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| **3GPP TSG RAN WG1 Meeting #102-e R1-200xxxx**  **e-Meeting, 17th – 28th August, 2020**   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | *CR-Form-v12.0* | | | | | | | | | | **CHANGE REQUEST** | | | | | | | | | |  | | | | | | | | | |  | **38.202** | **CR** | **DRAFT** | **rev** | **-** | **Current version:** | **16.1.0** |  | |  | | | | | | | | | | *For* [***HE******LP***](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:*** | DL Channel Combination associated with DCI format 2\_6 monitoring | | | | | | | | | | |  |  | | | | | | | | | | | ***Source to WG:*** | Moderator (CATT) | | | | | | | | | | | ***Source to TSG:*** | RAN WG1 | | | | | | | | | | |  |  | | | | | | | | | | | ***Work item code:*** | **NR\_UE\_pow\_sav\_CORE** | | | | |  | | ***Date:*** | | 2020-08-27 | |  |  | | | |  | | |  | |  | | ***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 can be 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-12 (Release 12) Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | | |  |  | | | | | | | | | | | ***Reason for change:*** | | Currently, the channel combination of DCI format 2\_6 monitoring and RAR for RACH Msg 2 only capture the scenario when RAR is addressed to RA-RNTI. The channel combination of RAR for RACH Msg2 addressed to C-RNTI/MCS-C-RNTI and DCI format 2\_6 monitoring outside Active Time was not captured in Table 6.2-2. | | | | | | | | | | ***-*** | |  | | | | | | | | | | ***Summary of change:*** | | The channel combination in Clause 6.2 has include full set of DL channel combination with CRC scrambled by different RNTIs within and outside Active Time. The missing combination of RAR addressed to C-RNTI/MCS-C-RNTI and DCI format 2\_6 monitoring outside Active Time is covered as the subset of selected channel combination. | | | | | | | | | |  | |  | | | | | | | | | | ***Consequences if not approved:*** | | The UE behavior is not clear for the channel combination of RAR addressed to C-RNTI/MCS-C-RNTI and DCI format 2\_6 with CRC scrambling by PS-RNTI outside Active Time. | | | | | | | | | |  | |  | | | | | | | | | | ***Clauses affected:*** | | 6.2 | | | | | | | | | |  | |  | | | | | | | | | |  | | **Y** | **N** |  | | |  | | | | | ***Other specs*** | |  | **X** | Other core specifications | | | TS/TR ... CR ... | | | | | ***affected:*** | |  | **X** | Test specifications | | | TS/TR ... CR ... | | | | | ***(show related CRs)*** | |  | **X** | O&M Specifications | | | TS/TR ... CR ... | | | | |  | |  | | | | | | | | | | ***Other comments:*** | | Isolated impact analysis:  The CR captures the missing channel combination of RAR addressed to C-RNTI/MCS-C-RNTI and DCI format 2\_6 monitoring outside Active Time. | | | | | | | | | |  | |  | | | | | | | | | | ***This CR's revision history:*** | | This is the first version for this CR. | | | | | | | | | |

## 6.2 Downlink

The tables 6.2-1, 6.2-2 describe the possible combinations of physical channels that can be received simultaneously in the downlink by one UE. Table 6.2-1 introduces notation for a "Reception Type" which represents a physical channel and any associated transport channel. Table 6.2-2 describes the combinations of these "Reception Types" which are supported by the UE depending on capabilities [8, TS 38.306], and enumerates how many of each can be received simultaneously. The UE shall be able to receive all TBs according to the indication on PDCCH. Any subset of the combinations specified in table 6.2-2 is also supported.

Table 6.2-1: Downlink "Reception Types"

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| "Reception Type" | Physical Channel(s) | Monitored RNTI | Associated Transport Channel | Comment |
| A | PBCH | N/A | BCH |  |
| B | PDCCH+PDSCH | SI-RNTI | DL-SCH | Note 1 |
| C0 | PDCCH | P-RNTI | N/A | Note 1, Note 2 |
| C1 | PDCCH+PDSCH | P-RNTI | PCH | Note 1 |
| D0 | PDCCH+PDSCH | RA-RNTI or Temporary C-RNTI or MsgB-RNTI | DL-SCH | Note 3 |
| D1 | PDCCH+PDSCH | C-RNTI, CS-RNTI, MCS-C-RNTI | DL-SCH |  |
| D2 | PDCCH | C-RNTI, CS-RNTI, MCS-C-RNTI | DL-SCH |  |
| E | PDCCH | C-RNTI | N/A | Note 4 |
| F0 | PDCCH | Temporary C-RNTI | UL-SCH | Note 3 |
| F1 | PDCCH | C-RNTI, CS-RNTI, MCS-C-RNTI | UL-SCH |  |
| G | PDCCH | SFI-RNTI | N/A |  |
| H | PDCCH | INT-RNTI | N/A |  |
| J0 | PDCCH | TPC-PUSCH-RNTI | N/A |  |
| J1 | PDCCH | TPC-PUCCH-RNTI | N/A |  |
| J2 | PDCCH | TPC-SRS-RNTI | N/A |  |
| K | PDCCH | SP-CSI-RNTI | N/A |  |
| L0 | PDCCH | SL-RNTI | SL-SCH |  |
| L1 | PDCCH | SLCS-RNTI | SL-SCH |  |
| M | PDCCH | SL Semi-Persistent Scheduling V-RNTI | SL-SCH | Note 5 |
| N | PDCCH | PS-RNTI | N/A |  |
| O | PDCCH | AI-RNTI | N/A |  |
| Note 1: These are received from PCell only.  Note 2: In some cases UE is only required to monitor the short message within the DCI for P-RNTI.  Note 3: These are received from PCell or PSCell.  Note 4: This corresponds to PDCCH-ordered PRACH.  Note 5: This corresponds to PDCCH scheduling LTE PC5. | | | | |

Table 6.2-2: Downlink "Reception Type" combinations

|  |  |  |  |
| --- | --- | --- | --- |
| Supported Combinations | | | Comment |
| PCell | PSCell | SCell |
| 1. RRC\_IDLE | | | |
| A + (B and/or C1 and/or D0) + F0 |  |  | Note 1 |
| 2. RRC\_INACTIVE | | | |
| A + (B and/or C1 and/or D0) + F0 |  |  | Note 1 |
| 3. RRC\_CONNECTED | | | |
| (A + C0 + (B and/or (D0 or (m1\*D1+m2\*D2))) + E + F0 + n\*F1 + G + H + J0 + J1 + J2 + K + O + [L0 + L1 + M] + N) | (A + (D0 or (m1\*D1+m2\*D2)) + E + F0 + n\*F1 + G + H + J0 + J1 + J2 + K + O + [L0 + L1 + M] + N) | m1\*D1 + m2\*D2 + E + n\*F1 + G + H  + J0 + J1 + J2 + K + O + [L0 + L1 + M] | Note 2, Note 3, Note 4, Note 5, Note 6, Note 7, Note 8 |
| Note 1: UE is not required to decode more than two PDSCH simultaneously, and decoding prioritization when more than two are received is up to UE implementation.  Note 2: For PCell, UE is not required to decode SI-RNTI PDSCH simultaneously with C-RNTI PDSCH, unless in FR1.  Note 3: Supported combinations are subject to UE capabilities for dual connectivity, carrier aggregation, receiving of group TPC commands, pre-emption indication and dynamic SFI monitoring.  Note 4: The values of m2 ≥ 0 and n≥ 0 in the supported combinations are subject to the UE capability.  Note 5: Support of monitoring PDCCH with SL-RNTI, SLCS-RNTI, SL Semi-Persistent Scheduling V-RNTI are subject to UE capability.  Note 6: The values of m1 ≥ 1 in the supported combinations are subject to the UE capability.  Note 7: In Active time, a UE is not expected to monitor the DCI format for the PDCCH scrambled by PS-RNTI.  Note 8: The PDCCH scrambled by PS-RNTI can only be configured on the PCell and PSCell. | | | |