**3GPP TSG-WG RAN4 Meeting #94-e *Revised* R4-2000133**

**Electronic Meeting, 24 Feb. - 6 Mar., 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.101-3** | **CR** | **0160** | **rev** | **1** | **Current version:** | **16.2.0** |  |
|  |
| *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 TS 38.101-3: Switching time mask between two uplink carriers in EN-DC |
|  |  |
| ***Source to WG:*** | China Telecom, ZTE, LGE, CMCC, China Unicom, KDDI… |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_RF\_FR1-Core |  | ***Date:*** | 2020-02-01 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | For UE supporting maximum two concurrent transmission, Tx switching between two uplink carriers can enable 1 Tx on E-UTRA carier and 2 Tx on NR carrier. |
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| ***Summary of change:*** | Introduce UE time mask requirements to allow switching between two uplink carriers for inter-band EN-DC. |
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| ***Consequences if not approved:*** | UE is not allowed to support Tx switching between two uplink carriers. |
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| ***Clauses affected:*** | New section 6.3B.4 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **X** |  |  Test specifications | TS 38.521-3 |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

*< Start of change >*

### 6.3B.4 Output power dynamics for switching between two uplink carriers

#### 6.3B.4.1 E-UTRA and NR switching time mask between two uplink carriers

The switching time mask specified in clause 6.3B.4.1 is applicable when switching between an uplink band pair of an EN-DC configuration is supported, and is only applicable when uplink transmission is switched between E-UTRA UL carrier 1 capable of one transmit antenna connector and NR UL carrier 2 capable of two transmit antenna connectors, where the two uplink carriers are in different bands with different carrier frequencies. The switching periods described in 6.3B.4-1 are only located in NR carrier, and the length of uplink switching period *X* depends on UE capability [TBD].

The requirements apply for the case of co-located and synchronized network deployment for the two uplink carriers.

For UE supporting uplink transmission switching, the UE is mandated to support 2-layer UL-MIMO transmission and single-layer transmission on carrier 2 following the BS scheduling and rank adaptation (if rank adaptation is applicable).

Figure 6.3B.4.1-1: Time mask for switching between E-UTRA UL carrier and NR UL carrier, where the switching period is located in NR carrier

*< Start of change >*