**3GPP TSG-RAN5 Meeting #95-e Draft\_** **R5-223329**

**Electronic Meeting, 9th May– 20th May 2022**

**3GPP TSG RAN Meeting #96-e RP-22xxxx**

**Electronic Meeting, 6th June – 9th June 2022**

**Source: Apple**

**Title: New WID on UE Conformance Test Aspects – NR RRM enhancements**

**Document for: Approval**

**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 Test Aspects – NR RRM enhancements

## Acronym: NR\_RRM\_enh-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-16

## 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 work item is a

|  |  |
| --- | --- |
|  | Feature |
| X | Building Block |
|  | *Work Task* |
|  | Study Item |

### 2.2 Parent Work Item

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| NR\_RRM\_Enh-Core | RAN4 | 840195 | Core part: NR\_RRM\_ENh |
| NR\_RRM\_Enh -Perf | RAN4 | 840295 | Perf. part: NR\_RRM\_Enh |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| 760087 | UE Conformance Test Aspects - 5G system with NR and LTE | Baseline will be existing content of TS 38.533 test specification introduced via this Release 15 Work Item |

## 3 Justification

At the RAN#83, the scope of Rel-16 RRM enhancements was discussed and at the RAN4#91 meeting the specific pending topics under this topic were identified.

RAN4 introduced a Rel16 work item for NR RRM Enhancements for which both the Core and Performance parts have been 100% complete as of RAN#92 (June 2021). To meet the industry expectations in time, there is a need for RAN5 to start a work item to deliver conformance test cases for NR RRM Enhancements

## 4 Objective

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

The objective of this RAN5 WI is to enable UE conformance testing for the Release 16 RRM enhancements related requirements for the sub-topics indicated below. RAN5 conformance test procedures will be created to verify test requirements as per the scope being covered in RAN4 namely:

The focus will be to specify test requirements for the following:

1. RRM test requirement of SRS carrier switching requirements for NR SA, NR-DC, EN-DC and NE-DC including
   * Delay and interruption test requirements of the following cases
     + LTE SRS carrier switching impacting NR CC
     + NR SRS carrier switching impacting LTE CC
     + NR SRS carrier switching impacting NR CC
2. RRM test requirements of multiple Scell activation/deactivation in both FR1 and FR2
   * Scell activation and deactivation delay and interruption test requirements for multiple SCell activation/deactivation in FR1, and FR2, and FR1+FR2
     + the corresponding delay requirements for both FR1 and FR2 should be power class agnostic
3. CGI reading test requirements with autonomous gap for NR capable UE
   * CGI reading for NR cell (NR capable UE in LTE SA, NR SA UE, EN-DC UE, NE-DC UE, and NR-DC)
   * CGI reading for LTE cell (NR SA UE, EN-DC UE, NE-DC UE, and NR-DC UE)
4. RRM test requirements of BWP switching
   * The Interruption requirement and BWP switching delay requirement when UE is configured or indicated to change BWP on multiple CCs
5. Inter-band CA test requirement for FR2 UE measurement capability of independent Rx beam
   * Cell detection/measurement requirement,
   * Beam management requirements,
   * Scell activation requirement,
   * Interruption requirement,
   * Scheduling restriction requirement
6. Inter-frequency measurement test requirement without MG
   * RRM requirements for inter-frequency measurement without MG when the SSB is completely contained in the active BWP of the UE
7. RRM test requirements for UE specific channel BW change in FR1 and FR2
   * Introduce RRM test requirements for UE specific channel BW change

## 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* | | | | | |
| Type | TS/TR number | Title | For info  at TSG# | For approval at TSG# | Remarks |
|  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| TS 38.508-1 | Definition of common test environment for NR RRM enhancements | TSG RAN#102 (Dec-23) |  |
| TS 38.508-2 | Introduction of common implementation conformance statement (ICS) for NR RRM Enhancements | TSG RAN#102 (Dec-23) |  |
| TS 38.533 | Introduction of new test cases to cover NR RRM enhancements related test requirements | TSG RAN#102 (Dec-23) |  |
| TS 38.522 | Applicability for new test cases added under NR RRM enhancements | TSG RAN#102 (Dec-23) |  |
| TR 38.903 | Derivation of test tolerances and measurement uncertainty for new test requirements added under NR RRM enhancements | TSG RAN#102 (Dec-23) |  |
| TR 38.905 | Derivation of test points for test cases added under NR RRM enhancements | TSG RAN#102 (Dec-23) |  |

## 6 Work item Rapporteur(s)

Ashwin Mohan (Apple)

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## 7 Work item leadership

RAN5

## 8 Aspects that involve other WGs

None

## 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Apple |
| China Unicom |
| Ericsson |
| Huawei |
| HiSilicon |
| Orange |
| Rohde&Schwarz |
| Verizon |
| ZTE |
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