**3GPP TSG-SA3 Meeting #103-e *draft\_S3-211459-r2***

**e-meeting, 17 - 28 May 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **33.501** | **CR** | **1080** | **rev** | **-** | **Current version:** | **16.6.0** |  |
|  |
| *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:***  | Clarification on the number of PLMN IDuse by SEPP over N32 |
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| ***Source to WG:*** | Vodafone |
| ***Source to TSG:*** | SA3 |
|  |  |
| ***Work item code:*** | 5G\_eSBA |  | ***Date:*** | 2021-05-04 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | Rel-16 |
|  | *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:*** | It is unclear between TS 33.501 and TS 29.573 whether a SEPP can support multiple PLMN IDs and how SEPPs with multiple IDs connect to other SEPPs |
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| ***Summary of change:*** | Addition of sentence describing that a SEPP may have multiple PLMN IDs but each PLMN ID has its own separate N32 interface. |
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| ***Consequences if not approved:*** | Network implementations may be incompatible and prevent roaming between networks. |
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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:*** | Linked to cat A CR to release 17. |
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| ***This CR's revision history:*** |  |

#### 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 messages received from the NF (directly or 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.

The SEPP shall be able to use one or more PLMN IDs.

In the situation that a PLMN, e.g., hPLMN, is using more than one PLMN ID, this PLMN SEPP may use the same N32-connection for all its PLMN IDs, with each of its remote PLMN partner, e.g., each vPLMN.. If different PLMNs are represented by the PLMN IDs supported by a SEPP, the SEPP shall use separate N32-connections for each pair of home and visited PLMN.