BR112017008737	A1	2017-05-30	BR112017008737				
KR20170080581	A	2017-07-10	KR20170080581				
CN107113136	A	2017-08-29	CN107113136				
EP3213446	A1	2017-09-06	EP3213446				
JP2017539128	A	2017-12-28	JP2017539128				
BR112017008737	A2	2018-02-27	BR112017008737				
US10021677	B2	2018-07-10	US10021677				

Abstract

(EP3213446)

Methods, systems, and devices are described for wireless communication employing two-stage control channel messaging. Systems, methods, and apparatuses for two stage two-stage physical downlink control channel (PDCCH) with a downlink control information (DCI) flag and DCI format size indicator are described. For instance, the present disclosure presents an example method of wireless communication at a wireless device, which may include receiving, at a first bandwidth and during a transmission time interval (TTI), a first control channel message. In addition, the example method may include determining, based on a flag in the first control channel message, whether a second control channel message is present in the TTI. Furthermore, the example method may include receiving, at a second bandwidth, the second control channel message where the flag indicates that the second control channel message is present for the TTI.

Inventors

MALLIK SIDDHARTHA

YOO TAESANG

CHENDAMARAI KANNAN ARUMUGAM

WEI YONGBIN

DAMNJANOVIC JELENA

MALLADI DURGA PRASAD

LUO TAO

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-05-05

2016-05-06

2017-04-13

2017-05-26

2017-05-30

2017-07-10

2017-08-29

2017-09-06

2017-12-28

2018-02-27

2018-07-10

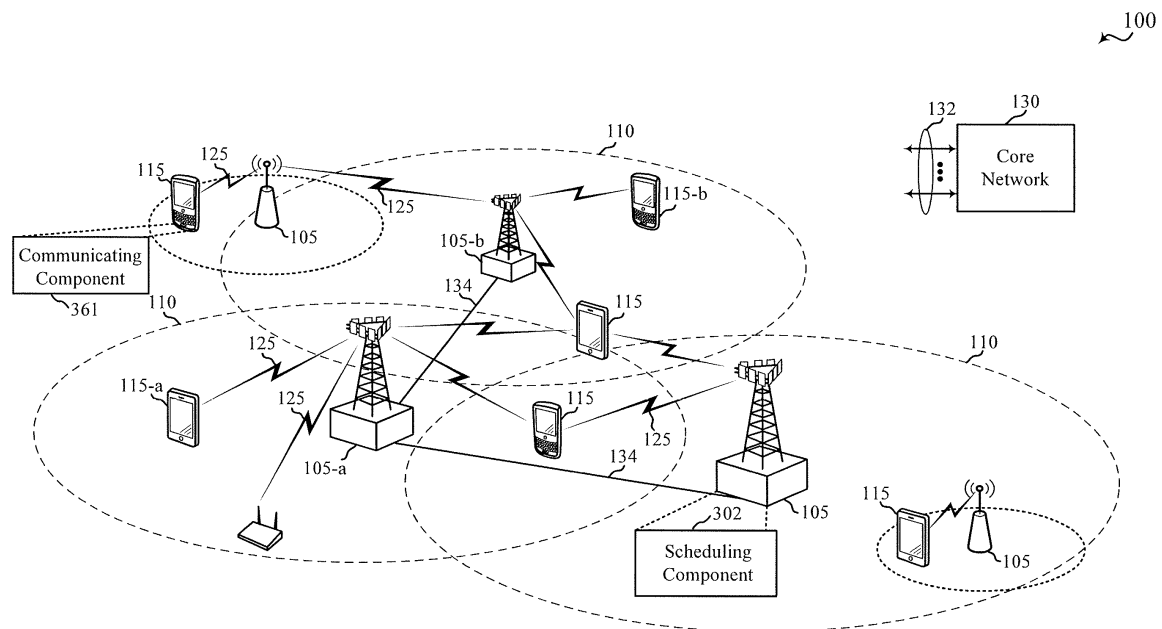
Family 22/25 - FAMPAT - ©Questel

Title

(EP3210329)

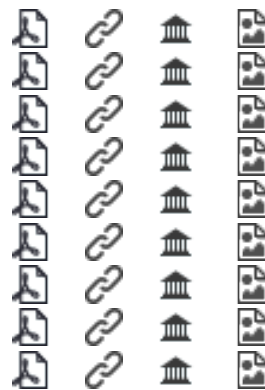
Dynamic uplink/downlink frame structure for enhanced component carriers

Images



Publication data including kind & date

US20160119920	A1	2016-04-28	US20160119920
WO2016064522	A1	2016-04-28	WO201664522
AU2015337003	A1	2017-03-30	AU2015337003
BR112017008297	A1	2017-05-30	BR112017008297
KR20170074880	A	2017-06-30	KR20170074880
CN107078882	A	2017-08-18	CN107078882
EP3210329	A1	2017-08-30	EP3210329
JP2017536037	A	2017-11-30	JP2017536037
BR112017008297	A2	2017-12-19	BR112017008297



Abstract

(EP3210329)

Various aspects described herein relate to communicating using dynamic uplink and downlink transmission time interval (TTI) switching in a wireless network. A notification can be received from a network entity of switching a configurable TTI from downlink communications to uplink communications. The configurable TTI can be one of a plurality of TTIs in a frame structure that allows dynamic switching of configurable TTIs between downlink and uplink communications within a frame. Additionally, uplink communications can be transmitted to the network entity during the configurable TTI based at least in part on the notification.

Inventors

MALLIK SIDDHARTHA
 YOO TAESANG
 DAMNJANOVIC JELENA
 DAMNJANOVIC ALEKSANDAR
 CHENDAMARAI KANNAN ARUMUGAM
 WEI YONGBIN
 MALLADI DURGA PRASAD

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2016-04-28

2016-04-28

2017-03-30

2017-05-30

2017-06-30

2017-08-18

2017-08-30

2017-11-30

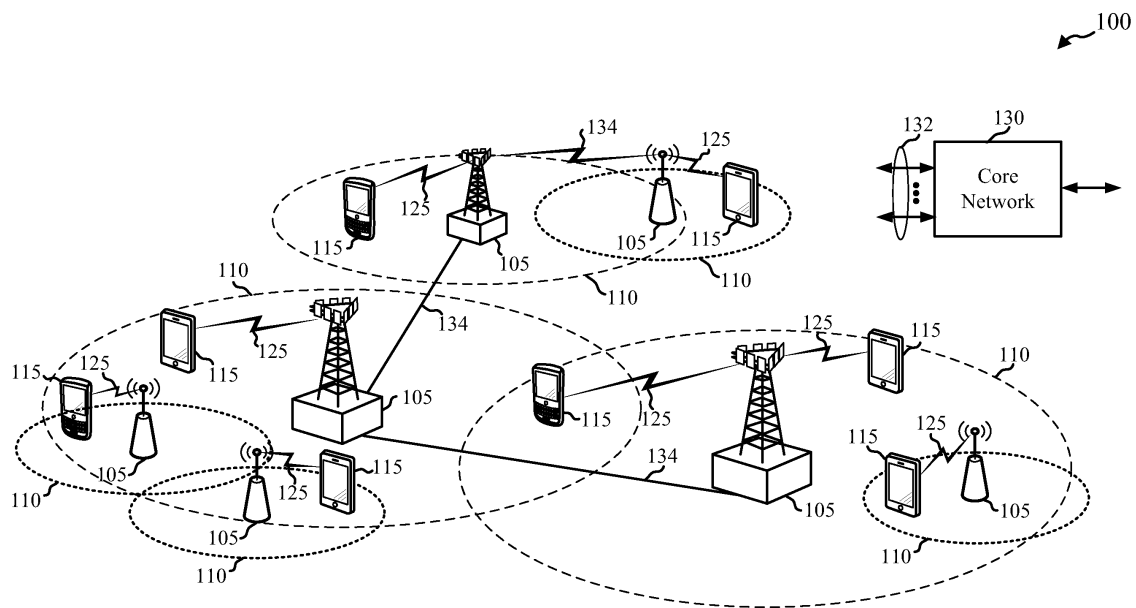
2017-12-19

Family 23/25 - FAMPAT - ©Questel

Title

(WO2014180318)

DUAL THRESHOLD BASED CELL CLUSTERING INTERFERENCE MITIGATION FOR eIMTA

Images**Publication data including kind & date**

WO2014180318	A1	2014-11-13	WO2014180318
WO2014179967	A1	2014-11-13	WO2014179967
US20160056907	A1	2016-02-25	US20160056907

**Abstract**

(WO2014180318)

Methods, systems, and devices are described for interference mitigation between neighboring cells through the use of cell clusters and virtual logical cell clusters. Cells may be added to a cell cluster with a first cell when a level of interference coupling between the first cell and one or more neighboring cells exceeds a first threshold. One or more other cells may be added to a virtual logical cell cluster with the first cell when the level of interference coupling is between a second threshold and the first threshold, the second threshold being less than the first threshold. Interference mitigation between cells of cell clusters and/or virtual logical cell clusters may be performed. Interference mitigation may be accomplished through, for example, coordination of TDD uplink-downlink (UL-DL) configurations for cell clusters and scheduling-dependent interference management (SDIM) for virtual logical cell clusters.

Inventors

WEI CHAO

FENG MINGHAI

WANG NENG

HOU JILEI

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2014-11-13

2014-11-13

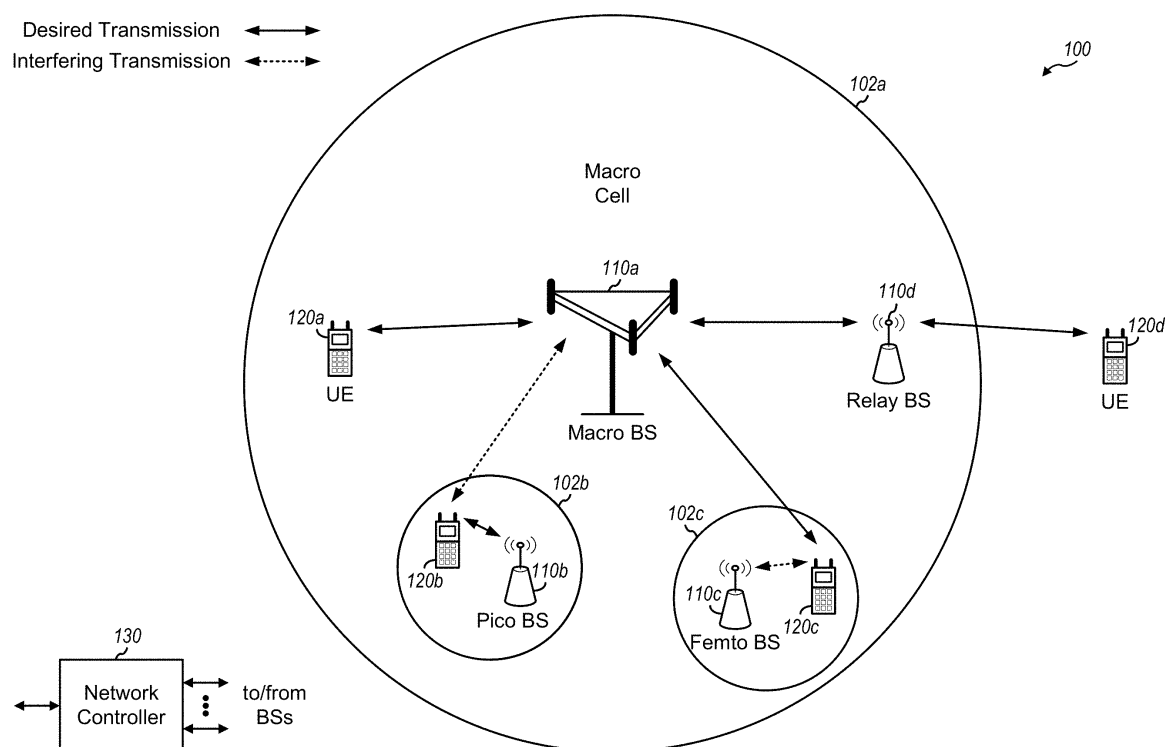
2016-02-25

Family 24/25 - FAMPAT - ©Questel

Title

(WO201889662)

Techniques and apparatuses for configuring a common uplink portion in new radio

Images**Publication data including kind & date**

US20180132244	A1	2018-05-10	US20180132244
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WO2018089662	A1	2018-05-17	WO201889662
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**Abstract**

(WO201889662)

A method, an apparatus, and a computer program product for wireless communication are provided. The apparatus may receive a configuration indication for a common uplink portion of a wireless communication structure. The apparatus may configure the common uplink portion based at least in part on the configuration indication. The apparatus may transmit a communication in the common uplink portion configured according to the configuration indication.

Inventors

HUANG YI

CHEN WANSI

ZENG WEI

XU HAO

WANG RENQUI

JI TINGFANG

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2018-05-10

2018-05-17

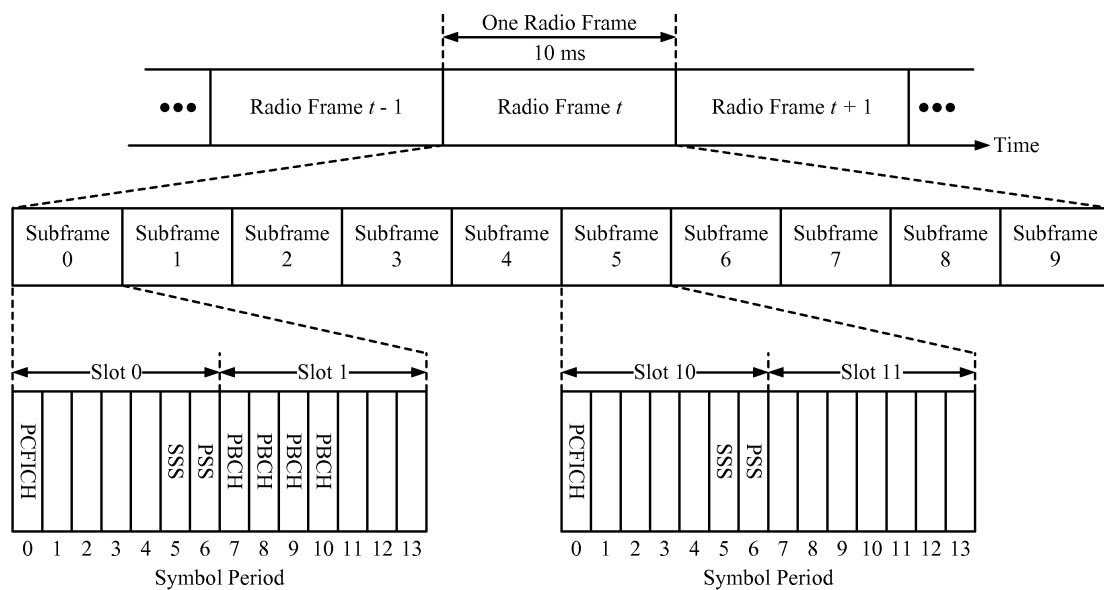
Family 25/25 - FAMPAT - ©Questel

Title

(EP2863572)

Allocating physical hybrid arq indicator channel (PHICH) resources

Images



Publication data including kind & date

CA2842702	A1	2013-02-07	CA2842702
WO2013020012	A1	2013-02-07	WO201320012
US20130034028	A1	2013-02-07	US20130034028
KR20140043148	A	2014-04-08	KR20140043148
BR112014002148	A1	2014-05-20	BR112014002148
CN103828284	A	2014-05-28	CN103828284
EP2740231	A1	2014-06-11	EP2740231
JP2014524689	A	2014-09-22	JP2014524689
IN0083/MUMNP/2014	A	2014-11-21	IN2014MN00083
EP2863572	A1	2015-04-22	EP2863572
RU2014106858	A	2015-09-10	RU2014106858
US9258086	B2	2016-02-09	US9258086
JP5890022	B2	2016-03-22	JP5890022
KR101642366	B1	2016-07-25	KR101642366
RU2595770	C2	2016-08-27	RU2595770
CA2842702	C	2016-10-25	CA2842702
BR112014002148	A2	2017-02-21	BR112014002148
CN103828284	B	2017-03-01	CN103828284B



[EP2740231](#)

B1 2018-07-25 EP2740231

Abstract

(EP2863572)

Certain aspects of the present disclosure relate to techniques for allocating resources for Physical Hybrid Automatic Repeat Request (HARQ) Indicator Channel (PHICH).

Inventors

CHEN WANSI

DAMNJANOVIC JELENA M

MONTJOJO JUAN

Latest standardized assignees - inventors removed

QUALCOMM

Publication dates

2013-02-07

2013-02-07

2013-02-07

2014-04-08

2014-05-20

2014-05-28

2014-06-11

2014-09-22

2014-11-21

2015-04-22

2015-09-10

2016-02-09

2016-03-22

2016-07-25

2016-08-27

2016-10-25

2017-02-21

2017-03-01

2018-07-25