3GPP TSG SA WG4#118-e meeting ***Tdoc S4-220383***

6th – 14th April 2022

**Source: Qualcomm Incorporated, AT&T, Nokia Corporation, InterDigital Communications, Ericsson LM, Samsung Electronics Co., Ltd., Facebook, KPN N.V., Tencent**

**Title: New WID on 5G Real-time Transport Protocols**

**Document for: Agreement**

**Agenda Item: 10.8 - New Work / New Work Items and Study Items**

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: 5G Real-time Media Transport Protocol Configurations

Acronym: 5G\_RTP

Unique identifier: TBA

Potential target Release: Rel-18

# 1 Impacts

*{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | **UICC apps** | **ME** | **AN** | **CN** | **Others (specify)** |
| **Yes** |  | X |  |  |  |
| **No** | X |  | 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 …

|  |  |
| --- | --- |
|  | **Feature** |
| X | **Building Block** |
|  | *Work Task* |
|  | **Study Item** |

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

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| --- |
| **Parent Work / Study Items**  |
| **Acronym** | **Working Group** | **Unique ID** | **Title (as in 3GPP Work Plan)** |
|  | SA4 | N/A | N/A |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| **Other related Work /Study Items (if any)** |
| **Unique ID** | **Title** | **Nature of relationship** |
| 810006 | Extended Reality (XR) in 5G | Relevant XR use cases in the conversational space |
| 820003 | Support of Immersive Teleconferencing and Telepresence for Remote Terminals | Previous work in MTSI related to 360-degree immersive communication in IMS |
| 850042 | Study on evolution of IMS multimedia telephony service | Feasibility study on AR call |
| 880011 | Study on 5G Glass-type AR/MR Devices | Feasibility study on 5G support of AR/MR devices including AR conversational services |
| 920029 | Stage 1 of Evolution of IMS Multimedia Telephony Service | Requirements to support AR telephony communication as specified in TS 22.261 |
| 940066 | Study on system architecture for next generation real time communication services | Study on system architecture enhancement for next-generation real-time communication in IMS. |
| See Note | iRTCW1 | iRTCW is expected to reference a WebRTC configuration of RTP developed in this work item |
| See Note | IBACS1 | IBACS is expected to reference an IMS configuration of RTP developed in this work item |
| See Note | SR\_MSE1 | The Split Rendering Media Service Enabler spec is expected to reference an IMS configuration of RTP developed in this work item |

Note 1: The marked WIDs/SIDs are currently in draft phase and will be finalized in the following meetings. Any relationship or dependency is based on the current status of the respective draft.

# 3 Justification

TR 26.998 (5G Glass-type AR/MR) identified multiple aspects of normative work to support “5G/AR Real-time Communication” (clause 8.4). TR 26.998 identified normative work needed to support delivery of immersive media via RTP for IMS-based and WebRTC-based conversational services. To support XR split rendering as described in clause 8.6 of TR 26.998, RTP is also needed to transport immersive media and metadata information between the edge and device.

To improve support for the above XR services and enablers, it is necessary to configure RTP with specific settings and features that enable immersive experiences. Further improvements in performance and QoE over the 5G system can be achieved by specifying RTP configurations that are integrated and optimized for the 5G system, and leverage cross-layer optimizations being developed in SA2 and RAN. The work will focus on RTP over UDP. New protocols like QUIC are outside of scope of this work and may be considered for a future work item.

As these configurations will be specified for use by multiple services, service enablers, and potentially, application developers, it is very important that they do not introduce unnecessary complexities that would discourage commercial deployment of the configurations. Therefore, technologies included should be commercially relevant and not introduce implementation and interoperability complexity without clearly demonstrating performance gains or new relevant functionalities.

This work item focuses on optimizing the use of RTP for the transport of real-time immersive media and associated metadata. The use of the IMS Data Channel is still supported by existing services such as ITT4RT but is outside the scope of this work.

# 4 Objective

The objective of this work item is to specify configurations of RTP to improve support for traditional and immersive real-time services and enablers. To develop a commercially relevant set of configurations that only include technologies that are either commercially relevant or deployed, or demonstrate clear performance or relevant functionality that justifies introducing additional implementation or interoperability complexity.

The work item aims to:

1. Specify RTP configurations that support at least the following services or enablers:
	1. IMS-based conversational XR services
	2. WebRTC-based conversational XR services
	3. WebRTC-based conversational services using traditional media
	4. XR split-rendering, i.e., real-time transport of media between the UE and edge
2. In the RTP configurations, specify references and further descriptions of
	1. RTP settings, e.g., uni-directional or bi-directional, use of multiple, simultaneous RTP streams in a single RTP session, use of multiple RTP sessions.
	2. RTP functions, e.g., use of RTP header extensions, FEC, RTP retransmission, SRTP
	3. RTCP feedback reporting procedures
3. In the RTP configurations, specify the usage of SDP attributes and parameters needed to configure RTP appropriately for the services and enablers.
4. In the RTP configurations, specify 5G optimizations and cross-layer optimizations based on SA2/RAN (e.g., FS\_XRM) enhancements if and when completed.

# 5 Expected Output and Time scale

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| --- |
| **New specifications** |
| **Type**  | **TS/TR number** | **Title** | **For info at TSG#**  | **For approval at TSG#** | **Spec Editor** |
| TS | 26.xxx | 5G Real-time Media Transport Protocol Configurations | TSG#xx (after SA4#125) | TSG#xx (after SA4#126) | Burman, Bo, Ericsson LM, bo.burman@ericsson.com |

|  |
| --- |
| **Impacted existing TS/TR** |
| **TS/TR No.** | **Description of change**  | **Target completion plenary#** | **Remarks** |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Igor Curcio, Nokia Corporation, igor.curcio@nokia.com

# 7 Work item leadership

SA4

# 8 Aspects that involve other WGs

Coordination with SA2 and RAN groups may be necessary.

# 9 Supporting Individual Members

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| --- |
| **Supporting IM name** |
| Qualcomm Incorporated |
| AT&T |
| Nokia Corporation |
| InterDigital Communications |
| Ericsson LM |
| Samsung Electronics Co., Ltd. |
| Facebook |
| KPN N.V. |
| Tencent |