**3GPP TSG-SA3 Meeting #106-e *S3-220405r4***

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

**Source: Lenovo**

**Title: New Study on applying URSP rules for Authentic Applications (FS\_UAutA)**

**Document for: Approval**

**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 applying URSP rules for Authentic Applications

## Acronym: FS\_UAutA

## Unique identifier: *TBA*

## Potential target Release: Rel-18

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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 …

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

## 2.2 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 |
|  |  | {optional free text} |

Dependency on non-3GPP (draft) specification: N/A

# 3 Justification

A 5G-capable UE may have a plurality of UE Route Selection Policy (URSP) rules, each one containing a traffic descriptor component and a route selection descriptor component. The route selection descriptor component identifies the data connection that must be used to transmit the traffic that matches the traffic descriptor component. A data connection is identified with a set of data connection parameters, wherein a data connection parameter can identify (a) the name of the external data network (Data Network Name, DNN) reachable via the data connection, (b) a network slice utilized by the data connection (S-NSSAI), (c) the radio access network type utilized by the data connection (3GPP access or non-3GPP access), (d) the IP type utilized by the data connection (e.g. IPv4 or IPv6), (e) the session and service continuity type (SSC type) provided by the data connection, etc.

Essentially, the URSP rules map the different traffic flows generated in the UE into different data connections, each one utilizing different data connection parameters. The UE may establish multiple data connections with a mobile communication network.

In order to identify the traffic generated by the application, the traffic descriptor component of the URSP rule comprises the identity of the application. Note that the identity of an application is not a secure identifier, i.e., it cannot uniquely identify an application. It is feasible that a second application is (maliciously) designed to have the same identifier as the identifier of a genuine application. In this way, the second application pretends to be the genuine application and can cause the UE to transmit its traffic based on a URSP rule that was designed to be applied for the traffic of the genuine application.

The security study in SA3 is looking at mechanisms to ensure the identity of a genuine application in order to apply the URSP rule accordingly, so that malicious applications cannot get access towards the operator regulated resources.

# 4 Objective

The objectives of this study are to:

1. Identify key issues and develop solutions to address the following security aspects:
   1. Correct identification and validation of genuine applications for authorizing traffic transmission according to the URSP rule.
   2. Identify enhancements within URSP rules to allow the UE to determine application traffic from genuine applications.
2. Conclude on selected solutions for potential normative work.

# 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.xxx | Study on Identification and Routing of Authentic Application Data | TSG#98 | TSG#99 | Andreas Kunz, akunz@lenovo.com |

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

# 6 Work item Rapporteur(s)

Andreas Kunz, akunz@lenovo.com

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

Potential interactions with SA2 for the architectural aspects (URSP rule information)

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Lenovo |
| Motorola Mobility |
| AT&T |
| CableLabs |
| Deutsche Telekom |
| Xiaomi |
| LG Electronics |
| Broadcom |
| China Telecom |
| Intel |
| China Mobile |
| PCCW Global B.V. |
| Motorola Solutions MSI |
| NEC |
| CATT |
| Verizon |