**3GPP TSG-SA3 Meeting #107-e *S3-220895-r1***

**e-meeting, 16 - 20 May 2022** Revision of S3-22xxxx

**Source: Nokia, Nokia Shanghai Bell, CableLabs, Charter Communications, Lenovo, Apple**

**Title:** **New SID on** **Security aspects for 5WWC Phase 2**

**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 5WWC Phase 2

# Document for: Approval

## Acronym: FS\_WWC-Ph2-Sec

## Unique identifier: *TBA*

## Potential target Release: Rel-18

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | 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

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| FS\_5WWC\_Ph2 | SA2 | 940062 | Study on the support for 5WWC Phase 2 |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 820014 | Wireless and Wireline Convergence for the 5G system architecture | SA2 normative work for supporting Trusted Non-3GPP access network and Wireline Access network |
| 900012 | Access Traffic Steering, Switch and Splitting support in the 5G system architecture | SA2 R17 normative work for support of Multi-access PDU session |

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

# 3 Justification

The support of wireline access has been specified in TS 23.501/502/503 and in TS 23.316 in Rel-16. Security requirements and procedures are specified in TS 33.501 Annex O. However, some scenarios have not been addressed or partially solved during Rel-16 study/normative work. To address those scenarios, to better support wireline access in 5G systems and Trusted Non-3GPP Access networks, SA2 has approved a SID on 5WWC phase 2 in Rel-18. The progress of the 5WWC Phase2 SA2 is captured in 23700-17, where 25 solutions are already included in the TR. In this TR, SA2 defines the various kinds of devices sitting behind the RG:

* **Authenticable Non-3GPP (AUN3) devices:** Device is a Non-3GPP device that does not support NAS over non-3GPP access, but it possesses 5G credentials, hence it can be authenticated by 5GC. i.e. USIM will be present, but the protocol stack (NAS) will not be there.
* **Non-Authenticable Non-3GPP (NAUN3) devices:** A Non-3GPP device that the 5GC cannot authenticate.

In SA2, several solutions are proposed to address differentiated services (e.g., QoS and charging) for various types of non-3GPP devices and UEs connected behind a 5G-RG. However, authorization and authentication of those devices should be addressed in SA3.

Another issue is related to how to select the TNGF/N3IWF that supports the S-NSSAI(s) requested by the UE during registration via a non-3GPP access network. For this key issue, various solutions are proposed to expose the network node's slice information to UE. However, it may pose a security threat to the network or the company that owns Slice.

Security aspects of SA2 5WWC SID need to be studied in SA3 in Rel-18.

For trusted non-3GPP access, SA2 has defined support for UE TNAP mobility but related security aspects are not defined yet in SA3 (i.e., concerns were raised against usage of ERP). For this reason, it should be investigated how UE TNAP mobility can be supported with non-ERP based solutions..

NOTE: ERP-based solutions will not be considered in the study for UE TNAP mobility scenario, as there are concerns against usage of ERP.

# 4 Objective

The objectives of this study are to:

* Whether and how to identify, authenticate and authorize the non-3GPP devices behind the Residential Gateway (RG) connecting to the network.
* Whether and how to identify, authenticate and authorize the 3GPP devices (UE or N5CW devices) behind the Residential Gateway (RG) connecting to the network.
* Security aspects of supporting slice in 5WWC.
* Whether and how the security aspects for UE TNAP mobility can be supported in the 5GS.

Editor’s Note: the objective on the security aspects of UE TNAP mobility depends on SA2 feedback.

# 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 WWC Phase2 security aspects | TSG#98  | TSG#99 | Saurabh Khare, Nokia, saurabh.khare@nokia.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)

Saurabh Khare, Nokia, Saurabh.khare@nokia.com

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

Potential interactions with SA2 for the architectural aspects.

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Nokia |
| Nokia Shanghai Bell |
| CableLabs |
| Charter Communications |
| Lenovo |
| Apple |
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