**3GPP TSG CT WG3 Meeting #138 C3-246533**

**Orlando, US, 18 - 22 November, 2024 (revision of C3-246104 was CP-242252)**

**3GPP TSG-CT WG1 Meeting #152 C1-246688**

**Orlando, US, 18 - 22 November, 2024 (revision of C1-246468 was CP-242252)**

**Source: Samsung**

**Title: Revised WID on CT aspects for application enablement for mobile metaverse services**

**Document for: Approval**

**Agenda Item: 19.3**

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 for application enablement for mobile metaverse services

Acronym: Metaverse\_App

Unique identifier: 1050025

Potential target Release: Rel-19

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | X |  | X |  |
| No | X |  | X |  |  |
| Don't know |  |  |  |  | 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) |
| Metaverse\_App | SA6 | 1040076 | Application enablement for mobile metaverse services |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 1030039 | Study on security aspects of 5G Mobile Metaverse services | SA3 study on security aspects of the metaverse services. |

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

# 3 Justification

A substantial justification appears in the work item description for the parent feature (Metaverse\_App, Unique ID: 1040076) and applies to this building block work item description as well.

The Metaverse\_App WID in SA6, specifies the application layer architecture, procedures and information flows necessary for enabling the mobile metaverse applications over 3GPP networks. The Metaverse\_App SA6 study work in 3GPP TR 23.700-21 is almost complete (88% completion rate) and normative work is started. The Stage-2 normative work will be specified and have impacts to the Stage-3 protocol aspects and related APIs need to be specified in CT WGs.

CT WGs need to define protocol aspects of the architecture for enabling mobile metaverse applications, based on normative stage 2 specification developed by 3GPP SA6 and SA3 WG.

# 4 Objective

To define the protocol aspects and related APIs for enabling mobile metaverse applications based upon the normative Rel-19 Stage 2 specifications 3GPP TS 23.434, 3GPP TS 23.437 and 3GPP TS 23.438 developed by SA6 WG (additional CT WGs impacts areas will be identified based on the progress of the normative stage 2 work in SA6). The stage-3 work shall be started after the applicable normative stage-2 requirements in SA6 are available.

For CT1, the expected work includes as mentioned below:

1. To define protocol for SEAL-Uu interface for:
	1. Potential Digital asset (e.g., avatar) management service, based on normative stage-2 work developed in 3GPP TS 23.438;
	2. Potential Spatial Map and Spatial Anchor management based on normative stage-2 work developed in 3GPP TS 23.437.
2. Possible support for device discovery to offload task for metaverse services using PINAPP.

For CT3, the expected work includes as mentioned below:

1. To define protocol for SEAL-S interface for:
	1. Potential Digital asset (e.g., avatar) management service, based on normative stage-2 work developed in 3GPP TS 23.438;
	2. Potential spatial Map and Spatial Anchor management based on normative stage-2 work developed in 3GPP TS 23.437.
2. Updates to the SEAL service(s) for digital asset (e.g., avatar), spatial map and spatial anchor management.

NOTE: Coordination with SA4 is required related to avatar management and media aspects.

# 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 |
| TS | 24.550 | Digital asset, Spatial mapping and Spatial anchors server - Service Enabler Architecture Layer for Verticals (SEAL); Protocol specification; | TSG CT#108 (June 2025) | TSG CT#109 (September 2025) | Sangameshwara, Vijay, Samsung Electronics, s.vijay@samsung.com |
| TS | 29.XXX | Service Enabler Architecture Layer for Verticals (SEAL); Metaverse Enablement Services; Stage 3 | TSG CT#108 (June 2025) | TSG CT#109 (September 2025) | Tangudu, Narendranath Durga, Samsung Electronics, n.tangudu@samsung.com |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 24.583 | Possible updates to Application layer support for Personal IoT Network (PINAPP) | TSG CT#109 (September 2025) | CT1 |
| 24.545 | Possible updates to support mobile metaverse services. | TSG CT#109 (September 2025) | CT1 |
| 29.549 | Possible Updates to the SEAL service(s) for avatar, spatial map and spatial anchor management. | TSG CT#109 (September 2025) | CT3 |

Editor’s Note: New TS for digital asset services is FFS and will be determined based on stage-2 work progress for new APIs.

# 6 Work item Rapporteur(s)

Narendranath Durga Tangudu (n.tangudu@samsung.com)

# 7 Work item leadership

CT3

# 8 Aspects that involve other WGs

SA3 for security aspects, potential SA2 for avatar management and SA4 for media aspects

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Samsung |
| AT&T |
| CATT |
| InterDigital |
| ZTE |
| Orange |
| Nokia |
| Lenovo |
| Verizon |