**3GPP TSG-RAN2#118 Meeting *R2-2206248***

**Electronic, 9th– 20th May, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.321** | **CR** | 1298 | **rev** | - | **Current version:** | **17.0.0** |  |
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| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Correction on MAC spec for posEnh | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | RAN2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_pos\_enh-Core | | | | |  | ***Date:*** | | | 2022-05-09 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | First, in the current MAC spec, the MAC CE for MG activation/deactiation command and MG activation/deactiation request are still incomplete. In the last R1 meeting, it has been agreed that there can be at most 16 pre-configured positioning MG.  Second, the following has been agreed during RAN2#118e about cancellation of UL MAC CE for MG activation/dactivation  Proposal3 (modified): Detailed conditions for cancelling triggered MAC CE from the upper layer does not need to be captured in normative text in the MAC spec. Indicate in the cancellation procedure that MAC follows requests from upper layer.  Third, the following has beena agreed during RAN2#118e on pathloss derivation. Then, the description in MAC spec is not needed.  Proposal 3 (modified): Add a new field description in SIB2 and a new clause for pathloss derivation for TA validation of SRSp transmission. No conclusion now on whether this clause can also be used for CG-SDT in RRC\_INACTIVE.  Finally, it should also be noted that the following agreement has been made in RAN1 regarding the UL MAC CE for MG activation/deactivation request. Hence, no change needs to be made to the previous format of the MAC CE. However, some editorial changes are still needed.   |  | | --- | | **Conclusion**  It is RAN1 understanding that the maximum number of PPWs that can be activated/deactivated by a single DL MAC-CE is up to RAN2.   * The previous agreement of maximum number of PPWs that can be activated/deactivated by a single DL MAC-CE is reverted.   Note: It means from RAN1 perspective, RAN1 intends to agree that up to 4 PPWs can be activated/deactivated by a single DL MAC CE as specified in TS 38.321 v17.0.0. |   Also, regarding the following change, in SDT, similar agreements have been made. Prefer to implement the agreement in one place, hence it is not implemented in this CR  Proposal 3 (modified): Agree on the changes R2-2205368 to update the maintenance of the uplink time alignment procedure, with revised punctuation. | | | | | | | | |
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| ***Summary of change:*** | | Impliment the agreements in R2#118e. | | | | | | | | |
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| ***Consequences if not approved:*** | | Incomplete MAC spec for positioning enhancement | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.25, 5.26, 6.1.3.40, 6.1.3.41, 6.1.3.42 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Ver0 in RAN2#118e: R2-2206248 | | | | | | | | |

==================================CHANGE BEGINS===================================

## 5.25 Positioning Measurement Gap Activation/Deactivation Request

If the UE is configured with pre-configured measurement gap, the UE may request the network to activate or deactivate the Positioning measurement gap with UL MAC CE for Positioning Measurement Gap Activation/Deactivation Request in clause 6.1.3.40.

The MAC entity shall, when triggered by the upper layer to send Positioning Measurement Gap Activation/Deactivation Request, cancel the triggered Positioning Measurement Gap Activation/Deactivation Request, if any and trigger another Positioning Measurement Gap Activation/Deactivation Request according to the upper layer's request.

The MAC entity shall,

1>if Positioning Measurement Gap Activation/Deactivation Request MAC CE has been triggered, and not cancelled:

2> if indication from upper layer has been received that the triggered Positioning Measurement Gap Activation/Deactiation Request MAC CE should be cancelled:

3> cancel the triggered Positioning Measurement Gap Activation/Deactivation Request MAC CE.

2> if UL-SCH resources are available for a new transmission and these UL-SCH resources can accommodate the Positioning Measurement Gap Activation/Deactivation Request MAC CE plus its subheader as a result of logical channel prioritization:

3> instruct the Multiplexing and Assembly procedure to generate the Positioning Measurement Gap Activation/Deactivation Request MAC CE according to the upper layer's request;

3> cancel triggered Positioning Measurement Gap Activation/Deactivation Request MAC CE.

2> else:

3> trigger a Scheduling Request for Positioning Measurement Gap Activation/Deactivation Request MAC CE.

===============================NEXT CHANGE=========================================

## 5.26 Positioning SRS transmission in RRC\_INACTIVE

### 5.26.1 General

Periodic and semi-persistent Positioning SRS can be configured for Positioning SRS transmission in RRC\_INACTIVE. The MAC entity shall, if the TA of the configured Positioning SRS is valid according to clause 5.26.2:

- transmit Positioning Periodic SRS or Semi-Persistent SRS defined in TS 38.214 [7].

### 5.26.2 TA validation for SRS transmission in RRC\_INACTIVE

RRC configures the following parameters for validation for SRS transmission in RRC\_INACTIVE:

- *inactivePosSRS-RSRP-ChangeThreshold*: RSRP threshold for the increase/decrease of RSRP for time alignment validation;

The MAC entity shall:

1> if the UE is configured with *measObject* for the Serving Cell where the UE receives configuration for SRS transmission in RRC\_INACTIVE:

2> store the RSRP of the downlink pathloss reference derived based on the *measObject* configured for the Serving Cell as in TS 38.331.

1> else if Timing Advance Command MAC CE is received for *inactivePosSRS-TimeAlignmentTimer* as in clause 5.2:

2> update the stored downlink pathloss reference with the current RSRP value of the downlink pathloss reference.

The MAC entity shall consider the TA to be valid when the following condition is fulfilled:

1> compared to the stored downlink pathloss reference RSRP value, the current RSRP value of the downlink pathloss reference has not increased/decreased by more than *inactivePosSRS-RSRP-ChangeThreshold*, if configured.

==============================NEXT CHANGE========================================

#### 6.1.3.40 Positioning Measurement Gap Activation/Deactivation Request MAC CE

The Positioning Measurement Gap Activation/deactivation request MAC CE is identified by MAC subheader with eLCID as specified in Table 6.2.1-2b.

It has a fixed 8-bit size defined as follows (Figure 6.1.3.40-1):

- Positioning MG ID: This field indicates the identifier for the preconfigured positioning measurement gap. The length of the field is 4 bits.

- A/D: This field indicates the activation or deactivation of the Positioning Measurement Gap. The field is set to 1 to indicate activation, otherwise it indicates deactivation. The length of the field is 1 bit.



**Figure 6.1.3.40-1: Positioning Measurement Gap Activation/Deactivation Request MAC CE**

==================================NEXT CHANGE=====================================

#### 6.1.3.41 Positioning Measurement Gap Activation/Deactivation Command MAC CE

The Positioning Measurement Gap Activation/Deactivation Command MAC CE is identified by MAC subheader with eLCID as specified in Table 6.2.1-1b.

It has a fixed 8-bit size defined as follows (Figure 6.1.3.41-1):

- Positioning MG ID: This field indicates the identifier for the preconfigured positioning measurement gap. The length of the field is 4 bits.

- A/D: This field indicates the activation or deactivation of the Positioning Measurement Gap. The field is set to 1 to indicate activation, otherwise it indicates deactivation. The length of the field is 1 bit.



**Figure 6.1.3.41-1: Positioning Measurement Gap Activation/Deactivation Command MAC CE**

=====================================NEXT CHANGE===================================

#### 6.1.3.42 PPW Activation/Deactivation Command MAC CE

The PPW Activation/Deactivation Command MAC CE is identified by MAC subheader with eLCID as specified in Table 6.2.1-1b.

It has variable size defined as follows (Figure 6.1.3.42-1):

- numEntry: This field indicates the number of entries N-1 in the MAC CE. 00 indicates that N equals to 2; 01 indicates that N equals to 3 and so on. The length of the field is 2 bits;

- Serving Cell ID: This field indicates the identity of the Serving Cell for which the MAC CE applies. The length of the field is 5 bits;

- PPW ID: This field indicates the PPW configured on active DL BWP of the Serving Cell identified by the above Serving Cell ID. The length of the field is 2 bits;

- A/D: This field indicates the activation or deactivation of the PPW. The field is set to 1 to indicate activation, otherwise it indicates deactivation. The length of the field is 1 bit.

- R: Reserved bit, set to 0.



Figure 6.1.3.42-1: PPW Activation/Deactivation Command MAC CE

==================================END OF CHANGES===================================