

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT6245952

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
INTERDIGITAL VC HOLDINGS, INC.	02/26/2020
RECEIVING PARTY DATA	
Name:	CONVIDA WIRELESS, LLC
Street Address:	200 BELLEVUE PARKWAY
Internal Address:	SUITE 300
City:	WILMINGTON
State/Country:	DELAWARE
Postal Code:	19809
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16483748
CORRESPONDENCE DATA	
Fax Number:	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Email:	anaquadocketing@Xsensus.com
Correspondent Name:	XSENSUS, LLP
Address Line 1:	200 DAINGERFIELD ROAD
Address Line 2:	SUITE 201
Address Line 4:	ALEXANDRIA, VIRGINIA 22314
ATTORNEY DOCKET NUMBER:	13154US01
NAME OF SUBMITTER:	TIERNEY FARRELL
SIGNATURE:	/TIERNEY FARRELL/
DATE SIGNED:	08/12/2020
Total Attachments: 49	
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PATENT ASSIGNMENT

This PATENT ASSIGNMENT, effective as of July 31, 2019, is made by and between **InterDigital VC Holdings, Inc.**, a Delaware corporation having a place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809 (hereinafter "Assignor"), and **Conviva Wireless, LLC**, a limited liability company having a place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809 (hereinafter "Assignee").

WHEREAS:

Assignor is the sole owner of the patents and patent applications listed in the attached Exhibit A (hereinafter "Patents"); and

Assignee is desirous of acquiring all of Assignor's right, title and interest in and to the Patents.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound hereby, Assignor has sold, assigned and transferred, and does hereby sell, assign and transfer to Assignee the entire right, title and interest in and to any and all of the following:

- (i) the Patents, including any and all inventions, invention disclosures, improvements and discoveries disclosed or claimed therein (hereinafter "Inventions"), for the United States, its possessions and territories and all foreign countries, regions and territories;
- (ii) the rights of priority created by the Patents under any treaty relating thereto, including the rights to apply for patents and patent applications covering the Inventions in any and all countries, regions and territories;
- (iii) any and all patents and patent applications, certificates of invention, utility models and any other grants by any governmental entity for the protection of inventions resulting from the Patents, in any and all countries, regions and territories, including any and all patents and patent applications disclosing the Inventions and any patents issuing from such applications, including provisionals, non-provisionals, divisionals, continuations, continuations-in-part, reissues, extensions, renewals, substitutions and re-examinations of the Patents; and
- (iv) all past, present and future causes of action and enforcement rights, whether currently pending, filed or otherwise, in connection with the Patents, the patents and patent applications resulting from the Patents and the Inventions, including without limitation, all rights to sue for any past, present or future infringement thereof, including the rights to license and to collect and receive any damages, royalties, injunctive relief, and/or any other settlements or remedies for such infringements, and including any provisional rights having arisen from any publication of any of the Patents or any patent application resulting therefrom,

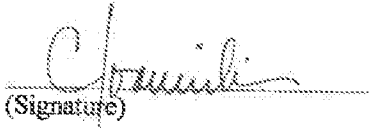
the same to be held and enjoyed by Assignee for its own use and enjoyment, and for the use and enjoyment of its successors, assigns and other legal representatives, as fully and entirely as the same would have been held and enjoyed by Assignor, if this Assignment and sale had not been made.

AND, this Assignment may be executed in multiple counterparts, each of which shall be deemed to be an original of this Assignment.

Patent Assignment: InterDigital VC Holdings, Inc. to Convida Wireless, LLC

IN WITNESS WHEREOF, Assignor and Assignee, by and through their respective authorized representative, have executed this instrument on the date indicated below.

SIGNED for and on behalf of InterDigital VC Holdings, Inc.

By		<u>26 February 2020</u>
	(Signature)	(Date)
	Christos Ioannidi	Senior Patent Executive
	(Print Name)	(Print Title)

SIGNED for and on behalf of Convida Wireless, LLC

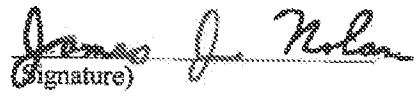
By		<u>2/26/2020</u>
	(Signature)	(Date)
	James J. Nolan	Manager of Convida Wireless, LLC
	(Print Name)	(Print Title)

EXHIBIT A

Country	Application No.	Patent No.	Filing Date	Title
SE	1730328-0		11/24/2017	NB-IoT NAS security proxy in other NF than AMF
US	62/635,221		2/26/2018	Multiple Independent NAS Security Context
WO	PCT/EP2018/082317		11/23/2018	NB-IoT NAS security proxy in other NF than AMF
SE	1830095-4		3/23/2018	Creating on-demand transmission gap for control signaling
WO	PCT/EP2019/057273		3/22/2019	Creating on-demand transmission gap for control signaling
EP	18157260.3		2/16/2018	Early PUSCH Repetition Termination Search Space
WO	PCT/EP2019/053188		2/8/2019	Early PUSCH Repetition Termination Search Space
CN	201880019597.0		3/22/2018	
EP	17162886.0		3/24/2017	SLSS anchor narrowband for relay
EP	18711954.0		3/22/2018	
US	16/496,972		3/22/2018	
WO	PCT/EP2018/057366		3/22/2018	SLSS anchor narrowband for relay
CN	201880022295.9		2/28/2018	
EP	17164265.5		3/31/2017	Access barring for remote device via Relay
EP	18707714.4		2/28/2018	
TW	107106322		2/26/2018	cAccess barring for remote device via Relay
US	16/498,459		2/28/2018	
WO	PCT/EP2018/054885		2/28/2018	cAccess barring for remote device via Relay
CN	201880023201.X		3/27/2018	

Country	Application No.	Patent No.	Filing Date	Title
EP	17163988.3		3/30/2017	Shared Uplink Grant Fee Resource higher layer impacts - Secondary eNB to Master eNB
EP	18712255.1		3/27/2018	
US	16/498,436		3/27/2018	
WO	PCT/EP2018/057784		3/27/2018	Shared Uplink Grant Fee Resource higher layer impacts - Secondary eNB to Master eNB
CN	201880023205.8		3/27/2018	
EP	17163832.3		3/30/2017	Shared Uplink Grant Free Resource higher layer impacts - cipher keys during handover
EP	18712251.0		3/27/2018	
US	16/498,476		3/27/2018	
WO	PCT/EP2018/057768		3/27/2018	Shared Uplink Grant Free Resource higher layer impacts - cipher keys during handover
CN	201880020504.6		3/22/2018	
EP	17162884.5		3/24/2017	Dual event based Early Handover optimizations
EP	18711955.7		3/22/2018	
US	16/495209		3/22/2018	
WO	PCT/EP2018/057370		3/22/2018	Dual event based Early Handover optimizations
EP	17162668.2		3/23/2017	Transmission of early termination of repetition indicator
EP	18711383.2		3/22/2018	
US	16/491159		3/22/2018	
WO	PCT/EP2018/057368		3/22/2018	Transmission of early termination of repetition indicator
CN	201880020503.1		3/20/2018	

Country	Application No.	Patent No.	Filing Date	Title
EP	17162411.7		3/22/2017	Shared Uplink Grant Free Resource
EP	18711132.3		3/20/2018	
TW	107103238		1/30/2018	Shared Uplink Grant Free Resource
US	16/495107		3/20/2018	
WO	PCT/EP2018/057080		3/20/2018	Shared Uplink Grant Free Resource
CN	201880019938.4		3/20/2018	
EP	17162407.5		3/22/2017	URLLC Self Pre-emption
EP	18711131.5		3/20/2018	
US	16/495838		3/20/2018	
WO	PCT/EP2018/057078		3/20/2018	URLLC Self Pre-emption
CN	201880022542.5		3/1/2018	
EP	17164263.0		3/31/2017	Open Loop Power control for remote device
EP	18706772.3		3/1/2018	
US	16/499,326		3/1/2018	
WO	PCT/EP2018/055089		3/1/2018	Open Loop Power control for remote device
EP	17155750.7		2/10/2017	Dynamic rescheduling of HARQ feedback resources
EP	18702742.0		2/8/2018	
US	16/484829		2/8/2018	
WO	PCT/EP2018/053231		2/8/2018	Dynamic rescheduling of HARQ feedback resources
EP	17154893.6		2/6/2017	URLLC back indication of PDSCH
EP	18701191.1		1/29/2018	

Country	Application No.	Patent No.	Filing Date	Title
US	16/483748		1/29/2018	
WO	PCT/EP2018/052110		1/29/2018	URLLC back indication of PDSCH
CN	201880011313.3		1/19/2018	
EP	17155737.4		2/10/2017	Handover and Paging procedure for Pre-authorized QoS flows
EP	18700595.4		1/19/2018	
KR	20197023210		1/19/2018	
US	16/484828		1/19/2018	
WO	PCT/EP2018/051330		1/19/2018	Handover and Paging procedure for Pre-authorized QoS flows
EP	17196256.6		10/12/2017	Infrastructure Equipment, Terminal Device and Methods
EP	17176495.4		6/16/2017	Pre-emption resource set for common pre-emption indicator
EP	18727326.3		6/5/2018	Infrastructure Equipment, Terminal Device and Methods
IN	202017001037		6/5/2018	Infrastructure Equipment, Terminal Device and Methods
US	16/622,976		6/5/2018	Infrastructure Equipment, Terminal Device and Methods
WO	PCT/EP2018/064763		6/5/2018	Infrastructure Equipment, Terminal Device and Methods
CN	201880039463		5/3/2017	INFRASTRUCTURE EQUIPMENT, MOBILE TERMINAL, COMPUTER SOFTWARE AND METHODS
EP	17169347.6		5/3/2017	Pre-emption Indicator Resource Granularity for URLLC/eMBB Multiplexing

Country	Application No.	Patent No.	Filing Date	Title
EP	18719612.6		5/3/2017	INFRASTRUCTURE EQUIPMENT, MOBILE TERMINAL, COMPUTER SOFTWARE AND METHODS
US	16/609,748		5/3/2017	INFRASTRUCTURE EQUIPMENT, MOBILE TERMINAL, COMPUTER SOFTWARE AND METHODS
WO	PCT/EP2018/061197		5/2/2018	INFRASTRUCTURE EQUIPMENT, MOBILE TERMINAL, COMPUTER SOFTWARE AND METHODS
EP	16183546.7		8/10/2016	Power Saving OTDOA in MTC
EP	17736976.6		7/13/2017	Power Saving OTDOA in MTC
US	16/324126		7/13/2017	Power Saving OTDOA in MTC
WO	PCT/EP2017/067746		7/13/2017	Power Saving OTDOA in MTC
EP	15181121.3		8/14/2015	Reduced Measurement for LC-MTC
EP	16744349.8		7/21/2016	Reduced Measurement for LC-MTC
US	15/746044		7/21/2016	Reduced Measurement for LC-MTC
WO	PCT/EP2016/067391		7/21/2016	Reduced Measurement for LC-MTC
EP	15163295.7		4/10/2015	Switched antenna transmit diversity.
EP	16713308.1		3/14/2016	Switched antenna transmit diversity.
US	15/554747	10136432	3/14/2016	Switched antenna transmit diversity.
US	16/195337		11/19/2018	Switched antenna transmit diversity.
WO	PCT/EP2016/055452		3/14/2016	Switched antenna transmit diversity.
CN	201680064357.3		10/13/2016	Adapting the Total Number of HARQ Processes for LC-MTC
EP	15193082.3		11/4/2015	Adapting the Total Number of HARQ Processes for LC-MTC

Country	Application No.	Patent No.	Filing Date	Title
EP	16781444.1		10/13/2016	Adapting the Total Number of HARQ Processes for LC-MTC
US	15/342881	10177881	11/3/2016	Adapting the Total Number of HARQ Processes for LC-MTC
US	16/194395		11/19/2018	Adapting the Total Number of HARQ Processes for LC-MTC
WO	PCT/EP2016/074605		10/13/2016	Adapting the Total Number of HARQ Processes for LC-MTC
CN	201380041157.2	ZL201380041157	8/1/2013	Non-real-time traffic aggregation in relay nodes for increased network capacity
EP	13776546.7		8/1/2013	Non-real-time traffic aggregation in relay nodes for increased network capacity
JP	2015-524861	5996798	8/1/2013	Non-real-time traffic aggregation in relay nodes for increased network capacity
KR	10-2015-7002749	10-1580770	8/1/2013	Non-real-time traffic aggregation in relay nodes for increased network capacity
US	13/565006	9252866	8/2/2012	Non-real-time traffic aggregation in relay nodes for increased network capacity
US	15/011973	9615382	2/1/2016	Non-real-time traffic aggregation in relay nodes for increased network capacity
WO	PCT/IB2013/001695		8/1/2013	Non-real-time traffic aggregation in relay nodes for increased network capacity
CN	201580029448.9		3/23/2015	Fractional LTE carrier discovery in non-contiguous spectrum resources
DE	15711752.4	602015015515.7	3/23/2015	Fractional LTE carrier discovery in non-contiguous spectrum resources
EP	14170435.3		5/28/2014	Fractional LTE carrier discovery in non-contiguous spectrum resources

Country	Application No.	Patent No.	Filing Date	Title
EP	15711752.4	3149878	3/23/2015	Fractional LTE carrier discovery in non-contiguous spectrum resources
EP	18176015.8		6/5/2018	Fractional LTE carrier discovery in non-contiguous spectrum resources
FR	15711752.4	3149878	3/23/2015	Fractional LTE carrier discovery in non-contiguous spectrum resources
GB	15711752.4	3149878	3/23/2015	Fractional LTE carrier discovery in non-contiguous spectrum resources
US	15/308528		3/23/2015	Fractional LTE carrier discovery in non-contiguous spectrum resources
WO	PCT/EP2015/056155		3/23/2015	Fractional LTE carrier discovery in non-contiguous spectrum resources
CN	201580027304.X		3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
DE	15713404.0	3123795	3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
EP	15713404.0	3123795	3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
FR	15713404.0	3123795	3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
GB	15713404.0	3123795	3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
JP	2016-558329	6281644	3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
KR	10-2016-7029090		3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
US	61/969227		3/23/2014	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING

Country	Application No.	Patent No.	Filing Date	Title
US	14/663582	9510321	3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
US	15/289419	9839003	10/10/2016	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
WO	PCT/EP2015/055980		3/20/2015	UE INITIATED STATIONARY INDICATOR FOR REDUCED PAGING
DE	14725108.6	602014045316.3	5/15/2014	Connected mode DRX improvements for MTC
EP	13171903.1		6/13/2013	Connected mode DRX improvements for MTC
EP	14725108.6	3008967	5/15/2014	Connected mode DRX improvements for MTC
FR	14725108.6	3008967	5/15/2014	Connected mode DRX improvements for MTC
GB	14725108.6	3008967	5/15/2014	Connected mode DRX improvements for MTC
NL	14725108.6	3008967	5/15/2014	Connected mode DRX improvements for MTC
US	14/895774		5/15/2014	Connected mode DRX improvements for MTC
WO	PCT/EP2014/059941		5/15/2014	Connected mode DRX improvements for MTC
CN	201480023050.X	ZL201480023050	4/15/2014	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs
EP	14717857.8		4/15/2014	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs
GB	1307187.3		4/22/2013	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs
IN	8098/DELNP/2015		4/15/2014	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs
JP	2016509540	6378750	4/15/2014	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs
KR	20157030212		4/15/2014	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs

Country	Application No.	Patent No.	Filing Date	Title
US	14/784790	9900909	4/15/2014	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs
WO	PCT/GB2014/051183		4/15/2014	Fixed Delay Signaling for Delay Tolerant/Power Limited M2M UEs
EP	14715080.9		3/27/2014	Transitioning to New Power Saving State for Devices Which Occasionally Transmit Data
EP	18212544.3		12/20/2018	Transitioning to New Power Saving State for Devices Which Occasionally Transmit Data
GB	1307186.5		4/22/2013	Transitioning to New Power Saving State for Devices Which Occasionally Transmit Data
US	14/784656	9913218	3/27/2014	Transitioning to New Power Saving State for Devices Which Occasionally Transmit Data
US	15/874369		1/18/2018	Transitioning to New Power Saving State for Devices Which Occasionally Transmit Data
WO	PCT/GB2014/050972		3/27/2014	Transitioning to New Power Saving State for Devices Which Occasionally Transmit Data
US	14/781750		3/27/2014	Transitioning to New Power Saving State for Devices Which Occasionally Transmit Data
EP	14711583.6		3/14/2014	MTC Paging capacity expansion
GB	1307102.2		4/19/2013	MTC Paging capacity expansion
JP	2016508225	6346267	3/14/2014	MTC Paging capacity expansion
US	14/781172		3/14/2014	MTC Paging capacity expansion
WO	PCT/GB2014/050783		3/14/2014	MTC Paging capacity expansion
EP	14711584.4		3/14/2014	MTC Paging capacity expansion
GB	1307101.4		4/19/2013	MTC Paging capacity expansion
JP	2016508226	6314209	3/14/2014	MTC Paging capacity expansion

Country	Application No.	Patent No.	Filing Date	Title
US	14/781161		3/14/2014	MTC Paging capacity expansion
WO	PCT/GB2014/050784		3/14/2014	MTC Paging capacity expansion
CZ	13783368.7	2936901	10/21/2013	Delegated Random Access for LTE
DE	13783368.7	6.02013E+11	10/21/2013	Delegated Random Access for LTE
EP	13783368.7	2936901	10/21/2013	Delegated Random Access for LTE
FI	13783368.7	2936901	10/21/2013	Delegated Random Access for LTE
FR	13783368.7	2936901	10/21/2013	Delegated Random Access for LTE
GB	1222899.5	2509070	12/19/2012	Delegated Random Access for LTE
GB	13783368.7	2936901	10/21/2013	Delegated Random Access for LTE
IT	13783368.7	502017000085587	10/21/2013	Delegated Random Access for LTE
KR	20157015959		10/21/2013	Delegated Random Access for LTE
NL	13783368.7	2936901	10/21/2013	Delegated Random Access for LTE
SE	13783368.7	2936901	10/21/2013	Delegated Random Access for LTE
US	14/437381	9635673	10/21/2013	Delegated Random Access for LTE
WO	PCT/GB2013/052737		10/21/2013	Delegated Random Access for LTE
CN	201380066696.1	ZL201380066696	10/21/2013	Delegated Random Access for LTE
DE	13783369.5	602013021024.1	10/21/2013	Delegated Random Access for LTE
EP	13783369.5	2936902	10/21/2013	Delegated Random Access for LTE
EP	17153002.5		1/25/2017	Delegated Random Access for LTE
FR	13783369.5	2936902	10/21/2013	Delegated Random Access for LTE
GB	1222902.7	2509071	12/19/2012	Delegated Random Access for LTE
GB	13783369.5	2936902	10/21/2013	Delegated Random Access for LTE

Country	Application No.	Patent No.	Filing Date	Title
IT	13783369.5	502017000087767	10/21/2013	Delegated Random Access for LTE
JP	2015548744		10/21/2013	Delegated Random Access for LTE
KR	20157016039		10/21/2013	Delegated Random Access for LTE
NL	13783369.5	2936902	10/21/2013	Delegated Random Access for LTE
US	14/434335	9839019	10/21/2013	Delegated Random Access for LTE
US	15/804822		11/6/2017	Delegated Random Access for LTE
WO	PCT/GB2013/052738		10/21/2013	Delegated Random Access for LTE
BR	112015003709.7		8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
CN	201380040827.9	ZL201380040827	8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
EP	13759297.8		8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
GB	1215581.8		8/31/2012	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
IN	380/DELNP/2015		8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
JP	2015529124		8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
KR	20157004861		8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
RU	2015111560	2627028	8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
US	14/414169	10187897	8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
US	16/231702		12/24/2018	Control Region (ePDCCH) Sharing for Low Cost MTC UEs

Country	Application No.	Patent No.	Filing Date	Title
WO	PCT/GB2013/052274		8/29/2013	Control Region (ePDCCH) Sharing for Low Cost MTC UEs
CN	201380019446.2	ZL201380019446	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
DE	13715439.9	602013038124.0	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
EP	13715439.9	2837251	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
ES	13715439.9	2837251	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
FR	13715439.9	2837251	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
GB	1206344.2		4/11/2012	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
GB	13715439.9	2837251	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
IT	13715439.9	502018000024538	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
JP	2015505021	6138235	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
KR	20147028178	10-1999417	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
NL	13715439.9	2837251	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
SE	13715439.9	2837251	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter
US	14/389809		4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Transmitter

Country	Application No.	Patent No.	Filing Date	Title
US	16/258946		1/28/2019	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Trasmitter
WO	PCT/GB2013/050914		4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Trasmitter
CN	201380019453.2	ZL201380019453	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
DE	13717825.7	602013040791.6	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
EP	13717825.7	2837252	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
FR	13717825.7	2837252	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
GB	1206347.5	2501081	4/11/2012	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
GB	13717825.7	2837252	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
JP	2015505020	6266591	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
US	14/388603	9756567	4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
WO	PCT/GB2013/050913		4/10/2013	CSMA Type Un-Synchronous Reception for MTC within Synchronous Systems-Receiver
CN	201280071643.4	ZL201280071643	12/26/2012	Wireless communication device, wireless communication method, and wireless communication system
DE	12873102.3	2833689	12/26/2012	WIRELESS COMMUNICATION DEVICE, WIRELESS COMMUNICATION METHOD, AND WIRELESS COMMUNICATION SYSTEM

Country	Application No.	Patent No.	Filing Date	Title
EP	12873102.3	2833689	12/26/2012	WIRELESS COMMUNICATION DEVICE, WIRELESS COMMUNICATION METHOD, AND WIRELESS COMMUNICATION SYSTEM
JP	2012076220		3/29/2012	wireless communication apparatus, wireless communication method and wireless communication system
JP	2014507337	5924403	12/26/2012	wireless communication apparatus, wireless communication method and wireless communication system
NL	12873102.3	2833689	12/26/2012	WIRELESS COMMUNICATION DEVICE, WIRELESS COMMUNICATION METHOD, AND WIRELESS COMMUNICATION SYSTEM
US	14/377347	9590775	12/26/2012	Radio communication apparatus and radio communication method, and radio communication system
WO	PCT/JP2012/083737		12/26/2012	WIRELESS COMMUNICATION DEVICE, WIRELESS COMMUNICATION METHOD, AND WIRELESS COMMUNICATION SYSTEM
CN	201380041293.1	104584648	8/1/2013	Method for terminal requested network controlled transmission throttling.
DE	13776545.9	2880922	8/1/2013	Method for terminal requested network controlled transmission throttling.
EP	13776545.9	2880922	8/1/2013	Method for terminal requested network controlled transmission throttling.
JP	2015-524860	6006417	8/1/2013	Method for terminal requested network controlled transmission throttling.
KR	10-2015-7002723	10-1634691	8/1/2013	Method for terminal requested network controlled transmission throttling.
KR	10-2016-7016770	10-1955778	8/1/2013	Method for terminal requested network controlled transmission throttling.

Country	Application No.	Patent No.	Filing Date	Title
NL	13776545.9	2880922	8/1/2013	Method for terminal requested network controlled transmission throttling.
US	13/566554	9271234	8/3/2012	Method for terminal requested network controlled transmission throttling.
US	15/048384		2/19/2016	Method for terminal requested network controlled transmission throttling.
WO	PCT/IB2013/001694		8/1/2013	Method for terminal requested network controlled transmission throttling.
CN	201280040506.4	ZL201280040506	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
DE	12754078.9	602012045347.8	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
EP	12754078.9	2745590	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
FR	12754078.9	2745590	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
GB	1114346.8	2493784	8/19/2011	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
GB	12754078.9	2745590	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
JP	2014525497	6022568	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St

Country	Application No.	Patent No.	Filing Date	Title
US	14/239713	9538510	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
US	15/351680	10251164	11/15/2016	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
US	16/289682		3/1/2019	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
WO	PCT/GB2012/051993		8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-Base St
CN	201280040509.8	ZL201280040509	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE
EP	12754079.7		8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE
GB	1114348.4	2493785	8/19/2011	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE
JP	2014525498	6022569	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE
KR	20147006958		8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE
US	14/238671	9526088	8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE

Country	Application No.	Patent No.	Filing Date	Title
US	15/332431	9973258	10/24/2016	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE
WO	PCT/GB2012/051994		8/15/2012	Mechanism to signal grants made to MTC UEs to relay nodes and general UL relaying functionality-UE
CN	201280040517.2	ZL201280040517	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
DE	12754075.5	602012048093.9	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
EP	12754075.5	2745449	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
FR	12754075.5	2745449	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
GB	1114335.1	2493917	8/19/2011	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
GB	12754075.5	2745449	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
JP	2014526544	6031517	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
KR	20147006633		8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
NL	12754075.5	2745449	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
US	14/179254	9585122	2/12/2014	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
US	15/434902	10200972	2/16/2017	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE

Country	Application No.	Patent No.	Filing Date	Title
US	16/258669		1/28/2019	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
WO	PCT/GB2012/051949		8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-UE
CN	201280040332.1	ZL201280040332	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
DE	12754076.3	602012052045.0	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
EP	12754076.3	2745450	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
FR	12754076.3	2745450	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
GB	1114333.6	2493780	8/19/2011	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
GB	12754076.3	2745450	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
JP	2014526545	6031518	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
NL	12754076.3	2745450	8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
US	14/170153	9288786	1/31/2014	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
WO	PCT/GB2012/051951		8/10/2012	Multicast Hybrid ARQ Mechanism for virtual Carrier operation-BS
CN	201280037474.2	ZL201280037474	7/26/2012	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
DE	12754060.7	602012018626.7	7/26/2012	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE

Country	Application No.	Patent No.	Filing Date	Title
EP	12754060.7	2737730	7/26/2012	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
GB	1113148.9	2493216	7/29/2011	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
IN	10618/DELNP/2013		7/26/2012	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
JP	2014523385	6143750	7/26/2012	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
JP	2017027236	6317491	2/16/2017	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
KR	20147001775	101920954	7/26/2012	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
US	14/163803	9491614	1/24/2014	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
US	15/343724	10299108	11/4/2016	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
US	16/410099		5/13/2019	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
WO	PCT/GB2012/051805		7/26/2012	Introduction of new 'ECM Messaging Connected' state into the Evolved Packet Core-UE
CN	201280024705.6	ZL201280024705	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
DE	12730239.6	602012049448.4	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
EP	12730239.6	2721868	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
FR	12730239.6	2721868	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC

Country	Application No.	Patent No.	Filing Date	Title
GB	1109982.7	2491856	6/14/2011	Uplink / Downlink Asymmetric Network Topology for MTC
GB	12730239.6	2721868	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
JP	2014515283		6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
NL	12730239.6	2721868	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
US	14/122017	9560636	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
US	14/801461	10182425	7/16/2015	Uplink / Downlink Asymmetric Network Topology for MTC
US	15/344051	10231224	11/4/2016	Uplink / Downlink Asymmetric Network Topology for MTC
WO	PCT/GB2012/051332		6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
US	14/122049	9622166	6/13/2012	Uplink / Downlink Asymmetric Network Topology for MTC
AU	2011311010		8/10/2011	Communication apparatus, and method,
BR	BR1120130077085		8/10/2011	Communication apparatus, and method,
CN	201180047051.4		8/10/2011	Communication device, communication control method, and communication system
EP	11830437.7		8/10/2011	COMMUNICATION DEVICE, COMMUNICATION CONTROL METHOD, AND COMMUNICATION SYSTEM
ID	W00201301157		8/10/2011	Communication apparatus, and method,
IN	02713/DELNP/13		8/10/2011	Communication apparatus, and method,

Country	Application No.	Patent No.	Filing Date	Title
JP	2010225079	5776161	10/4/2010	Communication apparatus, and method,
KR	20137007306		8/10/2011	Communication apparatus, and method,
MX	2013/003576	321005	8/10/2011	Communication apparatus, and method,
RU	2013113961		8/10/2011	Communication apparatus, and method,
US	13/820162	9131426	8/10/2011	Communication device, communication control method, and communication system
US	14/816267	9538448	8/3/2015	Communication device, communication control method, and communication system
VN	1-2013-00909		8/10/2011	Communication apparatus, and method,
WO	PCT/JP2011/068289		8/10/2011	COMMUNICATION DEVICE, COMMUNICATION CONTROL METHOD, AND COMMUNICATION SYSTEM
ZA	2013/01071	2013/01071	8/10/2011	Communication apparatus, and method,
AU	2011311009		8/11/2011	Communication apparatus
BR	BR1120130076909		8/10/2011	Communication apparatus
CA	2808204		8/10/2011	Communication apparatus
CN	201180046881.5		8/10/2011	Communication device, communication control method, and communication system
DE	11830436.9	2627123	8/10/2011	Communication apparatus
EP	11830436.9	2627123	8/10/2011	COMMUNICATION DEVICE, COMMUNICATION CONTROL METHOD, AND COMMUNICATION SYSTEM
ES	11830436.9	2627123	8/10/2011	COMMUNICATION DEVICE, COMMUNICATION CONTROL METHOD, AND COMMUNICATION SYSTEM
FR	11830436.9		8/10/2011	Communication apparatus

Country	Application No.	Patent No.	Filing Date	Title
GB	11830436.9	2627123	8/10/2011	Communication apparatus
ID	W00201301163		8/10/2011	Communication apparatus
IN	02703/DELNP/13		8/10/2011	Communication apparatus
JP	2010225078	5682208	10/4/2010	Communication apparatus
KR	20137007307		8/10/2011	Communication apparatus
RU	2013113963		8/10/2011	Communication apparatus
TR	11830436.9		8/10/2011	Communication apparatus
US	13/819353	9143885	8/10/2011	Communication device, communication control method, and communication system
US	14/824296	9949058	8/12/2015	Communication device, communication control method, and communication system
US	15/924649		3/19/2018	COMMUNICATION DEVICE, COMMUNICATION CONTROL METHOD, AND COMMUNICATION SYSTEM
US	16/414291		5/16/2019	
VN	1-2013-00933		8/10/2011	Communication apparatus
WO	PCT/JP2011/068288		8/10/2011	COMMUNICATION DEVICE, COMMUNICATION CONTROL METHOD, AND COMMUNICATION SYSTEM
ZA	2013/01554	2013/01554	8/10/2011	Communication apparatus
BR	BR1120120316222		6/7/2011	Relay apparatus, relay method wireless communication system, base station and wireless communication apparatus
CN	201180028419.2		6/7/2011	Relay device, relay method, wireless communication system, base station and wireless communication device

Country	Application No.	Patent No.	Filing Date	Title
DE	11795596.3	2584829	6/7/2011	Relay apparatus, relay method wireless communication system, base station and wirelss communication appratus
EP	11795596.3	2584829	6/7/2011	RELAY DEVICE AND RELAY METHOD FOR A WIRELESS COMMUNICATION SYSTEM
FR	11795596.3		6/7/2011	Relay apparatus, relay method wireless communication system, base station and wirelss communication appratus
GB	11795596.3	2584829	6/7/2011	Relay apparatus, relay method wireless communication system, base station and wirelss communication appratus
IN	10791/DELNP/12		6/7/2011	Relay apparatus, relay method wireless communication system, base station and wirelss communication appratus
JP	2010139935		6/18/2010	
KR	20127032250	1829484	6/7/2011	Relay apparatus, relay method wireless communication system, base station and wirelss communication appratus
NL	11795596.3	2584829	6/7/2011	RELAY DEVICE, RELAY METHOD, WIRELESS COMMUNICATION SYSTEM, BASE STATION AND WIRELESS COMMUNICATION DEVICE
RU	2012153590	2566358	6/7/2011	Relay apparatus, relay method wireless communication system, base station and wirelss communication appratus
US	13/702648	9755725	6/7/2011	Relay device, relay method, wireless communication system, base station, and wireless communication device
WO	PCT/JP2011/062990		6/7/2011	RELAY DEVICE, RELAY METHOD, WIRELESS COMMUNICATION SYSTEM, BASE STATION AND WIRELESS COMMUNICATION DEVICE

Country	Application No.	Patent No.	Filing Date	Title
CN	201180024571.3	ZL201180024571	5/17/2011	Wireless communication apparatus, base station, wireless communication method, and wireless communication system
DE	11786520.4	2579653	5/17/2011	Wireless communication apparatus, base station, wireless communication method and wireless communication system
EP	11786520.4	2579653	5/17/2011	WIRELESS COMMUNICATION APPARATUS, BASE STATION, WIRELESS COMMUNICATION METHOD, AND WIRELESS COMMUNICATION SYSTEM
FR	11786520.4	2579653	5/17/2011	Wireless communication apparatus, base station, wireless communication method and wireless communication system
GB	11786520.4	2579653	5/17/2011	Wireless communication apparatus, base station, wireless communication method and wireless communication system
IN	09969/DELNP/12		5/17/2011	Wireless communication apparatus, base station, wireless communication method and wireless communication system
JP	2010120634		5/26/2010	
KR	20127029915		5/17/2011	Wireless communication apparatus, base station, wireless communication method and wireless communication system
US	13/698785	9198057	5/17/2011	Wireless communication device, base station, wireless communication method, and wireless communication system
WO	PCT/JP2011/061255		5/17/2011	WIRELESS COMMUNICATION APPARATUS, BASE STATION, WIRELESS COMMUNICATION METHOD, AND WIRELESS COMMUNICATION SYSTEM
CN	201180029963.9	ZL201180029963	5/12/2011	Communication apparatus, communication method and communication system

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Country	Application No.	Patent No.	Filing Date	Title
DE	11797926.0	2587866	5/12/2011	Communication apparatus, communication method and communication system
EP	11797926.0	2587866	5/12/2011	COMMUNICATION APPARATUS, COMMUNICATION METHOD AND COMMUNICATION SYSTEM
FR	11797926.0	2587866	5/12/2011	Communication apparatus, communication method and communication system
GB	11797926.0	2587866	5/12/2011	Communication apparatus, communication method and communication system
JP	2010145645		6/25/2010	
RU	2012154923		5/12/2011	Communication apparatus, communication method and communication system
US	13/702601	9100912	5/12/2011	Communication device, and communication method as well as communication system
US	14/744279	9769753	6/19/2015	Communication device and communication method as well as communication system
WO	PCT/JP2011/061003		5/12/2011	COMMUNICATION APPARATUS, COMMUNICATION METHOD AND COMMUNICATION SYSTEM
BR	BR1120140040524		8/23/2012	Communication apparatus, communication method and communication system
CN	201280040948.9	ZL201280040948	8/23/2012	Communication device, communication method, communication system, and base station
DE	12828497.3	2705714	8/23/2012	Communication apparatus, communication method and communication system
EP	12828497.3	2705714	8/23/2012	COMMUNICATION DEVICES AND METHODS FOR CONTROL AREA EXTENSION
FR	12828497.3	2705714	8/23/2012	Communication apparatus, communication method and communication system

Country	Application No.	Patent No.	Filing Date	Title
GB	12828497.3	2705714	8/23/2012	Communication apparatus, communication method and communication system
IN	01379/CHENP/14		8/23/2012	Communication apparatus, communication method and communication system
JP	2011190521		9/1/2011	Communication apparatus, communication method and communication system
NL	12828497.3	2705714	8/23/2012	Communication apparatus, communication method and communication system
RU	2014106470	2574587	8/23/2012	Communication apparatus, communication method and communication system
US	14/123573	9450740	8/23/2012	Communication device to arrange an extension control area in a subframe according to a periodic mapping pattern
US	15/249165	9853798	8/26/2016	Communication device, communication method, communication system, and base station for counting a number of frames
WO	PCT/JP2012/005290		8/23/2012	COMMUNICATION DEVICE, COMMUNICATION METHOD, COMMUNICATION SYSTEM, AND BASE STATION
CN	201580076026.7		12/21/2015	Thresholds for selection of amount of coverage enhancement
EP	15154857.5		2/12/2015	Thresholds for selection of amount of coverage enhancement
EP	15817319.5		12/21/2015	Thresholds for selection of amount of coverage enhancement
TW	104144240		12/29/2015	Thresholds for selection of amount of coverage enhancement
US	15/548429		12/21/2015	Thresholds for selection of amount of coverage enhancement

Country	Application No.	Patent No.	Filing Date	Title
WO	PCT/EP2015/080811		12/21/2015	Thresholds for selection of amount of coverage enhancement
CN	201680041538.4		7/14/2016	Global synchronization for V2X
EP	15178910.4		7/29/2015	Global synchronization for V2X
EP	15193499.9		11/6/2015	Synchronization priority for V2V and V2P
EP	16739115.0		7/14/2016	Global synchronization for V2X
KR	20187002167		7/14/2016	Global synchronization for V2X
US	15/740880		7/14/2016	Global synchronization for V2X
WO	PCT/EP2016/066755		7/14/2016	Global synchronization for V2X
CN	201380067135.3	ZL201380067135	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
DE	13799636.9	602013041733.4	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
EP	13799636.9	2936724	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
FR	13799636.9	2936724	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
GB	1223313.6	2509161	12/21/2012	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
GB	13799636.9	2936724	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
JP	2015548745	6309023	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
KR	20157016154		11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
US	14/439479	9800997	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning

Country	Application No.	Patent No.	Filing Date	Title
WO	PCT/GB2013/053125		11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
DE	13796159.5	602013042101.3	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
EP	13796159.5	2936723	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
FR	13796159.5	2936723	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
GB	1223314.4	2509162	12/21/2012	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
GB	13796159.5	2936723	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
KR	20157016153		11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
US	14/441068	10182434	11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
WO	PCT/GB2013/053128		11/26/2013	Virtual Carrier Existence and Configuration Indication via PCI and RS partitioning
CN	201380057599.6	ZL201380057599	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
DE	13780397.9	6.02013E+11	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
EP	13780397.9	2915271	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
FR	13780397.9	2915271	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
GB	1219709.1		11/2/2012	Interruptible TTI-bundled HARQ processes for LTE

Country	Application No.	Patent No.	Filing Date	Title
GB	13780397.9	2915271	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
IT	13780397.9	502018000009530	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
JP	2015541224	6194006	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
KR	20157011100		10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
NL	13780397.9	2915271	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
US	14/431600	9532352	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
WO	PCT/GB2013/052739		10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
DE	13780398.7	602013033400.5	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
EP	13780398.7	2915272	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
FR	13780398.7	2915272	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
GB	1219710.9		11/2/2012	Interruptible TTI-bundled HARQ processes for LTE
GB	13780398.7	2915272	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
KR	20157011101		10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
SE	13780398.7	2915272	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE

Country	Application No.	Patent No.	Filing Date	Title
US	14/429171	10348453	10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
WO	PCT/GB2013/052740		10/21/2013	Interruptible TTI-bundled HARQ processes for LTE
CN	201480005096.9	ZL201480005096	1/13/2014	Virtual Carrier Interference Management
EP	14700124.2		1/13/2014	Virtual Carrier Interference Management
GB	1300770.3	2509910	1/16/2013	Virtual Carrier Interference Management
JP	2015553156		1/13/2014	Virtual Carrier Interference Management
KR	20157018784		1/13/2014	Virtual Carrier Interference Management
US	14/650991	10299259	1/13/2014	Virtual Carrier Interference Management
US	16/373657		4/3/2019	Virtual Carrier Interference Management
WO	PCT/GB2014/050077		1/13/2014	Virtual Carrier Interference Management
BR	112015017731.0		1/17/2014	Reference Signal for VC Power Boosting
CN	201480007054.9	ZL201480007054	1/17/2014	Reference Signal for VC Power Boosting
EP	14700787.6		1/17/2014	Reference Signal for VC Power Boosting
EP	19161710.9		3/8/2019	Reference Signal for VC Power Boosting
GB	1301730.6		1/31/2013	Reference Signal for VC Power Boosting
IN	4933/DELNP/2015		1/17/2014	Reference Signal for VC Power Boosting
JP	2015555786	6336489	1/17/2014	Reference Signal for VC Power Boosting
KR	20157020531		1/17/2014	Reference Signal for VC Power Boosting
US	14/651421	9525531	1/17/2014	Reference Signal for VC Power Boosting
WO	PCT/GB2014/050141		1/17/2014	Reference Signal for VC Power Boosting

Country	Application No.	Patent No.	Filing Date	Title
DE	14739218.7	602014040011.6	7/2/2014	Flexible RAR Windows for Decoupled UL/DL LTE Operation
EP	13179321.8		8/5/2013	Flexible RAR Windows for Decoupled UL/DL LTE Operation
EP	14739218.7	3031276	7/2/2014	Flexible RAR Windows for Decoupled UL/DL LTE Operation
GB	14739218.7	3031276	7/2/2014	Flexible RAR Windows for Decoupled UL/DL LTE Operation
US	14/908184		7/2/2014	Flexible RAR Windows for Decoupled UL/DL LTE Operation
WO	PCT/GB2014/052010		7/2/2014	Flexible RAR Windows for Decoupled UL/DL LTE Operation
BR	112016002031.6		7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
CA	2919880		7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
CN	201480044708.5	ZL201480044708	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
DE	14739216.1	602014022635.3	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
EP	13179483.6		8/6/2013	UE power saving for delay tolerant traffic and non delay tolerant traffic
EP	14739216.1	3031185	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
FR	14739216.1	3031185	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
GB	14739216.1	3031185	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic

Country	Application No.	Patent No.	Filing Date	Title
IN	8091/CHENP/2015		7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
JP	2016532726	6386046	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
KR	20167003082		7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
NL	14739216.1	3031185	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
US	14/904484	9973434	7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
WO	PCT/GB2014/052000		7/2/2014	UE power saving for delay tolerant traffic and non delay tolerant traffic
CN	201480052819.0	ZL201480052819	9/8/2014	Prioritised Scheduling Request on PUCCH in LTE
DE	14759238.0	602014036982.0	9/8/2014	Prioritised Scheduling Request on PUCCH in LTE
EP	13186246.8		9/26/2013	Prioritised Scheduling Request on PUCCH in LTE
EP	14759238.0	3039932	9/8/2014	Prioritised Scheduling Request on PUCCH in LTE
FR	14759238.0	3039932	9/8/2014	Prioritised Scheduling Request on PUCCH in LTE
GB	14759238.0	3039932	9/8/2014	Prioritised Scheduling Request on PUCCH in LTE
US	15/021469	10154511	9/8/2014	Prioritised Scheduling Request on PUCCH in LTE
US	16/199393		11/26/2018	Prioritised Scheduling Request on PUCCH in LTE
WO	PCT/EP2014/069108		9/8/2014	Prioritised Scheduling Request on PUCCH in LTE
CN	201580038435.8	ZL201580038435	6/11/2015	Relay Discovery for Inter-RAT Relay Assisted Machine Type Communications
EP	14177091.7		7/15/2014	Relay Discovery for Inter-RAT Relay Assisted Machine Type Communications

Country	Application No.	Patent No.	Filing Date	Title
EP	15729797.9		6/11/2015	Relay Discovery for Inter-RAT Relay Assisted Machine Type Communications
US	15/320122	10257783	6/11/2015	Relay Discovery for Inter-RAT Relay Assisted Machine Type Communications
WO	PCT/EP2015/063090		6/11/2015	Relay Discovery for Inter-RAT Relay Assisted Machine Type Communications
CN	201580037438.X	ZL201580037438	7/2/2015	Data Aggregation in Multi-RAT Relay assisted UL transmission
EP	14176603.0		7/10/2014	Data Aggregation in Multi-RAT Relay assisted UL transmission
EP	15738010.6		7/2/2015	Data Aggregation in Multi-RAT Relay assisted UL transmission
US	15/321661	9954605	7/2/2015	Data Aggregation in Multi-RAT Relay assisted UL transmission
WO	PCT/EP2015/065117		7/2/2015	Data Aggregation in Multi-RAT Relay assisted UL transmission
EP	17162 865.4		3/24/2017	CE-Level controlled random backoff
EP	18 711 594.4		3/23/2018	
US	16/495,742		3/23/2018	
WO	PCT/EP2018/057508		3/23/2018	CE-Level controlled random backoff
CN	201280008281.4		2/7/2012	Wireless communication apparatus, base station, wireless communication method, program, and wireless communication system
DE	12747436.9	2677818	2/7/2012	Wireless communication apparatus, method, and system and base station
EP	12747436.9	2677818	2/7/2012	RADIO COMMUNICATION DEVICE AND METHOD FOR SWITCHING THE PAGING CYCLE

Country	Application No.	Patent No.	Filing Date	Title
FR	12747436.9		2/7/2012	Wireless communication apparatus, method, and system and base station
GB	12747436.9	2677818	2/7/2012	Wireless communication apparatus, method, and system and base station
JP	2011030656		2/16/2011	Wireless communication apparatus, method, and system and base station
JP	2015077665	5915795	4/6/2015	
TR	12747436.9	2677818	2/7/2012	Wireless communication apparatus, method, and system and base station
US	13/981641	9549390	2/7/2012	Radio communication device, base station, method for radio communication, program, and radio communication system
US	15/377239	9930721	12/13/2016	Radio communication device, base station, method for radio communication, and radio communication system with acyclic paging cycles
WO	PCT/JP2012/052742		2/7/2012	WIRELESS COMMUNICATION APPARATUS, BASE STATION, WIRELESS COMMUNICATION METHOD, PROGRAM, AND WIRELESS COMMUNICATION SYSTEM
AU	2012218698	2012218698	2/7/2012	Wireless communication apparatus, method, and system and base station
BR	BR1120130203986		2/7/2012	Wireless communication apparatus, method, and system and base station
CA	2823936		2/7/2012	Wireless communication apparatus, method, and system and base station
CN	201280008056.0	ZL201280008056	2/7/2012	Wireless communication apparatus, base station, wireless communication method, program, and wireless communication system
DE	12746611.8	2677817	2/7/2012	Wireless communication apparatus, method, and system and base station

Country	Application No.	Patent No.	Filing Date	Title
EP	12746611.8	2677817	2/7/2012	RADIO COMMUNICATION DEVICE, METHOD AND BASE STATION FOR SWITCHING THE PAGING CYCLE
FR	12746611.8	2677817	2/7/2012	Wireless communication apparatus, method, and system and base station
GB	12746611.8	2677817	2/7/2012	Wireless communication apparatus, method, and system and base station
ID	W00201303681		2/7/2012	Wireless communication apparatus, method, and system and base station
IN	07069/DELNP/13		2/7/2012	Wireless communication apparatus, method, and system and base station
JP	2011030657	5672046	2/16/2011	Wireless communication apparatus, method, and system and base station
KR	20137020957	1867117	2/7/2012	Wireless communication apparatus, method, and system and base station
MX	2013/009233	336163	2/7/2012	Wireless communication apparatus, method, and system and base station
RU	2013137245	2577538	2/7/2012	Wireless communication apparatus, method, and system and base station
TR	12746611.8	2677817	2/7/2012	Wireless communication apparatus, method, and system and base station
US	13/978749	9210686	2/7/2012	Radio communication device, base station, method for radio communication, program and radio communication system
US	14/940904	9344996	11/13/2015	Radio communication device, base station, method for radio communication, program and radio communication system
VN	1-2013-02445	19821	2/7/2012	Wireless communication apparatus, method, and system and base station

Country	Application No.	Patent No.	Filing Date	Title
WO	PCT/JP2012/052741		2/7/2012	WIRELESS COMMUNICATION APPARATUS, BASE STATION, WIRELESS COMMUNICATION METHOD, PROGRAM, AND WIRELESS COMMUNICATION SYSTEM
ZA	2013/05993	2013/05993	2/7/2012	Wireless communication apparatus, method, and system and base station
CN	201280040334.0	ZL201280040334	8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
DE	12753217.4	602012044767.2	8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
EP	12753217.4	2745610	8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
FR	12753217.4	2745610	8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
GB	1114345.0		8/19/2011	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
GB	12753217.4	2745610	8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
JP	2014525491	5990585	8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
KR	20147006957		8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE

Country	Application No.	Patent No.	Filing Date	Title
US	14/239605	9144033	8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
US	14/809796	9622248	7/27/2015	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
US	15/414665	10129890	1/25/2017	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
WO	PCT/GB2012/051928		8/9/2012	Random access procedure in UL only relay systems and means for detecting need for UE to be served by relay node.-UE
CN	201280037961.9	ZL201280037961	7/23/2012	Context less routing in the EPC-BS
CN	201280038336.6	ZL201280038336	7/23/2012	Context less routing in the EPC-UE
DE	12743205.2	602012050666.0	7/23/2012	Context less routing in the EPC-BS
DE	12743206.0	602012047651.6	7/23/2012	Context less routing in the EPC-UE
EP	12743205.2	2737735	7/23/2012	Context less routing in the EPC-BS
EP	12743206.0	2737736	7/23/2012	Context less routing in the EPC-UE
EP	18156126.7		2/9/2018	Context less routing in the EPC-BS
EP	18168034.9		4/18/2018	Context less routing in the EPC-UE
FR	12743205.2	2737735	7/23/2012	Context less routing in the EPC-BS
FR	12743206.0	2737736	7/23/2012	Context less routing in the EPC-UE
GB	1113145.5	2493347	7/29/2011	Introduction of new RRC messaging Connected state into the LTE RAN-UE
GB	1113144.8	2493346	7/29/2011	Context less routing in the EPC-UE
GB	1209526.1	2493240	5/29/2012	Context less routing in the EPC-BS

Country	Application No.	Patent No.	Filing Date	Title
GB	1209525.3	2493239	5/29/2012	Context less routing in the EPC-UE
GB	12743205.2	2737735	7/23/2012	Context less routing in the EPC-BS
GB	12743206.0	2737736	7/23/2012	Context less routing in the EPC-UE
IN	10898/DELNP/2013		7/23/2012	Context less routing in the EPC-BS
IN	10802/DELNP/2013		7/23/2012	Context less routing in the EPC-UE
JP	2014523381	6147254	7/23/2012	Context less routing in the EPC-BS
JP	2014523382	6149035	7/23/2012	Context less routing in the EPC-UE
NL	12743205.2	2737735	7/23/2012	Context less routing in the EPC-BS
NL	12743206.0	2737736	7/23/2012	Context less routing in the EPC-UE
SE	12743205.2	2737735	7/23/2012	Context less routing in the EPC-BS
US	14/165322	9363139	1/27/2014	Context less routing in the EPC-BS
US	14/165298	9521038	1/27/2014	Context less routing in the EPC-UE
US	15/349083	9716654	11/11/2016	Context less routing in the EPC-UE
WO	PCT/GB2012/051764		7/23/2012	Context less routing in the EPC-BS
WO	PCT/GB2012/051766		7/23/2012	Context less routing in the EPC-UE
AT	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
BR	- 112013019317.4		2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
CN	201280007748.3	ZL201280007748	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
CN	201610154617.8	ZL201610154617	3/17/2016	Provision of a Virtual Carrier within an LTE Carrier
DE	12702869.4	602012038889.7	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
DE	17185909.3	602012058718.0	8/11/2017	Provision of a Virtual Carrier within an LTE Carrier
EP	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier

Country	Application No.	Patent No.	Filing Date	Title
EP	17185909.3	3261284	8/11/2017	Provision of a Virtual Carrier within an LTE Carrier
EP	18213480.9		12/18/2018	Provision of a Virtual Carrier within an LTE Carrier
ES	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
FR	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
FR	17185909.3	3261284	8/11/2017	Provision of a Virtual Carrier within an LTE Carrier
GB	1101972.6	2487782	2/4/2011	Provision of a Virtual Carrier within an LTE Carrier
GB	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
GB	17185909.3	3261284	8/11/2017	Provision of a Virtual Carrier within an LTE Carrier
IN	6089/DELNP/2013		2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
IT	12702869.4	502017000145813	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
JP	2013552267	5976681	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
JP	2016142536		7/20/2016	Provision of a Virtual Carrier within an LTE Carrier
MX	MX/a/2013/008294	334416	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
NL	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
NL	17185909.3	3261284	8/11/2017	Provision of a Virtual Carrier within an LTE Carrier
PL	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
RU	2013140766	2595268	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
SE	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
TR	12702869.4	2671341	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
US	13/983455	9516633	2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
US	15/333273	9860032	10/25/2016	Provision of a Virtual Carrier within an LTE Carrier
US	15/834695		12/7/2017	Provision of a Virtual Carrier within an LTE Carrier

Country	Application No.	Patent No.	Filing Date	Title
WO	PCT/GB2012/050212		2/1/2012	Provision of a Virtual Carrier within an LTE Carrier
CN	201280029326.6	ZL201280029326	6/11/2012	Carrier selection Methods
CN	201711339829.4		12/14/2017	Carrier selection Methods
DE	12727407.4	602012055103.8	6/11/2012	Carrier selection Methods
EP	12727407.4	2721873	6/11/2012	Carrier selection Methods
EP	18206812.2		11/16/2018	Carrier selection Methods
FR	12727407.4	2721873	6/11/2012	Carrier selection Methods
GB	1110077.3	2492062	6/15/2011	Carrier selection Methods
GB	12727407.4	2721873	6/11/2012	Carrier selection Methods
JP	2014515278	5964417	6/11/2012	Carrier selection Methods
JP	2016128360	6346225	6/29/2016	Carrier selection Methods
KR	20147000597	101908165	6/11/2012	Carrier selection Methods
NL	12727407.4	2721873	6/11/2012	Carrier selection Methods
US	14/126203	9713146	6/11/2012	Carrier selection Methods
US	15/623096		6/14/2017	Carrier selection Methods
WO	PCT/GB2012/051309		6/11/2012	Carrier selection Methods
BR	112013031237.8		6/11/2012	Carrier selection Methods
CN	201280029386.8	ZL201280029386	6/11/2012	Carrier selection Methods
DE	12727408.2	602012052019.1	6/11/2012	Carrier selection Methods
EP	12727408.2	2721874	6/11/2012	Carrier selection Methods
EP	18195671.5		9/20/2018	Carrier selection Methods
FR	12727408.2	2721874	6/11/2012	Carrier selection Methods

Country	Application No.	Patent No.	Filing Date	Title
GB	1110085.6	2491866	6/15/2011	Carrier selection Methods
GB	12727408.2	2721874	6/11/2012	Carrier selection Methods
IN	10090/DELNP/2013		6/11/2012	Carrier selection Methods
IT	12727408.2	502018000038924	6/11/2012	Carrier selection Methods
JP	2014515279	5964418	6/11/2012	Carrier selection Methods
JP	2016128389	6280958	6/29/2016	Carrier selection Methods
NL	12727408.2	2721874	6/11/2012	Carrier selection Methods
RU	2014101073	2602387	6/11/2012	Carrier selection Methods
US	14/126118	9209954	6/11/2012	Carrier selection Methods
US	14/944832	9432997	11/18/2015	Carrier selection Methods
US	15/236753	9801183	8/15/2016	Carrier selection Methods
WO	PCT/GB2012/051310		6/11/2012	Carrier selection Methods
AU	2012345070	2012345070	11/8/2012	Communication terminal, communication procedure, base station, and communications system
BR	BR1120140126844		11/8/2012	Communication terminal, communication procedure, base station, and communications system
CA	2851075		11/8/2012	Communication terminal, communication procedure, base station, and communications system
CN	201280058048.7	ZL201280058048	11/8/2012	Communication terminal, communication method, base station, and communication system
CN	201810653984.1		6/22/2018	Communication terminal, communication method, base station and communication system
DE	16183538.4		8/10/2016	

Country	Application No.	Patent No.	Filing Date	Title
EP	12853962.4		11/8/2012	COMMUNICATION TERMINAL, COMMUNICATION METHOD, BASE STATION, AND COMMUNICATION SYSTEM
EP	16183538.4		8/10/2016	COMMUNICATION TERMINAL, COMMUNICATION METHOD, BASE STATION AND COMMUNICATION SYSTEM
FR	16183538.4		8/10/2016	
GB	16183538.4		8/10/2016	
ID	P00201403041		11/8/2012	Communication terminal, communication procedure, base station, and communications system
IN	04248/DELNP/14		11/8/2012	Communication terminal, communication procedure, base station, and communications system
JP	2011264437		12/2/2011	Communication terminal, communication procedure, base station, and communications system
JP	2013547080	5967102	11/8/2012	COMMUNICATION TERMINAL, COMMUNICATION METHOD, BASE STATION, AND COMMUNICATION SYSTEM
MX	2014/006327		11/8/2012	Communication terminal, communication procedure, base station, and communications system
RU	2014121225		11/8/2012	Communication terminal, communication procedure, base station, and communications system
US	14/358096	9706597	11/8/2012	Communication terminal, communication method, base station and communication system
US	15/606365	10123363	5/26/2017	Communication terminal, communication method, base station and communication system

Country	Application No.	Patent No.	Filing Date	Title
US	16/056810		8/7/2018	COMMUNICATION TERMINAL, COMMUNICATION METHOD, BASE STATION AND COMMUNICATION SYSTEM
VN	1-2014-01613		11/8/2012	Communication terminal, communication procedure, base station, and communications system
WO	PCT/JP2012/078912		11/8/2012	COMMUNICATION TERMINAL, COMMUNICATION METHOD, BASE STATION, AND COMMUNICATION SYSTEM
ZA	2014/03504	2014/03504	11/8/2012	Communication terminal, communication procedure, base station, and communications system
BR	BR1120150263640		2/13/2014	Communication control method, communication control method, wireless communication system and terminal device
CN	201480021655.5	ZL201480021655	2/13/2014	Communication control device, communication control method, wireless communication system, and terminal device
EP	14788039.7		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE
IN	09769/DELNP/15		2/13/2014	Communication control method, communication control method, wireless communication system and terminal device
JP	2013090285		4/23/2013	Communication control method, communication control method, wireless communication system and terminal device
JP	2015513589	6468184	2/13/2014	Communication control method, communication control method, wireless communication system and terminal device

Country	Application No.	Patent No.	Filing Date	Title
RU	2015144673	2643673	2/13/2014	Communication control method, communication control method, wireless communication system and terminal device
TW	103113543	I662844	4/14/2014	Communication control method, communication control method, wireless communication system and terminal device
US	14/785343	9736842	2/13/2014	Communication control apparatus, communication control method, radio communication system and terminal apparatus for an extension band added to the component carrier to an excess frequency band either on an upper side or on a lower side of the component carrier
VN	1-2015-03832		2/13/2014	Communication control method, communication control method, wireless communication system and terminal device
WO	PCT/JP2014/053348		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE
AU	2014258790	2014258790	2/13/2014	Communication control device, communication control method, wireless communication system and terminal device
BR	BR1120150263682		2/13/2014	Communication control device, communication control method, wireless communication system and terminal device
CN	201480021656.X		2/13/2014	Communication control device, communication control method, wireless communication system, and terminal device
EP	14788725.1		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE

Country	Application No.	Patent No.	Filing Date	Title
ID	P00201506671		2/13/2014	Communication control device, communication control method, wireless communication system and terminal device
JP	2013090288		4/23/2013	Communication control device, communication control method, wireless communication system and terminal device
JP	2015513590	6380383	2/13/2014	Communication control device, communication control method, wireless communication system and terminal device
US	14/785345	9736843	2/13/2014	Communication control apparatus, communication control method, radio communication system and terminal apparatus for setting an extension band having the extension bandwidth of the integer multiple of a RB size
VN	1-2015-03834		2/13/2014	Communication control device, communication control method, wireless communication system and terminal device
WO	PCT/JP2014/053351		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE
EP	14788543.8		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE
JP	2013090287		4/23/2013	Communication control device, communication control method, wireless communication system and terminal device
TW	103113542	I642318	4/14/2014	Communication control device, communication control method, wireless communication system and terminal device

Country	Application No.	Patent No.	Filing Date	Title
US	14/784417	10075955	2/13/2014	Communication control apparatus, communication control method, radio communication system and terminal apparatus
WO	PCT/JP2014/053350		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE
EP	14788702.0		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE
JP	2013090286		4/23/2013	Communication control device, communication control method, wireless communication system and terminal device
US	14/785339	9930687	2/13/2014	Communication control apparatus, communication control method, radio communication system and terminal apparatus
WO	PCT/JP2014/053349		2/13/2014	COMMUNICATION CONTROL DEVICE, COMMUNICATION CONTROL METHOD, WIRELESS COMMUNICATION SYSTEM, AND TERMINAL DEVICE
CN	201480062454.X		10/3/2014	Random access preamble reservation for MTC devices
DE	14780503.0	602014029593.2	10/3/2014	Random access preamble reservation for MTC devices
EP	13192988.7		11/14/2013	Random access preamble reservation for MTC devices
EP	14780503.0	3061304	10/3/2014	Random access preamble reservation for MTC devices
EP	17174452.7		6/5/2017	Random access preamble reservation for MTC devices

Country	Application No.	Patent No.	Filing Date	Title
FR	14780503.0	3061304	10/3/2014	Random access preamble reservation for MTC devices
GB	14780503.0	3061304	10/3/2014	Random access preamble reservation for MTC devices
IN	201617010498		10/3/2014	Random access preamble reservation for MTC devices
IT	14780503.0	502018000027783	10/3/2014	Random access preamble reservation for MTC devices
JP	2016529974		10/3/2014	Random access preamble reservation for MTC devices
NL	14780503.0	3061304	10/3/2014	Random access preamble reservation for MTC devices
US	15/029177	9867197	10/3/2014	Random access preamble reservation for MTC devices
US	15/674549	10306648	8/11/2017	Random access preamble reservation for MTC devices
US	16/383684		4/15/2019	Random access preamble reservation for MTC devices
WO	PCT/EP2014/071221		10/3/2014	Random access preamble reservation for MTC devices