**3GPP TSG-SA3 Meeting #108e *S3-222389***

**e-meeting, 22 - 26 August 2022**

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| *CR-Form-v12.1* |
| **DRAFT CHANGE REQUEST** |
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|  | **33.216** | **CR** | **DRAFT CR** | **rev** | **-** | **Current version:** | **16.7.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network |  |

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| ***Title:***  | eNB checks UP IP capability |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | S3 |
|  |  |
| ***Work item code:*** | SCAS\_5G\_Ph2 |  | ***Date:*** | 2022-08-22 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | eNB has supported UP IP, so the corresponding test case needs to be added.The eNB is expected to be locally configured with a UP integrity protection policy as specified in clause 7.3.3 of TS 33.401 |
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| ***Summary of change:*** | Add a new requirement and test caseUpdate the requirement and test cast to include the eNB UP IP feature. |
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| ***Consequences if not approved:*** | Inaccurate.Incomplete security assurance work for the UP IP feature |
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| ***Clauses affected:*** | new |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\*\*\*\*\* Begin 1st change\*\*\*\*\*\*\*\*\*

##### 4.2.2.1.x Integrity protection of user data between the UE and the eNB

*Requirement Name:* Integrity protection of user data between the UE and the eNB.

*Requirement Reference:* TS 33.401 [3], clause 5.1.4.

*Requirement Description:* *"*User plane packets between the eNB and the UE may be integrity protected on the Uu interface. *" in clause 5.1.4*

*Threat References:* TBD

***Test Case****:*

**Test Name:** TC-UP-DATA-INT\_eNB

**Purpose:** Toverify that the user data packets are integrity protected over the Uu interface.

**Pre-Condition:**

- The eNB network product shall be connected in emulated/real network environments. UE may be simulated.

- Tester shall have knowledge of integrity algorithm and integrity protection keys.

- The tester can capture the message via the Uu interface, or can capture the message at the UE.

**Execution Steps:**

1. eNB sends RRCConnectionReconfiguration with integrity protection indication "on".

2. Check any User data sent by eNB after sending RRCConnectionReconfiguration and while the UE is in active state is integrity protected.

**Expected Results:**

Any user plane packets sent between UE and eNB over the Uu interface after eNB sending RRCConnectionReconfiguration is integrity protected.

**Expected format of evidence:**

Evidence suitable for the interface e.g. Screenshot containing the operational results.

\*\*\*\*\*\*\*\*\* End of 1st change\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\* Begin 2nd change\*\*\*\*\*\*\*\*\*

##### 4.2.2.1.X Local UP integrity protection configuration

*Requirement Name:* Select the right UP integrity protection policy.

*Requirement Reference:* TS 33.401 [2] clause 7.3.3

*Requirement Description:* *"* *The eNB shall be locally configured with UP integrity protection policy.* " in clause 7.3.3

*Threat References:* TBD

***Test Case****:*

**Test Name:** TC\_LOCAL\_UP\_INTEGRITY\_PROTECTION\_CONFIGURATION

**Purpose:** Toverify that the eNB is locally configured with a UP integrity protection policy

**Pre-Condition:**

- The eNB network product shall be connected in emulated/real network environments. UE and MME may be simulated.

- The eNB locally configured to activate UP integrity protection by default if no UP integrity protection policy is received from MME.

- Tester shall have knowledge of integrity algorithm and integrity protection keys.

- The tester can capture the message via the Uu interface, or can capture the message at the UE.

**Execution Steps:**

1.MME sends EPS security capability with EIA7 indicating the UP integrity protection is supported by the UE. But the MME does not send a UP integrity protection policy to the eNB.

2. eNB sends RRCConnectionReconfiguration with integrity protection indication "on".

3. Check any User data sent by eNB after sending RRCConnectionReconfiguration and while the UE is in active state is integrity protected.

**Expected Results:**

Any user plane packets sent between UE and eNB over the Uu interface after eNB sending RRCConnectionReconfiguration is integrity protected.

**Expected format of evidence:**

Evidence suitable for the interface e.g. Screenshot containing the operational results.

\*\*\*\*\*\*\*\*\* End of 2nd change\*\*\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\* Begin 3rd change\*\*\*\*\*\*\*\*\*

##### 4.2.2.1.X UP IP policy selection

*Requirement Name:* Select the right UP IP policy.

*Requirement Reference:* TS 33.401 [2] clause 7.3.3

*Requirement Description:* *"* *If the eNB receives UP integrity protection policy from the MME, the eNB shall use the received UP integrity protection policy, otherwise, the eNB shall use the locally configured UP integrity protection policy if EIA7 in the EPS security capability indicates that the UE supports user plane integrity protection with EPC.* " in clause 7.3.3

*Threat References:* TBD

***Test Case****:*

**Test Name:** TC\_ UP\_IP\_POLICY\_Selection

**Purpose:** Toverify that the eNB has a locally configured UP IP policy

**Pre-Condition:**

- The eNB network product shall be connected in emulated/real network environments. UE and MME may be simulated.

- The eNB locally UP IP is set to NOT NEEDED.

- Tester shall have knowledge of integrity algorithm and integrity protection keys.

- The tester can capture the message via the Uu interface, or can capture the message at the UE.

**Execution Steps:**

1.MME sends EPS security capability with EIA7 indicating the UP IP is supported by the UE. But the MME does sends a UP IP policy with REQUIRED to the eNB.

2. eNB sends RRCConnectionReconfiguration with integrity protection indication "on".

3. Check any User data sent by eNB after sending RRCConnectionReconfiguration and while the UE is in active state is integrity protected.

**Expected Results:**

Any user plane packets sent between UE and eNB over the Uu interface after eNB sending RRCConnectionReconfiguration is integrity protected.

**Expected format of evidence:**

Evidence suitable for the interface e.g. Screenshot containing the operational results.

\*\*\*\*\*\*\*\*\* End of change\*\*\*\*\*\*\*\*\*