**3GPP TSG-RAN2 Meeting #110-electronicR2-2006154**

**E-meeting, 1st – 12th June 2020 revision of R2-2005614**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.321** | **CR** | **0756** | **rev** |  | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | CR to 38321 on RACH Prioritization for MPS and MCS | | | | | | | | | |
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| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core, TEI16 | | | | |  | ***Date:*** | | | 2020-06-08 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | In RAN2#107, it was agreed to support the RACH prioritization procedure for MCS and MPS in Rel-16 NR. With this, the network is allowed to configure RACH prioritization parameters (e.g. ra-Prioritization) for MPS and MCS via SIB1. At the UE side, it checks whether the configured RACH prioritization parameters can be applied or not based on the Access Identity(ies) during the RACH initialization procedure.  According to the following highlighted text quoted from MAC specification, the Access Identity(ies) needs to be mandatorily provided to MAC by RRC during/before the initialization of RA procedure. Unfortunately, the Access Identity(ies) cannot be explicitly provided to MAC according to the current RRC specification. Consequently, the highlighted conditional branch below is always not satisfied. The RACH prioritization procedure for MCS and MPS can never be applied.  TS 38.321 subclause 5.1.1a:  2> if *ra-PrioritizationForAccessIdentity* is configured for the selected carrier; and  2> if one or more Access Identities has been explicitly provided by RRC; and  2> if for at least one of these Access Identities the corresponding bit in the *ra-PriorizationForAI* is set to *one*:  3> if *powerRampingStepHighPriority* is configured in the *ra-PrioritizationForAccessIdentity*:  4> set *PREAMBLE\_POWER\_RAMPING\_STEP* to the *powerRampingStepHighPriority*.  3> if *scalingFactorBI* is configured in the *ra-PrioritizationForAccessIdentity*:  4> set *SCALING\_FACTOR\_BI* to the *scalingFactorBI*. | | | | | | | | |
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| ***Summary of change:*** | | Considering that the Access Identity(ies) is selected and provided to lower layers by the NAS, the terminology “RRC” in clause 5.1.1a of TS 38.321 is replaced by the terminology “upper layers”. | | | | | | | | |
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| ***Consequences if not approved:*** | | The RACH prioritization procedure for MCS and MPS can never be applied. | | | | | | | | |
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| ***Clauses affected:*** | | 5.1.1.a | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

FIRST CHANGE

### 5.1.1a Initialization of variables specific to Random Access type

The MAC entity shall:

1> if *RA\_TYPE* is set to 2-stepRA:

2> set *PREAMBLE\_POWER\_RAMPING\_STEP* to *msgA-PreamblePowerRampingStep*;

2> set *SCALING\_FACTOR\_BI* to 1;

2> apply *preambleTransMax* included in the *RACH-ConfigGenericTwoStepRA*;

2> if *msgA-TransMax* is included in the *RACH-ConfigCommonTwoStepRA*

3> apply *msgA-TransMax* included in the *RACH-ConfigCommonTwoStepRA.*

2> else:

3> consider that *msgA-TransMax* is not configured.

2> if the Random Access procedure was initiated for SpCell beam failure recovery (as specified in clause 5.17); and

2> if *beamFailureRecoveryConfig* is configured for the active UL BWP of the selected carrier:

3> if *ra-PrioritizationTwoStep* is configured in the *beamFailureRecoveryConfig*:

4> set *PREAMBLE\_POWER\_RAMPING\_STEP* to the *powerRampingStepHighPriority* included in the *ra-PrioritizationTwoStep* in *beamFailureRecoveryConfig*.

4> if *scalingFactorBI* is configured in the *ra-PrioritizationTwoStep* in *beamFailureRecoveryConfig*:

5> set *SCALING\_FACTOR\_BI* to the *scalingFactorBI*.

2> else if the Random Access procedure was initiated for handover; and

2> if *rach-ConfigDedicated* is configured for the selected carrier:

3> if *ra-PrioritizationTwoStep* is configured in the *rach-ConfigDedicated*:

4> set PREAMBLE\_POWER\_RAMPING\_STEP to the *powerRampingStepHighPriority* included in the *ra-PrioritizationTwoStep* in *rach-ConfigDedicated*.

4> if *scalingFactorBI* is configured in *ra-PrioritizationTwoStep* in the rach-ConfigDedicated:

5> set *SCALING\_FACTOR\_BI* to the *scalingFactorBI*.

3> if *msgA-TransMax* is configured in the *rach-ConfigDedicated*:

4> apply *msgA-TransMax* configured in the *rach-ConfigDedicated.*

3> else:

4> consider that *msgA-TransMax* is not configured.

2> if *ra-PrioritizationForAccessIdentityTwoStep* is configured for the selected carrier; and

2> if the MAC entity is provided by upper layers with Access Identity 1 or 2; and

2> if for at least one of these Access Identities the corresponding bit in the *ra-PriorizationForAI* is set to *one*:

3> if *powerRampingStepHighPriority* is configured in the *ra-PrioritizationForAccessIdentityTwoStep*:

4> set *PREAMBLE\_POWER\_RAMPING\_STEP* to the *powerRampingStepHighPriority*.

3> if *scalingFactorBI* is configured in the *ra-PrioritizationForAccessIdentityTwoStep*:

4> set *SCALING\_FACTOR\_BI* to the *scalingFactorBI*.

2> set *MSGA\_PREAMBLE\_POWER\_RAMPING\_STEP* to *PREAMBLE\_POWER\_RAMPING\_STEP.*

1> else (i.e. RA\_TYPE is set to *4-stepRA*):

2> set *PREAMBLE\_POWER\_RAMPING\_STEP* to *powerRampingStep*;

2> set *SCALING\_FACTOR\_BI* to 1;

2> set *preambleTransMax* to *preambleTransMax* included in the *RACH-ConfigGeneric*;

2> if the Random Access procedure was initiated for SpCell beam failure recovery (as specified in clause 5.17); and

2> if beamFailureRecoveryConfig is configured for the active UL BWP of the selected carrier:

3> start the *beamFailureRecoveryTimer*, if configured;

3> apply the parameters *powerRampingStep*, *preambleReceivedTargetPower*, and *preambleTransMax* configured in the beamFailureRecoveryConfig;

3> if *ra-Prioritization* is configured in the *beamFailureRecoveryConfig*:

4> set *PREAMBLE\_POWER\_RAMPING\_STEP* to the *powerRampingStepHighPriority* included in the *ra-Prioritization* in *beamFailureRecoveryConfig*.

4> if *scalingFactorBI* is configured in the *ra-Prioritization* in *beamFailureRecoveryConfig*:

5> set *SCALING\_FACTOR\_BI* to the *scalingFactorBI*.

2> else if the Random Access procedure was initiated for handover; and

2> if *rach-ConfigDedicated* is configured for the selected carrier:

3> if *ra-Prioritization* is configured in the *rach-ConfigDedicated*:

4> set *PREAMBLE\_POWER\_RAMPING\_STEP* to the *powerRampingStepHighPriority* included in the *ra-Prioritization* in *rach-ConfigDedicated*.

4> if *scalingFactorBI* is configured in the *ra-Prioritization* in *rach-ConfigDedicated*:

5> set *SCALING\_FACTOR\_BI* to the *scalingFactorBI*.

2> if *ra-PrioritizationForAccessIdentity* is configured for the selected carrier; and

2> if the MAC entity is provided by upper layers with Access Identity 1 or 2; and

2> if for at least one of these Access Identities the corresponding bit in the *ra-PriorizationForAI* is set to *one*:

3> if *powerRampingStepHighPriority* is configured in the *ra-PrioritizationForAccessIdentity*:

4> set *PREAMBLE\_POWER\_RAMPING\_STEP* to the *powerRampingStepHighPriority*.

3> if *scalingFactorBI* is configured in the *ra-PrioritizationForAccessIdentity*:

4> set *SCALING\_FACTOR\_BI* to the *scalingFactorBI*.

2> if *RA\_TYPE* is switched from *2-stepRA* to *4-step RA* during this Random Access procedure:

3> set *POWER\_OFFSET\_2STEP\_RA* to (*PREAMBLE\_POWER\_RAMPING\_COUNTER* – 1) × (*MSGA\_PREAMBLE\_POWER\_RAMPING\_STEP* – *PREAMBLE\_POWER\_RAMPING\_STEP*).

END OF CHANGE