**3GPP TSG-RAN WG2 Meeting #114-e *R2-210xxxx***

**, May 19th – 27th, 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **0610** | **rev** | **1** | **Current version:** | **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:*** | NR-DC cell grouping capability | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_NR\_DC\_CA\_enh-Core | | | | |  | ***Date:*** | | | 03 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | C |  | | | | | ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The release-15 standard only supports synchronous NR-DC configuration where all serving cells of the MCG are in FR1 and all serving cells of the SCG are in FR2.  This restriction is removed in release-16 and it requires new UE capability signalling to convey the supported mapping of serving cells to Cell Groups. | | | | | | | | |
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| ***Summary of change:*** | | In 4.2.7.12:   * Add the field *supportedCellGrouping* in *NRDC-Parameters*   **Impact Analysis**  Impacted 5G architecture options:  NR-DC  Impacted functionality:  UE capability reporting  Inter-operability:  If the network is implemented according to the CR and the UE is not, there is not interoperability issue. The UE will only indicate support for NR-DC where all FR1 serving cells are in the MCG and all FR2 serving cells are in the SCG.  If the UE is implemented according to the CR and the network is not, there is not interoperability issue. The network will interpret the UE supports only NR-DC where all FR1 serving cells are in the MCG and all FR2 serving cells are in the SCG. | | | | | | | | |
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| ***Consequences if not approved:*** | | NR-DC Cell Grouping beyond that of Rel-15 is not supported by the standard. | | | | | | | | |
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| ***Clauses affected:*** | | 4.2.7.12 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS 38.331 CR 2763 | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | R2-2106513 | | | | | | | | |

*START OF CHANGE*

4.2.7.12 *NRDC-Parameters*

| **Definitions for parameters** | **Per** | **M** | **FDD-TDD**  **DIFF** | **FR1-FR2**  **DIFF** |
| --- | --- | --- | --- | --- |
| ***asyncNRDC-r16***  Indicates whether the UE supports asynchronous NR-DC with MRTD and MTTD as specified in clause 7.5 and 7.6 of TS 38.133 [5]. If the band combination is comprised of a single band entry for more than two carriers, the UE shall support any permutations of carriers to CGs. If the band combination is comprised of at least two band entries, the carriers corresponding to a band entry shall belong to only one cell group.  A UE indicating this capability shall support asynchronous NR-DC configuration where all serving cells of the MCG are in FR1 and all serving cells of the SCG are in FR2. | BC | FFS | No | No |
| ***intraFR-NR-DC-PwrSharingMode1-r16***  Indicates whether the UE supports intra-FR NR DC with semi-static power sharing mode1 between MCG and SCG cells of same frequency range as defined in TS 38.213 [11]. If this field is absent, the UE does not support intra-FR NR DC. | BC | No | No | No |
| ***intraFR-NR-DC-PwrSharingMode2-r16***  Indicates whether the UE supports semi-static power sharing mode2 between MCG and SCG cells of same frequency range for synchronous intra-FR NR DC as defined in TS 38.213 [11]. The UE indicating the support of this also indicates the support of *intraFR-NR-DC-PwrSharingMode1-r16.* | BC | No | No | No |
| ***intraFR-NR-DC-DynamicPwrSharing-r16***  Indicates the UE support of dynamic power sharing for intra-FR NR DC between MCG and SCG cells of same frequency range with long or short offset as specified in TS 38.213 [11]. The UE indicating the support of this also indicates the support of *intraFR-NR-DC-PwrSharingMode1-r16.* | BC | No | No | No |
| ***sfn-SyncNRDC***  Indicates the UE supports NR-DC only with SFN and frame synchronization between PCell and PSCell. If not included by the UE supporting NR-DC, the UE supports NR-DC with slot-level synchronization without condition on SFN and frame synchronization. In this release of the specification, the UE shall not report this UE capability. | UE | No | No | No |
| ***supportedCellGrouping-r16***  Indicates which NR-DC cell groupings the UE supports for the given NR DC band combination, i.e., mapping of serving cells to MCG and SCG, and the operation mode (synchronous or asynchronous), as requested by the network via *requestedCellGrouping*.  The IDs reported in this field refer to the cell groupings that the network requested in *requestedCellGrouping*. ID#0 corresponds to the first element in *requestedCellGrouping*, ID#1 corresponds to the second element in *requestedCellGrouping* and so on. NOTE: Irrespective of the indicated supportedCellGrouping, the UE shall also support NR-DC where all FR1 serving cells are in the MCG and all FR2 serving cells are in the SCG, as described in ca-ParametersNRDC. | BC | No | No | No |

*END OF CHANGE*