**3GPP TSG-RAN WG4 Meeting #111 R4-240xxxx**

Fukuoka City, Fukuoka , Japan, 20th – 24th May, 2024

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *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:*** | draft CR on cell switch delay and PDCCH ordered RACH delay requirements in R18 LTM | | | | | | | | | |
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| ***Source to WG:*** | , CATT | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_Mob\_enh2-Core | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | |  |
|  | *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 17) Rel-17 (Release 18) Rel-18 (Release 19) Rel-19 (Release 20)* | |
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| ***Reason for change:*** | | 1. The common understanding agreed in R4-2406502 needs to be captured. Otherwise at least the UE Tx beam might not be determined in FR2  2. Merge the changes for 6.2.2C on the [TBD] value from R4-2407350 and R4-2408685  3. Merge the changes for 6.2.2C.2 on clarification for no requirement case in R4-2407483. Wording refinement is also done based on R4-2407483, with further revision to further optimize the wording. | | | | | | | | |
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| ***Summary of change:*** | | Revise above parts as discussed. | | | | | | | | |
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| ***Consequences if not approved:*** | | The requirements are not correct | | | | | | | | |
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| ***Clauses affected:*** | | 6.2.2C | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | R4-2406513 | | | | | | | | |

<Start of Change #1>

## 6.2.2C PDCCH ordered Random Access for LTM

6.2.2C.1 Introduction

The requirements in this clause apply for a UE capable of [FG 45-5: RACH-based early TA acquisition] configured to trigger RACH procedure toward target LTM candidate cell before receiving cell switch command MAC-CE.

The requirements in this clause apply if PDCCH order-based RACH on candidate cell is triggered based on L1-RSRP report or L3-RSRP beam-level report in FR1, or based on L1-RSRP report in FR2.

6.2.2C.2 PDCCH ordered Random Access delay

UE shall complete the RACH transmission as defined in TS38.213 [3] clause 8.1, in which and are defined as the following:

- is the time for T/F tracking

- = 0 if the following conditions are met.

- The target LTM neighbor cell is on an FR1 carrier whose TCI state associated with SSB indicated in the PDCCH-order is activated and the time gap between receiving the MAC-CE activating the target TCI state and PDCCH order is larger than TCI state activation delay defined in clause 8.x.3, and

- L1-RSRP measurement period of candidate cell is not larger than 160ms or

- The time between receiving the MAC-CE activating the target TCI state and PDCCH order is not larger than 160ms.

- = + , if

- the target FR1 LTM candidate cell has no activated TCI state that is associated with the SSB indicated in the PDCCH-order, or the target LTM candidate cell is in FR2, where

* is the time to first SSB transmission after PDCCH-order RACH command is decoded by the UE when SSB is within active BWP
* FFS: [ is the time to first SSB transmission overlapping with MGL after PDCCH-order RACH command is decoded by the UE when SSB is outside active BWP]
* = 2 ms, which is the time for SSB processing;

- [The requirements, including Te requirements specified in 7.2.2, does not apply to the RACH transmission if the target LTM candidate cell on an FR1 carrier and

- activation command of the TCI state associated with SSB of the candidate cell indicated in the PDCCH-order is received, and the time gap between receiving the MAC-CE activating the target TCI state and PDCCH order is larger than TCI state activation delay defined in clause 8.x.3, and L1-RSRP measurement period for the SSB is larger than 160 ms.]

- is the time for RF and baseband preparation. The following apply:

- If PRACH bandwidth is outside active UL BWP of the SpCell but within one of configured UL BWPs of other active serving cell, the is the DCI based BWP switching delay specified in clause 8.6.

- If PRACH bandwidth is not within any of the configured UL BWPs of any active serving cell, equals to capability value reported in [FG 39-5: RF/BB preparation time for PDCCH-order RACH].

- Otherwise, = 0.

<End of Change #1>