**3GPP TSG-SA3 Meeting #115 *draft\_S3-240988-r1***

Athens, Greece, 26th February - 1st March 2024 (revision of S3-240764 and S3-240614)

**Source: Ericsson, China Mobile, Nokia**

**Title: Revised SID on the security support for the Next Generation Real Time Communication services Phase 2**

**Document for: Agreement**

**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 the security support for the Next Generation Real Time Communication services phase 2

Acronym: FS\_NG\_RTC\_SEC\_Ph2

Unique identifier: 1020038

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 |  |  |
| Don't know | X |  |  |  | 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) |
| N/A | N/A | N/A | N/A |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| 790003 | Enhancements to IMS for new real time communication services | Work Item of Stage 1 requirements |
| 920029 | Stage 1 of Evolution of IMS Multimedia Telephony Service | Work item of Stage 1 requirements |
| 920036 | Evolution of IMS Multimedia Telephony Service | Work Item of Stage 1 requirements |
| 960032 | Study on security support for Next Generation Real Time Communication services | Stage 2 security Rel-18 study item |
| 990038 | Security support for Next Generation Real Time Communication services | Work item of Stage 2 security handling |
| 1000028 | Mobile Metaverse Services | Work item of Stage 1 requirements |
| 1010030 | Study on system architecture for next generation real time communication services phase 2 | Stage 2 Rel-19 study item |

# 3 Justification

SA2 continues the study on Next Generation Real Time Communication Phase 2 in Rel-19 and the results are expected to be documented in a new technical report TR 23.700-77 as per SP-231196. The SA2 study proposal has several proposed work tasks, however it is expected that the following architectural aspects have security impact.

According to TR 23.700-87, there are scenarios that the third party subscribers (e.g. employees) use third party IDs (e.g., enterprise employee ID). The IMS network can present the third party ID to the callee during subsequent calling process. The third party subscriber can access the IMS network directly or via a SIP trunk as well. From the security point of view, the enhanced IMS network shall be able to support the identity verification and authorization of third-party user during an IMS call.

The third party specific user identity handling was not completed in TR 23.700-87 and the new SA2 study includes this aspect stating that the SA3 security handling work in TR 33.890 should be taken into account. The security handling of third party specific user identities is captured in the TR 33.890 in the form of "Key issue #1: Third party specific user identities" and two solution proposals. No normative was pursued in Rel-18 due to the conclusion in TR 23.700-87. However, SA2 has included this issue in the new study in Rel-19, which means SA3 is expected to continue the work on it.

The SA2 study scope also includes enhancements to IMS media plane to support the use cases of IMS based Metaverse services such as the impact on IMS system to support enhanced media plane capabilities, deployment aspects, the use of metaverse digital identities such as avatars in IMS communication. These enhancements may require an accompanying security study.

The SA2 study scope includes IMS data channel exposure interfaces between the Data Channel Application Server (DCAS) and Data Channel Server Function (DCSF) and between the DCAS and IMS Application Server (AS). TR 23.700-77 includes an investigation of the enhancement of existing interfaces. SA3 needs to study the security of these interfaces and verify whether existing mechanisms are sufficient or new solutions are needed. In addition privacy should be considered for the aforementioned interfaces.

# 4 Objective

The study aims at investigating the security impacts of the new features of the Next Generation Real Time Communication studied in TR 23.700-77. More specifically the study aims at:

- WT1: IMS third party identity security handling

NOTE 1: The related SA3 study in Rel-18 captured in TR 33.890 will be taken into account if applicable.

- WT2: Studying the security handling of the enhancements to IMS media plane to support the use cases of IMS based Metaverse services.

- WT3: Studying the security and privacy issues and solutions related to the IMS data channel exposure

NOTE 2: New objectives can be added to address security aspects of other key issues introduced in SA2 after further progress made in SA2.

## TU estimates and dependencies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Work Task ID | TU Estimate  (Study) | TU Estimate  (Normative) | RAN Dependency  (Yes/No/Maybe) | Inter Work Tasks Dependency |
| 1. | 1 TU (3 meeting cycles) | 1 TU (3 meeting cycles) | No |  |
| 2. | 1 TU (3 meeting cycles) | 1 TU (3 meeting cycles) | No |  |
| 3. | 1 TU (3 meeting cycles) | 1 TU (3 meeting cycles) | No |  |

Total TU estimates for the study phase: 3 TUs (3 meeting cycles)

Total TU estimates for the normative phase: 3 TUs (3 meeting cycles)

Total TU estimates: 6

# 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 | TR 33.790 | Study on the security support for the Next Generation Real Time Communication services phase 2 | TSG SA#105 (Sept., 2024) | TSG SA#106 (Dec., 2024) | Vlasios Tsiatsis [vlasios.tsiatsis@ericsson.com](mailto:vlasios.tsiatsis@ericsson.com)  Xiaoting Huang <huangxiaoting@chinamobile.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)

# Vlasios Tsiatsis [vlasios.tsiatsis@ericsson.com](mailto:vlasios.tsiatsis@ericsson.com), Xiaoting Huang [huangxiaoting@chinamobile.com](mailto:huangxiaoting@chinamobile.com)

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

SA2 for the stage 2 architecture.

CT1 for the stage 3 UE aspects.

CT4 for the stage 3 network aspects.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Ericsson |
| AT&T? |
| China Mobile |
| Nokia? |
| Nokia Shanghai Bell? |
| Huawei? |
| Hisilicon? |