**3GPP TSG-SA3 Meeting #107-e *S3-220987r1***

e-meeting, 16 - 20 May 2022 (revision of S3-220987)

**Source: Qualcomm Incorporated (to be SA3)**

**Title: New SID on Security for Phase 2 for UAS, UAV and UAMDocument 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 Security of Phase 2 for UAS, UAV and UAM

Acronym: FS\_UAS\_Ph2\_SEC

Unique identifier: TBD

Potential target Release: *Rel-18*

# 1 Impacts

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

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) |
| ID\_UAS | SA WG1 | 810049 | Remote Identification of Uncrewed Aerial Systems |
| FS\_ID\_UAS\_Ph2 | SA WG2 | 940051 | SA2 study looking at further architecture enhancements for UAS |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| 920028 | Security aspects of Uncrewed Aerial Systems | SA3 WID that detailed the security of the basic mechanisms for the UAS ecosystem |
| 900014 | (Stage 2 of) Support of Uncrewed Aerial Systems Connectivity, Identification, and Tracking | SA2 WID that created the basic supporting mechanisms for the UAS ecosystem |

# 3 Justification

SA2 have stated a Study Item to address some of the requirements defined new requirements in SA1 but not covered by 3GPP SA2 work in ID\_UAS in release 17. The objectives of this new Study Item include the following aspects:

Study the gaps and system architecture enhancements required to:

- WT#1.1. Study how to transport Broadcast Remote Identification and C2 communications via the 3GPP system by identifying how and whether existing mechanisms can be re-used, and identifying architectural and functional modifications required;

- WT#1.2. Identify how and whether existing mechanisms can be re-used, and identify architectural and functional modifications required, in order to support aviation applications such as Detect And Avoid (DAA), etc.

Such objectives may introduce security threat that require the introduction of security mechanism, e.g., if PC5 unicast is chosen to carry some aviation traffic then confidentiality, integrity, replay attack prevention is likely to be needed for any introduced PC5 signalling. Having a study item would be the simplest way to consider how to address such security issues.

# 4 Objective

The objective of this study work is to investigate and identify the security and privacy threats and corresponding security requirements that derive from the architecture and system level enhancements studied by SA2. Furthermore, the study will consider solutions and analyse these to make recommendations for possible normative work (taking into consideration the output of the SA2 work on this topic). In particular the study will consider the security of any architectural enhancements introduced by SA2 to transport Broadcast Remote Identification and C2 communications via the 3GPP system or support aviation applications such as Detect And Avoid (DAA).

# 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 security of architecture enhancement for UAV and UAM | TSG#98 – Dec 2022 | TSG#99 – Mar 2023 | Escott, Adrian, Qualcomm Incorporated, aescott@qti.qualcomm.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)

Escott, Adrian, Qualcomm Incorporated, aescott@qti.qualcomm.com

# 7 Work item leadership

SA3

# 8 Aspects that involve other WGs

SA2 for the architecture aspects, RAN groups for the RAN related issues.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Qualcomm Incorporated |
| Huawei? |
| HiSilicon? |
| Ericsson? |
|  |
|  |