**3GPP TSG SA WG4 RTC SWG 129 S4-241436**

**e-Meeting, 19 – 23 August, 2024 Revision of S4-241371**

**Source: Samsung Electronics CO., LTD, NTT, AT&T, LG Electronics Inc.**

**Title: SID on immersive Real-Time Communication for WebRTC, Phase 2**

**Document for: Approval**

**Agenda Item: 17**

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 immersive Real-Time Communication for WebRTC, Phase 2

Acronym: FS\_iRTCW\_Ph2

Unique identifier:

Potential target Release: Rel-19

# 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\* |

## 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) |
| GA4RTAR | S4 | 960044 | Generic architecture for RT and AR/MR media |
| iRTCW | S4 | 950014 | immersive Real-Time Communication for WebRTC |
| FS\_eiRTCW | S4 | 950012 | Feasibility Study on the enhancements for immersive Real-time Communication for WebRTC |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 960046 | Real-time Transport Protocols Configurations (5G\_RTP) | Media transport aspects and RTP profile for WebRTC. |
| 1030007 | Study of 5G Real-time Transport Protocol Configurations, Phase 2 | Media transport aspects and RTP profile for WebRTC. |
| 1030006 | Study on Advanced Media Delivery (FS\_AMD) | Further harmonization of RTC and Streaming for Advanced Media Delivery |
| 950015 | Media Capabilities for Augmented Reality (MeCAR) | Signalling and metadata for immersive media communication specified |
|  |  |  |
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# 3 Justification

In Release-18, SA4 addressed the work for specifying the initial set of 5G generic architecture and the protocols used for WebRTC-based Real-Time media Communication (RTC). The purpose of the work is to support WebRTC-based real-time media communication services (especially for immersive services) in different collaboration models between 5GS operators and third-party media communication service providers. As a result of the work, (a) TS 26.506 specifies RTC architecture, functionalities and call flows required for collaboration scenarios and (b) TS 26.113 specifies the protocols applicable over the interfaces of the RTC architecture.

NOTE: The scope of this new study is in the RTC architecture which is non-IMS based, therefore the works of NG\_RTC\_Ph2 in SA2 to enhance IMS network are not relevant to this study.

In addition, SA4 had studied the possible enhancement of RTC architecture and its associated signalling protocols (FS\_eiRTCW, UID=950012) for some specific collaboration scenarios. FS\_eiRTCW did not provide any recommendation for normative works, but it contains some useful key findings to be considered as improved/extended RTC features in Release-19 timeframe.

To better support the immersive media communication over RTC for various service scenarios, the following number of key issues should be investigated further among the possible enhancements:

**1. Media capabilities, profiles and codecs for RTC.**
The parent work item, iRTCW (UID=950014) was intended to specify the immersive media components, but TS 26.113 primarily specifies the protocols and APIs for real-time communication, which are not restricted to specific profiles nor codecs. TS 26.119 has developed the immersive media codecs and profiles in Release-18 for generic service, it should be studied the suitable subset for real-time media communication in this study.

**2. Signalling and metadata to support immersive media capabilities**
TS 26.113 specified reference point of RTC-4s and RTC-4m for exchange of signalling and metadata information, respectively, However there needs more studies to improve the usage of these interfaces. Particularly, the device type and media capabilities identifiers specifically for UEs with immersive media capabilities are defined in TS 26.119, but 26.113 did not specify how these identifiers could be incorporated into RTC system. Also, 26.113 addressed some essential metadata (e.g,. depth sensors) in the Annex, but it remains as FFS how to make this usable. In this study, the requirements and the potential list of signalling and metadata are identified.

**3. Support of tethered cases in RTC system.**
How to support tethered cases on RTC architecture was studied and documented in TR 26.930. Tethered case is one of the possible use cases of immersive RTC services, but the solutions were not completed during the Release-18 study, particularly for following aspects:

1. Identification of the supported scenario for tethered cases. (e.g., "Native WebRTC App/Web App" on the tethered device and "Native WebRTC App/Web App" on the UE.)

2. Media processing capabilities of the tethered devices and the impact on the RTC architecture.

3. Evaluate the SA2 solution in TS 23.501 and XRM\_Ph2 in Release-19 on E2E QoS when there are non-3GPP networks also involved for the use cases considered under SA4 and identify potential gaps and coordinate with SA2 if needed.

# 4 Objective

This study item aims to:

A. Document the following key issues in detail, and in particular how they relate to the existing RTC architecture and protocols specified in TS 26.506 and TS 26.113:

1. Media capabilities, profiles and codecs for RTC

2. Signalling and metadata to support immersive media capabilities

3. Support of tethered cases in RTC system

B. Identify solutions for each of the key issues

C. Identify suitable one for key issues requiring solutions and recommend potential normative work to relevant specifications.

# 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 | Enhancements on Real-Time Media Communication for WebRTC | SA#107 (Mar., 2025) | SA#108 (Jun., 2025) | TR Editor: Yoshihiro INOUE (Yoshihiro.inoue@ntt-at.co.jp) |

|  |
| --- |
| 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)

Hakju Ryan Lee, Samsung Electronics, CO., LTD, hakju00.lee@samsung.com

# 7 Work item leadership

SA4

# 8 Aspects that involve other WGs

Coordination with following WGs may be necessary.

- SA2: Architectural aspects.

# 9 Supporting Individual Members

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| Supporting IM name |
| NTT |
| Samsung Electronics, CO., LTD |
|  |
| AT&T |
| LG Electronics Inc. |
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