**3GPP TSG-SA3 Meeting #102-e S3-210385-r1**

**e-meeting, 18 – 29 January 2021, Online**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **33.501** | **CR** | 1049 | **rev** | **1** | **Current version:** | **15.11.0** |  |
|  |
| *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 | **x** |

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| ***Title:***  | Adding the security requirement with encBlockIndex in Rel15 |
|  |  |
| ***Source to WG:*** | Huawei, Hisilicon, Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | S3 |
|  |  |
| ***Work item code:*** | 5GS\_Ph1-SEC |  | ***Date:*** | 2020-12-25 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-15 |
|  | *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:*** | In SA3 #101e meeting, it was agreed to align the JSON format on encryption IE with CT4, and new requirement on the JSON format is required based on the LS S3-203522 sent to CT4, i.e. *If a cNF tries to access an API and includes the value "encBlockIndex" in the JSON of the request (regardless of the encoding used for that JSON request), this request shall be rejected by the cSEPP.**The pSEPP shall reject any request in which an IPX has inserted or relocated references to encBlockIndex. (This seems to be hidden in the CT4 spec in "verification of modification policy”.)*Hence, clarification on the requirement of SEPP is required accordingly. |
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| ***Summary of change:*** | Security requirements of cSEPP and pSEPP is clarified.  |
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| ***Consequences if not approved:*** | Security requirements of cSEPP and SEPP are not clarified based on the CT4 implementation. |
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| ***Clauses affected:*** | 5.9.3.2 |
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|  | **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:*** |  |

\* \* \* First Change \* \* \* \*

#### 5.9.3.2 Requirements for Security Edge Protection Proxy (SEPP)

The SEPP shall act as a non-transparent proxy node.

The SEPP shall protect application layer control plane messages between two NFs belonging to different PLMNs that use the N32 interface to communicate with each other.

The SEPP shall perform mutual authentication and negotiation of cipher suites with the SEPP in the roaming network.

The SEPP shall handle key management aspects that involve setting up the required cryptographic keys needed for securing messages on the N32 interface between two SEPPs.

The SEPP shall perform topology hiding by limiting the internal topology information visible to external parties.

As a reverse proxy the SEPP shall provide a single point of access and control to internal NFs.

The receiving SEPP shall be able to verify whether the sending SEPP is authorized to use the PLMN ID in the received N32 message.

The SEPP shall be able to clearly differentiate between certificates used for authentication of peer SEPPs and certificates used for authentication of intermediates performing message modifications.

NOTE 1: Such a differentiation could be done e.g. by implementing separate certificate storages.

The SEPP shall discard malformed N32 signaling messages.

The sending SEPP shall reject the messages received from the NF (via SCP) with JSON including "encBlockIndex" (regardless of the encoding used for that JSON request).

The receiving SEPP shall reject any message in which an IPX has inserted or relocated references to encBlockIndex.

The SEPP shall implement rate-limiting functionalities to defend itself and subsequent NFs against excessive CP signaling. This includes SEPP-to-SEPP signaling messages.

The SEPP shall implement anti-spoofing mechanisms that enable cross-layer validation of source and destination address and identifiers (e.g. FQDNs or PLMN IDs).

NOTE 2: An example for such an anti-spoofing mechanism is the following: If there is a mismatch between different layers of the message or the destination address does not belong to the SEPP’s own PLMN, the message is discarded.

\* \* \* End of Changes \* \* \* \*