**3GPP TSG-CT WG1 Meeting #146C1-240191\_r1**

**Online, 22– 26 January 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **24.229** | **CR** | **6651** | **rev** | **1** | **Current version:** | **18.4.0** |  |
|  |
| *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:***  | Support of "a=3gpp-bdc-used-by" SDP attribute for IMS data channels |
|  |  |
| ***Source to WG:*** | Ericsson, China Mobile, China Southern Power Grid Co, Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | NG\_RTC |  | ***Date:*** | 2024-01-08 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | A new SDP attribute "a=3gpp-bdc-used-by" used to help the MF and MRF in the terminating network to distinguish the two bootstrap data channels with the same stream ID value 100 between the originating network and the terminating network was specified in TS 26.114.Support of the media-level SDP attribute "a=3gpp-bdc-used-by" needs to be added in annex A SDP profile tables.Furthermore, name of the capability in annex A SDP profile tables needs to be aligned with the rest of specification and TS 24.186 i.e. name of capability "3GPP MTSI client using data channels" should be changed to "IMS data channels" to avoid confusion. Note that:* TS 23.228 specifies IMS data channels are always established in the context of an IMS MMTel session; and
* TS 24.186 specifies the IMS multimedia telephony communication enhanced to support data channel applications can support different types of media, including IMS data channel media specified in TS 24.116 in addition to MMTel media types listed in TS 22.173.

This is also indicated in clause 4.20 of this TS: IMS data channels are always associated with MMTEL sessions.Framework for Live Uplink Streaming (FLUS) functionality requires support of the media-level SDP attributes "a=label" and "a=3gpp-qos-hint" is needed, while for the IMS data channel a media-level SDP attribute "a=label" is not needed, but in accordance with TS 26.114, clause 6.2.10.2 the "a=3gpp-qos-hint" SDP attribute should be used to indicate specific loss or latency requirements, so existing conditions c71 in table A.319 and c81 in table A.330 need to be updated for support of "a=label" attribute, and new conditions need to be specified for support of "a=3gpp-qos-hint" and "a=3gpp-bdc-used-by" attributes. |
|  |  |
| ***Summary of change:*** | Annex A SDP profile tables updated as follows:- in tables A.317 and A.328 "3GPP MTSI client using data channels" capability renamed to "IMS data channels", added TS 24.186; and- in tables A.319 and A.330:* conditions c71 and c81 updated to indicate "a=label" attribute is only applicable for FLUS,
* added new conditions c72 and c82 specifying applicability for "a=3gpp-qos-hint" attribute; and
* added "a=3gpp-bdc-used-by" attribute and new conditions c73 and c83 specifying attribute applicability.
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|  |  |
| ***Consequences if not approved:*** | The MRF in the terminating network will not be able to distinguish the two bootstrap data channels with the same stream ID value 100 between the originating network and the terminating network.Specific loss or latency requirements using "a=3gpp-qos-hint" will not be supported for IMS data channels.Unclear aplicability of SDP attributes related to support of IMS data channels if "3GPP MTSI client using data channels" capability will not be renamed. |
|  |  |
| ***Clauses affected:*** | A.3.2.1, A.3.2.2, A.3.3.1, A.3.3.2 |
|  |  |
|  | **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:*** |  |

\*\*\* First Change \*\*\*

### A.3.2.1 Major capabilities

Table A.317: Major capabilities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Does the implementation support | Reference | RFC status | Profile status |
|  | **Capabilities within main protocol** |  |  |  |
|  |  |  |  |  |
|  | **Extensions** |  |  |  |
| 22 | integration of resource management and SIP? | [30] [64] | o | c14 |
| 23 | grouping of media lines? | [53] | c3 | c3 |
| 24 | mapping of media streams to resource reservation flows? | [54] | o | c1 |
| 25 | SDP bandwidth modifiers for RTCP bandwidth? | [56] | o | o (NOTE 1) |
| 26 | TCP-based media transport in the session description protocol? | [83] | o | c2 |
| 27 | interactive connectivity establishment? | [289], [290] | o | c4 |
| 28 | session description protocol format for binary floor control protocol streams? | [108] | o | o |
| 29 | extended RTP profile for real-time transport control protocol (RTCP)-based feedback (RTP/AVPF)? | [135] | o | c5 |
| 30 | SDP capability negotiation? | [137] | o | c6 |
| 31 | Session Description Protocol (SDP) extension for setting up audio media streams over circuit-switched bearers in the Public Switched Telephone Network (PSTN)? | [155] | o | c7 |
| 32 | miscellaneous capabilities negotiation in the Session Description Protocol (SDP)? | [156] | o | c7 |
| 33 | transport independent bandwidth modifier for the Session Description Protocol? | [152] | o | c8 |
| 34 | Secure Real-time Transport Protocol (SRTP)? | [169] | o | c15 |
| 35 | MIKEY-TICKET? | [170] | o | c10 |
| 36 | SDES? | [168] | o | c9 |
| 37 | end-to-access-edge media security using SDES? | 7.5.2 | n/a | c16 |
| 37A | end-to-access-edge media security for MSRP using TLS and certificate fingerprints? | 7.5.2 | n/a | c22 |
| 37B | end-to-access-edge media security for BFCP using TLS and certificate fingerprints? | 7.5.2 | n/a | c23 |
| 37C | end-to-access-edge media security for UDPTL using DTLS and certificate fingerprints? | 7.5.2 | n/a | c24 |
| 37D | end-to-access-edge media security for RTP media using DTLS-SRTP and certificate fingerprints? | 7.5.2 | n/a | c40 |
| 38 | SDP media capabilities negotiation? | [172] | o | c12 |
| 39 | Transcoding Services Invocation in the Session Initiation Protocol (SIP) Using Third Party Call Control (3pcc)? | [166] | o | c13 |
| 40 | Message Session Relay Protocol? | [178] | o | c17 |
| 40A | Connection establishment for media anchoring for the message session relay protocol? | [214] | o | c26 |
| 41 | a SDP offer/answer mechanism to enable file transfer? | [185] | o | o |
| 42 | optimal media routeing | [11D] | n/a | c18 |
| 43 | ECN for RTP over UDP | [188] | o | c19 |
| 44 | T.38 FAX? | [202] | n/a | c20 |
| 45 | support for reduced-size RTCP? | [204] | o | o |
| 46 | RTCP extended reports? | [205] | o | o |
| 47 | maximum receive SDU size? | [9B] | o | o |
| 48 | the SDP content attribute? | [206] | o | c21 |
| 49 | a general mechanism for RTP header extensions? | [210] | o | o |
| 50 | negotiation of generic image attributes in the session description protocol (SDP)? | [211] | o | o |
| 51 | connection-oriented media transport over the TLS protocol in the SDP? | [241] | o | c25 |
| 52 | UDPTL over DTLS? | [217] | o | c27 |
| 53 | telepresence? | [7G] | o | o |
| 54 | SCTP over DTLS? | [219] | o | c28 |
| 55 | DTLS-SRTP? | [222], [223] | o | c41 |
| 56 | STUN Usage for Consent Freshness? | [224] | o | c29 |
| 57 | Alternate Connectivity (ALTC) Attribute? | [228] | o | c30 |
| 58 | 3GPP MTSI RTCP-APP adaptation? | [9B] | n/a | o |
| 59 | 3GPP MTSI Pre-defined Region-of-Interest (ROI)? | [9B] | n/a | o |
| 60 | 3GPP MTSI Arbitrary Region-of-Interest (ROI)? | [9B] | n/a | o |
| 61 | multiplexing RTP data and control packets on a single port | [237], [237A] | o | o |
| 61A | Exclusive RTP and RTCP multiplexed on one port (a=rtcp-mux-only)? | [246] | o | c34 |
| 62 | SDP-based data channel negotiation? | [238] | o | c31 |
| 63 | Media plane optimization for WebRTC? | [8Z] | n/a | c32 |
| 64 | Enhanced bandwidth negotiation mechanism? | [9B] | n/a | o |
| 65 | an SDP offer/answer mechanism to negotiate DTLS protected media? | [240] | o | c33 |
| 66 | Using simulcast in SDP and RTP sessions? | [249] | o | c35 |
| 67 | RTP payload format restrictions? | [250] | o | c36 |
| 68 | Compact Concurrent Codec Negotiation and Capabilities? | [9B] | n/a | c35 |
| 69 | 3GPP MTSI Delay Budget Information (DBI)? | [9B] | n/a | c37 |
| 70 | Access Network Bitrate Recommendation (ANBR)? | [9B] | n/a | c38 |
| 71 | Framework for Live Uplink Streaming (FLUS)? | [276] | n/a | c39 |
| 72 | IMS data channels? | [297], [9B] | n/a | c42 |
| c1: IF A.3/1 THEN m ELSE n/a - - UE role.c2: IF A.3/9B AND A.3/13B THEN m ELSE IF A.3/1 OR A.3/2A OR A.3/6 OR A.3/7 THEN o ELSE n/a - - IBCF (IMS-ALG), ISC gateway function (IMS-ALG), UE, P-CSCF (IMS-ALG), MGCF, AS.c3: IF A.317/24 OR A.317/53 THEN m ELSE o - - mapping of media streams to resource reservation flows, telepresence.c4: IF A.3/9B OR A.3/13B THEN m ELSE IF A.3/1 OR A.3/6 THEN o ELSE n/a - - IBCF (IMS-ALG), application gateway function (IMS-ALG), UE, MGCF.c5: IF A.3A/50 OR A.3A/50A OR A.3/6 OR A.3/9B OR A.3A/89 OR A.3A/11 OR A.3A/12 THEN m ELSE o - - multimedia telephony service participant, multimedia telephony service application server, MGCF, IBCF (IMS-ALG), ATCF (UA), conference focus, conference participant.c6: IF A.3A/50 OR A.3A/50A OR A.3/6 OR A.3/9B OR A.3/13B OR A.3A/89 THEN m ELSE o - - multimedia telephony service participant, multimedia telephony service application server, MGCF, IBCF (IMS-ALG), application gateway function (IMS-ALG), ATCF (UA).c7: IF A.3A/82 OR A.3A/83 THEN m ELSE o - - ICS user agent, SCC application server.c8: IF A.317/25 AND (A.3/1 OR A.3/6 OR A.3A/89) THEN o ELSE n/a - - SDP bandwidth modifiers for RTCP bandwidth, UE, MGCF, ATCF (UA).c9: IF A.3D/30 OR A.3D/20 THEN m ELSE n/a - - end-to-access-edge media security using SDES, end-to-end media security using SDES.c10: IF A.3D/21 OR A.3D/22 THEN m ELSE n/a - - end-to-end media security using KMS, end-to-end media security for MSRP using TLS and KMS.c12: IF A.3A/82 OR A.3A/83 THEN m ELSE o - - ICS user agent, SCC application server.c13: IF IF A.3/7D OR A.3/8 THEN o else n/a - - AS performing 3rd party call control or MRFC.c14: IF A.4/2C THEN m ELSE o - - initiating a session which require local and/or remote resource reservation.c15: IF A.3D/20 OR A.3D/21 OR A.3D/30 THEN m ELSE n/a - - end-to-end media security using SDES, end-to-end media security using KMS, end-to-access-edge media security using SDES.c16: If A.3D/30 THEN m ELSE n/a - - end-to-access-edge media security using SDES.c17: IF A.3A/33B OR A.3A/34 THEN m ELSE IF A.3A/8 OR A.3A/9 OR A.3/2A THEN o ELSE n/a - - session-mode messaging participant, session-mode messaging intermediate node, IBCF, MRFC, P-CSCF (IMS-ALG).c18: IF A.3/2A OR A.3/6 OR A.3/7 OR A.3/9B OR A.3A/89 OR A.3/13B THEN o ELSE n/a - - P-CSCF (IMS-ALG), MGCF, AS, IBCF (IMS-ALG), ATCF (UA), application gateway function (IMS-ALG).c19: IF A.3/2A OR A.3/6 OR A.3/8 OR A.3/9B OR A.3A/81 OR A.3A/89 OR A.3/13B OR A.3A/81A OR A.3A/81B THEN o ELSE n/a - - P-CSCF (IMS-ALG), MGCF, MRFC, IBCF (IMS-ALG), MSC Server enhanced for ICS, ATCF (UA), application gateway function (IMS-ALG), MSC server enhanced for SRVCC using SIP interface, MSC server enhanced for DRVCC using SIP interface.c20: IF A.3/1 OR A.3/6 THEN o ELSE n/a - - UE, MGCF.c21: IF A.3A/57 OR A.3A/58 OR A.3A/59 OR A.3A/60 OR A.3/2A OR A.3/9B OR A.3A/11 OR A.3A/12 THEN m ELSE o - - Customized alerting tones application server, Customized alerting tones UA client, Customized ringing signal application server, Customized ringing signal UA client, P-CSCF (IMS-ALG), IBCF (IMS-ALG), conference focus, conference participant.c22: If A.3D/20A THEN m ELSE n/a - - end-to-access-edge media security for MSRP using TLS and certificate fingerprints.c23: If A.3D/20B THEN m ELSE n/a - - end-to-access-edge media security for BFCP using TLS and certificate fingerprints.c24: If A.3D/20C THEN m ELSE n/a - - end-to-access-edge media security for UDPTL using DTLS and certificate fingerprints.c25: IF (A.317/37A AND A.317/40) OR (A.317/37B AND A.317/28) OR (A.317/37C AND A.317/52) OR (A.317/37D AND A.317/55) THEN m ELSE o - - end-to-access-edge media security for MSRP using TLS and certificate fingerprints, message session relay protocol, end-to-access-edge media security for BFCP using TLS and certificate fingerprints, session description protocol format for binary floor control protocol streams, end-to-access-edge media security for UDPTL using DTLS and certificate fingerprints, UDPTL over DTLS, end-to-access-edge media security for RTP media using DTLS-SRTP and certificate fingerprints, DTLS-SRTP.c26: IF A.317/40 THEN m ELSE n/a - - message session relay protocol.c27: IF A.317/37C THEN m ELSE o - - end-to-access-edge media security for UDPTL using DTLS and certificate fingerprints.c28: IF (A.3/1 AND A.317/53) OR A.3/14 OR A.3A/95 THEN m ELSE o - - UE, telepresence, Gm based WIC, eP-CSCF.c29: IF A.3/14 OR A.3A/95 THEN m ELSE o - - Gm based WIC, eP-CSCF.c30: IF A.3A/81 OR A.3/9B OR A.3/2A THEN o ELSE n/a - - UE performing the functions of an external attached network, IBCF (IMS-ALG), P-CSCF (IMS-ALG).c31: IF A.3/14 OR A.3A/95 THEN o ELSE n/a - - Gm based WIC, eP-CSCF.c32: IF A.3A/95 OR A.3/9B THEN o ELSE n/a - - eP-CSCF, IMS-ALG.c33: IF A.317/52 OR A.317/54 OR A.317/55 THEN m ELSE n/a - - UDPTL over DTLS, SCTP over DTLS, DTLS-SRTP.c34: IF A.3/14 OR A.3A/95 THEN m ELSE n/a - - Gm based WIC, eP-CSCF.c35: IF A.3A/11 OR A.3A/12 THEN o ELSE n/a - - conference focus, conference participant.c36: IF A.317/66 AND (A.3A/11 OR A.3A/12) THEN o ELSE n/a - - Using simulcast in SDP and RTP sessions, conference focus, conference participant.c37: IF A.3/1 OR A.3/2A OR A.3/8 OR A.3/9B THEN o ELSE n/a - - UE, P-CSCF (IMS-ALG), MRFC, IBCF (IMS-ALG).c38: IF A.3/1 THEN o ELSE n/a - - UE.c39: IF A.3/1 OR A.3/2 THEN o ELSE n/a - - UE, P-CSCF.c40: IF A.3D/31 THEN m ELSE n/a - - end-to-access-edge media security for RTP media using DTLS-SRTP and certificate fingerprints.c41: IF A.3D/31 THEN m ELSE o - - end-to-access-edge media security for RTP media using DTLS-SRTP and certificate fingerprints.c42: IF A.3/1 OR A.3/8 OR A.3A/50A THEN o ELSE n/a - - UE, MRFC, Multimedia telephony service application server. |
| NOTE 1: For "video" and "audio" media types that utilise RTP/RTCP, if the RTCP bandwidth level for the session is different than the default RTCP bandwidth as specified in RFC 3556 [56], then, it shall be specified. For other media types, it may be specified. |

\*\*\* Next Change \*\*\*

### A.3.2.2 SDP types

Table A.318: SDP types

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Type | Sending | Receiving |
| Ref. | RFC status | Profile status | Ref. | RFC status | Profile status |
|  | **Session level description** |
| 1 | v= (protocol version) | [39] 5.1 | m | m | [39] 5.1 | m | m |
| 2 | o= (owner/creator and session identifier) | [39] 5.2 | m | m | [39] 5.2 | m | m |
| 3 | s= (session name) | [39] 5.3 | m | m | [39] 5.3 | m | m |
| 4 | i= (session information) | [39] 5.4 | o | c2 | [39] 5.4 | m | c3 |
| 5 | u= (URI of description) | [39] 5.5 | o | c4 | [39] 5.5 | o | n/a |
| 6 | e= (email address) | [39] 5.6 | o | c4 | [39] 5.6 | o | n/a |
| 7 | p= (phone number) | [39] 5.6 | o | c4 | [39] 5.6 | o | n/a |
| 8 | c= (connection information) | [39] 5.7 | c5 | c5 | [39] 5.7 | m | m |
| 9 | b= (bandwidth information) | [39] 5.8 | o | o | [39] 5.8 | m | m |
|  | **Time description (one or more per description)** |
| 10 | t= (time the session is active) | [39] 5.9 | m | m | [39] 5.9 | m | m |
| 11 | r= (zero or more repeat times) | [39] 5.10 | o | c4 | [39] 5.10 | o | n/a |
|  | **Session level description (continued)** |
| 12 | z= (time zone adjustments) | [39] 5.11 | o | n/a | [39] 5.11 | o | n/a |
| 13 | k= (encryption key) | [39] 5.12 | x | x | [39] 5.12 | n/a | n/a |
| 14 | a= (zero or more session attribute lines) | [39] 5.13 | o | o | [39] 5.13 | m | m |
|  | **Media description (zero or more per description)** |
| 15 | m= (media name and transport address) | [39] 5.14 | m | m | [39] 5.14 | m | m |
| 16 | i= (media title) | [39] 5.4 | o | c2 | [39] 5.4 | o | c3 |
| 17 | c= (connection information) | [39] 5.7 | c1 | c1 | [39] 5.7 | m | m |
| 18 | b= (bandwidth information) | [39] 5.8 | o | o | [39] 5.8 | m | m |
| 19 | k= (encryption key) | [39] 5.12 | x | x | [39] 5.12 | n/a | n/a |
| 20 | a= (zero or more media attribute lines) | [39] 5.13 | o | o | [39] 5.13 | m | m |
| c1: IF (A.318/15 AND NOT A.318/8) THEN m ELSE IF (A.318/15 AND A.318/8) THEN o ELSE n/a - - "c=" contained in session level description and SDP contains media descriptions.c2: IF A.3/6 THEN x ELSE o - - MGCF.c3: IF A.3/6 THEN n/a ELSE m - - MGCF.c4: IF A.3/6 THEN x ELSE n/a - - MGCF.c5: IF A.318/17 THEN o ELSE m - - "c=" contained in all media description. |

Prerequisite A.318/14 OR A.318/20 - - a= (zero or more session/media attribute lines)

Table A.319: zero or more session / media attribute lines (a=)

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Field | Sending | Receiving |
| Ref. | RFC status | Profile status | Ref. | RFC status | Profile status |
| 1 | category (a=cat) | [39] 6 | c8 | c8 | [39] 6 | c9 | c9 |
| 2 | keywords (a=keywds) | [39] 6 | c8 | c8 | [39] 6 | c9 | c9 |
| 3 | name and version of tool (a=tool) | [39] 6 | c8 | c8 | [39] 6 | c9 | c9 |
| 4 | packet time (a=ptime) | [39] 6 | c10 | c10 | [39] 6 | c11 | c11 |
| 5 | maximum packet time (a=maxptime) | [39] 6 (NOTE 1) | c10 | c10 | [39] 6 (NOTE 1) | c11 | c11 |
| 6 | receive-only mode (a=recvonly) | [39] 6 | o | o | [39] 6 | m | m |
| 7 | send and receive mode (a=sendrecv) | [39] 6 | o | o | [39] 6 | m | m |
| 8 | send-only mode (a=sendonly) | [39] 6 | o | o | [39] 6 | m | m |
| 8A | Inactive mode (a=inactive) | [39] 6 | o | o | [39] 6 | m | m |
| 9 | whiteboard orientation (a=orient) | [39] 6 | c10 | c10 | [39] 6 | c11 | c11 |
| 10 | conference type (a=type) | [39] 6 | c8 | c8 | [39] 6 | c9 | c9 |
| 11 | character set (a=charset) | [39] 6 | c8 | c8 | [39] 6 | c9 | c9 |
| 12 | language tag (a=sdplang) | [39] 6 | o | o | [39] 6 | m | m |
| 13 | language tag (a=lang) | [39] 6 | o | o | [39] 6 | m | m |
| 14 | frame rate (a=framerate) | [39] 6 | c10 | c10 | [39] 6 | c11 | c11 |
| 15 | quality (a=quality) | [39] 6 | c10 | c10 | [39] 6 | c11 | c11 |
| 16 | format specific parameters (a=fmtp) | [39] 6 | c10 | c10 | [39] 6 | c11 | c11 |
| 17 | rtpmap attribute (a=rtpmap) | [39] 6 | c10 | c10 | [39] 6 | c11 | c11 |
| 18 | current-status attribute (a=curr) | [30] 5 | c1 | c1 | [30] 5 | c2 | c2 |
| 19 | desired-status attribute (a=des) | [30] 5 | c1 | c1 | [30] 5 | c2 | c2 |
| 20 | confirm-status attribute (a=conf) | [30] 5 | c1 | c1 | [30] 5 | c2 | c2 |
| 21 | media stream identification attribute (a=mid) | [53] 3 | c3 | c3 | [53] 3 | c4 | c4 |
| 22 | group attribute (a=group) | [53] 4 | c5 | c5 | [53] 3 | c6 | c6 |
| 23 | setup attribute (a=setup) | [83] 4 | c7 | c45 | [83] 4 | c7 | c45 |
| 24 | connection attribute (a=connection) | [83] 5 | c7 | c7 | [83] 5 | c7 | c7 |
| 24A | DTLS association ID attribute (a=tls-id) | [240] 4 | c62 | c62 | [240] 4 | c62 | c62 |
| 25 | IP addresses (a=candidate) | [290] | c12 | c12 | [290] | c13 | c13 |
| 26 | floor control server determination (a=floorctrl) | [108] 4 | c14 | c14 | [108] 4 | c14 | c14 |
| 27 | conference id (a=confid) | [108] 5 | c14 | c14 | [108] 5 | c14 | c14 |
| 28 | user id (a=userid) | [108] 5 | c14 | c14 | [108] 5 | c14 | c14 |
| 29 | association between streams and floors (a=floorid) | [108] 6 | c14 | c14 | [108] 6 | c14 | c14 |
| 30 | RTCP feedback capability attribute (a=rtcp-fb) | [135] 4.2 | c15 | c15 | [135] 4.2 | c15 | c15 |
| 31 | extension of the rtcp-fb attribute (a=rtcp-fb) | [136] 7.1, [188] 6.2, [251] 9 | c15 | c15 | [136] 7.1, [251] 9 | c15 | c15 |
| 32 | supported capability negotiation extensions (a=csup) | [137] 3.3.1 | c16 | c16 | [137] 3.3.1 | c16 | c16 |
| 33 | required capability negotiation extensions (a=creq) | [137] 3.3.2 | c16 | c16 | [137] 3.3.2 | c16 | c16 |
| 34 | attribute capability (a=acap) | [137] 3.4.1 | c16 | c16 | [137] 3.4.1 | c16 | c16 |
| 35 | transport protocol capability (a=tcap) | [137] 3.4.2 | c16 | c16 | [137] 3.4.2 | c16 | c16 |
| 36 | potential configuration (a=pcfg) | [137] 3.5.1[172] 3.3.6 | c16 | c16 | [137] 3.5.1[172] 3.3.6 | c16 | c16 |
| 37 | actual configuration (a=acfg) | [137] 3.5.2 | c16 | c16 | [137] 3.5.2 | c16 | c16 |
| 38 | connection data capability (a=ccap) | [156] 3.1 | c17 | c17 | [156] 3.1 | c18 | c18 |
| 39 | maximum packet rate (a=maxprate) | [152] 6.3 | c19 | c19 | [152] 6.3 | c19 | c19 |
| 40 | crypto attribute (a=crypto) | [168] | c20 | c20 | [168] | c20 | c20 |
| 41 | key management attribute (a=key-mgmt) | [167] | c21 | c21 | [167] | c21 | c21 |
| 42 | 3GPP\_e2ae-security-indicator (a=3ge2ae) | 7.5.2 | c22 | c22 | 7.5.2 | c22 | c22 |
| 43 | media capability (a=rmcap) | [172] 3.3.1 | c23 | c23 | [172] 3.3.1 | c23 | c23 |
| 43A | media capability (a=omcap) | [172] 3.3.1 | c23 | c23 | [172] 3.3.1 | c23 | c23 |
| 44 | media format capability (a=mfcap) | [172] 3.3.2 | c23 | c23 | [172] 3.3.2 | c23 | c23 |
| 45 | media-specific capability (a=mscap) | [172] 3.3.3 | c23 | c23 | [172] 3.3.3 | c23 | c23 |
| 46 | latent configuration (a=lcfg) | [172] 3.3.5 | c44 | c44 | [172] 3.3.5 | c44 | c44 |
| 47 | session capability (a=sescap) | [172] 3.3.8 | c24 | c24 | [172] 3.3.8 | c24 | c24 |
| 48 | msrp path (a=path) | [178] | c25 | c25 | [178] | c25 | c25 |
| 49 | file selector (a=file-selector) | [185] 6 | c27 | c27 | [185] 6 | c28 | c28 |
| 50 | file transfer identifier (a= file-transfer-id) | [185] 6 | c26 | c26 | [185] 6 | c28 | c28 |
| 51 | file disposition (a=file-disposition) | [185] 6 | c26 | c26 | [185] 6 | c28 | c28 |
| 52 | file date (a=file-date) | [185] 6 | c26 | c26 | [185] 6 | c28 | c28 |
| 53 | file icon (a=file-icon | [185] 6 | c26 | c26 | [185] 6 | c28 | c28 |
| 54 | file range (a=file-range) | [185] 6 | c26 | c26 | [185] 6 | c28 | c28 |
| 55 | optimal media routeing visited realm (a=visited-realm) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 56 | optimal media routeing secondary realm (a=secondary-realm) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 57 | optimal media routeing media level checksum (a=omr-m-cksum) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 58 | optimal media routeing session level checksum (a=omr-s-cksum) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 59 | optimal media routeing codecs (a=omr-codecs) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 60 | optimal media routeing media attributes (a=omr-m-att) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 61 | optimal media routeing session attributes (a=omr-s-att) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 62 | optimal media routeing media bandwidth (a=omr-m-bw) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 63 | optimal media routeing session bandwidth (a=omr-s-bw) | 7.5.3 | c29 | c29 | 7.5.3 | c29 | c29 |
| 64 | ecn-attribute (a=ecn-capable-rtp) | [188] | c30 | c30 | [188] | c30 | c30 |
| 65 | T38 FAX Protocol version (a=T38FaxVersion) | [202] | n/a | c31 | [202] | n/a | c31 |
| 66 | T38 FAX Maximum Bit Rate (a=T38MaxBitRate) | [202] | n/a | c31 | [202] | n/a | c31 |
| 67 | T38 FAX Rate Management (a=T38FaxRateManagement) | [202] | n/a | c31 | [202] | n/a | c31 |
| 68 | T38 FAX Maximum Buffer Size (a=T38FaxMaxBuffer) | [202] | n/a | c31 | [202] | n/a | c31 |
| 69 | T38 FAX Maximum Datagram Size (a=T38FaxMaxDatagram) | [202] | n/a | c31 | [202] | n/a | c31 |
| 70 | T38 FAX maximum IFP frame size (a=T38FaxMaxIFP) | [202] | n/a | c32 | [202] | n/a | c32 |
| 71 | T38 FAX UDP Error Correction Scheme (a=T38FaxUdpEC) | [202] | n/a | c32 | [202] | n/a | c32 |
| 72 | T38 FAX UDP Error Correction Depth (a=T38FaxUdpECDepth) | [202] | n/a | c32 | [202] | n/a | c32 |
| 73 | T38 FAX UDP FEC Maximum Span (a=T38FaxUdpFECMaxSpan) | [202] | n/a | c32 | [202] | n/a | c32 |
| 74 | T38 FAX Modem Type (a=T38ModemType) | [202] | n/a | c32 | [202] | n/a | c32 |
| 75 | T38 FAX Vendor Info(a=T38VendorInfo) | [202] | n/a | c32 | [202] | n/a | c32 |
| 76 | reduced-size RTCP (a=rtcp-rsize) | [204] | c33 | c33 | [204] | c34 | c34 |
| 77 | RTP control protocol extended report parameters (a=rtcp-xr) | [205] | c35 | c35 | [205] | c36 | c36 |
| 78 | maximum receive SDU size (a=3gpp\_MaxRecvSDUSize) | [9B] | c37 | c37 | [9B] | c38 | c38 |
| 79 | content (a=content) | [206] | c39 | c39 | [206] | c39 | c39 |
| 80 | generic header extension map definition (a=extmap) | [210] | c40 | c40 | [210] | c41 | c41 |
| 81 | image attribute (a=imageattr) | [211] | c42 | c42 | [211] | c43 | c43 |
| 82 | fingerprint (a=fingerprint) | [241] | c46 | c46 | [241] | c46 | c46 |
| 83 | msrp-cema (a=msrp-cema) | [214] | c47 | c47 | [214] | c47 | c47 |
| 84 | sctp-port (a=sctp-port) | [219] | c48 | c48 | [219] | c48 | c48 |
| 84A | max-message-size (a=max-message-size) | [219] | c68 | c68 | [219] | c48 | c48 |
| 85 | CS correlation (a=cs-correlation) | [155] 5.2.3.1 | c49 | c49 | [155] 5.2.3.1 | c49 | c49 |
| 86 | Alternate Connectivity (ALTC) Attribute (a=altc) | [228] | o | c50 | [228] | o | c50 |
| 87 | 3GPP MTSI RTCP-APP adaptation (a=3gpp\_mtsi\_app\_adapt) | [9B] | n/a | c51 | [9B] | n/a | c52 |
| 88 | 3GPP MTSI Pre-defined Region-of-Interest (ROI)(a=predefined\_ROI) | [9B] | n/a | c53 | [9B] | n/a | c54 |
| 89 | RTP and RTCP multiplexed on one port (a=rtcp-mux) | [237], [237A] | c55 | c55 | [237], [237A] | c55 | c55 |
| 90 | data channel mapping (a=dcmap) | [238] | c56 | c56 | [238] | c56 | c56 |
| 91 | data channel subprotocol specific attributes (a=dcsa) | [238] | c55 | c56 | [238] | c56 | c56 |
| 92 | Media plane optimization for WebRTC Contact (a= tra-contact) | 7.5.4 | c57 | c57 | 7.5.4 | c57 | c57 |
| 93 | Media plane optimization for WebRTC m-line (a= tra-m-line) | 7.5.4 | c58 | c58 | 7.5.4 | c58 | c58 |
| 94 | Media plane optimization for WebRTC attribute (a= tra-att) | 7.5.4 | c57 | c57 | 7.5.4 | c57 | c57 |
| 95 | Media plane optimization for WebRTC bandwidth (a= tra-bw) | 7.5.4 | c57 | c57 | 7.5.4 | c57 | c57 |
| 96 | Media plane optimization for WebRTC SCTP-association (a= tra-SCTP-association) | 7.5.4 | c58 | c58 | 7.5.4 | c58 | c58 |
| 97 | Media plane optimization for WebRTC media line number (a= tra-media-line-number) | 7.5.4 | c59 | c59 | 7.5.4 | c59 | c59 |
| 98 | Enhanced bandwidth negotiation mechanism (a=bw-info) | [9B] | n/a | c60 | [9B] | n/a | c61 |
| 99 | Exclusive RTP and RTCP multiplexed on one port (a=rtcp-mux-only) | [246] | c63 | c63 | [246] | c63 | c63 |
| 100 | Simulcast stream description (a=simulcast) | [249] 6.1 | c64 | c64 | [249] 6.1 | c64 | c64 |
| 101 | Restriction identifier (a=rid) | [250] 10 | c65 | c65 | [250] 10 | c66 | c66 |
| 102 | 3GPP compact concurrent codec capabilities (a=ccc-list) | [9B] | n/a | c67 | [9B] | n/a | c67 |
| 103 | Delay Budget Information (DBI) RTCP feedback type (a=rtcp-fb:\* 3gpp-delay-budget) | [9B] 6.2.8 | n/a | c69 | [9B] 6.2.8 | n/a | c69 |
| 104 | ANBR Support attribute (a=anbr) | [9B] | n/a | c70 | [9B] | n/a | c70 |
| 105 | Label attribute (a=label) | [277] 4 | o | c71 | [277] 4 | o | c71 |
| 106 | 3GPP QoS hint attribute (a=3gpp-qos-hint) | [9B] 6.2.7.4 | n/a | c72 | [9B] 6.2.7.4 | n/a | c72 |
| 107 | 3GPP bootstrap data channel used by attribute (a=3gpp-bdc-used-by) | [9B] 6.2.12 | n/a | c73 | [9B] 6.2.12 | n/a | c73 |
| c1: IF A.317/22 AND A.318/20 THEN o ELSE n/a - - integration of resource management and SIP, media level attribute name "a=".c2: IF A.317/22 AND A.318/20 THEN m ELSE n/a - - integration of resource management and SIP, media level attribute name "a=".c3: IF A.317/23 AND A.318/20 THEN o ELSE n/a - - grouping of media lines, media level attribute name "a=".c4: IF A.317/23 AND A.318/20 THEN m ELSE n/a - - grouping of media lines, media level attribute name "a=".c5: IF A.317/23 AND A.318/14 THEN o ELSE n/a - - grouping of media lines, session level attribute name "a=".c6: IF A.317/23 AND A.318/14 THEN m ELSE n/a - - grouping of media lines, session level attribute name "a=".c7: IF A.317/26 AND A.318/20 THEN m ELSE n/a - - TCP-based media transport in the session description protocol, media level attribute name "a=".c8: IF A.318/14 THEN o ELSE x - - session level attribute name "a=".c9: IF A.318/14 THEN m ELSE n/a - - session level attribute name "a=".c10: IF A.318/20 THEN o ELSE x - - media level attribute name "a=".c11: IF A.318/20 THEN m ELSE n/a - - media level attribute name "a=".c12: IF A.317/27 AND A.318/20 THEN o ELSE n/a - - candidate IP addresses, media level attribute name "a=".c13: IF A.317/27 AND A.318/20 THEN m ELSE n/a - - candidate IP addresses, media level attribute name "a=".c14: IF A.317/28 AND A.318/20 THEN m ELSE n/a - - session description protocol format for binary floor control protocol streams, media level attribute name "a=".c15: IF (A.317/29 AND A.318/20) THEN m ELSE n/a - - extended RTP profile for real-time transport control protocol (RTCP)-based feedback (RTP/AVPF), media level attribute name "a=".c16: IF A.317/30 AND A.318/20 THEN m ELSE n/a - - SDP capability negotiation, media level attribute name "a=".c17: IF A.317/32 AND A.318/20 THEN o ELSE n/a - - miscellaneous capabilities negotiation in the Session Description Protocol (SDP), media level attribute name "a=".c18: IF A.317/32 AND A.318/20 THEN m ELSE n/a - - miscellaneous capabilities negotiation in the Session Description Protocol (SDP), media level attribute name "a=".c19: IF A.317/33 AND (A.318/14 OR A.318/20) THEN o ELSE n/a - - bandwidth modifier packet rate parameter, media or session level attribute name "a=".c20: IF A.317/34 AND A.317/36 AND A.318/20 THEN m ELSE n/a - - Secure Real-time Transport Protocol, media plane security using SDES, media level attribute name "a=".c21: IF ((A.317/34 AND A.3D/21) OR A.3D/22) AND A.317/35 AND A.318/20 THEN m ELSE n/a - - Secure Real-time Transport Protocol, end-to-end media security using KMS, end-to-end media security for MSRP using TLS and KMS, MIKEY-TICKET, media level attribute name "a=".c22: IF (A.317/37 OR A.317/37A OR A.317/37B OR A.317/37C OR A.317/37D) AND A.318/20 THEN m ELSE n/a - - end-to-access edge media security using SDES, end-to-access-edge media security for MSRP using TLS and certificate fingerprints, end-to-access-edge media security for BFCP using TLS and certificate fingerprints, end-to-access-edge media security for UDPTL using DTLS and certificate fingerprints, end-to-access-edge media security for RTP media using DTLS-SRTP and certificate fingerprints, media level attribute name "a=".c23: IF A.317/38 THEN m ELSE n/a - - SDP media capabilities negotiation.c24: IF A.317/38 AND A.318/14 THEN m ELSE n/a - - SDP media capabilities negotiation, session level attribute name "a=".c25: IF A.317/40 AND A.318/20 THEN m ELSE n/a - - message session relay protocol, media level attribute name "a=".c26: IF A.317/41 AND A.318/20 THEN o ELSE n/a - - a SDP offer/answer mechanism to enable file transfer, media level attribute name "a=".c27: IF A.317/41 AND A.318/20 AND (A.3A/31 OR A.3A/33) THEN m ELSE IF A.317/41 AND A.318/20 AND NOT (A.3A/31 OR A.3A/33) THEN o ELSE n/a - - a SDP offer/answer mechanism to enable file transfer, media level attribute name "a=", messaging application server, messaging participant.c28: IF A.317/41 AND A.318/20 THEN m ELSE n/a - - a SDP offer/answer mechanism to enable file transfer, media level attribute name "a=".c29: IF A.317/42 AND A.318/20 THEN o ELSE n/a - - optimal media routeing, media level attribute name "a=".c30: IF A.317/43 THEN m ELSE n/a - - ECN for RTP over UDP, media level attribute name "a=".c31: IF A.317/44 AND A.318/20 THEN m ELSE n/a - - T.38 FAX, media level attribute name "a=".c32: IF A.317/44 AND A.318/20 THEN o ELSE n/a - - T.38 FAX, media level attribute name "a=".c33: IF A.317/45 AND A.318/20 THEN o ELSE n/a - - support for reduced-size RTCP, media level attribute name "a=".c34: IF A.317/45 AND A.318/20 THEN m ELSE n/a - - support for reduced-size RTCP, media level attribute name "a=".c35: IF A.317/46 AND A.318/20 AND A.318/14 THEN o ELSE n/a - - RTCP extended reports, media level attribute name "a=", session level attribute name "a=".c36: IF A.317/46 AND A.318/20 AND A.318/14 THEN m ELSE n/a - - RTCP extended reports, media level attribute name "a=", session level attribute name "a=".c37: IF A.317/47 AND A.318/20 AND A.318/14 THEN o ELSE n/a - - maximum receive SDU size, media level attribute name "a=", session level attribute name "a=".c38: IF A.317/47 AND A.318/20 AND A.318/14 THEN m ELSE n/a - - maximum receive SDU size, media level attribute name "a=", session level attribute name "a=".c39: IF A.317/48 AND A.318/20 THEN m ELSE n/a - - the SDP content attribute, media level attribute name "a=".c40: IF A.317/49 AND A.318/20 AND A.318/14 THEN o ELSE n/a - - a general mechanism for RTP header extensions, media level attribute name "a=", session level attribute name "a=". |
| c41: IF A.317/49 AND A.318/20 AND A.318/14 THEN m ELSE n/a - - a general mechanism for RTP header extensions, media level attribute name "a=", session level attribute name "a=".c42: IF A.317/50 AND A.318/20 THEN o ELSE n/a - - negotiation of generic image attributes in the session description protocol (SDP), media level attribute name "a=".c43: IF A.317/50 AND A.318/20 THEN m ELSE n/a - - negotiation of generic image attributes in the session description protocol (SDP), media level attribute name "a=".c44: IF A.317/38 AND A.318/20 THEN m ELSE n/a - - SDP media capabilities negotiation, media level attribute name "a=".c45: IF (A.317/26 OR A.317/52) AND A.318/20 THEN m ELSE n/a - - TCP-based media transport in the session description protocol, UDPTL over DTLS, media level attribute name "a=".c46: IF (A.317/51 OR A.317/55) AND A.318/20 AND A.318/14 THEN m ELSE n/a - - connection-oriented media transport over the TLS protocol in the SDP, DTLS-SRTP, media level attribute name "a=", session level attribute name "a=".c47: IF A.317/40A AND A.318/20 THEN m ELSE n/a - - connection establishment for media anchoring for the message session relay protocol, media level attribute name "a=".c48: IF A.317/54 AND A.318/20 THEN m ELSE n/a - - SCTP over DTLS, media level attribute name "a=".c49: IF A.317/31 AND A.318/20 THEN m ELSE n/a - - Session Description Protocol (SDP) extension for setting up audio media streams over circuit-switched bearers in the Public Switched Telephone Network (PSTN) and SIP, media level attribute name "a=".c50: IF A.317/57 AND A.318/20 THEN o ELSE n/a - - Alternate Connectivity (ALTC) Attribute, media level attribute name "a="c51: IF A.317/58 AND A.318/20 THEN o ELSE n/a - - 3GPP MTSI RTCP-APP adaptation, media level attribute name "a=".c52: IF A.317/58 AND A.318/20 THEN m ELSE n/a - - 3GPP MTSI RTCP-APP adaptation, media level attribute name "a=".c53: IF A.317/59 AND A.318/20 THEN o ELSE n/a - - 3GPP MTSI Pre-defined Region-of-Interest (ROI), media level attribute name "a=".c54: IF A.317/59 AND A.318/20 THEN m ELSE n/a - - 3GPP MTSI Pre-defined Region-of-Interest (ROI), media level attribute name "a=".c55: IF A.317/61 AND A.318/20 THEN m ELSE n/a - - multiplexing RTP data and control packets on a single port, media level attribute name "a=".c56: IF A.317/62 AND A.318/20 THEN m ELSE n/a - - SDP-based data channel negotiation, media level attribute name "a=".c57: IF A.317/63 AND (A.318/14 OR A.318/20) THEN o ELSE n/a - -, Media plane optimization for WebRTC session or media level attribute name "a=".c58: IF A.317/63 AND A.318/20 THEN o ELSE n/a - -, Media plane optimization for WebRTC media level attribute name "a=".c59: IF A.317/63 AND A.318/14 THEN o ELSE n/a - -, Media plane optimization for WebRTC session level attribute name "a=".c60: IF A.317/64 AND A.318/20 THEN o ELSE n/a - - Enhanced bandwidth negotiation mechanism, media level attribute name "a=".c61: IF A.317/64 AND A.318/20 THEN m ELSE n/a - - Enhanced bandwidth negotiation mechanism, media level attribute name "a=".c62: IF (A.317/52 OR A.317/54 OR A.317/55) AND A.318/20 THEN m ELSE n/a - - UDPTL over DTLS, SCTP over DTLS, DTLS-SRTP, media level attribute name "a=".c63: IF A.317/61A AND A.318/20 THEN m ELSE n/a - - Exclusive RTP and RTCP multiplexed on one port (a=rtcp-mux-only), media level attribute name "a=".c64: IF A.317/66 AND A.318/20 THEN m ELSE n/a - - Using simulcast in SDP and RTP sessions, media level attribute name "a=".c65: IF A.317/67 AND A.318/20 THEN o ELSE n/a - - RTP payload format restrictions, media level attribute name "a=". c66: IF A.317/67 AND A.318/20 THEN m ELSE n/a - - RTP payload format restrictions, media level attribute name "a=".c67: IF A.317/68 AND A.318/14 THEN o ELSE n/a - - Compact Concurrent Codec Negotiation and Capabilities, session level attribute name "a=".c68: IF A.317/54 AND A.318/20 THEN o ELSE n/a - - SCTP over DTLS, media level attribute name "a=".c69: IF A.317/69 AND A.318/20 THEN m ELSE n/a - - Delay Budget Information (DBI), media level attribute name "a=".c70: IF A.317/70 AND A.318/20 THEN m ELSE n/a - - Access Network Bitrate Recommendation (ANBR), media level attribute name "a=".c71: IF A.317/71 AND A.318/20 THEN m ELSE n/a - - Framework for Live Uplink Streaming (FLUS), media level attribute name "a=".c72: IF (A.317/71 OR A.317/72) AND A.318/20 THEN o ELSE n/a - - Framework for Live Uplink Streaming (FLUS), IMS data channels, media level attribute name "a=".c73: IF A.317/72 AND A.318/20 THEN o ELSE n/a - - IMS data channels, media level attribute name "a=". |
| NOTE 1: Further specification of the usage of this attribute is defined by specifications relating to individual codecs. |

Prerequisite A.319/80 - - a= generic header extension map definition (a=extmap)

Table A.319A: RTP header extensions

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Field | Sending | Receiving |
| Ref. | RFC status | Profile status | Ref. | RFC status | Profile status |
| 1 | coordination of video orientation (urn:3gpp:video-orientation) | [9B] | n/a | o | [9B] | n/a | o |
| 2 | higher granularity coordination of video orientation (urn:3gpp:video-orientation:6) | [9B] | n/a | c1 | [9B] | n/a | c1 |
| 3 | video region-of-interest predefined-roi-sent (urn:3gpp: predefined-roi-sent) | [9B] | n/a | c2 | [9B] | n/a | c2 |
| 4 | video region-of-interest arbitrary-roi-sent (urn:3gpp:roi-sent) | [9B] | n/a | c3 | [9B] | n/a | c3 |
| c1: IF A.319A/1 THEN o ELSE n/a - - coordination of video orientation.c2: IF A.317/59 THEN o ELSE n/a - - 3GPP MTSI Pre-defined Region-of-Interest (ROI).c3: IF A.317/60 THEN o ELSE n/a - - 3GPP MTSI Arbitrary Region-of-Interest (ROI). |

\*\*\* Next Change \*\*\*

### A.3.3.1 Major capabilities

Table A.328: Major capabilities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Does the implementation support | Reference | RFC status | Profile status |
|  | **Capabilities within main protocol** |  |  |  |
| 0A | application of session policy? | 6.2, 6.3 | x | c2 |
|  | **Extensions** |  |  |  |
| 1 | integration of resource management and SIP? | [30] [64] | o | n/a |
| 2 | grouping of media lines? | [53] | c3 | x |
| 3 | mapping of media streams to resource reservation flows? | [54] | o | x |
| 4 | SDP bandwidth modifiers for RTCP bandwidth? | [56] | o | c1 |
| 5 | TCP-based media transport in the session description protocol? | [83] | o | c11 |
| 6 | interactive connectivity establishment? | [289], [290] | o | c4 |
| 7 | session description protocol format for binary floor control protocol streams? | [108] | o | o |
| 8 | extended RTP profile for real-time transport control protocol (RTCP)-based feedback (RTP/AVPF)? | [135] | o | c5 |
| 9 | SDP capability negotiation? | [137] | o | c9 |
| 10 | Session Description Protocol (SDP) extension for setting up audio media streams over circuit-switched bearers in the Public Switched Telephone Network (PSTN)? | [155] | o | c6 |
| 11 | miscellaneous capabilities negotiation in the Session Description Protocol (SDP)? | [156] | o | c6 |
| 14 | Secure Real-time Transport Protocol (SRTP)? | [169] | o | o |
| 15 | MIKEY-TICKET? | [170] | o | o |
| 16 | SDES? | [168] | o | o |
| 17 | end-to-access edge media security using SDES? | 7.5.2 | n/a | n/a |
| 17A | end-to-access-edge media security for MSRP using TLS and certificate fingerprints? | 7.5.2 | n/a | n/a |
| 17B | end-to-access-edge media security for BFCP using TLS and certificate fingerprints? | 7.5.2 | n/a | n/a |
| 17C | end-to-access-edge media security for UDPTL using DTLS and certificate fingerprints? | 7.5.2 | n/a | n/a |
| 17D | end-to-access-edge media security for RTP media using DTLS-SRTP and certificate fingerprints? | 7.5.2 | n/a | n/a |
| 18 | SDP media capabilities negotiation? | [172] | o | c8 |
| 19 | Transcoding Services Invocation in the Session Initiation Protocol (SIP) Using Third Party Call Control (3pcc)? | [166] | m | i |
| 20 | Message Session Relay Protocol? | [178] | o | o |
| 20A | Connection establishment for media anchoring for the message session relay protocol? | [214] | o | c12 |
| 21 | a SDP offer/answer mechanism to enable file transfer? | [185] | o | o |
| 22 | optimal media routeing? | [11D] | n/a | o |
| 23 | ECN for RTP over UDP? | [188] | o | c10 |
| 24 | T.38 FAX? | [202] | n/a | o |
| 25 | support for reduced-size RTCP? | [204] | o | o |
| 26 | RTCP extended reports? | [205] | o | o |
| 27 | maximum receive SDU size? | [9B] | o | o |
| 28 | the SDP content attribute | [206] | o | o |
| 29 | a general mechanism for RTP header extensions? | [210] | o | o |
| 30 | negotiation of generic image attributes in the session description protocol (SDP)? | [211] | o | o |
| 31 | connection-oriented media transport over the TLS protocol in the SDP? | [241] | o | o |
| 32 | UDPTL over DTLS? | [217] | o | o |
| 33 | telepresence? | [7G] | o | o |
| 34 | SCTP over DTLS? | [219] | o | o |
| 35 | DTLS-SRTP? | [222], [223] | o | o |
| 36 | STUN Usage for Consent Freshness? | [224] | o | o |
| 38 | 3GPP MTSI RTCP-APP adaptation? | [9B] | n/a | o |
| 39 | 3GPP MTSI Pre-defined Region of Interest (ROI)? | [9B] | n/a | o |
| 40 | 3GPP MTSI Arbitrary Region-of-Interest (ROI)? | [9B] | n/a | o |
| 41 | multiplexing RTP data and control packets on a single port | [237], [237A] | o | o |
| 42 | Media plane optimization for WebRTC | 7.5.4 | n/a | o |
| 43 | Enhanced bandwidth negotiation mechanism | [9B] | n/a | o |
| 45 | an SDP offer/answer mechanism to negotiate DTLS protected media? | [240] | o | c13 |
| 46 | Using simulcast in SDP and RTP sessions? | [249] | o | o |
| 47 | RTP payload format restrictions? | [250] | o | o |
| 48 | Compact Concurrent Codec Negotiation and Capabilities? | [9B] | n/a | o |
| 49 | 3GPP MTSI Delay Budget Information (DBI)? | [9B] | n/a | c14 |
| 50 | Access Network Bitrate Recommendation (ANBR)? | [9B] | n/a | c15 |
| 51 | Framework for Live Uplink Streaming (FLUS)? | [276] | n/a | c15 |
| 52 | IMS data channels? | [297], [9B] | n/a | o |
| c1: IF A.3/2 OR A.3A/88 THEN m ELSE n/a - - P-CSCF, ATCF (proxy).c2: IF A.3/2 OR A.3/4 THEN o ELSE x – P-CSCF, S-CSCF.c3: IF A.328/3 THEN m ELSE o - - mapping of media streams to resource reservation flows.c4: IF A.3/2 OR A.3/4 THEN m ELSE n/a - - P-CSCF, S-CSCF.c5: IF (A.3A/50A AND A.3/7C) OR A.3/2 OR A.3/4 OR A.3A/88 THEN m ELSE n/a - - multimedia telephony service application server as AS acting as a SIP proxy, P-CSCF, S-CSCF, ATCF (proxy).c6: IF (A.3A/83 AND A.3/7C) OR A.3/4 THEN m ELSE IF A.3A/88 THEN i ELSE n/a - - SCC application server, AS acting as a SIP proxy, S-CSCF, ATCF (proxy).c7: IF A.328/18 THEN m ELSE o - - SDP media capabilities negotiation.c8: IF A.3/2 OR A.3/4 THEN m ELSE IF A.3A/88 THEN i ELSE o - - P-CSCF, S-CSCF, ATCF (proxy).c9: IF (A.3A/50A AND A.3/7C) OR A.3/2 OR A.3/4 OR A.328/18 OR A.3A/88 THEN m ELSE n/a - - multimedia telephony service application server as AS acting as a SIP proxy, P-CSCF, S-CSCF, SDP media capabilities negotiation, ATCF (proxy).c10: IF A.3A/88 THEN o ELSE i - - ATCF (proxy).c11: IF A.3/2 OR A.3/4 OR A.3A/88 THEN m ELSE n/a - - P-CSCF, S-CSCF, ATCF (proxy).c12: IF A.328/20 THEN m ELSE n/a - - message session relay protocol.c13: IF A.328/32 OR A.328/34 OR A.328/35 THEN m ELSE n/a - - UDPTL over DTLS, SCTP over DTLS, DTLS-SRTP.c14: IF A.3/2 OR A.3/4 THEN o ELSE n/a - - P-CSCF, S-CSCF.c15: IF A.3/2 THEN o ELSE n/a - - P-CSCF. |

\*\*\* Next Change \*\*\*

### A.3.3.2 SDP types

Table A.329: SDP types

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Type | Sending | Receiving |
| Ref. | RFC status | Profile status | Ref. | RFC status | Profile status |
|  | **Session level description** |
| 1 | v= (protocol version) | [39] 5.1 | m | m | [39] 5.1 | m | m |
| 2 | o= (owner/creator and session identifier). | [39] 5.2 | m | m | [39] 5.2 | i | i |
| 3 | s= (session name) | [39] 5.3 | m | m | [39] 5.3 | i | i |
| 4 | i= (session information) | [39] 5.4 | m | m | [39] 5.4 | i | i |
| 5 | u= (URI of description) | [39] 5.5 | m | m | [39] 5.5 | i | i |
| 6 | e= (email address) | [39] 5.6 | m | m | [39] 5.6 | i | i |
| 7 | p= (phone number) | [39] 5.6 | m | m | [39] 5.6 | i | i |
| 8 | c= (connection information) | [39] 5.7 | m | m | [39] 5.7 | i | i |
| 9 | b= (bandwidth information) | [39] 5.8 | m | m | [39] 5.8 | i | i |
|  | **Time description (one or more per description)** |
| 10 | t= (time the session is active) | [39] 5.9 | m | m | [39] 5.9 | i | i |
| 11 | r= (zero or more repeat times) | [39] 5.10 | m | m | [39] 5.10 | i | i |
|  | **Session level description (continued)** |
| 12 | z= (time zone adjustments) | [39] 5.11 | m | m | [39] 5.11 | i | i |
| 13 | k= (encryption key) | [39] 5.12 | m | m | [39] 5.12 | i | i |
| 14 | a= (zero or more session attribute lines) | [39] 5.13 | m | m | [39] 5.13 | i | i |
|  | **Media description (zero or more per description)** |
| 15 | m= (media name and transport address) | [39] 5.14 | m | m | [39] 5.14 | m | m |
| 16 | i= (media title) | [39] 5.4 | m | m | [39] 5.4 | i | i |
| 17 | c= (connection information) | [39] 5.7 | m | m | [39] 5.7 | i | i |
| 18 | b= (bandwidth information) | [39] 5.8 | m | m | [39] 5.8 | i | c1 |
| 19 | k= (encryption key) | [39] 5.12 | m | m | [39] 5.12 | i | i |
| 20 | a= (zero or more media attribute lines) | [39] 5.13 | m | m | [39] 5.13 | i | c1 |
| c1: IF A.328/0A THEN m ELSE i - - application of session policy. |

Prerequisite A.329/14 OR A.329/20 - - a= (zero or more session/media attribute lines)

Table A.330: zero or more session / media attribute lines (a=)

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Field | Sending | Receiving |
| Ref. | RFC status | Profile status | Ref. | RFC status | Profile status |
| 1 | category (a=cat) | [39] 6 | m | m | [39] 6 | i | i |
| 2 | keywords (a=keywds) | [39] 6 | m | m | [39] 6 | i | i |
| 3 | name and version of tool (a=tool) | [39] 6 | m | m | [39] 6 | i | i |
| 4 | packet time (a=ptime) | [39] 6 | m | m | [39] 6 | i | c9 |
| 5 | maximum packet time (a=maxptime) | [39] 6 (NOTE 1) | m | m | [39] 6 (NOTE 1) | i | c9 |
| 6 | receive-only mode (a=recvonly) | [39] 6 | m | m | [39] 6 | i | c9 |
| 7 | send and receive mode (a=sendrecv) | [39] 6 | m | m | [39] 6 | i | c9 |
| 8 | send-only mode (a=sendonly) | [39] 6 | m | m | [39] 6 | i | c9 |
| 8A | Inactive mode (a=inactive) | [39] 6 | m | m | [39] 6 | i | c9 |
| 9 | whiteboard orientation (a=orient) | [39] 6 | m | m | [39] 6 | i | c9 |
| 10 | conference type (a=type) | [39] 6 | m | m | [39] 6 | i | i |
| 11 | character set (a=charset) | [39] 6 | m | m | [39] 6 | i | i |
| 12 | language tag (a=sdplang) | [39] 6 | m | m | [39] 6 | i | c9 |
| 13 | language tag (a=lang) | [39] 6 | m | m | [39] 6 | i | c9 |
| 14 | frame rate (a=framerate) | [39] 6 | m | m | [39] 6 | i | c9 |
| 15 | quality (a=quality) | [39] 6 | m | m | [39] 6 | i | c9 |
| 16 | format specific parameters (a=fmtp) | [39] 6 | m | m | [39] 6 | i | c9 |
| 17 | rtpmap attribute (a=rtpmap) | [39] 6 | m | m | [39] 6 | i | c9 |
| 18 | current-status attribute (a=curr) | [30] 5 | m | m | [30] 5 | c2 | c2 |
| 19 | desired-status attribute (a=des) | [30] 5 | m | m | [30] 5 | c2 | c2 |
| 20 | confirm-status attribute (a=conf) | [30] 5 | m | m | [30] 5 | c2 | c2 |
| 21 | media stream identification attribute (a=mid) | [53] 3 | c5 | x | [53] 3 | c6 | x |
| 22 | group attribute (a=group) | [53] 4 | c5 | x | [53] 4 | c6 | x |
| 23 | setup attribute (a=setup) | [83] 4 | c7 | c50 | [83] 4 | c8 | c51 |
| 24 | connection attribute (a=connection) | [83] 5 | c7 | c7 | [83] 5 | c8 | c8 |
| 24A | DTLS association ID attribute (a=tls-id) | [240] 4 | c72 | c72 | [240] 4 | c72 | c72 |
| 25 | candidate IP addresses (a=candidate) | [290] | c9 | c9 | [290] | c10 | c10 |
| 26 | floor control server determination (a=floorctrl) | [108] 4 | c11 | c11 | [108] 4 | c12 | c13 |
| 27 | conference id (a=confid) | [108] 5 | c11 | c11 | [108] 5 | c12 | c13 |
| 28 | user id (a=userid) | [108] 5 | c11 | c11 | [108] 5 | c12 | c13 |
| 29 | association between streams and floors (a=floorid) | [108] 6 | c11 | c11 | [108] 6 | c12 | c13 |
| 30 | RTCP feedback capability attribute (a=rtcp-fb) | [135] 4.2 | c14 | c14 | [135] 4.2 | c15 | c15 |
| 31 | extension of the rtcp-fb attribute (a=rtcp-fb) | [136] 7.1[188] 6.2, [251] 9 | c14 | c14 | [136] 7.1, [251] 9 | c15 | c15 |
| 32 | supported capability negotiation extensions (a=csup) | [137] 3.3.1 | c16 | c16 | [137] 3.3.1 | c17 | c17 |
| 33 | required capability negotiation extensions (a=creq) | [137] 3.3.2 | c16 | c16 | [137] 3.3.2 | c17 | c17 |
| 34 | attribute capability (a=acap) | [137] 3.4.1 | c16 | c16 | [137] 3.4.1 | c17 | c17 |
| 35 | transport protocol capability (a=tcap) | [137] 3.4.2 | c16 | c16 | [137] 3.4.2 | c17 | c17 |
| 36 | potential configuration (a=pcfg) | [137] 3.5.1[172] 3.3.6 | c16 | c16 | [137] 3.5.1[172] 3.3.6 | c17 | c17 |
| 37 | actual configuration (a=acfg) | [137] 3.5.2 | c16 | c16 | [137] 3.5.2 | c17 | c17 |
| 38 | connection data capability (a=ccap) | [156] 3.1 | c18 | c18 | [156] 3.1 | c19 | c19 |
| 40 | crypto attribute (a=crypto) | [168] | c20 | c20 | [167] | c20 | c20 |
| 41 | key management attribute (a=key-mgmt) | [167] | c21 | c21 | [168] | c22 | c22 |
| 42 | 3GPP\_e2ae-security-indicator (a=3ge2ae) | 7.5.2 | c23 | c23 | 7.5.2 | c23 | c23 |
| 43 | media capability (a=rmcap) | [172] 3.3.1 | c24 | c24 | [172] 3.3.1 | c26 | c26 |
| 43A | media capability (a=omcap) | [172] 3.3.1 | c24 | c24 | [172] 3.3.1 | c26 | c26 |
| 44 | media format capability (a=mfcap) | [172] 3.3.2 | c24 | c24 | [172] 3.3.2 | c26 | c26 |
| 45 | media-specific capability (a=mscap) | [172] 3.3.3 | c24 | c24 | [172] 3.3.3 | c26 | c26 |
| 46 | latent configuration (a=lcfg) | [172] 3.3.5 | c48 | c48 | [172] 3.3.5 | c49 | c49 |
| 47 | session capability (a=sescap) | [172] 3.3.8 | c25 | c25 | [172] 3.3.8 | c27 | c27 |
| 48 | msrp path (a=path) | [178] | c28 | c28 | [178] | c29 | c29 |
| 49 | file selector (a=file-selector) | [185] 6 | c30 | c30 | [185] 6 | c31 | c31 |
| 50 | file transfer identifier (a= file-transfer-id) | [185] 6 | c30 | c30 | [185] 6 | c31 | c31 |
| 51 | file disposition (a=file-disposition) | [185] 6 | c30 | c30 | [185] 6 | c31 | c31 |
| 52 | file date (a=file-date) | [185] 6 | c30 | c30 | [185] 6 | c31 | c31 |
| 53 | file icon (a=file-icon | [185] 6 | c30 | c30 | [185] 6 | c31 | c31 |
| 54 | file range (a=file-range) | [185] 6 | c30 | c30 | [185] 6 | c31 | c31 |
| 55 | optimal media routeing visited realm (a=visited-realm) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 56 | optimal media routeing secondary realm (a=secondary-realm) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 57 | optimal media routeing media level checksum (a=omr-m-cksum) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 58 | optimal media routeing session level checksum (a=omr-s-cksum) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 59 | optimal media routeing codecs (a=omr-codecs) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 60 | optimal media routeing media attributes (a=omr-m-att) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 61 | optimal media routeing session attributes (a=omr-s-att) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 62 | optimal media routeing media bandwidth (a=omr-m-bw) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 63 | optimal media routeing session bandwidth (a=omr-s-bw) | 7.5.3 | c32 | c32 | 7.5.3 | c33 | c33 |
| 64 | ecn-attribute (a=ecn-capable-rtp) | [188] | c34 | c34 | [188] | c34 | c34 |
| 65 | T38 FAX Protocol version (a=T38FaxVersion) | [202] | n/a | c35 | [202] | n/a | c36 |
| 66 | T38 FAX Maximum Bit Rate (a=T38MaxBitRate) | [202] | n/a | c35 | [202] | n/a | c36 |
| 67 | T38 FAX Rate Management (a=T38FaxRateManagement) | [202] | n/a | c35 | [202] | n/a | c36 |
| 68 | T38 FAX Maximum Buffer Size (a=T38FaxMaxBuffer) | [202] | n/a | c35 | [202] | n/a | c36 |
| 69 | T38 FAX Maximum Datagram Size (a=T38FaxMaxDatagram) | [202] | n/a | c35 | [202] | n/a | c36 |
| 70 | T38 FAX maximum IFP frame size (a=T38FaxMaxIFP) | [202] | n/a | c35 | [202] | n/a | c36 |
| 71 | T38 FAX UDP Error Correction Scheme (a=T38FaxUdpEC) | [202] | n/a | c35 | [202] | n/a | c36 |
| 72 | T38 FAX UDP Error Correction Depth (a=T38FaxUdpECDepth) | [202] | n/a | c35 | [202] | n/a | c36 |
| 73 | T38 FAX UDP FEC Maximum Span (a=T38FaxUdpFECMaxSpan) | [202] | n/a | c35 | [202] | n/a | c36 |
| 74 | T38 FAX Modem Type (a=T38ModemType) | [202] | n/a | c35 | [202] | n/a | c36 |
| 75 | T38 FAX Vendor Info(a=T38VendorInfo) | [202] | n/a | c35 | [202] | n/a | c36 |
| 76 | reduced-size RTCP (a=rtcp-rsize) | [204] | c37 | c37 | [204] | c38 | c38 |
| 77 | RTP control protocol extended report parameters (a=rtcp-xr) | [205] | c39 | c39 | [205] | c40 | c40 |
| 78 | maximum receive SDU size (a=3gpp\_MaxRecvSDUSize) | [9B] | c41 | c41 | [9B] | c42 | c42 |
| 79 | content (a=content) | [206] | c43 | c43 | [206] | c43 | c43 |
| 80 | generic header extension map definition (a=extmap) | [210] | c44 | c44 | [210] | c45 | c45 |
| 81 | image attribute (a=imageattr) | [211] | c46 | c46 | [211] | c47 | c47 |
| 82 | fingerprint (a=fingerprint) | [241] | c52 | c52 | [241] | c53 | c53 |
| 83 | msrp-cema (a=msrp-cema) | [214] | c54 | c54 | [214] | c55 | c55 |
| 84 | sctp-port (a=sctp-port) | [219] | c56 | c56 | [219] | c56 | c56 |
| 84A | max-message-size (a=max-message-size) | [219] | c56 | c56 | [219] | c56 | c56 |
| 85 | CS correlation (a=cs-correlation) | [155] 5.2.3.1 | c57 | c57 | [155] 5.2.3.1 | c57 | c57 |
| 87 | 3GPP MTSI RTCP-APP adaptation (a=3gpp\_mtsi\_app\_adapt) | [9B] | n/a | c58 | [9B] | n/a | c59 |
| 88 | 3GPP MTSI Pre-defined Region-of-Interest (ROI)(a=predefined\_ROI) | [9B] | n/a | c60 | [9B] | n/a | c61 |
| 89 | RTP and RTCP multiplexed on one port (a=rtcp-mux) | [237], [237A] | c62 | c62 | [237], [237A] | c63 | c63 |
| 92 | Media plane optimization for WebRTC Contact (a= tra-contact) | 7.5.4 | c64 | c64 | 7.5.4 | c65 | c65 |
| 93 | Media plane optimization for WebRTC m-line (a= tra-m-line) | 7.5.4 | c66 | c66 | 7.5.4 | c67 | c67 |
| 94 | Media plane optimization for WebRTC attribute (a= tra-att) | 7.5.4 | c64 | c64 | 7.5.4 | c65 | c65 |
| 95 | Media plane optimization for WebRTC bandwidth (a= tra-bw) | 7.5.4 | c64 | c64 | 7.5.4 | c65 | c65 |
| 98 | Media plane optimization for WebRTC SCTP-association (a= tra-SCTP-association) | 7.5.4 | c66 | c66 | 7.5.4 | c67 | c67 |
| 97 | Media plane optimization for WebRTC media line number (a= tra-media-line-number) | 7.5.4 | c68 | c68 | 7.5.4 | c69 | c69 |
| 98 | Enhanced bandwidth negotiation mechanism (a=bw-info) | [9B] | n/a | c70 | [9B] | n/a | c71 |
| 99 | Exclusive RTP and RTCP multiplexed on one port (a=rtcp-mux-only) | [246] | c62 | c62 | [246] | c63 | c63 |
| 100 | Simulcast stream description (a=simulcast) | [249] 6.1 | c73 | c73 | [249] 6.1 | c74 | c74 |
| 101 | Restriction identifier (a=rid) | [250] 10 | c75 | c75 | [250] 10 | c76 | c76 |
| 102 | 3GPP compact concurrent codec capabilities (a=ccc-list) | [9B] | n/a | c77 | [9B] | n/a | c78 |
| 103 | Delay Budget Information (DBI) RTCP feedback type (a=rtcp-fb:\* 3gpp-delay-budget) | [9B] 6.2.8 | n/a | c79 | [9B] 6.2.8 | n/a | c79 |
| 104 | ANBR Support attribute (a=anbr) | [9B] | n/a | c80 | [9B] | n/a | c80 |
| 105 | Label attribute (a=label) | [277] 4 | o | c81 | [277] 4 | o | c81 |
| 106 | 3GPP QoS hint attribute (a=3gpp-qos-hint) | [9B] 6.2.7.4 | n/a | c82 | [9B] | n/a | c82 |
| 107 | 3GPP bootstrap data channel used by attribute (a=3gpp-bdc-used-by) | [9B] 6.2.12 | n/a | c83 | [9B] 6.2.12 | n/a | c83 |
| c2: IF A.328/1 THEN m ELSE i - - integration of resource management and SIP.c5: IF A.328/2 THEN m ELSE n/a - - grouping of media lines.c6: IF A.328/3 THEN m ELSE IF A.328/2 THEN i ELSE n/a - - mapping of media streams to resource reservation flows, grouping of media lines.c7: IF A.328/5 THEN m ELSE n/a.c8: IF A.328/5 THEN i ELSE n/a.c9: IF A.329/20 AND A.328/0A THEN m ELSE i - - media level attribute name "a=" and application of session policy.c9: IF A.328/6 THEN m ELSE n/a - - interactive connectivity establishment.c10: IF A.328/1 AND A.328/6 THEN m ELSE IF A.328/6 THEN i ELSE n/a - - integration of resource management and SIP, interactive connectivity establishment.c11: IF A.328/7 THEN m ELSE n/a - - session description protocol format for binary floor control protocol streams.c12: IF A.328/7 THEN i ELSE n/a - - session description protocol format for binary floor control protocol streams.c13: IF A.328/7 AND A.328/0A AND A.329/20 THEN m ELSE IF A.328/7 AND A.329/20 THEN i ELSE n/a - - session description protocol format for binary floor control protocol streams, media level attribute name "a=" and application of session policy.c14: IF (A.328/8 AND A.329/20) THEN m ELSE n/a - - extended RTP profile for real-time transport control protocol (RTCP)-based feedback (RTP/AVPF), media level attribute name "a=".c15: IF (A.328/8 AND A.329/20) THEN i ELSE n/a - - extended RTP profile for real-time transport control protocol (RTCP)-based feedback (RTP/AVPF), media level attribute name "a=".c16: IF A.328/9 AND A.329/20 THEN m ELSE n/a - - SDP capability negotiation, media level attribute name "a=".c17: IF A.328/9 AND A.329/20 THEN i ELSE n/a - - SDP capability negotiation, media level attribute name "a=".c18: IF A.328/11 AND A.329/20 THEN o ELSE n/a - - miscellaneous capabilities negotiation in the Session Description Protocol (SDP), media level attribute name "a=".c19: IF A.328/11 AND A.329/20 THEN m ELSE n/a - - miscellaneous capabilities negotiation in the Session Description Protocol (SDP), media level attribute name "a=".c20: IF A.328/14 AND A.328/16 AND A.329/20 THEN m ELSE n/a - - Secure Real-time Transport Protocol, media plane security using SDES, media level attribute name "a=".c21: IF ((A.328/14 AND A.3D/21) OR A.3D/22) AND A.328/15 AND A.329/20 THEN m ELSE n/a - - Secure Real-time Transport Protocol, media plane security using KMS, end-to-end media security for MSRP using TLS and KMS, MIKEY-TICKET, media level attribute name "a=".c22: IF ((A.328/14 AND A.3D/21) OR A.3D/22) AND A.328/15 AND A.329/20 THEN i ELSE n/a - - Secure Real-time Transport Protocol, media plane security using KMS, end-to-end media security for MSRP using TLS and KMS, MIKEY-TICKET, media level attribute name "a=".c23: IF A.328/17 AND A.329/20 THEN m ELSE n/a - - end to access edge media security, media level attribute name "a=".c24: IF A.328/18 THEN m ELSE n/a - - SDP media capabilities negotiation.c25: IF A.328/18 AND A.329/14 THEN m ELSE n/a - - SDP media capabilities negotiation, session level attribute name "a=".c26: IF A.328/18 AND A.328/0A THEN m ELSE IF A.328/18 THEN i ELSE n/a - - SDP media capabilities negotiation, application of session policy.c27: IF A.328/18 AND A.329/14 AND A.328/0A THEN m ELSE IF A.328/18 AND A.329/14 THEN i ELSE n/a - - SDP media capabilities negotiation, session level attribute name "a=", application of session policy.c28: IF A.328/20 AND A.329/20 THEN m ELSE n/a - - message session relay protocol, media level attribute name "a=".c29: IF A.328/20 AND A.329/20 THEN i ELSE n/a - - message session relay protocol, media level attribute name "a=".c30: IF A.328/21 AND A.329/20 THEN m ELSE n/a - - a SDP offer/answer mechanism to enable file transfer, media level attribute name "a=".c31: IF A.328/21 AND A.329/20 THEN i ELSE n/a - - a SDP offer/answer mechanism to enable file transfer, media level attribute name "a=".c32: IF A.328/22 AND A.329/20 THEN m ELSE n/a - - optimal media routeing, media level attribute name "a=".c33: IF A.328/22 AND A.329/20 THEN i ELSE n/a - - optimal media routeing, media level attribute name "a=".c34: IF A.328/23 THEN m ELSE i - - ECN for RTP over UDP, media level attribute name "a=".c35: IF A.328/24 AND A.329/20 THEN m ELSE n/a - - T.38 FAX, media level attribute name "a=".c36: IF A.328/24 AND A.329/20 THEN i ELSE n/a - - T.38 FAX, media level attribute name "a=".c37: IF A.328/25 AND A.329/20 THEN m ELSE n/a. - - support for reduced-size RTCP, media level attribute name "a=".c38: IF A.328/25 AND A.329/20 THEN i ELSE n/a - - support for reduced-size RTCP, media level attribute name "a=".c39: IF A.328/26 AND A.329/20 AND A.329/14 THEN m ELSE n/a -- RTCP extended reports, media level attribute name "a=", session level attribute name "a=".c40: IF A.328/26 AND A.329/20 AND A.329/14 THEN i ELSE n/a -- RTCP extended reports, media level attribute name "a=", session level attribute name "a=".c41: IF A.328/27 AND A.329/20 AND A.329/14 THEN m ELSE n/a -- maximum receive SDU size, media level attribute name "a=", session level attribute name "a=".c42: IF A.328/27 AND A.329/20 AND A.329/14 THEN i ELSE n/a -- maximum receive SDU size, media level attribute name "a=", session level attribute name "a=".c43: IF A.328/28 AND A.329/20 THEN m ELSE n/a - - the SDP content attribute, media level attribute name "a=".c44: IF A.328/29 AND A.329/20 AND A.329/14 THEN m ELSE n/a - - a general mechanism for RTP header extensions, media level attribute name "a=", session level attribute name "a=".c45: IF A.328/29 AND A.329/20 AND A.329/14 THEN i ELSE n/a - - a general mechanism for RTP header extensions, media level attribute name "a=", session level attribute name "a=".c46: IF A.328/30 AND A.329/20 THEN m ELSE n/a - - negotiation of generic image attributes in the session description protocol (SDP), media level attribute name "a=".c47: IF A.328/30 AND A.329/20 THEN i ELSE n/a - - negotiation of generic image attributes in the session description protocol (SDP), media level attribute name "a=".c48: IF A.328/18 AND A.329/20 THEN m ELSE n/a - - SDP media capabilities negotiation, media level attribute name "a=".c49: IF A.328/18 AND A.329/20 AND A.328/0A THEN m ELSE IF A.328/18 AND A.329/20 THEN i ELSE n/a - - SDP media capabilities negotiation, media level attribute name "a=", application of session policy.c50: IF (A.328/5 OR A.328/32) THEN m ELSE n/a -- TCP-based media transport in the session description protocol, UDPTL over DTLS.c51: IF (A.328/5 OR A.328/32) THEN i ELSE n/a -- TCP-based media transport in the session description protocol, UDPTL over DTLS.c52: IF (A.328/82 OR A.328/34) AND A.329/20 AND A.329/14 THEN m ELSE n/a -- connection-oriented media transport over the TLS protocol in the SDP, DTLS-SRTP, media level attribute name "a=", session level attribute name "a=".c53: IF (A.328/83 OR A.328/34) AND A.329/20 AND A.329/14 THEN i ELSE n/a -- connection-oriented media transport over the TLS protocol in the SDP, DTLS-SRTP, media level attribute name "a=", session level attribute name "a=".c54: IF A.328/20A AND A.329/20 THEN m ELSE n/a -- connection establishment for media anchoring for the message session relay protocol, media level attribute name "a=".c55: IF A.328/20A AND A.329/20 THEN i ELSE n/a -- connection establishment for media anchoring for the message session relay protocol, media level attribute name "a=".c56: IF A.328/33 AND A.329/20 THEN i ELSE n/a -- SCTP on top of DTLS, media level attribute name "a=".c57: IF A.318/10 AND A.329/20 THEN m ELSE n/a - - Session Description Protocol (SDP) extension for setting up audio media streams over circuit-switched bearers in the Public Switched Telephone Network (PSTN) and SIP, media level attribute name "a=".c58: IF A.328/38 AND A.329/20 THEN m ELSE n/a -- 3GPP MTSI RTCP-APP adaptation, media level attribute name "a=".c59: IF A.328/38 AND A.329/20 THEN i ELSE n/a -- 3GPP MTSI RTCP-APP adaptation, media level attribute name "a=".c60: IF A.328/39 AND A.329/20 THEN o ELSE n/a - - 3GPP MTSI Pre-defined Region-of-Interest (ROI), media level attribute name "a=".c61: IF A.328/39 AND A.329/20 THEN m ELSE n/a - - 3GPP MTSI Pre-defined Region-of-Interest (ROI), media level attribute name "a=".c62: IF A.328/41 AND A.329/20 AND A.329/14 THEN m ELSE n/a -- multiplexing RTP data and control packets on a single port, media level attribute name "a=", session level attribute name "a=".c63: IF A.328/41 AND A.329/20 AND A.329/14 THEN i ELSE n/a -- multiplexing RTP data and control packets on a single port, media level attribute name "a=", session level attribute name "a=".c64: IF A.328/42 AND (A.329/14 OR A.329/20) THEN m ELSE n/a - -, Media plane optimization for WebRTC session or media level attribute name "a=".c65: IF A. A.328/42 AND (A.329/14 OR A.329/20) THEN i ELSE n/a - -, Media plane optimization for WebRTC session or media level attribute name "a=".c66: IF A.328/42 AND A.329/20 THEN m ELSE n/a - -, Media plane optimization for WebRTC media level attribute name "a=".c67: IF A.328/42 AND A.329/20 THEN i ELSE n/a - -, Media plane optimization for WebRTC media level attribute name "a=".c68: IF A.328/42 AND A.329/14 THEN m ELSE n/a - -, Media plane optimization for WebRTC session level attribute name "a=".c69: IF A.328/42 AND A.329/14 THEN i ELSE n/a - -, Media plane optimization for WebRTC session level attribute name "a=".c70: IF A.328/43 AND A.329/20 THEN o ELSE n/a - - Enhanced bandwidth negotiation mechanism, media level attribute name "a=".c71: IF A.328/43 AND A.329/20 THEN m ELSE n/a - - Enhanced bandwidth negotiation mechanism, media level attribute name "a=".c72: IF (A.328/32 OR A.328/34 OR A.328/35) AND A.329/20 THEN m ELSE n/a - - UDPTL over DTLS, SCTP over DTLS, DTLS-SRTP, media level attribute name "a=".c73: IF A.328/46 AND A.329/20 THEN m ELSE n/a - - Using simulcast in SDP and RTP sessions, media level attribute name "a=".c74: IF A.328/46 AND A.329/20 THEN i ELSE n/a - - Using simulcast in SDP and RTP sessions, media level attribute name "a=".c75: IF A.328/47 AND A.329/20 THEN o ELSE n/a - - RTP payload format restrictions, media level attribute name "a=". c76: IF A.328/47 AND A.329/20 THEN i ELSE n/a - - RTP payload format restrictions, media level attribute name "a=".c77: IF A.328/48 AND A.329/14 THEN o ELSE n/a - - Compact Concurrent Codec Negotiation and Capabilities, session level attribute name "a=".c78: IF A.328/48 AND A.329/14 THEN i ELSE n/a - - Compact Concurrent Codec Negotiation and Capabilities, session level attribute name "a=".c79: IF A.328/49 AND A.329/20 m ELSE n/a - - Delay Budget Information (DBI), media level attribute name "a=".c80: IF A.328/50 AND A.329/20 THEN m ELSE n/a - - Access Network Bitrate Recommendation (ANBR), media level attribute name "a=".c81: IF A.328/51 AND A.329/20 THEN m ELSE n/a - - Framework for Live Uplink Streaming (FLUS), media level attribute name "a=".c82: IF (A.328/51 OR A.328/52) AND A.329/20 THEN o ELSE n/a - - Framework for Live Uplink Streaming (FLUS), IMS data channels, media level attribute name "a=".c83: IF A.328/53 AND A.329/20 THEN o ELSE n/a - - IMS data channels, media level attribute name "a=". |
| NOTE 1: Further specification of the usage of this attribute is defined by specifications relating to individual codecs. |

Prerequisite A.330/80 - - a= generic header extension map definition (a=extmap)

Table A.330A: RTP header extensions

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Field | Sending | Receiving |
| Ref. | RFC status | Profile status | Ref. | RFC status | Profile status |
| 1 | coordination of video orientation (urn:3gpp:video-orientation) | [9B] | n/a | m | [9B] | n/a | i |
| 2 | higher granularity coordination of video orientation (urn:3gpp:video-orientation:6) | [9B] | n/a | m | [9B] | n/a | i |
| 3 | video region-of-interest predefined-roi-sent (urn:3gpp:predefined-roi-sent) | [9B] | n/a | m | [9B] | n/a | i |
| 4 | video region-of-interest arbitrary-roi-sent (urn:3gpp:roi-sent) | [9B] | n/a | m | [9B] | n/a | i |

\*\*\* End of Changes \*\*\*