**3GPP TSG-CT WG3 Meeting #135 C3-243527**

**Hyderabad, India, 27th – 31st May 2024 *(revision of*** [***C3-243098***](https://www.3gpp.org/ftp/tsg_ct/WG1_mm-cc-sm_ex-CN1/TSGC1_148_China/Docs/C1-242939.zip)***)***

**Source: InterDigital Inc.**

**Title: New WID on CT Aspects of Application Layer Support for Uncrewed Aerial Systems (UAS), Phase 3**

**Document for: Agreement**

**Agenda item: 19.1.1**

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: CT Aspects of Application Layer Support for Uncrewed Aerial Systems (UAS), Phase 3

Acronym: UASAPP\_Ph3

Unique identifier:

Potential target Release: Rel-19

# 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 …

|  |  |
| --- | --- |
|  | Study  |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
| x | Normative – Stage 3 |
|  | Normative – Other\* |

## 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| UASAPP\_Ph3 | SA6 | 1010008 | Application Architecture for UAS applications Phase 3 |

## 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work Items (if any) |
| Unique ID | Title | Nature of relationship |
| 960017 | Study on UAV Phase 3 | SA1, study on UAV Phase 3 |
| 930012 | Study on application layer support for Uncrewed Aerial System (UAS) | SA6, Enhancements to Application aspects for UAS in UAV Phase 2 |
| 970038 | Stage 2 of UASAPP\_Ph2 | SA6, Enhancements to Application aspects for UAS in UAV Phase 2 |
|  |  |  |

**Dependency on non-3GPP (draft) specification: None**

# 3 Justification

3GPP CT1 within Rel-17 and Rel-18 worked on TS 24.257 defined the Uncrewed Aerial System (UAS) Application Enabler (UAE) layer; Protocol aspects (UASAPP, Phase 1 and Phase 2).

SA6 based on new requirements provided by SA1, 3GPP TS 22.125, agreed a WID on Application Architecture for UAS applications Phase 3 (UASAPP\_Ph3), and SA6 has already provided updates to TS 23.255 with the corresponding new stage 2 functionality.

As the above work impacts CT WGs, hence a new work item needs to be established to specify the stage 3 aspects of Application layer support for Uncrewed Aerial System (UAS) in Rel-19 to implement these stage 2 requirements.

# 4 Objective

The objective of the work is to specify the CT aspects and update the CT WGs specifications to support the stage 2 requirements on Application layer support for Uncrewed Aerial System (UAS) defined in 3GPP TS 23.255.

The following areas of work are expected to be covered based on the features specified in stage 2. The stage 3 work shall follow the normative stage-2 requirements as available.

**CT1:**

- Enhance/Update the protocol for communication between UAE client and UAE server (U1-AE) with flight route selection support and real-time UAV flight path monitoring assistance, UAV connection status (QoS) monitoring and location reporting.

- Enhance/Update the protocol for communication between UAE client and UAE server (U1-AE) to support the ground-station assisted Detect and Avoid (DAA).

- Enhance/update the protocol for communication between UAE client and UAE server (U1-AE) to support routing and switching the traffic between C2 connections via two different networks for communication reliability and redundancy, and simultaneous link support for UTM-Navigated C2.

**CT3:**

- Enhance/Update the protocol for communication between UAE server and UAE application specific server (UAE\_FlightPathMonitoring API, UAE\_FlightRoute API) to support the flight route selection and real-time UAV flight path monitoring assistance, UAV connection status (QoS) monitoring and location reporting.

- Enhance/Update the protocol for communication between UAE server and UAS application specific server (UAE\_DAASupport Service API for DAA) to support the ground-station assisted Detect and Avoid (DAA).

- Enhance/Update the protocol for communication between UAE server and UAE application specific server (UAE\_C2OperationModeManagement API) to support routing and switching the traffic between C2 connections via two different networks for communication reliability and redundancy, and simultaneous link support for UTM-Navigated C2.

# 5 Expected Output and Time scale

|  |
| --- |
| **New specifications** |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
|  |  |  |  |  |  |

|  |
| --- |
| **Impacted existing TS/TR** |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| TS 27.007 | Potential enhancements on existing AT-commands to control MT supporting UAE layer for UAS applications. | TSG#109 (September 2025) | CT1 |
| TS 24.257 | Potential enhancements to protocol for communication between UAE client and UAE server related to flight route monitoring and selection, DAA and C2 communication and switching. | TSG#109 (September 2025) | CT1 |
| TS 29.257 | Potential enhancements to the APIs for communication between UAE server and UAE application specific server including UAE\_FlightPathMonitoring API, UAE\_FlightRoute API, UAE\_DAASupport Service API for DAA and UAE\_C2OperationModeManagement API. | TSG#109 (September 2025) | CT3 |

# 6 Work item Rapporteur(s)

Taimoor Abbas, InterDigital (taimoor.abbas@interdigital.com)

# 7 Work item leadership

CT1

# 8 Aspects that involve other WGs

None

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Interdigital |
| Lenovo |
| Motorola Solutions |
| Convida Wireless LLC |
| SyncTechno Inc. |
| Deutsche Telekom |
| Samsung |
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