**3GPP TSG-RAN WG4 Meeting #97-e *R4-2017094***

**Electronic Meeting, 2nd – 13th Nov., 2020**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **1155** | **rev** | **1** | **Current version:** | **16.5.0** |  |
|  |
| *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:***  | CR on TS38.133 for dual active protocol stack handover |
|  |  |
| ***Source to WG:*** | Mediatek Inc. |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_Mob\_enh-Core |  | ***Date:*** | 2020-11-02 |
|  |  |  |  |  |
| ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | For asynchronous intra-frequency DAPS handover and asynchronous intra-band inter-frequency DAPS handover, demodulation performance degradation might happen on any single symbol of a slot |
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| ***Summary of change:*** | Clarify that “For asynchronous intra-frequency DAPS handover and asynchronous intra-band inter-frequency DAPS handover, if the receive time difference exceeds the cyclic prefix length of that SCS, demodulation performance degradation is expected. FFS the exact location(s) of OFDM symbol(s) where the interruption may occur” |
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| ***Consequences if not approved:*** | Whether UE is allowed to have demodulation performance degradation on any single symbol of a slot for asynchronous intra-frequency DAPS handover and asynchronous intra-band inter-frequency DAPS handover is not clear |
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| ***Clauses affected:*** | 6.1.3 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **X** |  |  Test specifications | TS38.533 |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Revised from R4-2014358 |

-------------------------------------------------------- Beginning of Change ------------------------------------------------------------

### 6.1.3 NR DAPS Handover

#### 6.1.3.1 Introduction

The requirements in this clause are applicable to DAPS handover to change the NR PCell to another NR cell.

Note: requirements only apply if

- the UE indicates ‘no-gap’ via *intraFreq-needForGap* for intra-frequency measurement of source cell and intra-frequency measurement of target cell, or

- the SSB of source cell is completely contained in the active DL BWP of the source cell, and the SSB of target cell is completely contained in the active DL BWP of the target cell, or

- the initial DL and UL BWP of source cell is confined within the active DL and UL BWP of the source cell respectively, and the initial DL and UL BWP of target cell is confined within the active DL and UL BWP of the target cell respectively.

#### 6.1.3.2 NR FR1 - NR FR1 DAPS Handover

The requirements in this clause are applicable to both intra-frequency and inter-frequency handovers from NR FR1 cell to NR FR1 cell. A DAPS handover is intra-frequency if the centre frequency of the SSB of the source cell and the centre frequency of the SSB of the target cell are the same, and the subcarrier spacing of the two SSBs are also the same.

Note: For intra-frequency DAPS handover, no requirement applies if active DL and UL BWP of target cell is not confined within the active DL and UL BWP of the source cell respectively.

Note: For inter-frequency DAPS handover, no requirement applies if the BWP of target cell is overlaped with the BWP of source cell in frequency domain.

An FR1 DAPS handover is synchronous if it meets the conditions in table 6.1.3.2-1, otherwise it is asynchronous

Table 6.1.3.2-1: Sync conditions for FR1 DAPS handover

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| --- | --- | --- |
| Type of handover | Maximum receive timing difference between source and taget cell (µs) for sync DAPS handover | Maximum transmit timing difference between source and taget cell (µs) for sync DAPS handover |
| Intra-frequencyNote 1,2,3 | 6µs | 7.6 µs  |
| Intra-band inter-frequency Note 1,2,3 | 6µs | 7.6 µs |
| Inter-band inter-frequency | 33 µs | 34.6 µs |
| Note 1: For synchonous DAPS handover, if the receive time difference exceeds the cyclic prefix length of that SCS, demodulation performance degradation is expected for the first symbol of the slot. For asynchronous DAPS handover, if the receive time difference exceeds the cyclic prefix length of that SCS, interruptions may occur depending on UE implementation. The duration and frequency of occurrence of such interruptions is not specified. Note 2: For DAPS handover on a TDD band, a UE is not expected to transmit in the uplink earlier than NRX-TX after the end of the last received downlink symbol in the same cell where NRX-TX=26500Tc. Note 3: For DAPS handover on a TDD band, a UE is not expected to receive in the downlink earlier than NTX-RX after the end of the last transmitted uplink symbol in the same cell where NTX-RX=26500Tc. |

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