**3GPP TSG-RAN WG2 Meeting #109 *R2-200xxxx***

**E-meeting, 24th Feb – 6th Mar 2019**

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| *CR-Form-v11.2* |
| **CHANGE REQUEST** |
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|  | **38.331** | **CR** | **1445** | **rev** | **1** | **Current version:** | **15.8.0** |  |
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| *For* [*HELP*](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:***  | CR on introduction of extended capabilities for NR-DC only BCs |
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| ***Source to WG:*** | ZTE Corporation, Sanechips |
| ***Source to TSG:*** | R2 |
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| ***Work item code:*** | NR\_newRAT-Core |  | ***Date:*** | 2020-02-13 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-15 |
|  | *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:*** | In the current *RF-ParametersMRDC* structure, the field *supportedBandCombinationList* is used to indicate the EN-DC only BCs, or the BCs that support both EN-DC and NE-DC. And the fields with suffix "*-v1540/ v1550/ v1560/ v1570/ v1580*" are used to indicate the extended features/capabilities for each BC in the *supportedBandCombinationList*.For the NE-DC only BCs, a new field *supportedBandCombinationListNEDC-Only* is introduced, the corresponding Asn.1is copied as follow:*RF-ParametersMRDC* information element-- ASN1START-- TAG-RF-PARAMETERSMRDC-STARTRF-ParametersMRDC ::= SEQUENCE { supportedBandCombinationList BandCombinationList OPTIONAL, appliedFreqBandListFilter FreqBandList OPTIONAL, ..., [[ srs-SwitchingTimeRequested ENUMERATED {true} OPTIONAL, supportedBandCombinationList-v1540 BandCombinationList-v1540 OPTIONAL ]], [[ supportedBandCombinationList-v1550 BandCombinationList-v1550 OPTIONAL ]], [[ supportedBandCombinationList-v1560 BandCombinationList-v1560 OPTIONAL, **supportedBandCombinationListNEDC-Only BandCombinationList**  OPTIONAL ]], [[ supportedBandCombinationList-v1570 BandCombinationList-v1570 OPTIONAL ]], [[ supportedBandCombinationList-v1580 BandCombinationList-v1580 OPTIONAL ]]}-- TAG-RF-PARAMETERSMRDC-STOP-- ASN1STOPHowever, for the NE-DC only BCs, only the *BandCombinationList* structure was included in *supportedBandCombinationListNEDC-Only*, therefore the UE is unable to report the extended features for the NE-DC only BCs.This CR aims to introduce the extensions for the NE-DC only BCs in *supportedBandCombinationListNEDC-Only*. |
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| ***Summary of change:*** | Add the *supportedBandCombinationListNEDCOnly-v15xy* field to the *RF-ParametersMRDC, includes* the extended features *(i.e.BandCombinationList-v1540/v1560/v1580)* for the NE-DC only BCs.**Impact analysis**Impacted 5G architecture options:NE-DCImpacted functionality:UE capabilityInter-operability: 1. If UE implements according to the CR and the network does not, the network will ignore the extended features sent by UE for NE-DC only BCs, and it is unclear for network how to interpret whether those features are supported or not;
2. If the network implements according to the CR and the UE does not, the UE is unable to report extended capabilities for NE-DC only BCs. The network may assume those features are not supported by UE, and results in low performance.
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| ***Consequences if not approved:*** | The UE is unable to report the extended capabilities(*e.g. BandCombinationList-v1540/ v1560/ v1580*) for the NE-DC only BCs. |
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| ***Clauses affected:*** | 6.3.3 |
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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 ...  |
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| ***Other comments:*** |  |

Start of change

### 6.3.3 UE capability information elements

#### – *RF-ParametersMRDC*

The IE *RF-ParametersMRDC* is used to convey RF related capabilities for MR-DC.

*RF-ParametersMRDC* information element

-- ASN1START

-- TAG-RF-PARAMETERSMRDC-START

RF-ParametersMRDC ::= SEQUENCE {

 supportedBandCombinationList BandCombinationList OPTIONAL,

 appliedFreqBandListFilter FreqBandList OPTIONAL,

 ...,

 [[

 srs-SwitchingTimeRequested ENUMERATED {true} OPTIONAL,

 supportedBandCombinationList-v1540 BandCombinationList-v1540 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1550 BandCombinationList-v1550 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1560 BandCombinationList-v1560 OPTIONAL,

 supportedBandCombinationListNEDC-Only BandCombinationList OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1570 BandCombinationList-v1570 OPTIONAL

 ]],

 [[

 supportedBandCombinationList-v1580 BandCombinationList-v1580 OPTIONAL

]],

 [[

 supportedBandCombinationListNEDC-Only-v15xy ::= SEQUENCE {

 supportedBandCombinationList-v1540 BandCombinationList-v1540 OPTIONAL,

 supportedBandCombinationList-v1560 BandCombinationList-v1560 OPTIONAL,

 supportedBandCombinationList-v1570 BandCombinationList-v1580 OPTIONAL

 } OPTIONAL

 ]]

}

-- TAG-RF-PARAMETERSMRDC-STOP

-- ASN1STOP

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| *RF-ParametersMRDC* field descriptions |
| ***appliedFreqBandListFilter***In this field the UE mirrors the *FreqBandList* that the NW provided in the capability enquiry, if any. The UE filtered the band combinations in the *supportedBandCombinationList* in accordance with this *appliedFreqBandListFilter*. |
| ***supportedBandCombinationList***A list of band combinations that the UE supports for (NG)EN-DC and/or NE-DC. The *FeatureSetCombinationId*:s in this list refer to the *FeatureSetCombination* entries in the *featureSetCombinations* list in the *UE-MRDC-Capability* IE. |
| ***supportedBandCombinationListNEDC-Only***A list of band combinations that the UE supports only for NE-DC. The *FeatureSetCombinationId*:s in this list refer to the *FeatureSetCombination* entries in the *featureSetCombinations* list in the *UE-MRDC-Capability* IE. |
| ***supportedBandCombinationListNEDC-Only1, supportedBandCombinationListNEDC-Only2, supportedBandCombinationListNEDC-Only3***The UE shall include the same number of entries, and listed in the same order, as in *BandCombinationList* of *supportedBandCombinationListNEDC-Only* field. |

End of change