**3GPP TSG-RAN5 Meeting #94-e** **R5-221382**

**Electronic Meeting, 21 Feb – 04 March 2022**

**3GPP TSG RAN Meeting #95-e RP-22xxxx**

**Electronic Meeting, 17 March – 23 March 2022** (revision of RP-2xxxx)

**Source: China Telecom, Vivo, CATT**

**Title: New WID on Conformance Test Aspects for LTE/NR Multi-SIM devices**

**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: Conformance Test Aspects for LTE/NR Multi-SIM devices

## Acronym: LTE\_NR\_MUSIM-UEConTest

## Unique identifier:

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

Potential target Release: Rel-17

## 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  |  |  |  |  |
| **No** | X | 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) |
| MUSIM | CT1 | 910063 | CT1 aspects of Enabling Multi-USIM Devices |
| LTE\_NR\_MUSIM | R2 | 860063 | Support for Multi-SIM devices for LTE/NR |
| LTE\_NR\_MUSIM-Core | R2 | 860163 | Core Part: Support for Multi-SIM devices for LTE/NR |

### 2.3 Other related Work Items and dependencies

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

## 3 Justification

Multi-USIM devices have become more and more popular in different countries. The user may have both a personal and a business subscription in one device or has two personal subscriptions in one device for different services (e.g., use one individual subscription and one “family circle” plan). However, support for multi-USIM within a device is currently handled in an implementation-specific manner, resulting in a variety of implementations and UE behaviours. Standardizing support for such UE’s can prove beneficial from a performance perspective in that network functionality can be based on predictable UE behaviour.

Collision due to reception of paging when the UE is in IDLE/INACTIVE mode in both of the networks associated with respective SIMs was discussed in both SA/CT and RAN. An IMSI offset was introduced into LTE to calculate an alternative IMSI for deriving the modified Paging Occasion to avoid paging collisions. The procedures for network switching (with or without retaining RRC connection in network A) were designed for the UE to notify Network A of its switch from Network A to Network B. Finally, the paging cause feature was introduced to allow network to indicate to the UE whether the service is VoLTE/VoNR, which can be used by the UE to prioritize VoLTE/VoNR services in connection with MUSIM. All of these procedures are intended to allow predictable UE behaviour when MUSIM operation is used so networks can provide better UE performance.

CT WGs have completed 90% of the MUSIM normative work for core network aspects in Q4 2021, and the target date of specification completion in RAN2 MUSIM WI is planned to be completed in Q1 2022, with the ASN.1 freezing date planned for Q2 2022. In addition, per the consensus in RP-213622 during the RAN#94e meeting, no RRM requirements related to MUSIM gaps will be introduced as part of the R17 MUSIM WI. In other words, the core specifications WI aspects will be completed soon, and only protocol standardization (e.g., measurement gap patterns) remains to be completed, so it is proper time to start the related conformance test work in RAN5.

## 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 UE conformance requirements corresponding to the WID on LTE/NR Multi-SIM devices. This work item will cover NAS and AS Protocol conformance test specifications with Rel-17 NR/LTE MUSIM features.

## 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 the NR Rel-17 MUSIM configurations. | TSG RAN#101  (Sep-23) |  |
| TS 36.508 | Definition of common test environment for the LTE Rel-17 MUSIM configurations. | TSG RAN#101  (Sep-23) |  |
| TS 38.508-2 | Introduction of common implementation conformance statement (ICS) for NR Rel-17 MUSIM | TSG RAN#101  (Sep-23) |  |
| TS 38.523-1 | Introduction of the SIG test cases for NR Rel-17 MUSIM | TSG RAN#101  (Sep-23) |  |
| TS 36.523-1 | Introduction of the SIG test cases for LTE Rel-17 MUSIM | TSG RAN#101  (Sep-23) |  |
| TS 38.523-2 | Introduction of test applicability for SIG test cases impacted by NR Rel-17 MUSIM | TSG RAN#101  (Sep-23) |  |
| TS 36.523-2 | Introduction of ICS and test applicability for SIG test cases impacted by LTE Rel-17 MUSIM | TSG RAN#101  (Sep-23) |  |
| TS 38.523-3 | Introduction of test model for NR Rel-17 MUSIM requirements | TSG RAN#101  (Sep-23) | Progress of TTCN development of the new protocol test cases is tracked in MCC TF160 reports to RAN5/RAN. |
| TS 36.523-3 | Introduction of test model for LTE Rel-17 MUSIM requirements | TSG RAN#101  (Sep-23) | Progress of TTCN development of the new protocol test cases is tracked in MCC TF160 reports to RAN5/RAN. |

## 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

|  |
| --- |
| Supporting IM name |
| China Telecom |
| Vivo |
| MTK |
| ZTE |
| DISH Network |
| CATT |
| Verizon |
| Huawei |
| HiSilicon |
| Qualcomm |
| AT&T |
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