**3GPP TSG-RAN5 Meeting #96-e** **DRAFT2\_R5-225256**

**Electronic Meeting, August 15-26, 2022**

**3GPP TSG RAN Meeting #97-e RP-22xxxx**

**Electronic Meeting, September 12-16, 2022**

**Source: Vodafone**

**Title: New WID on UE Conformance – User Plane Integrity Protection support for EPC connected architectures**

**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 – User Plane Integrity Protection support for EPC connected architectures

Acronym: UPIP\_SEC\_LTE-RAN-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** |  | X |  |  |  |
| **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) |
| UPIP\_SEC\_LTE | SA 3 | 910025 | User Plane Integrity Protection for LTE |
| UPIP\_SEC\_LTE-RAN-Core | RAN 3 | 941111 | User Plane Integrity Protection support for EPC connected architectures |

### 2.3 Other related Work Items and dependencies

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

# 3 Justification

In order to provide additional user plane data security (i.e. in addition to user plane data ciphering), SA3 agreed in their WI on “User Plane Integrity Protection for LTE” to additionally support user plane integrity protection (UPIP) for data transferred over Uu interface for UE connected to EPC.

As a result, at TSG RAN #94e in December 2021, RAN agreed a Building Block WID with the objectives of:

* Specify RAN basic functions for optional support and use of UPIP (at the full data rate supported by the UE) for the EPC connected architectures using NR PDCP (RAN2, RAN3)

For this release, it is intended that this feature only applies to EN-DC capable devices.

*Note: For security related reasons, the UE’s support/non-support for EPS-UPIP is not sent in the UE Radio Access Capabilities, and instead, it is sent from the UE to the MME in NAS messages and then sent by the MME to the RAN in S1-AP signalling.*

*EN-DC capable devices need to support NR-PDCP, and the support of EN-DC is signalled to the eNB within existing R15 UE Radio Access Capabilities. Hence no changes to TS 36.306 were made.*

# 4 Objective

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

The objective of this work item is to enable UE conformance testing for Rel-17 User Plane Integrity Protection support for EPC connected architectures corresponding to the WID on UPIP\_SEC\_LTE-RAN-Core with Unique identifier 941111.

NOTE 1: While the Rel 17 specifications only support LTE UPIP for EN-DC capable devices, the use of LTE UPIP is applicable to both LTE-only and EN-DC radio configurations for EN-DC capable devices.

It is intended that the User Plane Integrity Protection is tested at a data rate above that normally used for signalling (i.e. >> 64 kbps), but, owing to the anticipated performance demands on test equipment, it is not expected that User Plane Integrity Protection will be verified by the test equipment at “the full data rate supported by the UE”.

# 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 36.508 | Definition of common test environment for Rel-17 LTE User Plane Integrity Protection test cases | TSG RAN#100 (June-23) |  |
| TS 36.509 | Introduction of special conformance testing functions for LTE User Plane Integrity Protection test cases | TSG RAN#100 (June-23) |  |
| TS 36.523-1 | Introduction of the SIG test cases for Rel-17 LTE User Plane Integrity Protection | TSG RAN#100 (June-23) | These include user plane tests at [NR PDCP layer] |
| TS 36.523-2 | Introduction of ICS and test applicability for SIG test cases impacted by LTE User Plane Integrity Protection | TSG RAN#100 (June-23) |  |
| TS 36.523-3 | Introduction of test model for Rel-17 LTE User Plane Integrity Protection | 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 38.523-1 | Introduction of the SIG test cases for Rel-17 EN-DC User Plane Integrity Protection | TSG RAN#101  (Sep-23) | These include user plane tests at [PDCP layer] |
| TS 38.523-2 | Introduction of ICS and test applicability for SIG test cases impacted by EN-DC User Plane Integrity Protection | TSG RAN#101  (Sep-23) |  |
| TS 38.523-3 | Introduction of test model for Rel-17 EN-DC User Plane Integrity Protection | 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)

Rauer, Petra, Vodafone, petra.rauer@vodafone.com

# 7 Work item leadership

RAN5

# 8 Aspects that involve other WGs

None

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Vodafone |
| Ericsson |
| Telecom Italia |
| Telia Company |
| Deutsche Telekom |
| Huawei |
| HiSilicon |
| ZTE |
| Orange |
| BT |
| Verizon |
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