**3GPP TSG-RAN2 Meeting #113 electronic R2-2101560**

**Online, Jan 25th - Feb 5th, 2021**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.306** | **CR** | **0516** | **rev** | **-** | **Current version:** | **16.3.0** |  |
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| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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 the SupportedBandwidth and channelBWs(R16) | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE Corporation, Sanechips | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | ***Date:*** | | | 2021-1-15 |
|  |  | | | |  | |  | | |  |
| ***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 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:*** | | 1. For serving cells with other channel bandwidths, the network shall alsovalidate *supportedBandwidthCombinationSetIntraENDC*; 2. In case of the Single Carrier (Non-CA), for serving cell with other channel bandwidths, the network shall validate *channelBWs-DL/UL* and *supportedBandwidthDL/UL.* | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Add *supportedBandwidthCombinationSetIntraENDC* for the *channelBWs-DL/UL* and *supportedBandwidthDL/UL;* 2. Change the wording “serving cells” in the field description of *channelBWs-DL/UL* and *supportedBandwidthDL/U to “serving cell(s)”* to include both Single Carrier (Non-CA) and DC/CA cases.   **Impact analysis**  Impacted 5G architecture options:  NR SA, (NG)EN-DC, NE-DC  Impacted functionality:  Bandwidth Configuration  Inter-operability:   1. If UE implements according to the CR and the network does not, the network may configure the bandwidth that UE doesn’t support. 2. If the network implements according to the CR and the UE does not, there is no inter-operability issue. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The network may configure the bandwidth that UE doesn’t support, which may lead to Reconfiguration failure. | | | | | | | | |
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| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

First change

4.2.7.2 *BandNR parameters*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* omitted unchanged parts \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

| ***Definitions for parameters*** | Per | M | FDD-TDD  DIFF | FR1-FR2  DIFF |
| --- | --- | --- | --- | --- |
| ***channelBWs-DL***  Indicates for each subcarrier spacing the UE supported channel bandwidths. Absence of the *channelBWs-DL* (without suffix) for a band or absence of specific scs-XXkHz entry for a supported subcarrier spacing means that the UE supports the channel bandwidths among [5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100] and [50, 100, 200] that were defined in clause 5.3.5 of TS 38.101-1 version 15.7.0 [2] and TS 38.101-2 version 15.7.0 [3] for the given band or the specific SCS entry. For IAB-MT, to determine whether the IAB-MT supports a channel bandwidth of 100 MHz, the network checks c*hannelBW-DL-IAB-r16*.  For FR1, the bits in *channelBWs-DL* (without suffix) starting from the leading / leftmost bit indicate 5, 10, 15, 20, 25, 30, 40, 50, 60 and 80MHz. For FR2, the bits in *channelBWs-DL* (without suffix) starting from the leading / leftmost bit indicate 50, 100 and 200MHz. The third / rightmost bit (for 200MHz) shall be set to 1. For IAB-MT the third / rightmost bit (for 200MHz) is ignored. To determine whether the IAB-MT supports a channel bandwidth of 200 MHz, the network checks *channelBW-DL-IAB-r16*.  For FR1, the leading/leftmost bit in *channelBWs-DL-v1590* indicates 70MHz, and all the remaining bits in *channelBWs-DL-v1590* shall be set to 0.  NOTE: To determine whether the UE supports a specific SCS for a given band, the network validates the supportedSubCarrierSpacingDL and the scs-60kHz. To determine whether the UE supports a channel bandwidth of 90 MHz, the network may ignore this capability for and validate instead the channelBW-90mhz and the supportedBandwidthCombinationSet. For serving cell(s) with other channel bandwidths the network validates the channelBWs-DL, the supportedBandwidthCombinationSet, the supportedBandwidthCombinationSetIntraENDC, the asymmetricBandwidthCombinationSet (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]) and supportedBandwidthDL. | Band | Yes | N/A | N/A |
| ***channelBWs-UL***  Indicates for each subcarrier spacing the UE supported channel bandwidths.  Absence of the *channelBWs-UL* (without suffix) for a band or absence of specific scs-XXkHz entry for a supported subcarrier spacing means that the UE supports the channel bandwidths among [5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100] and [50, 100, 200] that were defined in clause 5.3.5 of TS 38.101-1 version 15.7.0 [2] and TS 38.101-2 version 15.7.0 [3] for the given band or the specific SCS entry. For IAB-MT, to determine whether the IAB-MT supports a channel bandwidth of 100 MHz, the network checks *channelBW-UL-IAB-r16*.  For FR1, the bits in *channelBWs-UL* (without suffix) starting from the leading / leftmost bit indicate 5, 10, 15, 20, 25, 30, 40, 50, 60 and 80MHz. For FR2, the bits in *channelBWs-UL* (without suffix) starting from the leading / leftmost bit indicate 50, 100 and 200MHz. The third / rightmost bit (for 200MHz) shall be set to 1. For IAB-MT the third / rightmost bit (for 200MHz) is ignored. To determine whether the IAB-MT supports a channel bandwidth of 200 MHz, the network checks *channelBW-UL-IAB-r16*.  For FR1, the leading/leftmost bit in *channelBWs-UL-v1590* indicates 70 MHz, and all the remaining bits in *channelBWs-UL-v1590* shall be set to 0.  NOTE: To determine whether the UE supports a specific SCS for a given band, the network validates the *supportedSubCarrierSpacingUL* and the *scs-60kHz*. To determine whether the UE supports a channel bandwidth of 90 MHz the network may ignore this capability for and validate instead the *channelBW-90mhz* and the *supportedBandwidthCombiantionSet*. *For serving cell(s) with other channel bandwidths the network validates the channelBWs-UL, the supportedBandwidthCombinationSet*, the supportedBandwidthCombinationSetIntraENDC, *the asymmetricBandwidthCombinationSet (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]) and supportedBandwidthUL.* | Band | Yes | N/A | N/A |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* omitted unchanged parts \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Second change

#### **4.2.7.5 *FeatureSetDownlink* parameters**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* omitted unchanged parts \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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| --- | --- | --- | --- | --- |
| ***Definitions for parameters*** | Per | M | FDD-TDD  DIFF | FR1-FR2  DIFF |
| ***supportedBandwidthDL***  Indicates maximum DL channel bandwidth supported for a given SCS that UE supports within a single CC (and in case of intra-frequency DAPS handover for the source and target cells), which is defined in Table 5.3.5-1 in TS 38.101-1 [2] for FR1 and Table 5.3.5-1 in TS 38.101-2 [3] for FR2.  For FR1, all the bandwidths listed in TS38.101-1 Table 5.3.5-1 for each band shall be mandatory with a single CC unless indicated optional. For FR2, the set of mandatory CBW is 50, 100, 200 MHz. When this field is included in a band combination with a single band entry and a single CC entry (i.e. non-CA band combination), the UE shall indicate the maximum channel bandwidth for the band according to TS 38.101-1 [2] and TS 38.101-2 [3].  NOTE: To determine whether the UE supports a channel bandwidth of 90 MHz, the network may ignore this capability for and validate instead the channelBW-90mhz and the supportedBandwidthCombinationSet. For serving cell(s) with other channel bandwidths the network validates the channelBWs-DL, the supportedBandwidthCombinationSet, the supportedBandwidthCombinationSetIntraENDC, the asymmetricBandwidthCombinationSet (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]) and supportedBandwidthDL. | FSPC | CY | N/A | N/A |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* omitted unchanged parts \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Third change

#### **4.2.7.8 *FeatureSetUplinkPerCC* parameters**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* omitted unchanged parts \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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| --- | --- | --- | --- | --- |
| **Definitions for parameters** | **Per** | **M** | **FDD-TDD**  **DIFF** | **FR1-FR2**  **DIFF** |
| ***supportedBandwidthUL***  Indicates maximum UL channel bandwidth supported for a given SCS that UE supports within a single CC (and in case of intra-frequency DAPS handover for the source and target cells), which is defined in Table 5.3.5-1 in TS38.101-1 [2] for FR1 and Table 5.3.5-1 in TS 38.101-2 [3] for FR2.  For FR1, all the bandwidths listed in TS38.101-1 Table 5.3.5-1 for each band shall be mandatory with a single CC unless indicated optional. For FR2, the set of mandatory CBW is 50, 100, 200 MHz. When this field is included in a band combination with a single band entry and a single CC entry (i.e. non-CA band combination), the UE shall indicate the maximum channel bandwidth for the band according to TS 38.101-1 [2] and TS 38.101-2 [3].  NOTE: To determine whether the UE supports a channel bandwidth of 90 MHz the network may ignore this capability for and validate instead the channelBW-90mhz and the supportedBandwidthCombiantionSet. For serving cell(s) with other channel bandwidths the network validates the channelBWs-UL, the supportedBandwidthCombinationSet, the supportedBandwidthCombinationSetIntraENDC, the asymmetricBandwidthCombinationSet (for a band supporting asymmetric channel bandwidth as defined in clause 5.3.6 of TS 38.101-1 [2]) and supportedBandwidthUL. | FSPC | CY | N/A | N/A |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* omitted unchanged parts \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

End of change