**3GPP TSG-SA3 Meeting #123 draft\_S3-252575-r1**

**Goteborg, Sweden, 25 – 29 August 2025** **(revision of S3-252575)**

**Source: Cisco Systems**

**Title: Study on security aspects of SNPN cellular hotspots**

**Document for: Approval**

**Agenda Item: 6.2**

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 SNPN cellular hotspots

Acronym: FS\_HOT\_SEC

Unique identifier:

Potential target Release: Rel-20

# 1 Impacts

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

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
| X | Study |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
|  | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 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) |
| 900053 | SA1 | 990053 | Study of Interconnect of SNPN |

### 2.3 Other related Work Items and dependencies

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

# 3 Justification

SA1 completed a study on the interconnect of SNPN (FS\_ISN), which resulted in the addition of the following requirements to support stand-alone non-public network (SNPN) cellular hotspots in TS 22.261.

- R1: Based on the SNPN configuration, the 5G network shall support a mechanism for an SNPN to be able to interconnect with a large number of SNPN Credential Providers with which the SNPN might not have preconfigured information detailing the IP addresses used by these SNPN Credential Providers to interconnect with the SNPN.

- R2: Based on the SNPN configuration, the 5G network shall support a mechanism for an SNPN Credential Provider to be able to interconnect with a large number of SNPNs with which the SNPN Credential Provider might not have preconfigured information detailing the IP addresses used by these SNPNs to interconnect with the SNPN Credential Provider.

- R3: Based on the SNPN configuration, the 5G network shall support a mechanism for an SNPN to be able to determine how to connect to an SNPN Credential Provider capable of verifying the identity presented by a user attempting to connect to that SNPN.

- R4: Based on the SNPN configuration, the 5G network shall support a mechanism for an SNPN to be able to securely interconnect with an SNPN Credential Provider in deployments where the required security information is not preconfigured.

- R5: Based on the SNPN configuration, the 5G network shall support a mechanism for an SNPN to enable an SNPN Credential Provider to securely notify events (e.g., a user’s subscription ending) to the SNPN.

In Release 17, the 3GPP architecture (TS 23.501) was enhanced to enable a Credentials Holder (CH) responsible for authenticating User Equipment (UE) to be decoupled from the operator of the SNPN. The CH equates at an SNPN Credentials Provider in the SNPN cellular hotspot requirements.

NOTE 1: TS 22.261 defines SNPN Credential Provider as "Entity within the 5G system that creates and manages identity information and provides authentication services for those identities for the purpose of accessing a SNPN. The SNPN Credential Provider can also authorize access to a non-public network for a subscriber associated with an identity handled by this SNPN Credential Provider.

NOTE 2: TS23.501 defines Credentials Holder as "Entity which authenticates and authorizes access to an SNPN separate from the Credentials Holder."

The security aspects of SNPN cellular hotspots have not yet been addressed.

# 4 Objective

Based on the above justification, the following objectives will be studied:

WT#1: Study and propose mechanisms that address the security aspects of SA1 requirements for SNPN cellular hotspots.

**TU estimates and dependencies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Work Task ID | TU Estimate  (Study) | TU Estimate  (Normative) | RAN Dependency  (Yes/No/Maybe) | Inter Work Tasks Dependency |
| WT#1 | 1 | 0.5 | No | WT#1 is self-contained |
|  |  |  |  |  |
|  |  |  |  |  |

Total TU estimates for the study phase: 1 (2 meeting cycles)

Total TU estimates for the normative phase: 0.5 (1 meeting cycle)

Total TU estimates: 1.5

# 5 Expected Output and Time scale

***{If this WID covers both stage 2 and stage 3, clearly indicate the different completion dates.}***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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 | TBD | Study on Security Aspects of SNPN Cellular Hotspots | TSG#110 | TSG#111 | TBD |
|  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| TS 33.310 | TBD | TBD | Pending outcome of study |
| TS 33.501 | TBD | TBD | Pending outcome of study |

# 6 Work item Rapporteur(s)

TBD

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

Stage 3 aspects will be covered by CT WGs.

Any normative work associated with this study is limited to that which does not require corresponding stage 2 work in SA2 or SA6. If any such work is identified, it will be communicated to the corresponding group and be left for future study in SA3.

# 9 Supporting Individual Members

{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval}

|  |
| --- |
| Supporting IM name |
| Cisco Systems |
| Samsung |
| CableLabs |
| ETRI |
| Lenovo |
|  |