**3GPP TSG RAN WG1 #100bis-e** **R1-200XXXX**

**e-meeting, April 20-30, 2020**

**Agenda item: 7.2.2.2.1**

**Source: Moderator (Nokia)**

**Title: TBA**

**Document for: Discussion and Decision**

This document summarizes the editorial corrections presented at RAN1”100bis-e

**Editorial \_Issue #1**

|  |  |
| --- | --- |
| Removing “unicast” limit for PUSCH CWS adjustment | R1-2001705 (2.4.1) |

--------------------------------------------------------- Start of TP #4-----------------------------------------------------------------

<unchanged part omitted>

The HARQ-ACK feedback, *reference duration* and duration in the procedure above are defined as the following:

- HARQ-ACK feedback for PUSCH(s) transmissions are expected to be provided to UE(s) explicitly or implicitly where implicit HARQ-ACK feedback for the purpose of contention window adjustment in this subclause, is determined based on the indication for a new transmission or retransmission in the DCI scheduling PUSCH(s) as follows:

- If a new transmission is indicated, 'ACK' is assumed for the transport blocks or code block groups in the corresponding PUSCH(s) for the TB-based and CBG-based transmission, respectively.

- If a retransmission is indicated for TB-based transmissions, 'NACK' is assumed for the transport blocks in the corresponding PUSCH(s).

- If a retransmission is indicated for CBG-based transmissions, if a bit value in the code block group transmission information (CBGTI) field is '0' or '1' as described in subclause 5.1.7.2 in [8], 'ACK' or 'NACK' is assumed for the corresponding CBG in the corresponding PUSCH(s), respectively.

The *reference duration* corresponding to a channel occupancy initiated by the UE including transmission of PUSCH(s) is defined in this clause as a duration starting from the beginning of the channel occupancy until the end of the first slot where at least one ~~unicast~~ PUSCH is transmitted over all the resources allocated for the PUSCH, or until the end of the first transmission burst by the UE that contains ~~unicast~~ PUSCH(s) transmitted over all the resources allocated for the PUSCH, whichever occurs earlier. If the channel occupancy includes a ~~unicast~~ PUSCH, but it does not include any ~~unicast~~ PUSCH transmitted over all the resources allocated for that PUSCH, then, the duration of the first transmission burst by the UE within the channel occupancy that contains PUSCH(s) is the *reference duration* for CWS adjustment.

<unchanged part omitted>

**Editorial \_Issue #2**

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| Update RRC parameter from “ChannelAccessType-r16” to “ChannelAccessMode- r16” | R1-2001705 (2.4.2)R1-2002530 (s6) |

**R1-2001705 (2.4.2) and R1-2002530 (s6) (same change in both)**

--------------------------------------------------------- Start of TP #5-----------------------------------------------------------------

8.1 Random access preamble

<unchanged part omitted>

For paired spectrum all PRACH occasions are valid.

For unpaired spectrum,

- if a UE is not provided *tdd-UL-DL-ConfigurationCommon*, a PRACH occasion in a PRACH slot is valid if it does not precede a SS/PBCH block in the PRACH slot and starts at least  symbols after a last SS/PBCH block reception symbol, where  is provided in Table 8.1-2.

- the index of the SS/PBCH block is provided by *ssb-PositionsInBurst* in *SIB1* or in *ServingCellConfigCommon*

- If a UE is provided *tdd-UL-DL-ConfigurationCommon*, a PRACH occasion in a PRACH slot is valid if

- it is within UL symbols, or

- it does not precede a SS/PBCH block in the PRACH slot and starts at least  symbols after a last downlink symbol and at least  symbols after a last SS/PBCH block symbol, where  is provided in Table 8.1-2, and if *ChannelAccessMode-r16* = *semistatic* is provided, does not overlap with a set of consecutive symbols before the start of a next channel occupancy time where there shall not be any transmissions, as described in [15, TS 37.213]

- the index of the SS/PBCH block is provided by *ssb-PositionsInBurst* in *SIB1* or in *ServingCellConfigCommon*.

<unchanged part omitted>

--------------------------------------------------------- End of TP #5-----------------------------------------------------------------

**Editorial \_Issue #3**

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| Update RRC parameter from “ul-toDL-CO-SharingED-Threshold-r16” to “ul-toDL-COT-SharingED-Threshold-r16” | R1-2001705 (2.4.7) |

------------------------------------------------------- Start of TP #10-----------------------------------------------------------------

<unchanged part omitted>

If a gNB shares a channel occupancy initiated by a UE using the channel access procedures described in clause 4.2.1.1 on a channel, the gNB may transmit a transmission that follows a PUSCH transmission on scheduled or configured resources by the UE after a gap as follows:

- The transmission shall contain transmission to the UE that initiated the channel occupancy and can include non-unicast and/or unicast transmissions where any unicast transmission that includes user plane data is only transmitted to the UE that initiated the channel occupancy.

- If the higher layer parameters *ul-toDL-COT-SharingED-Threshold-r16* is not provided, the transmission shall not include any unicast transmissions with user plane data and the transmission duration is not more than the duration of 2, 4 and 8 symbols for subcarrier spacing of 15, 30 and 60 kHz of the corresponding channel, respectively.

- If the gap is up to , the gNB can transmit the transmission on the channel after performing Type 2C DL channel access as described in clause 4.1.2.3.

- If the gap is or , the gNB can transmit the transmission on the channel after performing Type 2A or Type 2B DL channel access procedures as described in clause 4.1.2.1 and 4.1.2.2, respectively.

For the case where a gNB shares a channel occupancy initiated by a UE with configured grant PUSCH transmission, the gNB may transmit a transmission that follows the configured grant PUSCH transmission by the UE as follows:

- If the higher layer parameter *ul-toDL-COT-SharingED-Threshold-r16* is provided, the UE is configured by *cg-COT-SharingList-r16* where *cg-COT-SharingList-r16* provides a table configured by higher layer. Each row of the table provides a channel occupancy sharing information given by higher layer parameter *CG-COT-Sharing-r16*. One row of the table is configured for indicating that the channel occupancy sharing information is not available.

- If the 'COT sharing information' in CG-UCI indicates a row index that corresponds to a *CG-COT-Sharing-r16* that provides channel occupancy sharing information, the gNB can share the UE channel occupancy assuming a channel access priority class *p= channelAccessPriority-r16*, starting from *O=offset-r16* slots from the end of the slot where CG-UCI is detected, for a duration of *D=duration-r16* slots where *duration-r16*, *offset-r16*, and *channelAccessPriority-r16* are higher layer parameters provided by *CG-COT-Sharing-r16*.

- If the higher layer parameter *ul-toDL-COT-SharingED-Threshold-r16* is not provided, and if 'COT sharing information' in CG-UCI indicates '1', the gNB can share the UE channel occupancy and start the DL transmission X= *cg-COT-SharingOffset-r16* symbols from the end of the slot where CG-UCI is detected, where *cg-COT-SharingOffset-r16* is provided by higher layer. The transmission shall not include any unicast transmissions with user plane data and the transmission duration is not more than the duration of 2, 4 and 8 symbols for subcarrier spacing of 15, 30 and 60 kHz of the corresponding channel, respectively.

<unchanged part omitted>

**Editorial \_Issue #4**

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| Misc. editorial issues for 38..212 | R1-2001705 (2.4.8) |

--------------------------------------------------------- Start of TP #11---------------------------------------------------------------

7.3.1.1.2 Format 0\_1

<unchanged part omitted>

- ChannelAccess-CPext-CAPC – 0, 1, 2, 3, 4, 5 or 6 bits. The bitwidth for this field is determined as $\left⌈log\_{2}(I)\right⌉$ bits, where *I* is the number of entries in the higher layer parameter *ul-dci-triggered-UL-ChannelAccess-CPext-CAPC-r16* for operation in a cell with shared spectrum channel access and *ChannelAccessMode-r16* = "*dynamic*" or *ChannelAccessMode-r16* is absent; otherwise 0 bit. One or more entries from Table 7.3.1.1.2-35 are configured by the higher layer parameter *ul-dci-triggered-UL-ChannelAccess-CPext-CAPC-r16.*

<unchanged part omitted>

7.3.1.2.2 Format 1\_1

<unchanged part omitted>

-- ChannelAccess-CPext – 0, 1, 2, 3 or 4 bits. The bitwidth for this field is determined as $\left⌈log\_{2}(I)\right⌉$ bits, where I is the number of entries in the higher layer parameter dl-DCI-triggered-UL-ChannelAccess-CPext-r16 for operation in a cell with shared spectrum channel access and ChannelAccessMode-r16 = "dynamic" or *ChannelAccessMode-r16* is absent; otherwise 0 bit. One or more entries from Table 7.3.1.2.2-6 are configured by the higher layer parameter dl-DCI-triggered-UL-ChannelAccess-CPext-r16.

<unchanged part omitted>

--------------------------------------------------------- End of TP #11---------------------------------------------------------------

**Editorial \_Issue #5**

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| Definition of „shared spectrum“in 37.213 | R1-2002465 |

>>> Text proposal for 37.213 Section 1 >>>

< Unchanged parts are omitted >

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

Shared spectrum: licensed or unlicensed spectrum shared with other IMT/Non-IMT systems

< Unchanged parts are omitted >

>>> End Text proposal >>>

# References

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | [**R1-2001534**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2001534.zip) | Maintainance on the channel access procedure | Huawei, HiSilicon |
| 2 | [**R1-2001652**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2001652.zip) | Remaining issues on the channel access procedures | vivo |
| 3 | [**R1-2001705**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2001705.zip) | Remaining issues on the channel access procedure for NR-U | ZTE, Sanechips |
| 4 | [**R1-2001759**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2001759.zip) | Discussion on the remaining issues of channel access procedure | OPPO |
| 5 | [**R1-2001935**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2001935.zip) | Remaining issues of channel access procedure for NR-U | LG Electronics |
| 6 | [**R1-2001987**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2001987.zip) | Channel access mechanism for NR-unlicensed | Intel Corporation |
| 7 | [**R1-2002031**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002031.zip) | Channel access procedures | Ericsson |
| 8 | [**R1-2002117**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002117.zip) | Channel access procedures for NR-U | Samsung |
| 9 | [**R1-2002193**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002193.zip) | Remaining Issues on Channel Access Procedures for NR-U | Nokia, Nokia Shanghai Bell |
| 10 | [**R1-2002247**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002247.zip) | Remaining issues on channel access procedures for NR-U | ETRI |
| 11 | [**R1-2002383**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002383.zip) | Remaining issues and corrections on channel access procedure for NR-U | Sharp |
| 12 | [**R1-2002405**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002405.zip) | Remaining issues on channel access for NR-U operation | MediaTek Inc. |
| 13 | [**R1-2002434**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002434.zip) | Remaining issues on channel access procedures for NR-U | NTT DOCOMO, INC. |
| 14 | [**R1-2002465**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002465.zip) | TP on shared spectrum in NR-U | NEC |
| 15 | [**R1-2002530**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002530.zip) | TP for Channel access procedures for NR unlicensed | Qualcomm Incorporated |
| 16 | [**R1-2002632**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002632.zip) | Remaining issues on channel access procedure for NR-U | WILUS Inc. |
| 17 | [**R1-2002684**](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_100b_e/Docs/R1-2002684.zip) | COT sharing information in CG-UCI | Lenovo, Motorola Mobility |