**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 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:*** | | 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 ... | | |
|  | |  | | | | | | | | |
| ***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.

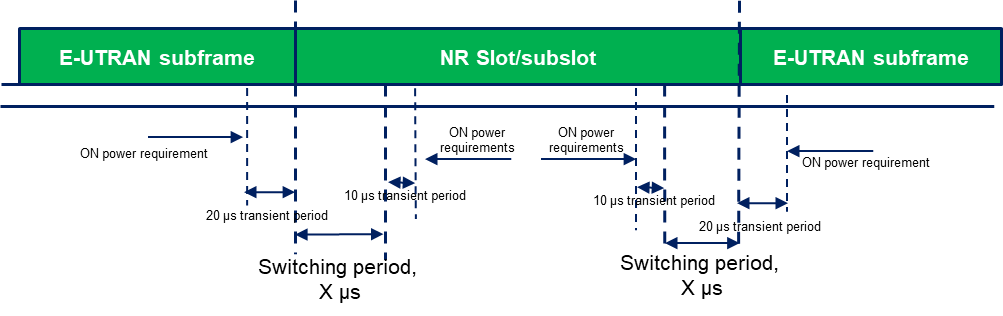
For UE supporting uplink transmission switching, the UE is mandated to support 2-layer UL-MIMO transmission and single-layer transmission on carrier 2 following the BS scheduling and rank adaptation (if rank adaptation is applicable).

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 >*