**3GPP TSG-SA3 Meeting #115 *S3-24xxxx***

**Athens, Greece, 26th February - 1st March 2024** **(revision of xx-yyxxxx)**

**Source: Nokia, Nokia Shanghai Bell, ZTE Corporation, China Telecom, OPPO, China Unicom, CATT, CableLabs, Lenovo, Charter**

**Title: New SID on security aspects for Multi-Access (DualSteer + ATSSS Ph-4)**

**Document for: Approval**

**Agenda Item: 6**

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 for Multi-Access (DualSteer + ATSSS Ph-4)

Acronym: FS\_MASSS\_Sec

Unique identifier: TBD

Potential target Release: Rel-19

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | X |  | X |  |
| No | 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) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 960018 | Study on upper layer traffic steering, switching and split over dual 3GPP access | Stage 1 study for DualSteer in Rel-19 |
| 1020031 | Upper layer traffic steering and switching over dual 3GPP access  | Stage 1 work item for DualSteer in Rel-19 |
| 1020070 | Study on Multi-Access (DualSteer and ATSSS\_Ph4) | Stage 2 work study on Multi-Access in Rel-19 by SA2 |

# 3 Justification

SA1 has studied and specified service requirements on new DualSteer devices and how to apply traffic steering and/or switching between two 3GPP access networks connected to the same or different PLMN networks. Please refer to TR 22.841 and TS 22.261 for details.

SA2 has a new study on Multi-Access, FS\_MASSS (TR 23.700-54), with three main objectives:

- WT#1: Study the overall architecture and function enhancements to 5GS to support DualSteer devices.

- WT#2: Study how MPQUIC can be extended to support non-UDP traffic.

- WT#3: Study a simplified ATSSS architecture for non 3GPP access, not based on current TNGF/N3IWF.

The security aspects FS\_MASSS and their impact in the architecture are to be covered in SA3. More specifically, in principle the following topics require SA3 coordination as per potential security impact:

1) DualSteer device is a new type of device that will register onto the 5G System, thus it is required to ensure that updated procedures (subscription, registration, mobility management) and communication of DualSteer devices with the 5GS are secured.

2) For the new ATSSS (Ph4) envisioned scenario, i.e., non-3GPP access is not based on current TNGF/N3IWF, the new required architecture enhancement should not compromise the overall security posture of the 5G network, in particular:

 - whether to keep NAS security context on non-3GPP access.

 - whether to keep IPsec on user plane and/or control plane.

 - whether new security mechanisms are to be considered in UE procedures such as the registration and connectivity to the 5G system in the context of ATSSS between 3GPP access and non-3GPP access without 5G NAS.

# 4 Objective

Based on the above justification, the following objectives will be studied based on the related Rel-19 work mainly in SA1 and SA2:

WT#1: Ensure that updated registration procedures for DualSteer devices are secured.

WT#2: Study the security aspects of a simplified ATSSS architecture over non-3GPP access, in particular:

WT#2.1: whether to keep NAS security context on non-3GPP access.

WT#2.2: whether to keep IPsec on user plane and/or control plane of non-3GPP access.

WT#2.3: whether new security mechanisms are to be considered in UE procedures such as the registration and connectivity to the 5G system in the context of ATSSS between 3GPP access and non-3GPP access without 5G NAS.

Any other potential security issue coming from SA2 study (TR 23.700-54) should be considered in this SID.

## TU estimates and dependencies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Work Task ID | TU Estimate(Study) | TU Estimate(Normative) | RAN Dependency(Yes/No/Maybe)  | Inter Work Tasks Dependency Editor’s Note: This column should highlight if WT#x is self-contained, or is dependent on completion of other WTs |
| WT#1 | 1.5 | 0.5 | No | WT#1 is self-contained |
| WT#2 | 1.5 | 0.5 | No | WT#2 is self-contained |
|  |  |  |  |  |

Total TU estimates for the study phase: 3

Total TU estimates for the normative phase: 1

Total TU estimates: 4

# 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 | 33.xyz | Study on security aspects for Multi-Access (DualSteer + ATSSS Ph-4)  | SA#xx | SA#yy |  |
|  |  |   |  |  |  |

|  |
| --- |
| 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)

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

Stage 3 aspects covered by CT WGs. Potential interaction with SA2 WG for architecture aspects, with RAN WGs for RAN dependent issues.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Nokia |
| Nokia Shanghai Bell |
| ZTE Corporation |
| China Telecom |
| OPPO |
| CATT |
| CableLabs |
| Lenovo |
| Charter |