**Source: Huawei, HiSillicon**

**Title: [FS\_5G\_RTP\_PH2] KI#9 Feasibility of RTP multiplexing options for transport of XR media streams**

**Agenda Item: 10.8**

**Document for: Agreement**

# 1 Background

The new SA4 Rel-19 study item on “5G Real-time Transport Protocol Configurations, Phase 2” (5G\_RTP\_PH2) has been approved in [SP-240065](https://www.3gpp.org/ftp/TSG_SA/TSG_SA/TSGS_103_Maastricht_2024-03/Docs/SP-240065.zip). The work item lists twelve distinct key issues to improve 5G RTP as defined in TS 26.522

1. **Feasibility of RTP multiplexing options for transport of XR media streams.** RTP allows different delivery options for multiple media streams. Those can be transmitted as multiple RTP streams in a single RTP session, in multiple RTP sessions, or in some cases, multiplexed media can be carried in a single RTP stream. SA4 needs to study the feasibility of the different delivery options for transport of XR media, e.g., in terms of timing space, sequence number space and synchronization (RFC 3550), and provide recommendations on their support for addressing different use cases.

# 2 Multiplexing in RTP/RTCP

In RTP, different streams typically use different ports even if they are in the same session, this is standard RTP delivery of audio/video streams.

For RTP streams multiplexing in a single RTP session, the SSRC is generally used for multiplexing and demultiplexing as described in RFC 8872 [1].

In addition, RTCP messages typically use their own port, sometimes combining RTCP and RTP on the same port is referred to as RTP/RTCP multiplexing, this has benefits in terms of reducing the overhead, but introduces about 5 percent extra bandwidth on the RTP stream. In this case, the RTP and RTCP traffic can be multiplexed and demultiplexed using the shared second Byte of the UDP payload (i.e. the RTCP packet type and the RTP M bit & RTP payload type) as described in RFC 5761 [2].

In WebRTC the same port may be used for RTP, RTCP and different streams

It is proposed to:

- study and document existing options for RTP multiplexing.

- identify the potential gaps on support of different use cases.

# 3 Proposal

It is recommended to agree and capture the clause 2 as the basic description for KI#9 in the Technical Report.

# 4 References

[1] RFC 8872: "Guidelines for Using the Multiplexing Features of RTP to Support Multiple Media Streams".

[2] RFC 5761: "Multiplexing RTP Data and Control Packets on a Single Port