**3GPP TSG-RAN5 Meeting #99 *R5-*** ***233308***

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

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

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

**Source: Huawei, HiSilicon, China Telecom**

**Title: New WID on UE Conformance - New Rel-18 NR licensed bands and extension of existing NR bands**

**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 - New Rel-18 NR licensed bands and extension of existing NR bands

Acronym: NR\_lic\_bands\_BW\_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

The following lists of RAN4 work items that will be tested in this RAN5 basket work item will be maintained in future revisions of this WI description:

**New NR bands:**

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| NR\_600MHz\_APT | R4 | 960097 | APT 600MHz NR band |
| NR\_6GHz\_add\_bands | R4 | 960098 | Introduction of additional 6GHz NR licensed bands |
| NR\_TDD\_n54 | R4 | 981044 | Introduction of NR TDD band in 1670-1675 MHz (n54) |
| NR\_900MHz\_US | R4 | 981045 | Introduction of 900 MHz NR band in the US |
| NR\_FDD\_ULn28\_DLn75\_n7 | R4 | 991042 | Addition of FDD NR bands using the uplink from n28 and the downlink of n75 and n76 |
| NR\_NTN\_LSband | R4 | 981043 | Introduction of the satellite L-/S-band for NR |

Note: RAN5 testing of RAN4 WIs shall only start after the RAN4 WI is completed. The RAN4 WI completion will be tracked in the RAN5 workplan that will be attached to WI status reports. RAN5 introduction of Rel-18 NTN bands shall start only after Rel-17 Solutions for NR to support non-terrestrial networks (NTN) WI is completed in RAN5

**Extended channel bandwidth of the existing NR bands:**

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| NR\_bands\_R18\_BWs | R4 | 970083 | Adding new channel bandwidth(s) support to existing NR bands |

Note: RAN5 testing of RAN4 WIs shall only start after the RAN4 WI is completed. The RAN4 WI completion will be tracked in the RAN5 workplan that will be attached to WI status reports. RAN5 introduction of Rel-18 NTN bands shall start only after Rel-17 Solutions for NR to support non-terrestrial networks (NTN) WI is completed in RAN5

### 2.3 Other related Work Items and dependencies

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

# 3 Justification

RAN4 have introduced Rel-18 work items for new NR licensed bands and extension of channel bandwidth of existing NR licensed bands. The new NR bands and extended channel bandwidth of the existing NR bands are introduced in Rel-18 NR specifications, but are release independent from Rel-15.

It is expected that there will be an interest to introduce most or all the new NR licensed bands and channel bandwidth extensions of existing licensed bands as listed in clause 2.2 in RAN5 test specifications. The increase in RAN5 work items will cause overhead in the RAN5 meeting agenda and meeting execution. Having all the new NR licensed band and channel bandwidth extension work items covered by one RAN5 basket work item would enable RAN5 to more efficiently handle CRs for common areas in 3GPP conformance test cases.

Note: As for all basket WIs, each unit of the basket (i.e. testing of one new NR band or testing of an extension of a new NR band) can progress and complete separately. Once the whole basket is declared completed, all units of the basket that are not completed will be removed from the basket WI and from the specifications.

# 4 Objective

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

The objective of this work item is to define the corresponding UE conformance requirements, analyse the test case impact, applicability, test environment, and update the relevant conformance specifications for the new licensed bands and extended channel bandwidth of exiting licensed bands covered by the RAN4 work items in Rel-18.

|  |  |  |  |
| --- | --- | --- | --- |
| RAN4 WI Code | RAN4 completion | New band/New CBW | RAN5 status |
| NR\_600MHz\_APT | 100% | n105 | Pending |
| NR\_6GHz\_add\_bands | 0% | FFS | - |
| NR\_TDD\_n54 | 100% | n54 | Pending |
| NR\_900MHz\_US | 5% | n106 | Pending |
| NR\_FDD\_ULn28\_DLn75\_n7 | 0% | FFS | - |
| NR\_NTN\_LSband | 10% | n254 | Pending |
| NR\_bands\_R18\_BWs | 100% | n8 adding 25MHz (15kHz SCS) | Pending |
| NR\_bands\_R18\_BWs | 0% | n39 adding 35 MHz (15-60 kHz SCS) | Pending |
| NR\_bands\_R18\_BWs | 0% | n98 adding 35 MHz for (15-60 kHz SCS) | Pending |
| NR\_bands\_R18\_BWs | 0% | n71 adding 25 and 30 MHz for uplink (15 kHz SCS for 25 MHz) | Pending |

# 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 36.521-4 | Updating new NTN bands associated RF co-existence requirements  | TSG RAN#108(Jun-25) |  |
| TS 38.508-1 | Definition of common environment for new Rel-18 bands and extension of existing NR bands. | TSG RAN#108(Jun-25) |  |
| TS 38.508-2 | Introduction of physical implementation capabilities for new Rel-18 bands. | TSG RAN#108(Jun-25) |  |
| TS 38.521-1 | Introduction of new Rel-18 FR1 bands and extension of existing NR FR1 bands and associated specific RF requirements. | TSG RAN#108(Jun-25) |  |
| TS 38.521-3 | Including the new bands as protected bands for EN-DC configurations | TSG RAN#108(Jun-25) |  |
| TS 38.521-4 | Introduction of new Rel-18 FR1 bands and extension of existing NR FR1 bands and associated specific demodulation requirements. | TSG RAN#108(Jun-25) |  |
| TS 38.521-5 | Introduction of Rel-18 NTN bands and extension of existing NR NTN bands and associated specific RF requirements. | TSG RAN#108(Jun-25) |  |
| TS 38.533 | Introduction of new Rel-18 bands in groups of bands definition for NR RRM tests. | TSG RAN#108(Jun-25) |  |
| TS 38.523-3 | Update of the test case execution guidelines for new Rel-18 bands.Note: Progress of TTCN development of the new protocol test cases is tracked in MCC TF160 reports to RAN5/RAN. | TSG RAN#108(Jun-25) |  |
| TR 38.903 | Derivation of test tolerances and measurement uncertainty for User Equipment (UE) conformance test cases if new group of bands are introduced by the new Rel-18 bands. | TSG RAN#108(Jun-25) |  |
| TR 38.905 | Derivation of test points for new Rel-18 bands in radio transmission and reception User Equipment (UE) conformance 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 |
| Ligado Networks |
| Ericsson |