**3GPP TSG-****RAN2 Meeting #110 electronic R2-2006169**

**1st – 12th June, 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **37.340** | **CR** | **0207** | **rev** | **1** | **Current version:** | **16.1.0** |  |
|  | | | | | | | | |
| *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 | **X** | Core Network |  |

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| ***Title:*** | Support of asynchronous NR-DC | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE Corporation (Rapporteur) | | | | | | | | | |
| ***Source to TSG:*** | RAN2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_NR\_DC\_CA\_enh-Core | | | | |  | ***Date:*** | | | 2020-05-29 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | The current specification indicates that NR-DC always assumes slot-level synchronization between PCell and PSCell. However Rel-16 also supports asynchronous NR-DC. | | | | | | | | |
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| ***Summary of change:*** | | It is clarified that NR-DC may require synchronization between PCell and PSCell or not depending on the UE's capabilities. | | | | | | | | |
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| ***Consequences if not approved:*** | | The specification remains incorrect regarding the support of asynchronous NR-DC. | | | | | | | | |
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| ***Clauses affected:*** | | 5 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

---------------------------------------------START OF CHANGE-------------------------------------------

# 5 Layer 1 related aspects

In MR-DC, two or more Component Carriers (CCs) may be aggregated over two cell groups. A UE may simultaneously receive or transmit on multiple CCs depending on its capabilities. The maximum number of configured CCs for a UE is 32 for DL and UL. Depending on UE's capabilities, up to 31 CCs can be configured for an E-UTRA cell group when the NR cell group is configured. For the NR cell group, the maximum number of configured CCs for a UE is 16 for DL and 16 for UL.

A gNB may configure the same Physical Cell ID (PCI) to more than one NR cell it serves. To avoid PCI confusion for MR-DC, NR PCIs should be allocated in a way that an NR cell is uniquely identifiable by a PCell identifier. This PCell is in the coverage area of an NR cell included in the MR-DC operation. In addition, NR PCIs should only be re-used in NR cells on the same SSB frequency sufficiently distant from each other. X2-C/Xn-C signalling supports disambiguation of NR PCIs by including the CGI of the PCell in respective X2AP/XnAP messages (e.g. SGNB ADDITION REQUEST/S-NODE ADDITION REQUEST) and by providing neighbour cell relationship via non-UE associated signaling (e.g. via the Xn Setup procedure or the NG-RAN node Configuration Update procedure).

NR-DC supports the case of no synchronization between PCell and PSCell. However, some UEs may support NR-DC only if slot-level synchronization between PCell and PSCell is ensured.

---------------------------------------------END OF CHANGE---------------------------------------------