**3GPP TSG-RAN5 Meeting #99 *R5-233307***

**Incheon, Korea, May 22nd – 26th, 2023**

**3GPP TSG RAN Meeting #100 RP-23xxxx**

**Taipei, June 12-14, 2023**

**Source: Huawei, HiSilicon, CMCC**

**Title:** **New WID on UE Conformance - Rel-18 NR CA and DC; and NR and LTE DC Configurations**

**Document for: Endorsement**

**Agenda Item: 4.1**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: UE Conformance – Rel-18 NR CA and DC; and NR and LTE DC Configurations

Acronym: NR\_CADC\_NR\_LTE\_DC\_R18-UEConTest

Unique identifier:

|  |  |
| --- | --- |
| **This WID includes a Testing part** | **X** |
| **and it addresses the following 3GPP work area:** | **Radio Access** | **X** |
| **Core Network** |  |
| **Services** |  |

Potential target Release: Rel-18

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  |  |  |  |  |
| **No** | X | X | X | X |  |
| **Don't know** |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

This description is a

|  |
| --- |
| Normative Work Item:*tick applicable boxes below* |
|  | Stage 1 |
|  | Stage 2 |
|  | Stage 3 |
| X | Other (e.g. testing) |

### 2.2 Parent Work Item

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| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| DC\_R18\_1BLTE\_1BNR\_2DL2UL | R4 | 961001 | Rel-18 Dual Connectivity (DC) of 1 band LTE (1DL/1UL) and 1 NR band (1DL/1UL) |
| DC\_R18\_xBLTE\_yBNR\_zDL3UL | R4 | 961002 | Rel-18 Dual Connectivity (DC) of x LTE bands and y NR bands with z bands DL and 3 bands UL (x=1, 2, 3, 4; y=1, 2; 3<=z<=6) |
| DC\_R18\_xBLTE\_2BNR\_yDL2UL | R4 | 961003 | Rel-18 Dual Connectivity (DC) of x bands (x=1,2,3,4) LTE inter-band CA (xDL/1UL) and 2 bands NR inter-band CA (2DL/1UL) |
| DC\_R18\_2BLTE\_1BNR\_3DL2UL | R4 | 961004 | Rel-18 Dual Connectivity (DC) of 2 bands LTE inter-band CA (2DL/1UL) and 1 NR band (1DL/1UL) |
| DC\_R18\_xBLTE\_1BNR\_yDL2UL | R4 | 961005 | Rel-18 Dual Connectivity (DC) of x bands (x=3,4,5) LTE inter-band CA (xDL/1UL) and 1 NR band (1DL/1UL) |
| DC\_R18\_xBLTE\_yBNR\_zDL2UL | R4 | 961006 | Rel-18 Dual Connectivity (DC) of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and y bands (3<=y<=5 and x+y <= 6) NR inter-band CA (yDL/1UL) |
| NR\_CA\_R18\_Intra | R4 | 961007 | Rel-18 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y) |
| NR\_CADC\_R18\_yBDL\_xBUL | R4 | 961008 | Rel-18 NR inter-band Carrier Aggregation/Dual Connectivity for y bands DL (y=4, 5, 6) with x bands UL (x=1, 2) |
| NR\_SUL\_combos\_R18 | R4 | 961009 | Rel-18 single SUL band combinations for SA NR supplementary uplink (SUL), NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP) |
| NR\_CADC\_R18\_2BDL\_xBUL | R4 | 961010 | Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2) |
| NR\_CADC\_R18\_3BDL\_xBUL | R4 | 961011 | Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x bands UL (x=1,2) |
| NR\_2SUL\_cell\_combos\_R18 | R4 | 981047 | Rel-18 NR Carrier Aggregation (CA) band combinations with two SUL cells |
| NR\_700800900\_combo\_enh | R4 | 991046 | Enhancement for 700/800/900MHz band combinations for NR |

### 2.3 Other related Work Items and dependencies

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| --- |
| Other related Work/Study Items (if any) |
| **Acronym** | Unique ID | Title | Nature of relationship |
|  |  |  |  |

# 3 Justification

3GPP TSG RAN WG4 have created new bucket WIDs for Rel-18 CA/DC configurations. 3GPP TSG RAN WG5 needs to introduce the Rel-18 NR CA/DC configurations to the 3GPP UE test specifications.

# 4 Objective

### 4.1 Objective of SI or Core part WI or Testing part WI

The objective of the present work item is to develop RF, RRM and protocol test cases for Rel-18 NR CA/DC configurations. The scope of this work item is conformance testing of all Rel-18 CA/DC configurations including at least 1 NR component carrier specified by 3GPP TSG RAN WG4. The introduction of the CA/DC configurations into the 3GPP TSG RAN WG5 test specification is dependent on the progress of the associated core and performance work items in 3GPP TSG RAN WG4.

# 5 Expected Output and Time scale

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| --- |
| **New specifications**  |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Remarks |
|  |  |  |  |  |  |

|  |
| --- |
| **Impacted existing TS/TR** |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| TS 38.508-1 | Definition of common test environment for the NR Rel-18 CA and DC configurations. | TSG RAN#108(Jun-25) |  |
| TS 38.508-2 | Introduction of common implementation conformance statement (ICS) for new NR Rel-18 CA and DC configurations | TSG RAN#108(Jun-25) |  |
| TS 38.521-1 | Introduction of new NR Rel-18 CA and DC configurations specific RF requirements for Range 1 Standalone | TSG RAN#108(Jun-25) |  |
| TS 38.521-2 | Introduction of new NR Rel-18 CA and DC configurations specific RF requirements for Range 2 Standalone | TSG RAN#108(Jun-25) |  |
| TS 38.521-3 | Introduction of new NR Rel-18 CA and DC configurations specific RF requirements for Range 1 and Range 2 Interworking operation with other radios | TSG RAN#108(Jun-25) |  |
| TS 38.521-4 | Introduction of new NR Rel-18 CA and DC configurations specific performance requirements | TSG RAN#108(Jun-25) |  |
| TS 38.522 | Applicability statements of the new NR Rel-18 CA and DC configurations for the RF & RRM test cases | TSG RAN#108(Jun-25) |  |
| TS 38.523-1 | Introduction of new NR Rel-18 CA and DC configurations specific Protocol requirements | TSG RAN#108(Jun-25) |  |
| TS 38.523-2 | Applicability statements of the new NR Rel-18 CA and DC configurations for the Protocol test cases | TSG RAN#108(Jun-25) |  |
| TS 38.523-3 | Introduction of test model for NR Rel-18 CA and DC configurationsNote: Progress of TTCN development of the new protocol test cases is tracked in MCC TF160 reports to RAN5/RAN | TSG RAN#108(Jun-25) |  |
| TS 38.533 | Introduction of new NR Rel-18 CA and DC configurations specific RRM requirements | TSG RAN#108(Jun-25) |  |
| TR 38.903 | Documentation of test tolerances for NR Rel-18 CA and DC configurations RF and RRM test cases | TSG RAN#108(Jun-25) |  |
| TR 38.905 | Documentation of test points for NR Rel-18 CA and DC RF test cases | TSG RAN#108(Jun-25) |  |

# 6 Work item Rapporteur(s)

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# 7 Work item leadership

RAN5

# 8 Aspects that involve other WGs

None

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Huawei |
| HiSilicon |
| China Telecom |
| CMCC |
| China Unicom |
| Nokia |
| ZTE |
| CAICT |
| Verizon |
| NTT DOCOMO |
| Ericsson |
| Apple |
| AT&T |
| Vodafone |

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