**3GPP TSG- Meeting #-bis-e *508***

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** | **0** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | S4 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** | 08 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | In clause 7.10 (conclusion for KI#9) of TR 26.822, the following was agreed for normative work. - Based on response from SA2, normative work on multiplexed RTP streams may be needed. Furthermore, it is recommended to add guidelines to TS 26.522 [2] for RTP senders that use multiplexing.As a consequence of Reply LS from SA4 (S4-242065), SA2 has updated TS 23.501 (CR: S2-2412948) to add Media Identification (MID) into the IP Packet Filter Set as potential use of PDU sets identification in multiplexed media streams.This provides an option of multiplexing by use of SDES MID.  |
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| ***Summary of change:*** | * Add a new clause to provide RTP sender operation when using SDES MID-based multiplexing
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|  |  |
| ***Consequences if not approved:*** | RTP sender operation when using SDES MID for IP packet filtering is unclear. |
|  |  |
| ***Clauses affected:*** | 2, 4.6 (new), 4.6.1 (new), 4.6.2 (new) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* Change #1 \* \* \* \*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] ITU-T Rec H.264 (08/2021): "Advanced video coding for generic audiovisual services" | ISO/IEC 14496-10:2022: "Information technology – Coding of audio-visual objects – Part 10: Advanced Video Coding".

[3] ITU-T Rec H.265 (08/2021): "High efficiency video coding" | ISO/IEC 23008-2:2023: "High Efficiency Coding and Media Delivery in Heterogeneous Environments – Part 2: High Efficiency Video Coding".

[4] IETF RFC 3550 (2003): "RTP: A Transport Protocol for Real-Time Applications", H. Schulzrinne, S. Casner, R. Frederick and V. Jacobson.

[5] IETF RFC 6184 (2011): "RTP Payload Format for H.264 Video", Y.-K. Wang, R. Even, T. Kristensen, R. Jesup.

[6] IETF RFC 7798 (2016): "RTP Payload Format for High Efficiency Video Coding (HEVC)", Y.-K. Wang, Y. Sanchez, T. Schierl, S. Wenger, M. M. Hannuksela.

[7] 3GPP TR 26.928: "Extended Reality (XR) in 5G".

[8] 3GPP TR 26.998: "Support of 5G glass-type Augmented Reality / Mixed Reality (AR/MR) devices".

[9] IETF RFC 768 (1980): "User Datagram Protocol", J. Postel.

[10] IETF RFC 5761 (2010): "Multiplexing RTP Data and Control Packets on a Single Port", C. Perkins, M. Westerlund.

[11] IETF RFC 8285 (2017): "A General Mechanism for RTP Header Extensions", D. Singer, H. Desineni, R. Even.

[12] 3GPP TS 23.501: "System architecture for the 5G System (5GS)".

[13] IETF RFC 5905 (2010): "Network Time Protocol Version 4: Protocol and Algorithms Specification”, D. Mills, J. Martin, J. Burbank, W. Kasch.

[14] IEEE 1588-2019 – IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems, June 2020.

[15] IETF RFC 4574 (2006): "The Session Description Protocol (SDP) Label Attribute", O. Levin, G. Camarillo.

[16] IETF RFC 3611 (2003): "RTP Control Protocol Extended Reports (RTCP XR)", T. Friedman, R. Caceres, A. Clark.

[17] 3GPP TS 26.119: "Media Capabilities for Augmented Reality".

[18] IETF RFC 7656 (2015): "A Taxonomy of Semantics and Mechanisms for Real-Time Transport Protocol (RTP) Sources ", J. Lennox, K. Gross, S. Nandakumar, G. Salgueiro, B. Burman.

[19] IETF RFC 5888 “The Session Description Protocol (SDP) Grouping Framework”, G. Camarillo et al.

[20] ISO/IEC 60559:2020: “Floating-point arithmetic”.

[21] 3GPP TR 26.114: "IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction".

[22] IETF RFC 9143 (2022): "Negotiating Media Multiplexing Using the Session Description Protocol (SDP)".

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\* \* \* \* Change #2 (All new text)\* \* \* \*

## 4.6 RTP Header Extension for Multiplexed Stream

### 4.6.1 General

When PDU Sets is multiplexed in the media stream, UPF and RAN nodes should identify the PDU Sets belonging to a specific media stream in a PDU session. To identify and differentiate separate (S)RTP stemas in a multiplexed IP traffic flow, TS 23.501 specified (S)RTP Multiplexed Media Identification Information including a combination of at least one of the followings; Synchronization Source (SSRC) [4], Payload Type (PT) [4], and (S)RTP SDES header extention for Media Identification (MID) [22].

### 4.6.2 Use of SDES MID

An RTP sender may use the bundle in SDP negotiation to multiplex the media streams, particularly in case SSRC is not available before the (S)RTP session is started. When the bundle is available, an RTP sender shall send MID value for identification of media stream. When MID value is available at the RTP sender, it is exchanged in SDP negotiation by using ‘a=mid” attribute [22]. When the (S)RTP session is established, the same MID value shall be present in the extended header of associated (S)RTP packets for SDES items as described in IETF RFC 9143 [22]. When the delivery of MID value is available, an RTP sender uses either the 1-byte or the 2-byte extended header format, as described in IETF RFC 9143 [22] and as shown in Figure 4.6-1 and 4.6-2, respectively.

 0 1 2 3

 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 | ID | len | SDES item text value ... |

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

Figure 4.6-1: One-byte Header extension format for SDES items

 0 1 2 3

 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 | ID | len | SDES item text value ... |

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

Figure 4.6-2: Two-byte Header extension format for SDES items

NOTE: Not every (S)RTP packet is required to send MID value.

An RTP sender may also send the SDES MID value in the associated (S)RTCP with SDES item type of 15. Figure 4.6-3 shows the (S)RTCP packet fomat to carry SDES MID as specified in IETF RFC 9143 [22].

 0 1 2 3

 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 | MID=15 | length | identification-tag ...

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

Figure 4.6-3: (S)RTCP packet format for SDES MID delivery

\* \* \* \* End of changes \* \* \* \*