3GPP TSG|WG-SA4 Meeting #133-e S4-251428

Online, 18 – 25 July 2025 (revision of S4-251195)

**Source: Qualcomm Incorporated**

**Title: [Draft] New SID on Avatars Phase 2**

**Document for: Approval**

**Agenda Item: 17.1**

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: Study on Avatars Phase 2

Acronym: FS\_AVATAR\_Ph2

Unique identifier:

Potential target Release: Rel-20

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | X |  | X |  |
| No | X |  | X |  | X |
| Don't know |  |  |  |  |  |

# 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) |
| FS\_AVATAR | SA4 | 1000019 | **Study of Avatars in Real-Time Communication Services** |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| AvCall-MED | **Avatar Communications in AR Calls** | Preceding work item on Avatars in AR calls |

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

MPEG for avatar & animation compression

# 3 Justification

The previous studies and normative work on Avatars in 3GPP have established foundational elements for avatar integration in real-time communication (RTC) services, including defining interoperable base Avatar formats and initial signaling mechanisms. With the emergence and adoption of a standardized Avatar format, the focus now shifts towards enhancing the avatar-based RTC services by emphasizing the quality of service and advanced animation features required for realistic and immersive user experiences.

In TR 26.813, beyond the work that is now conducted in AvCall-MED, the following considerations are mentioned for future work beyond Release 19:

1. Conduct further studies on Advanced and Non-IMS avatar communication scenarios,

2. investigate additional deployment scenarios, including integration with non-IMS communication frameworks,

3. study support for more complex multi-user environments for IMS and non-IMS scenarios,

4. document traffic characteristics for avatar communication and identify needs for more advanced QoS support,

5. study and document quality aspects and requirements of avatars in communication services, and

6. study and document advanced rendering and animation techniques for avatars, including support for multiple tracking frameworks and the required mapping/translation/fallback aspects to support interoperability.

This subsequent study phase aims to address the gaps identified by the previous work, particularly concerning the acceptability and enhancement of user-perceived service quality, i.e., issues 4, 5 and 6. Understanding the critical parameters influencing quality, identifying comprehensive service quality requirements, and determining QoS needs across various deployment scenarios, including those beyond IMS-based frameworks, is essential. Further exploration of advanced animation techniques, AI-driven avatar animation, security frameworks, and efficient compression schemes will provide necessary insights and guidelines to realize realistic avatar experiences in next-generation communication services.

# 4 Objective

The study item will address the following objectives:

1. Identify parameters critical for service quality acceptability of avatar-based RTC services.

2. Define comprehensive Quality-of-Experience (QoE) metrics and Quality-of-Service (QoS) requirements specific to avatar communication services.

3. Evaluate advanced animation techniques to enhance realism and user interaction, including AI-driven avatars animation (including voice control) and comparisons to traditional capture-based animation.

4. Evaluate mechanism to support dynamic components (accessories, hair, clothes, etc.) to an avatar.

5. Investigate architecture and service requirements beyond IMS-based avatar deployments, exploring potential alternative frameworks and use cases.

6. Assess the feasibility and potential benefits of integrating AI frameworks in IMS- and non-IMS-based services to drive avatar animation dynamically through voice or other input modalities.

7. Study security implications, focusing on authentication, privacy preservation, content protection (e.g., DRM), and secure distribution mechanisms for avatar data.

8. Evaluate existing compression methods and explore more efficient schemes specifically optimized for avatar formats and real-time usage scenarios.

9. Identify gaps in existing specifications and provide guidance for potential normative work.

# 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 |
|  |  |  |  |  |  |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 26.813 | Advanced Avatar Aspects | SA#112 (June 2026) |  |

# 6 Work item Rapporteur(s)

Bouazizi, Imed, Qualcomm Inc., bouazizi@qti.qualcomm.com

# 7 Work item leadership

SA4

# 8 Aspects that involve other WGs

SA2: Architectural implications and service frameworks beyond IMS.

SA3: Security, privacy, and DRM aspects.

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Qualcomm Incorporated |
| InterDigital Communications |
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