**3GPP TSG|WG-SA4 Meeting #124 S4-231074**

**Berlin, DE, 22nd-26th May 2023** **(revision of S4-230983)**

**Source: Qualcomm Incorporated, ZTE, VODAFONE Group Plc, Lenovo Future Communications, [Beijing Xiaomi Mobile Software](https://portal.etsi.org/webapp/TelDir/QueryOrgaInfo.asp?OrgaId=15334" \t "_blank), InterDigital Communications, Huawei Technologies**

**Title: New SID on Avatars in Next Generation Real-Time Communications**

**Document for: Approval**

**Agenda Item: xxx**

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 of Avatars in Real-Time Communication Services

Acronym: FS\_AVATAR

Unique identifier:

Potential target Release: Rel-18

# 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 …

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

**\* Other = e.g. testing**

## 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) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 950015 | **Media Capabilities for Augmented Reality** | {optional free text}  |
| 960044 | **Generic architecture for RT and AR/MR** |  |
| 950014 | **Immersive Real-time Communication for WebRTC** |  |
| 960042 | **IMS-based AR Conversational Services** |  |

**Dependency on non-3GPP (draft) specification:**

# 3 Justification

Real-time communication services are evolving to offer immersive experiences to the end user by teleporting them into new worlds and allowing them to interact with other participants in richer and more realistic ways. Compared to the classical 2D video telephony/conferencing experiences, immersive real-time communication has the potential to disrupt the way people communicate. It is perceived as a core aspect of the Metaverse.

Avatars are digital representations of users in the metaverse, a set of virtual worlds where people can interact with each other in real-time. These avatars can take on many forms, from realistic human-like figures to synthetic characters. Users can customize their avatars with a range of features, such as clothing, accessories, and even physical attributes like height and body type. Avatars allow users to express themselves and create a unique digital identity within the metaverse. They also enable social interactions and communication, providing a sense of presence and connection with other users in the virtual world. With the continued growth of the metaverse, the use of avatars is likely to become even more prevalent, further blurring the line between the physical and digital worlds.

The integration, animation, and representation of avatars in real-time communication services is essential to enable these immersive experiences. This study item will identify and address the key technology challenges and recommend solutions for the support of Avatars.

# 4 Objective

The study item has the following objectives:

* Document the use cases for Avatars and classify avatar representations,
* Collect and document Avatar animation and representation approaches:
* Document the requirements for an interoperable base Avatar format:
	+ Prioritize deployed representations.
* Document formats for the animation data,
* Study the integration of Avatars into the RTC services (including WebRTC and IMS),
* Study the cross-operation with split rendering,
* Investigate the QoS, processing, and storage requirements for Avatars,
* In collaboration with SA3, investigate security aspects of Avatars, including authentication, privacy, DRM, …
* Document the network procedures and the impact on the 5G-RTC architecture.
* Discuss with relevant 3GPP groups on architecture and security aspects.

The study item will take into account the related SA1 requirements as defined in TR22.856.

NOTE: this study will not impact the integration of volumetric video formats such as V3C.

# 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 |
| TR | 26.8xx | Avatars in Real-Time Communication Services | SA#102 | SA#103 |  |
|  |  |  |  |  |  |

|  |
| --- |
| 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)

Bouazizi, Imed, Qualcomm Incorporated, bouazizi AT qti DOT qualcomm DOT com

# 7 Work item leadership

SA4

# 8 Aspects that involve other WGs

SA2 may need to be involved for architectural aspects.

SA3 may need to be involved for security and privacy aspects.

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Qualcomm Incorporated |
| ZTE |
| VODAFONE Group Plc |
| Lenovo Future Communications |
| [Beijing Xiaomi Mobile Software](https://portal.etsi.org/webapp/TelDir/QueryOrgaInfo.asp?OrgaId=15334" \t "_blank) |
| InterDigital Communications |
| Huawei Technologies |