**3GPP TSG-RAN WG2 Meeting #131 Draft R2-2506284**

**Bengaluru, India, 25 – 29 August 2025**

**Title: [DRAFT]** LS on power ramping and RRC configuration for CB-Msg3-EDT

**Response to:** -

**Release:** Release 19

**Work Item:** IoT\_NTN\_Ph3-Core

**Source:** Nokia [TSG RAN WG2]

**To:** TSG RAN WG1

**Cc:**

**Contact Person:**

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**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**Attachments:** -

**1. Overall Description:**

During RAN2#131 meeting, RAN2 discussed CB-Msg3-EDT and achieved the following agreements regarding power ramping on the CB-Msg3 (re-)transmission:

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| **Agreements regarding CB-Msg3-EDT power ramping:*** We inform RAN1 that RAN2 agreed to support power ramping for both NB-IoT and eMTC copying RAN2 agreements asking RAN1 to check the specification impact for RAN1 specs
* RAN2 to define two new RRC parameters for CB-Msg3 power ramping (i.e., powerRampingStep and cb-Msg3-InitialReceivedTargetPower), with the same value ranges as those defined for legacy Msg3 power ramping.
* The UE applies power ramping when the CB-Msg3ResponseTimer has expired and the UE proceeds to the next CB-msg3 transmission, by reusing the CB\_MSG3\_TRANSMISSION\_COUNTER\_CE as defined in the MAC running CR.
* The CB-Msg3 received target power can be calculated as below:

 the CB-MSG3\_RECEIVED\_TARGET\_POWER is set to cb-Msg3-InitialReceivedTargetPower + (CB\_MSG3\_TRANSMISSION\_COUNTER\_CE – 1) \* powerRampingStep; |

Besides, regarding CB-Msg3 TBS configuration, RAN2 agreed on the following, applicable to both NB-IoT and eMTC:

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| **Agreements regarding TBS configuration for CB-Msg3:*** We don’t support multiple TBSs per CE level for CB-Msg3 EDT.
* We introduce one additional value smaller than the smallest possible TBS size at the moment (328bits), i.e. 144bits.
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Furthermore, for eMTC, RAN2 agreed to define a set of MPDCCH narrowbands for MPDCCH monitoring for CB-Msg4:

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| **Agreements regarding MPDCCH narrowband configuration:*** We configure 2 MPDCCH narrowbands as a set (inform RAN1)
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In addition, RAN2 made the following confirmation regarding RAN1’s questions indicated in the LS R1-2504959: :

RAN1 question: RAN1 wonders whether RAN2 intends to support multi-PRB allocation or sub-PRB allocation or both

* RAN2 confirms that both multi-PRB allocation and sub-PRB allocation are supported for CB-Msg3 (inform RAN1).

RAN1 question: To be confirmed by RAN2 whether to support both singleTone and multitone, or singleTone only for HL parameter npusch-MCS-r16.

* RAN2 confirms that both single-tone and multi-tone are supported for CB-Msg3, and intends to reuse the parameter npusch-MCS-r16 for CB-Msg3 (inform RAN1).

RAN2 kindly invites RAN1 to take the above agreements into account and:

1. Check the specification impact in RAN1 to support power ramping for CB-Msg3 (re-)transmissions, and update the corresponding specification if needed.
2. Check whether RAN1 has any concern regarding the additional TBS size configured for CB-Msg3, i.e., 144 bits.
3. Check the specification impact in RAN1 to support 2 MPDCCH narrowbands for CB-Msg4 monitoring, and update the corresponding specification if needed.
4. Check the specification impact in RAN1 to support both multi-PRB allocation and sub-PRB allocation for CB-Msg3 in eMTC, as well as both single-tone and multi-tone transmissions for CB-Msg3 in NB-IoT, and update the corresponding specification if needed.

**2. Actions:**

**To RAN1:**

**ACTION:** RAN2 respectfully asks RAN1 to take the above information into account, provide feedback if any problem found, and update the specification if needed.

**3. Date of Next TSG-RAN WG2 Meetings:**

RAN2#131bis from 2025-10-13 to 2025-10-17 Prague, CZ

RAN2#132 from 2025-11-17 to 2025-11-21 Dallas, USA