**3GPP TSG-RAN Meeting #90e *RP-20xxxx***

**Electronic Meeting, December 7 – 11, 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | **38.101-3** | **CR** | **0431** | **rev** | **1** | **Current version:** | **16.5.0** |  |
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| *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 38.101-3 on handling of fallbacks for FR2 CA  |
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| ***Source to WG:*** | -  |
| ***Source to TSG:*** | Apple Inc. |
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| ***Work item code:*** | NR\_newRAT-Core |  | ***Date:*** | 2020-12-07 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***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:*** | This specification is not aligned with other specifications (38.331 and 38.306) with regards to which fallback band combinations are supported for the class of CA or DC configurations which include FR2 intra-band CA combinations which consist of mixed contiguous and non-contiguous intra-band CA within FR2. In an effort to reconcile this issue, it has been recognized that mandating additional in-gap requirements for all possible mixed contiguous and non-contiguous fallback band combinations results in a high number of requirements and is a burden on UE development. Together with per-UE capability signaling, this CR aligns the RAN4 specification with RAN2 specifications. |
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| ***Summary of change:*** | For CA or DC configurations, which include FR2 intra-band CA combinations with multiple subblocks, where at least one of the subblocks consists of a contiguous CA combination, the following two changes are implemented:1. Remove the requirement of direct fallback to single FR2 carrier2. Based on UE signaling a capability bit, introduce an applicability rule for Rx requirements (impacting clauses 7.5A, 7.5B, 7.6A, 7.6B) for fallbacks with multiple sub-blocks, where at least one of the sub-blocks consists of a contiguous CA combinationChanges to RAN2 specifications on UE capabilities (38.306) and RRC (38.331) are needed to introduce per-UE capability.**Impact analysis**Impacted functionality:Requirements for band combinations.Inter-operability:No inter-operability issues are foreseen. |
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| ***Consequences if not approved:*** | This specification is not aligned with other specifications (38.331 and 38.306) with regards to which fallback band combinations are supported. |
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| ***Clauses affected:*** | 4.2 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS38.306, TS38.331 |
| ***affected:*** | **X** |  |  Test specifications | TS38.521-3  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
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| ***Other comments:*** | This CR implements the principles for handling the FR2 fallback issue as described in RP-202556 |
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| ***This CR's revision history:*** | RP-201875 was postponed during the RAN #89e meeting. This CR is a revision of RP-202578. |

## **<Start of Changes>**

## 4.2 Applicability of minimum requirements

a) In this specification the Minimum Requirements are specified as general requirements and additional requirements. Where the Requirement is specified as a general requirement, the requirement is mandated to be met in all scenarios

b) For specific scenarios for which an additional requirement is specified, in addition to meeting the general requirement, the UE is mandated to meet the additional requirements.

c) The spurious emissions power requirements are for the long-term average of the power. For the purpose of reducing measurement uncertainty it is acceptable to average the measured power over a period of time sufficient to reduce the uncertainty due to the statistical nature of the signal

d) Terminal that supports EN-DC configuration shall meet E-UTRA requirements as specified in TS 36.101 [4] and NR requirements as in TS 38.101-1 [2] and TS 38.101-2 [3] unless otherwise specified in this specification

e) All the requirements for intra-band contiguous and non-contiguous EN-DC apply under the assumption of the same uplink-downlink and special subframe configurations in the E-UTRA and slot format indicated by UL-DL-configurationCommon and UL-DL-configurationDedicated in the NR for the EN-DC.

f) For EN-DC combinations with CA configurations for E-UTRA and/or NR, all the requirements for E-UTRA and/or NR all the requirements for E-UTRA and/or NR intra-band contiguous and non-contiguous CA apply under the assumption of the same slot format indicated by UL-DL-configurationCommon and UL-DL-configurationDedicated in the PSCell and SCells for NR and the same uplink-downlink and special subframe configurations in Pcell and SCells for E-UTRA.

A terminal which supports an EN-DC configuration shall support:

If any subsets of the EN-DC configuration do not specify its own bandwidth combination sets in 5.3B, then the terminal shall support the same E-UTRA bandwidth combination sets it signals the support for in E-UTRA CA configuration part of E-UTRA – NR DC and shall support the same NR bandwidth combination sets it signals the support for in NR CA configuration part of E-UTRA – NR DC.

Else if one of the subsets of the EN-DC configuration specify its own bandwidth combination sets in 5.3B, then the terminal shall support a product set of channel bandwidth for each band specified by E-UTRA bandwidth combination sets, NR bandwidth combination sets, and EN-DC bandwidth combination sets it singnals the support.

A terminal which supports an inter-band EN-DC configuration with a certain UL configuration shall support the all lower order DL configurations of the lower order EN-DC combinations, which have this certain UL configuration and the fallbacks of this UL configuration.

For CA or DC configurations, which include FR2 intra-band CA combinations with multiple sub-blocks, where at least one of the sub-blocks consists of a contiguous CA combination:

- If the field *partialVerifiedFR2-FallbackRX-Req* is not present, the UE shall meet the UE RF requirements in clauses 7.5A, 7.5B, 7.6A, 7.6B for all combinations;

- If the field *partialVerifiedFR2-FallbackRX-Req* is present, for each supported FR2 intra-band CA combination with multiple sub-blocks, where at least one of the sub-blocks consists of a contiguous CA configuration, in-gap UE RF requirements of the highest order CA combination in clauses 7.5A, 7.5B, 7.6A, 7.6B apply also to fallback CA band combinations with the same number of sub-blocks, where at least one of the sub-blocks consists of a contiguous CA combination;

- Regardless of the field *partialVerifiedFR2-FallbackRX-Req*, the UE shall meet all UL requirements and all DL out-of-gap requirements for all CA fallback band combinations.

Terminal that supports inter-band NR-DC between FR1 and FR2 configuration shall meet the requirements for corresponding CA configuration (suffix A), unless otherwise specified.

## **<End of Changes>**