**3GPP TSG-SA3 Meeting #106-e *draft\_S3-220252-r2***

e-meeting, 14 - 25 February 2022 (revision of S3-yyxxxx)

**Source: Ericsson, CableLabs, InterDigital, Intel, Xiaomi, Nokia, Nokia Shanghai Bell, ZTE, China Mobile**

**Title: New SID on security aspects of enhanced support of Non-Public Networks phase 2**

**Document for: Agreement**

**Agenda Item: 4.18**

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: Study on security aspects of enhanced support of Non-Public Networks phase 2

Acronym: FS\_eNPN\_Ph2­\_SEC

Unique identifier:

{A number to be provided by MCC at the plenary}

Potential target Release: Rel-18

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | X | X | X |  |
| No |  |  |  |  |  |
| Don't know | X |  |  |  | X |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | *Work Task* |
| X | Study Item |

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| N/A |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| 880008 | Study on enhanced security support for Non-Public Networks | Rel-17 study item |
| 920025 | Security Aspects of eNPN | Rel-17 work item |
| 940075 | Study on enhanced support of Non-Public Networks Phase 2 | SA2 Rel-18 study item |
| 890023 | Study on 5G Networks Providing Access to Localized Services | SA1 Rel-18 study item |
| 920031 | 5G Networks Providing Access to Localized Services | SA1 Rel-18 work item |

**Dependency on non-3GPP (draft) specification:** none

# 3 Justification

Non-Public Networks were introduced in Rel-16 with basic functions, and further enhanced in Rel-17 to enable wider cooperation between different networks and different entities to support use cases for NPN to provide access for UE that has no native credentials or subscription beforehand.

SA2 has started a study on phase 2 of enhanced support of Non-Public Networks. In that study, SA2's aim is to cover further enhancements to the 5GS to fulfil the stage 1 service requirements for Non-Public Networks and service requirements related to Providing Access to Localised Services (TS 22.261). Among these requirements, there are some with potential security impact and that hence need SA3's attention.

For example, the support of non-3GPP access for SNPN and mobility between SNPNs might have security impact that need to be studied. In addition, the potential security impact of support for localized services needs to be studied.

# 4 Objective

The aim of this work is to study the security aspects for any potential enhancements to be developed by SA2 based on the outcome of their study. For each of the objectives in the scope of the SA2 study, potential security aspects that are to be covered in this study are as follows:

* Support for enhanced mobility by enabling support for idle and connected mode mobility between SNPNs without new network selection.
  + Study if existing security mechanisms for mobility between PLMNs can be reused for SNPNs or if new security mechanisms are needed.
* Support for non-3GPP access for SNPN
  + Study if existing security mechanisms for enabling non-3GPP access in a PLMN can be reused for enabling non-3GPP access in an SNPN or if new security mechanisms are needed
* Address new SA1 requirements (e.g. TS 22.261 requirements from PALS work) related to NPN
  + Study the trust model for the resulting architecture for enabling Localized Services via a local hosting NPN.
  + Study if existing mechanisms for a UE to access an NPN can be reused for enabling a UE to authenticate with and access the local hosting NPN and the localized services via the hosting NPN with proper authorization, or if new security mechanisms are needed.
* Support for remote provisioning of SNPN or PNI-NPN credentials
  + Study potential solutions for End-to-End secure provisioning of Non-USIM credentials based on Control Plane

# 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# | Rapporteur |
| Internal TR | 33.8xx | Study on security aspects of enhanced support of Non-Public Networks phase 2 | TSG#98 (Dec 2022) | TSG#99 (Mar 2023) | Jost, Christine, Ericsson, christine.jost@ericsson.com |
|  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
|  |  |  |  |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Jost, Christine, Ericsson, (christine.jost@ericsson.com)

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

SA2 for other stage 2 aspects.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Ericsson |
| CableLabs |
| InterDigital |
| Intel |
| Xiaomi |
| Nokia |
| Nokia Shanghai Bell |
| ZTE |
| China Mobile |
|  |
|  |