**3GPP TSG-RAN WG1 Meeting #107-e R1-21xxxxx**

**e-Meeting, November 11–19, 2021**

|  |
| --- |
| *CR-Form-v12.1* |
| **DRAFT CHANGE REQUEST** |
|  |
|  | **37.213** | **CR** |  | **rev** |  | **Current version:** | **16.6.0** |  |
|  |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | Alignment CR for TS 37.213 |
|  |  |
| ***Source to WG:*** |  Ericsson |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NR\_unlic-Core |  | ***Date:*** | 2021-11-26 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | 1. In Clause 4.1.3 the specification describes “gNB can share the UE channel occupancy and start the DL transmission X= *cg-COT-SharingOffset-r16* symbols from the end to the slot where CG-UCI is detected,….” However, in TS38.331, “*cg-COT-SharingOffset* indicates the offset from the end of the slot where the COT sharing indication in UCI is enabled where the offset in symbols is equal to 14\*n, where n is the signalled value for *cg-COT-SharingOffset”*. The unit of *cg-COT-SharingOffset-r16* in TS 38.331 and TS 37.213 are not consistent.
2. In the description ‘is the set’ in Clasue 4.1.5, the word ‘set’ is misplaced.
3. There is a risk for misinterpretation in Clause 4.2.1 for the case where the channel access parameter is indicated in DCI, but does not include the channel access priority.
4. The letter ‘s’ is missing is ‘DL transmission’ in Clause 4.2.1.0.3.
5. In the description ‘one slot sensing slot’, first usage of ‘slot’ is redundant in Clause 4.2.1.2.1.
6. The word ’used’ is missing in the description ‘If the corresponding channel access priority class has not been for any UL transmission on the channel,‘ in Clause 4.2.2.2.
7. In the description ‘the set’ the word ‘the’ is redundant in Clause 4.2.3.1.
 |
|  |  |
| ***Summary of change:*** | 1. Add ‘\*14’ to scale *cg-COT-SharingOffset-r16* in order to determine X in symbols in Clause 4.1.3.
2. Change ‘is the set maximum’ to ‘is set to the maximum’ in Clause 4.1.5.
3. Add ‘,’ between ‘procedures’ and ‘where’ in Clause 4.2.1.
4. Add ‘s’ to ‘DL transmission’ in Clause 4.2.1.0.3.
5. Remove ‘slot’ from ‘one slot sensing’ in Clause 4.2.1.2.1.
6. Add ‘used’ after ‘has not been’, in Clause 4.2.2.2.
7. Remove ‘the’ before ‘set’ in Clause 4.2.3.1.
 |
|  |  |
| ***Consequences if not approved:*** | Inconsistent specifications |
|  |  |
| ***Clauses affected:*** | 4.1.3, 4.1.5, 4.2.1, 4.2.1.0.3, 4.2.1.2.1, 4.2.2.2, 4.2.3.1 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

### 4.1.3 DL channel access procedures in a shared channel occupancy

====================<unchanged text omitted>==================

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 is not available.

- If the 'COT sharing information' in CG-UCI detected in slot *n* 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 slot *n+O*, where *O=offset-r16* slots, 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\*14* 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 text omitted>==================

### 4.1.5 Energy detection threshold adaptation procedures

An eNB/gNB accessing a channel on which transmission(s) are performed, shall set the energy detection threshold () to be less than or equal to the maximum energy detection threshold .

 is determined as follows:

- If the absence of any other technology sharing the channel can be guaranteed on a long-term basis (e.g. by level of regulation) then:

-

- is maximum energy detection threshold defined by regulatory requirements in dBm when such requirements are defined, otherwise ;

- otherwise,

-

 where:

- =5dB for transmissions including discovery burst(s) as described in clause 4.1.2, and otherwise;

- ;

- is set to the maximum eNB/gNB output power in dBm for the channel;

- eNB/gNB uses the set maximum transmission power over a single channel irrespective of whether single channel or multi-channel transmission is employed

- ;

- is the single channel bandwidth in MHz.

====================<unchanged text omitted>==================

### 4.2.1 Channel access procedures for uplink transmission(s)

====================<unchanged text omitted>==================

When a UE uses Type 2A, Type 2B, or Type 2C UL channel access procedures for PUSCH transmissions indicated by a UL grant or related to random access procedures, where the corresponding UL channel access priority is not indicated, the UE assumes that the channel access priority class is used by the gNB for the *Channel Occupancy Time*.

A UE shall not transmit on a channel for a *Channel Occupancy Time* that exceeds where the channel access procedure is performed based on the channel access priority class associated with the UE transmissions, as given in Table 4.2.1-1.

The total *Channel Occupancy Time* of autonomous uplink transmission(s) obtained by the channel access procedure in this clause, including the following DL transmission if the UE sets 'COT sharing indication' in AUL-UCI to '1' in a subframe within the autonomous uplink transmission(s) as described in Clause 4.1.3, shall not exceed , where is given in Table 4.2.1-1.

====================<unchanged text omitted>==================

##### 4.2.1.0.3 Conditions for indicating Type 2 channel access procedures

An eNB/gNB may indicate Type 2 channel access procedures in the DCI of a UL grant or DL assignment scheduling transmission(s) including PUSCH on one or more channels or PUCCH on a channel, respectively, as follows:

If the UL transmissions occur within the time interval starting at and ending at , where

- ,

- is the time instant when the eNB/gNB has started transmission on the carrier according to the channel access procedure described in clause 4.1.1,

- value is determined by the eNB/gNB as described in clause 4.1.1,

- is the total duration of all gaps of duration greater than that occur between the DL transmissions of the eNB/gNB and UL transmissions scheduled by the eNB/gNB, and between any two UL transmissions scheduled by the eNB/gNB starting from ,

====================<unchanged text omitted>==================

#### 4.2.1.2.1 Type 2A UL channel access procedure

If a UE is indicated to perform Type 2A UL channel access procedures, the UE uses Type 2A UL channel access procedures for a UL transmission. The UE may transmit the transmission immediately after sensing the channel to be idle for at least a sensing interval . consists of a duration immediately followed by one sensing slot and includes a sensing slot at start of . The channel is considered to be idle for if both sensing slots of .are sensed to be idle.

====================<unchanged text omitted>==================

#### 4.2.2.2 Contention window adjustment procedures for UL transmissions scheduled/configured by gNB

====================<unchanged text omitted>==================

If a UE transmits transmissions using Type 1 channel access procedures associated with the channel access priority class on a channel and the transmissions are not associated with explicit or implicit HARQ-ACK feedbacks as described above in this clause, the UE adjusts before step 1 in the procedures described in clause 4.2.1.1, using the latest used for any UL transmissions on the channel using Type 1 channel access procedures associated with the channel access priority class . If the corresponding channel access priority class has not been used for any UL transmission on the channel, is used.

====================<unchanged text omitted>==================

#### 4.2.3.1 Default maximum energy detection threshold computation procedure

If the higher layer parameter *absenceOfAnyOtherTechnology-r14* or *absenceOfAnyOtherTechnology-r16* is provided

- where

- is Maximum energy detection threshold defined by regulatory requirements in dBm when such requirements are defined, otherwise

otherwise

-

where

- ;

- ;

- is set to the value of PCMAX\_H,*c*as defined in [3];

- ;

- is the single channel bandwidth in MHz.

====================<unchanged text omitted>==================