**3GPP TSG-****RAN2 Meeting #110 electronic R2-2006168**

**Online 1st – 12th June, 2020**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **37.340** | **CR** | **0205** | **rev** | **1** | **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:***  | Corrections to MAC description |
|  |  |
| ***Source to WG:*** | ZTE (Rapporteur), Ericsson, Huawei, HiSilicon |
| ***Source to TSG:*** | RAN2 |
|  |  |
| ***Work item code:*** | NR\_newRAT-Core |  | ***Date:*** | 2020-05-21 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| Reason for change: | 1. The current following description for the MAC sublayer: “In MR-DC, semi-persistent scheduling (SPS) resources can be configured on both PCell and PSCell.” is incomplete:
* In LTE, the SPS terminology is for both DL and UL, but for NR, SPS is only for DL while for UL the term configured grant (CG) is used.
* In LTE and NR, SPS and configured grant can be configured on SpCell as well as other serving cells on MCG/SCG, i.e. SCells.
1. The current description for random access procedure indicates that CFRA and CBRA are supported on PCell and PSCell. However PDCCH order can be used to trigger CFRA on any SCell.
2. A description for PHR should be added for the MAC sublayer: in general, in MR-DC, the MAC CEs transmitted in the MCG apply to the MAC Entity of the MCG (and vice versa for the SCG). So in principle the two MAC Entities operate independently (e.g. for BSR). However, PHR is an exception as a PHR can contain power headroom information for the “other CG”, i.e. PH for the SCG even if the PHR is transmitted in the MCG (and vice versa) and should then be highlighted in Stage 2.
 |
|  |  |
| ***Summary of change:*** | 1. Clarification that, in MR-DC, semi-persistent scheduling (SPS) resources and configured grant (CG) resources can be configured on serving cells in both MCG and SCG.
2. Clarification that, in MR-DC, CFRA can be configured on all serving cells in both MCG and SCG.
3. Addition of a description for PHR in MR-DC.

**Impact Analysis**Impacted 5G architecture options: EN-DC, NE-DC, NR-DC, NGEN-DCImpacted functionality:SPS and configured grant, CFRA and PHRInter-operability:No inter-operability problem is foreseen. |
|  |  |
| ***Consequences if not approved:*** | The current description for SPS and CFRA and the lack of description for PHR for MR-DC are misleading, which may have unexpected impacts to implementation. |
|  |  |
| ***Clauses affected:*** | 6.1 |
|  |  |
|  | **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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

---------------------------------------------START OF CHANGE-------------------------------------------

## 6.1 MAC Sublayer

In MR-DC, the UE is configured with two MAC entities: one MAC entity for the MCG and one MAC entity for the SCG. The serving cells of the MCG other than the PCell can only be activated/deactivated by the MAC Control Element received on MCG, and the serving cells of the SCG other than PSCell can only be activated/ deactivated by the MAC Control Element received on SCG. The MAC entity applies the bitmap for the associated cells of either MCG or SCG. PSCell in SCG is always activated like the PCell (i.e. deactivation timer is not applied to PSCell). With the exception of PUCCH SCell, one deactivation timer is configured per SCell by RRC.

In MR-DC, semi-persistent scheduling (SPS) resources and configured grant (CG) resources can be configured on serving cells in both MCG and SCG.

In MR-DC, contention based random access (CBRA) procedure is supported on both PCell and PSCell while contention free random access (CFRA) procedure is supported on all serving cells in both MCG and SCG.

In MR-DC, the BSR configuration, triggering and reporting are independently performed per cell group. For split bearers, the PDCP data is considered in BSR in the cell group(s) configured by RRC.

In MR-DC, separate DRX configurations are provided for MCG and SCG.

In MR-DC, PHR is independently configured per cell group. Events in one cell group can trigger power headroom reporting in both MCG and SCG. Power headroom information for one cell group is also included in a PHR transmitted in the other cell group.

In MR-DC, consistent LBT failure recovery procedure as described in clause 5.6.1 in TS 38.300 [3] can be configured for both MAC entities of MCG and/or SCG when operating with shared spectrum channel access.

In MR-DC, for power saving purpose, the UE can be configured with DCP to be monitored on the PCell, if the MN is a gNB (i.e. for NE-DC and NR-DC) and/or with DCP to be monitored on the PSCell, if the SN is a gNB (i.e. for EN-DC, NGEN-DC and NR-DC).

---------------------------------------------END OF CHANGE---------------------------------------------