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[EPODOC: SS 1] LTE and control

Results in EPODOC **5.314**

[SS 2] flow and processing

Results in EPODOC **99.833**

[SS 3] 1 and 2

Results in EPODOC **20**

[SS 4] 3 and unlicensed

Results in EPODOC **8**

[SS 5] ..v

[EPODOC: SS 5] ..li

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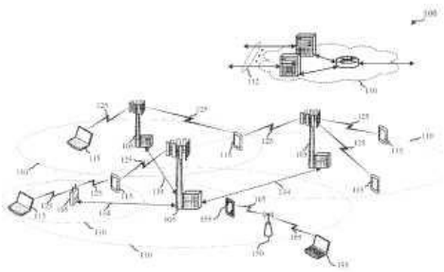

PN - MX2017013996 A 20180323
PR - US201562165814P 20150522; US201615149752 20160509; WO2016US31587 20160510
AP - MX20170013996 20160510
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CQI - H04L5/005 ; H04W72/042
CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808
PA - QUALCOMM INC [US]
TI - **CONTROL FLOW** ENHANCEMENTSFOR **LTE**-**UNLICENSED**.
AB - **Control flow** enhancement for **LTE**-U operation. Aspects include enhancements to **control flow processing** for floating TTI operation for **unlicensed** cells including ePDCCH **processing**, aperiodic CSI reporting, DRX operation, and extended TTIs at the end of a transmission burst. The described aspects also include enhancements for reference signal configuration for **unlicensed** cells, **processing** of joint grants for multiple **unlicensed** cells, ePDCCH **processing** for partial subframes, and multi-channel DRS operation.

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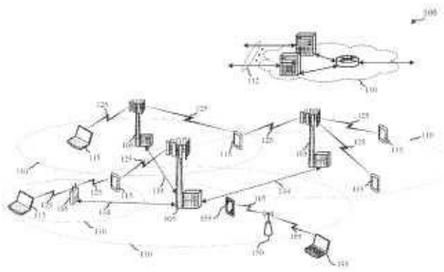

PN - PH12017501837 A1 20180411
PR - US201615149752 20160509; US201562165814P 20150522; WO2016US31587 20160510
AP - PH20171501837 20171006
DT - I
CCI - H04L5/001 ; H04L5/0048 ; H04L5/0053 ; H04L5/0091 ; H04W72/1289
CUI - H04J11/00 ; H04W28/12 ; H04W74/006
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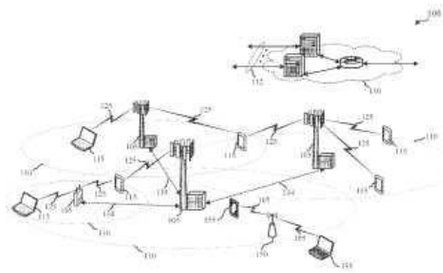

PN - CN107637156 A 20180126

PR - US201562165814P 20150522; US201615149752 20160509; WO2016US31587 20160510

AP - CN20168029234 20160510

DT - I

CT - || STSE (A)
CN103477579 A 20131225 [A] (LG ELECTRONICS INC)
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US2015071220 A1 20150312 [A] (LUO TAO [US], et al)
[A] 15-25
* 全文 *;
US2015110066 A1 20150423 [A] (GAAL PETER [US], et al)
[A] 1-15
* 全文 *;
US2015230211 A1 20150813 [A] (YOU HYANGSUN [KR], et al)
[A] 15-25
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CCI - H04L5/001 ; H04L5/0048 ; H04L5/0053 ; H04L5/0091 ; H04W72/1289

CUI - H04J11/00 ; H04W28/12 ; H04W74/006

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CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808

PA - QUALCOMM INC

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AB - The invention provides **control flow** enhancements for **LTE**-**unlicensed**. **Control flow** enhancement for **LTE**-U operation. Aspects include enhancements to **control flow processing** for floating TTI operation for **unlicensed** cells including ePDCCH **processing**, aperiodic CSI reporting, DRX operation, and extended TTIs at the end of a transmission burst. The described aspects also include enhancements for reference signal configuration for **unlicensed** cells, **processing** of joint grants for multiple **unlicensed** cells, ePDCCH **processing** for partial subframes, and multi-channel DRS operation.

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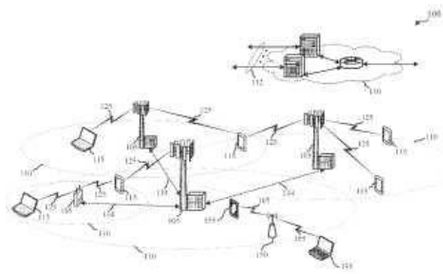

PN - CA2981985 A1 20161201

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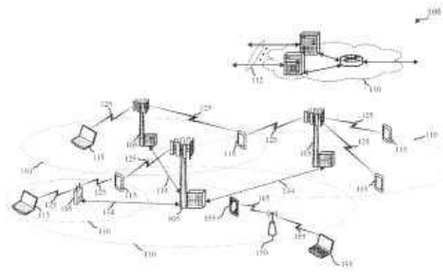

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AP - AU20160266823 20160510

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CQI - H04L5/005 ; H04W72/042

CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808

PA - QUALCOMM INC

TI - **Control flow** enhancements for **LTE**-**unlicensed**

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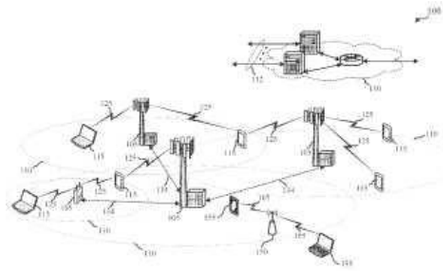

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PR - US201562165814P 20150522; US201615149752 20160509

AP - TW20160114592 20160511

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PA - QUALCOMM INC [US]

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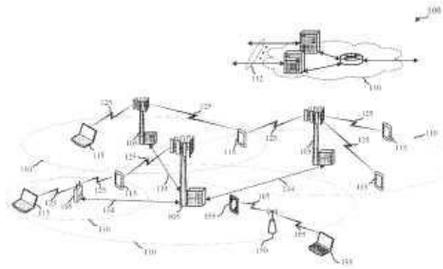

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PNFP - US9949169 B2 20180417

PR - US201615149752 20160509; US201562165814P 20150522

AP - US201615149752 20160509

DT - *; Rep

CT - || R141 (A1)
US2015365152 A1 20151217 [ ] (FRENNE MATTIAS [SE], et al);
US2016073344 A1 20160310 [ ] (VUTUKURI ESWAR [GB], et al);
US2016135181 A1 20160512 [ ] (NOGAMI TOSHIZO [US], et al);
US2016192396 A1 20160630 [ ] (NG BOON LOONG [US]);
US2016219618 A1 20160728 [ ] (RICO ALVARINO ALBERTO [US], et al);
US2016278118 A1 20160922 [ ] (YERRAMALLI SRINIVAS [US], et al);
US2016309498 A1 20161020 [ ] (LUO TAO [US], et al);
US2016330630 A1 20161110 [ ] (YOO TAESANG [US], et al);
US2016337880 A1 20161117 [ ] (NOGAMI TOSHIZO [US], et al);
US2016338023 A1 20161117 [ ] (NOGAMI TOSHIZO [US], et al);
US2017155488 A1 20170601 [ ] (SAXENA VIDIT [SE], et al);
US2017230970 A1 20170810 [ ] (KIM SEONWOOK [KR], et al)

CCI - H04L5/001 ; H04L5/0048 ; H04L5/0053 ; H04L5/0091 ; H04W72/1289

CUI - H04J11/00 ; H04W28/12 ; H04W74/006

CQI - H04L5/005 ; H04W72/042

CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808

PA - (A1 B2)
QUALCOMM INC [US]

TI - (A1)

CONTROL FLOW ENHANCEMENTSFOR **LTE**-**UNLICENSED**

- (B2)
Control flow enhancements for **LTE**-**unlicensed**

AB - (A1 B2)
Control flow enhancement for **LTE**-U operation. Aspects include enhancements to **control flow processing** for floating TTI operation for **unlicensed** cells including ePDCCH **processing**, aperiodic CSI reporting, DRX operation, and extended TTIs at the end of a transmission burst. The described aspects also include enhancements for reference signal configuration for **unlicensed** cells, **processing** of joint grants for multiple **unlicensed** cells, ePDCCH **processing** for partial subframes, and multi-channel DRS operation.

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PN - WO2016191091 A1 20161201

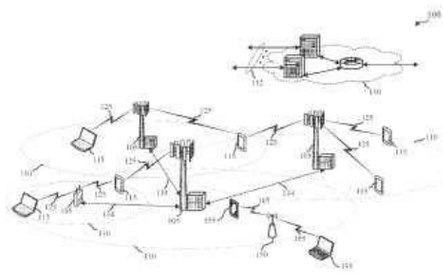
PR - US201562165814P 20150522; US201615149752 20160509

AP - WO2016US31587 20160510

DT - **

CT - |EP| ISR (A1)
US2014036881 A1 20140206 [XI] (KIM HYUNGTAE [KR], et al)
[X] 1,3,4,7,11,14
* paragraph [0003] - paragraph [0006] *
* paragraph [0016] *
* paragraph [0119] - paragraph [0128] *
* paragraph [0089] - paragraph [0091] *
* paragraph [0136] - paragraph [0147] *
* figures 9-15 *
[I] 2,5,8,9,12;
US2015110066 A1 20150423 [XI] (GAAL PETER [US], et al)
[X] 1,5,7,11,14
* paragraph [0009] - paragraph [0017] *
* paragraph [0078] - paragraph [0088] *
* paragraph [0092] - paragraph [0108] *
* paragraph [0133] - paragraph [0135] *
* figures 2a,3-5 *
[I] 6,10,13;
XP050971140 A[XI];
XP050973405 A[XI];
US2015071220 A1 20150312 [XYI] (LUO TAO [US], et al)
[X] 15,16,19,20,22,23,25
* paragraph [0105] - paragraph [0113] *
* paragraph [0146] - paragraph [0148] *
* paragraph [0153] - paragraph [0157] *
* figures 6,14 *
[Y] 17,21,24
[I] 18;
XP050968369 A[XAI];
WO2014051322 A1 20140403 [YA] (LG ELECTRONICS INC [KR])
[Y] 17,21,24
* the whole document *
[A] 15,16,18-20,22,23,25;
US2015230211 A1 20150813 [P] (YOU HYANGSUN [KR], et al)
[P]
* paragraph [0093] *
* paragraph [0167] - paragraph [0170] *

CTNP - |EP| ISR (A1)
[XI] - QUALCOMM INCORPORATED, "Adaptive Frame Structure and DL-UL configuration for LAA", vol. RAN WG1, no. Fukuoka, Japan; 20150525 - 20150529, (20150516), 3GPP DRAFT; R1-152783 - ADAPTIVE FRAME STRUCTURE AND DL-UL CONFIGURATION FOR LAA, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOL, URL: http://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_81/Docs/, (20150516), XP050971140
[X] 1,5,7,11,14
* page 1, line 3 - line 10 *
* page 2, line 15 - line 16 *
* page 4, line 8 - line 11 *
* page 4, line 31 - line 36 *
[I] 2,3,9,12
[XI] - MOTOROLA MOBILITY, "Further Discussions on Physical Layer options for LAA-LTE", vol. RAN WG1, no. Fukuoka, Japan; 20150425 - 20150529, (20150516), 3GPP DRAFT; R1-153183_PHYLAYEROPTIONS_V4, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL:http://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_81/Docs/, (20150516), XP050973405
[X] 1,3-5,7,11,14



* page 4, line 10 - line 12 *
* page 5, line 43 - page 6, line 6 *
* figure 1 *
[I] 2,9,12
[XAI] - NOKIA NETWORKS, "On LAA scheduling operation", vol. RAN WG1, no. Fukuoka, Japan; 20150525 - 20150529, (20150513), 3GPP DRAFT; R1-152823, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL: http://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_81/Docs/, (20150513), XP050968369
[X] 15,16
* Sec.2.1; page 1, line 1 - line 3 *
* page 2, line 29 - line 31 *
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[A] 17,18,21,24
[I] 19,20,22,23,25

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[SS 5] lte and 1 and unlicensed

Results in EPODOC **174**

[SS 6] 5 and aperiodic

Results in EPODOC **9**

[SS 7] ..v

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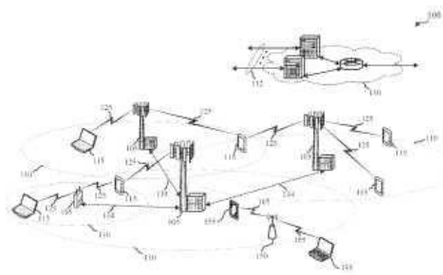

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PN - PH12017501837 A1 20180411

PR - US201615149752 20160509; US201562165814P 20150522; WO2016US31587 20160510

AP - PH20171501837 20171006

DT - I

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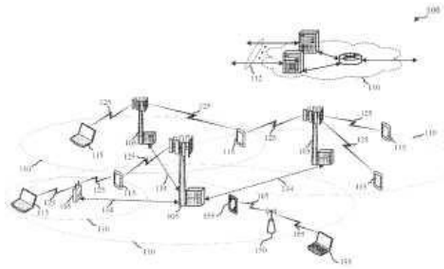

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PN - CN107637156 A 20180126

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[A] 1-15
* 全文 *;
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* 全文 *

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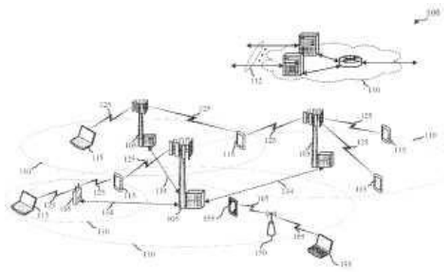

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CQI - H04L5/005 ; H04W72/042

CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808

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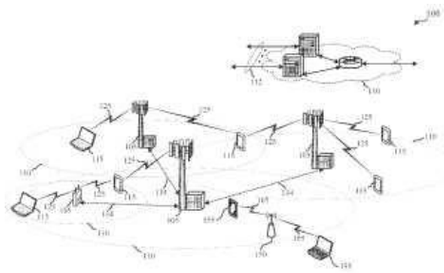

for **unlicensed** cells including ePDCCH processing, **aperiodic** CSI reporting, DRX operation, and extended TTIs at the end of a transmission burst. The described aspects also include enhancements for reference signal configuration for **unlicensed** cells, processing of joint grants for multiple **unlicensed** cells, ePDCCH processing for partial subframes, and multi-channel DRS operation.

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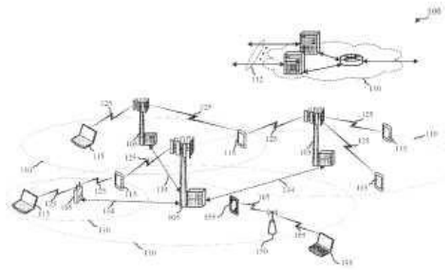

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CUI - H04J11/00 ; H04W28/12 ; H04W74/006

CQI - H04L5/005 ; H04W72/042

CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808

PA - QUALCOMM INC

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AB - **Control** flow enhancement for **LTE**-U operation. Aspects include enhancements to **control** flow processing for floating TTI operation for **unlicensed** cells including ePDCCH processing, **aperiodic** CSI reporting, DRX operation, and extended TTIs at the end of a transmission burst. The described aspects also include enhancements for reference signal configuration for **unlicensed** cells, processing of joint grants for multiple **unlicensed** cells, ePDCCH processing for partial subframes, and multi-channel DRS operation.

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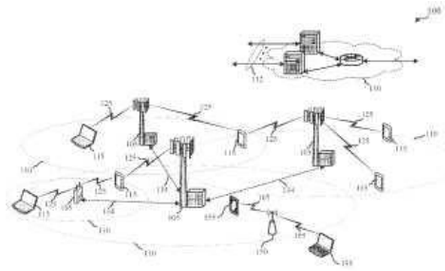

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PR - US201562165814P 20150522; US201615149752 20160509

AP - TW20160114592 20160511

DT - I

CCI - H04L5/001 ; H04L5/0048 ; H04L5/0053 ; H04L5/0091 ; H04W72/1289

CUI - H04J11/00 ; H04W28/12 ; H04W74/006

CQI - H04L5/005 ; H04W72/042

CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808

PA - QUALCOMM INC [US]

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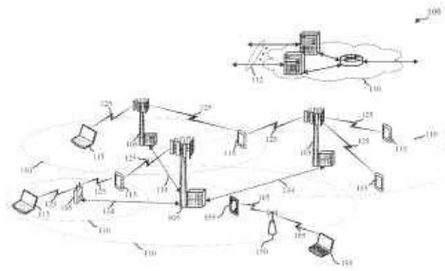

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PNFP - US9949169 B2 20180417

PR - US201615149752 20160509; US201562165814P 20150522

AP - US201615149752 20160509

DT - *; Rep

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CCI - H04L5/001 ; H04L5/0048 ; H04L5/0053 ; H04L5/0091 ; H04W72/1289

CUI - H04J11/00 ; H04W28/12 ; H04W74/006

CQI - H04L5/005 ; H04W72/042

CCA - H04L27/0006 ; H04W16/14 ; H04W74/0808

PA - (A1 B2)
QUALCOMM INC [US]

TI - (A1)
CONTROL FLOW ENHANCEMENTS FOR **LTE**-**UNLICENSED**
- (B2)
Control flow enhancements for **LTE**-**unlicensed**

AB - (A1 B2)
Control flow enhancement for **LTE**-U operation. Aspects include enhancements to **control** flow processing for floating TTI operation for **unlicensed** cells including ePDCCH processing, **aperiodic** CSI reporting, DRX operation, and extended TTIs at the end of a transmission burst. The described aspects also include enhancements for reference signal configuration for **unlicensed** cells, processing of joint grants for multiple **unlicensed** cells, ePDCCH processing for partial subframes, and multi-channel DRS operation.

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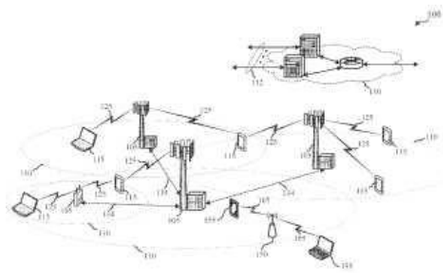

PN - WO2016191091 A1 20161201

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AP - WO2016US31587 20160510

DT - **

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[X] 1,3,4,7,11,14
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* paragraph [0016] *
* paragraph [0119] - paragraph [0128] *
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* figures 9-15 *
[I] 2,5,8,9,12;
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[X] 1,5,7,11,14
* paragraph [0009] - paragraph [0017] *
* paragraph [0078] - paragraph [0088] *
* paragraph [0092] - paragraph [0108] *
* paragraph [0133] - paragraph [0135] *
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[I] 6,10,13;
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[X] 15,16,19,20,22,23,25
* paragraph [0105] - paragraph [0113] *
* paragraph [0146] - paragraph [0148] *
* paragraph [0153] - paragraph [0157] *
* figures 6,14 *
[Y] 17,21,24
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[A] 15,16,18-20,22,23,25;
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[X] 1,3-5,7,11,14
* page 4, line 10 - line 12 *
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[X] 15,16
* Sec.2.1; page 1, line 1 - line 3 *
* page 2, line 29 - line 31 *
* page 3, line 1 - line 4 *
[A] 17,18,21,24
[I] 19,20,22,23,25

CCI - H04L5/001 ; H04L5/0048 ; H04L5/0053 ; H04L5/0091 ; H04W72/1289

CUI - H04J11/00 ; H04W28/12 ; H04W74/006

CQI - H04L5/005 ; H04W72/042

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PR - CN20141120411 20140327

AP - CN20141120411 20140327

DT - I

CCI - H04L5/0023 ; H04L5/0048 ; H04L5/0085 ; H04L5/0094

CQI - H04W72/042 ; H04W72/0453 ; H04L41/0803

CCA - H04L5/001

CQA - H04W88/08

PA - LONGBO COMM TECHNICAL CO LTD

TI - **Aperiodic** SRS (Sounding Reference Signal) method and device

AB - The invention provides an **aperiodic** SRS (Sounding Reference Signal) method and a device, so as to solve the problem of scheduling constraints of the traditional A-SRS in **unlicensed** spectrum communication and realize flexible scheduling of the **aperiodic** SRS through indicating a sending frequency band of the SRS by physical layer signaling. As an embodiment, the antenna port number of the **aperiodic** SRS is configured by high signaling of a logic cell index tag, physical resources occupied by the **aperiodic** SRS are configured by high signaling of a carrier index tag, and a logic cell index can correspond to a different physical carrier in a different sub frame. According to the scheme of the invention, a base station can dynamically trigger sending of the SRS in a non-scheduling carrier, and demands on an uplink CSI by the DFS (Dynamical Frequency Selection) technology in the **unlicensed** spectrum communication can be met. In addition, the DCI (Downlink **Control** Indicator) format in the prior **LTE** (Long Term Evolution) is reused as much as possible, and compatibility is good.

[SS 7]