**[MS-QoE]:**

**Quality of Experience Monitoring Server Protocol**

Intellectual Property Rights Notice for Open Specifications Documentation

* **Technical Documentation.** Microsoft publishes Open Specifications documentation (“this documentation”) for protocols, file formats, data portability, computer languages, and standards support. Additionally, overview documents cover inter-protocol relationships and interactions.
* **Copyrights**. This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you can make copies of it in order to develop implementations of the technologies that are described in this documentation and can distribute portions of it in your implementations that use these technologies or in your documentation as necessary to properly document the implementation. You can also distribute in your implementation, with or without modification, any schemas, IDLs, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications documentation.
* **No Trade Secrets**. Microsoft does not claim any trade secret rights in this documentation.
* **Patents**. Microsoft has patents that might cover your implementations of the technologies described in the Open Specifications documentation. Neither this notice nor Microsoft's delivery of this documentation grants any licenses under those patents or any other Microsoft patents. However, a given Open Specifications document might be covered by the Microsoft [Open Specifications Promise](https://go.microsoft.com/fwlink/?LinkId=214445) or the [Microsoft Community Promise](https://go.microsoft.com/fwlink/?LinkId=214448). If you would prefer a written license, or if the technologies described in this documentation are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting [iplg@microsoft.com](mailto:iplg@microsoft.com).
* **License Programs**. To see all of the protocols in scope under a specific license program and the associated patents, visit the [Patent Map](https://aka.ms/AA9ufj8).
* **Trademarks**. The names of companies and products contained in this documentation might be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights. For a list of Microsoft trademarks, visit [www.microsoft.com/trademarks](https://www.microsoft.com/trademarks).
* **Fictitious Names**. The example companies, organizations, products, domain names, email addresses, logos, people, places, and events that are depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

**Reservation of Rights**. All other rights are reserved, and this notice does not grant any rights other than as specifically described above, whether by implication, estoppel, or otherwise.

**Tools**. The Open Specifications documentation does not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments, you are free to take advantage of them. Certain Open Specifications documents are intended for use in conjunction with publicly available standards specifications and network programming art and, as such, assume that the reader either is familiar with the aforementioned material or has immediate access to it.

**Support.** For questions and support, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

**Revision Summary**

| Date | Revision History | Revision Class | Comments |
| --- | --- | --- | --- |
| 4/4/2008 | 0.1 | New | Initial version |
| 4/25/2008 | 0.2 | Minor | Updated based on feedback |
| 6/27/2008 | 1.0 | Major | Updated and revised the technical content. |
| 8/15/2008 | 1.01 | Minor | Revised and edited the technical content. |
| 12/12/2008 | 2.0 | Major | Updated and revised the technical content. |
| 2/13/2009 | 2.01 | Minor | Revised and edited the technical content. |
| 3/13/2009 | 2.02 | Minor | Revised and edited the technical content. |
| 7/13/2009 | 2.03 | Major | Revised and edited the technical content |
| 8/28/2009 | 2.04 | Editorial | Revised and edited the technical content |
| 11/6/2009 | 2.05 | Editorial | Revised and edited the technical content |
| 2/19/2010 | 2.06 | Editorial | Revised and edited the technical content |
| 3/31/2010 | 2.07 | Major | Updated and revised the technical content |
| 4/30/2010 | 2.08 | Editorial | Revised and edited the technical content |
| 6/7/2010 | 2.09 | Minor | Updated the technical content |
| 6/29/2010 | 2.10 | Editorial | Changed language and formatting in the technical content. |
| 7/23/2010 | 2.10 | None | No changes to the meaning, language, or formatting of the technical content. |
| 9/27/2010 | 3.0 | Major | Significantly changed the technical content. |
| 11/15/2010 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 12/17/2010 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 3/18/2011 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 6/10/2011 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 1/20/2012 | 4.0 | Major | Significantly changed the technical content. |
| 4/11/2012 | 4.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 7/16/2012 | 4.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 10/8/2012 | 4.1 | Minor | Clarified the meaning of the technical content. |
| 2/11/2013 | 4.2 | Minor | Clarified the meaning of the technical content. |
| 7/30/2013 | 4.3 | Minor | Clarified the meaning of the technical content. |
| 11/18/2013 | 4.3 | None | No changes to the meaning, language, or formatting of the technical content. |
| 2/10/2014 | 4.3 | None | No changes to the meaning, language, or formatting of the technical content. |
| 4/30/2014 | 4.4 | Minor | Clarified the meaning of the technical content. |
| 7/31/2014 | 4.5 | Minor | Clarified the meaning of the technical content. |
| 10/30/2014 | 4.6 | Minor | Clarified the meaning of the technical content. |
| 3/30/2015 | 5.0 | Major | Significantly changed the technical content. |
| 9/4/2015 | 6.0 | Major | Significantly changed the technical content. |
| 6/23/2016 | 6.1 | Minor | Clarified the meaning of the technical content. |
| 7/15/2016 | 6.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 9/14/2016 | 6.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 9/19/2017 | 6.2 | Minor | Clarified the meaning of the technical content. |
| 12/12/2017 | 6.2 | None | No changes to the meaning, language, or formatting of the technical content. |
| 4/27/2018 | 7.0 | Major | Significantly changed the technical content. |
| 7/24/2018 | 8.0 | Major | Significantly changed the technical content. |
| 8/28/2018 | 9.0 | Major | Significantly changed the technical content. |
| 6/18/2019 | 9.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 8/17/2021 | 10.0 | Major | Significantly changed the technical content. |
| 11/16/2021 | 10.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 2/15/2022 | 10.1 | Minor | Clarified the meaning of the technical content. |
| 8/20/2024 | 11.0 | Major | Significantly changed the technical content. |

Table of Contents

[1 Introduction 7](#_Toc174787273)

[1.1 Glossary 7](#_Toc174787274)

[1.2 References 10](#_Toc174787275)

[1.2.1 Normative References 10](#_Toc174787276)

[1.2.2 Informative References 11](#_Toc174787277)

[1.3 Overview 11](#_Toc174787278)

[1.4 Relationship to Other Protocols 12](#_Toc174787279)

[1.5 Prerequisites/Preconditions 12](#_Toc174787280)

[1.6 Applicability Statement 12](#_Toc174787281)

[1.7 Versioning and Capability Negotiation 12](#_Toc174787282)

[1.8 Vendor-Extensible Fields 12](#_Toc174787283)

[1.9 Standards Assignments 12](#_Toc174787284)

[2 Messages 13](#_Toc174787285)

[2.1 Transport 13](#_Toc174787286)

[2.2 Message Syntax 13](#_Toc174787287)

[2.2.1 application/vq-rtcpxr+xml 13](#_Toc174787288)

[2.2.1.1 VQReportEvent Element 14](#_Toc174787289)

[2.2.1.1.1 Child Elements 14](#_Toc174787290)

[2.2.1.1.2 Attributes 14](#_Toc174787291)

[2.2.1.2 VQSessionReport Element 14](#_Toc174787292)

[2.2.1.2.1 Child Elements 15](#_Toc174787293)

[2.2.1.2.2 Attributes 16](#_Toc174787294)

[2.2.1.3 Endpoint Element 16](#_Toc174787295)

[2.2.1.3.1 Child Elements 16](#_Toc174787296)

[2.2.1.3.2 Attributes 17](#_Toc174787297)

[2.2.1.4 DialogInfo Element 17](#_Toc174787298)

[2.2.1.4.1 Child Elements 18](#_Toc174787299)

[2.2.1.4.2 Attributes 20](#_Toc174787300)

[2.2.1.5 MediaLine Element 20](#_Toc174787301)

[2.2.1.5.1 Child Elements 21](#_Toc174787302)

[2.2.1.5.2 Attributes 22](#_Toc174787303)

[2.2.1.6 Description Element 23](#_Toc174787304)

[2.2.1.6.1 Child Elements 24](#_Toc174787305)

[2.2.1.7 Connectivity Element 26](#_Toc174787306)

[2.2.1.7.1 Child Elements 27](#_Toc174787307)

[2.2.1.8 NetworkConnectivityInfo Element 29](#_Toc174787308)

[2.2.1.8.1 Child Elements 29](#_Toc174787309)

[2.2.1.8.1.1 TraceRoute Element 30](#_Toc174787310)

[2.2.1.9 LocalAddr, RemoteAddr, and RelayAddress Elements 31](#_Toc174787311)

[2.2.1.9.1 Child Elements 32](#_Toc174787312)

[2.2.1.10 CaptureDev and RenderDev Elements 32](#_Toc174787313)

[2.2.1.10.1 Child Elements 32](#_Toc174787314)

[2.2.1.11 InboundStream and OutboundStream Elements 33](#_Toc174787315)

[2.2.1.11.1 Child Elements 33](#_Toc174787316)

[2.2.1.11.2 Attributes 33](#_Toc174787317)

[2.2.1.12 Network Element 34](#_Toc174787318)

[2.2.1.12.1 Child Elements 34](#_Toc174787319)

[2.2.1.13 Payload Element 37](#_Toc174787320)

[2.2.1.13.1 Child Elements 37](#_Toc174787321)

[2.2.1.14 Payload.Audio Element 38](#_Toc174787322)

[2.2.1.14.1 Child Elements 39](#_Toc174787323)

[2.2.1.15 Payload.Video Element 46](#_Toc174787324)

[2.2.1.15.1 Child Elements 47](#_Toc174787325)

[2.2.1.15.1.1 v3:SendCodecTypes Element 52](#_Toc174787326)

[2.2.1.15.1.2 v3:RecvCodecTypes Element 52](#_Toc174787327)

[2.2.1.15.1.3 List of combined resource types 53](#_Toc174787328)

[2.2.1.16 v3:AdditionalPayload Element 54](#_Toc174787329)

[2.2.1.16.1 Child Elements 54](#_Toc174787330)

[2.2.1.17 v2:VideoResolutionDistribution Element 54](#_Toc174787331)

[2.2.1.17.1 Child Elements 54](#_Toc174787332)

[2.2.1.18 v2:VideoRateMatchingLevelDistribution Element 55](#_Toc174787333)

[2.2.1.18.1 Child Elements 55](#_Toc174787334)

[2.2.1.19 Payload.ApplicationSharing Element 56](#_Toc174787335)

[2.2.1.19.1 Child Elements 57](#_Toc174787336)

[2.2.1.19.1.1 MetricAggregationType 58](#_Toc174787337)

[2.2.1.19.1.1.1 Child Elements 58](#_Toc174787338)

[2.2.1.19.1.2 MetricBurstGapType 59](#_Toc174787339)

[2.2.1.19.1.2.1 Child Elements 59](#_Toc174787340)

[2.2.1.19.1.3 AppSharingEstablishTime 59](#_Toc174787341)

[2.2.1.19.1.3.1 Child Elements 60](#_Toc174787342)

[2.2.1.20 QualityEstimates Element 60](#_Toc174787343)

[2.2.1.20.1 Child Elements 60](#_Toc174787344)

[2.2.1.21 QualityEstimates.Audio Element 60](#_Toc174787345)

[2.2.1.21.1 Child Elements 61](#_Toc174787346)

[2.2.1.22 NetworkMOS Element 62](#_Toc174787347)

[2.2.1.22.1 Child Elements 62](#_Toc174787348)

[2.2.1.23 Utilization Element 63](#_Toc174787349)

[2.2.1.23.1 Child Elements 63](#_Toc174787350)

[2.2.1.24 PacketLoss Element 64](#_Toc174787351)

[2.2.1.24.1 Child Elements 64](#_Toc174787352)

[2.2.1.25 BurstGapLoss Element 64](#_Toc174787353)

[2.2.1.25.1 Child Elements 65](#_Toc174787354)

[2.2.1.26 Delay Element 65](#_Toc174787355)

[2.2.1.26.1 Child Elements 65](#_Toc174787356)

[2.2.1.27 Jitter Element 66](#_Toc174787357)

[2.2.1.27.1 Child Elements 66](#_Toc174787358)

[2.2.1.28 Signal Element 67](#_Toc174787359)

[2.2.1.28.1 Child Elements 68](#_Toc174787360)

[2.2.1.29 v2:LocalClientEvent and v2:RemoteClientEvent Elements 72](#_Toc174787361)

[2.2.1.29.1 Child Elements 73](#_Toc174787362)

[2.2.2 application/ms-cqf+xml 75](#_Toc174787363)

[2.2.2.1 CallQualityFeedbackReport Element 75](#_Toc174787364)

[2.2.2.1.1 Child Elements 76](#_Toc174787365)

[2.2.2.1.2 Attributes 76](#_Toc174787366)

[2.2.2.2 Feedback Element 77](#_Toc174787367)

[2.2.2.2.1 Child Elements 77](#_Toc174787368)

[2.2.2.2.2 Attributes 77](#_Toc174787369)

[2.2.2.3 Tokens Element 78](#_Toc174787370)

[2.2.2.3.1 Child Elements 78](#_Toc174787371)

[2.2.2.4 Token Element 78](#_Toc174787372)

[2.2.2.4.1 Child Elements 78](#_Toc174787373)

[3 Protocol Details 80](#_Toc174787374)

[3.1 SIP UAC Details 80](#_Toc174787375)

[3.1.1 Abstract Data Model 80](#_Toc174787376)

[3.1.2 Timers 80](#_Toc174787377)

[3.1.3 Initialization 80](#_Toc174787378)

[3.1.4 Higher-Layer Triggered Events 80](#_Toc174787379)

[3.1.5 Message Processing Events and Sequencing Rules 80](#_Toc174787380)

[3.1.6 Timer Events 80](#_Toc174787381)

[3.1.7 Other Local Events 80](#_Toc174787382)

[3.2 SIP UAS Details 80](#_Toc174787383)

[3.2.1 Abstract Data Model 81](#_Toc174787384)

[3.2.2 Timers 81](#_Toc174787385)

[3.2.3 Initialization 81](#_Toc174787386)

[3.2.4 Higher-Layer Triggered Events 81](#_Toc174787387)

[3.2.5 Message Processing Events and Sequencing Rules 81](#_Toc174787388)

[3.2.6 Timer Events 81](#_Toc174787389)

[3.2.7 Other Local Events 81](#_Toc174787390)

[3.3 SIP Proxy Details 81](#_Toc174787391)

[3.3.1 Abstract Data Model 81](#_Toc174787392)

[3.3.2 Timers 81](#_Toc174787393)

[3.3.3 Initialization 82](#_Toc174787394)

[3.3.4 Higher-Layer Triggered Events 82](#_Toc174787395)

[3.3.5 Message Processing Events and Sequencing Rules 82](#_Toc174787396)

[3.3.6 Timer Events 82](#_Toc174787397)

[3.3.7 Other Local Events 82](#_Toc174787398)

[4 Protocol Examples 83](#_Toc174787399)

[4.1 application/vq-rtcpxr+xml 83](#_Toc174787400)

[4.2 application/ms-cqf+xml 85](#_Toc174787401)

[5 Security 87](#_Toc174787402)

[5.1 Security Considerations for Implementers 87](#_Toc174787403)

[5.2 Index of Security Parameters 87](#_Toc174787404)

[6 Appendix A: Full XML Schema 88](#_Toc174787405)

[6.1 Office Communications Server 2007 Schema 88](#_Toc174787406)

[6.2 Office Communications Server 2007 R2 Schema 95](#_Toc174787407)

[6.3 Microsoft Lync Server 2010 Schema 103](#_Toc174787408)

[6.4 Microsoft Lync Server 2013 Schema 115](#_Toc174787409)

[6.5 Microsoft Skype for Business Server Schema 131](#_Toc174787410)

[7 Appendix B: Product Behavior 152](#_Toc174787411)

[8 Change Tracking 172](#_Toc174787412)

[9 Index 173](#_Toc174787413)

# Introduction

The Quality of Experience Monitoring Server Protocol specifies the Quality of Experience Monitoring Server Protocol. It is a proprietary protocol used for publishing Quality of Experience (QoE) metrics. A client calculates QoE metrics and then sends them to a server for monitoring and diagnostics purposes.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

## Glossary

This document uses the following terms:

**202 Accepted**: A response that indicates that a request was accepted for processing.

**Audio/Video Edge Server (A/V Edge Server)**: A protocol server that implements the Traversal Using Relay NAT (TURN) Extensions Protocol, as described in [[MS-TURN]](%5bMS-TURN%5d.pdf#Section_9e434b27eb134249b0312d15c3835c8b). The protocol server provides connectivity to a protocol client that is behind a network entity, if the network entity provides network address translation (NAT).

**B-frame**: A bidirectional video frame that references both the previous frame and the next frame.

**call**: A communication between peers that is configured for a multimedia conversation.

**candidate**: A set of transport addresses that form an atomic unit for use with a media session. For example, in the case of Real-Time Transport Protocol (RTP) there are two transport addresses for each candidate, one for RTP and another for the Real-Time Transport Control Protocol (RTCP). A candidate has properties such as type, priority, foundation, and base.

**codec**: An algorithm that is used to convert media between digital formats, especially between raw media data and a format that is more suitable for a specific purpose. Encoding converts the raw data to a digital format. Decoding reverses the process.

**Common Intermediate Format (CIF)**: A picture format, described in the H.263 standard, that is used to specify the horizontal and vertical resolutions of pixels in YCbCr sequences in video signals.

**conference**: A [**Real-Time Transport Protocol (RTP)**](#gt_7c02483a-b2ed-4381-ae07-5332ee087a45) session that includes more than one participant.

**connectivity check**: A Simple Traversal of UDP through NAT (STUN) binding request that is sent to validate connectivity between the local and remote candidates in a candidate pair.

**Coordinated Universal Time (UTC)**: A high-precision atomic time standard that approximately tracks Universal Time (UT). It is the basis for legal, civil time all over the Earth. Time zones around the world are expressed as positive and negative offsets from UTC. In this role, it is also referred to as Zulu time (Z) and Greenwich Mean Time (GMT). In these specifications, all references to UTC refer to the time at UTC-0 (or GMT).

**dialog**: A peer-to-peer [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) relationship that exists between two user agents and persists for a period of time. A dialog is established by [**SIP messages**](#gt_2690e796-e281-48f3-ba0e-1f9acdb3ba8c), such as a 2xx response to an INVITE request, and is identified by a call identifier, a local tag, and a remote tag.

**endpoint**: A device that is connected to a computer network.

**forward error correction (FEC)**: A process in which a sender uses redundancy to enable a receiver to recover from packet loss.

**fully qualified domain name (FQDN)**: An unambiguous domain name that gives an absolute location in the Domain Name System's (DNS) hierarchy tree, as defined in [[RFC1035]](https://go.microsoft.com/fwlink/?LinkId=90264) section 3.1 and [[RFC2181]](https://go.microsoft.com/fwlink/?LinkId=127732) section 11.

**I-frame**: A video frame that is encoded as a single image, such that it can be decoded without any dependencies on previous frames. Also referred to as Intra-Coded frame, Intra frame, and key frame.

**Interactive Connectivity Establishment (ICE)**: A methodology that was established by the Internet Engineering Task Force (IETF) to facilitate the traversal of network address translation (NAT) by media.

**jitter**: A variation in a network delay that is perceived by the receiver of each packet.

**mean opinion score (MOS)**: A numerical indication of the perceived quality of media. It is expressed as a single number in the range of 1 to 5, where 1 is the lowest perceived quality and 5 is the highest perceived quality.

**Multipurpose Internet Mail Extensions (MIME)**: A set of extensions that redefines and expands support for various types of content in email messages, as described in [[RFC2045]](https://go.microsoft.com/fwlink/?LinkId=90307), [[RFC2046]](https://go.microsoft.com/fwlink/?LinkId=90308), and [[RFC2047]](https://go.microsoft.com/fwlink/?LinkId=90309).

**network address translation (NAT)**: The process of converting between IP addresses used within an intranet, or other private network, and Internet IP addresses.

**P-frame**: A predicative video frame that references a previous frame. Also referred to as inter-coded frame or inter-frame.

**proxy**: A computer, or the software that runs on it, that acts as a barrier between a network and the Internet by presenting only a single network address to external sites. By acting as a go-between that represents all internal computers, the proxy helps protects network identities while also providing access to the Internet.

**public switched telephone network (PSTN)**: Public switched telephone network is the voice-oriented public switched telephone network. It is circuit-switched, as opposed to the packet-switched networks.

**QoE Monitoring Agent**: A service running on a front-end server that collects and processes [**Quality of Experience (QoE)**](#gt_4871331b-4c0b-49f9-82fd-edcf5be31a7e) reports from clients in the form of a [**SIP message**](#gt_2690e796-e281-48f3-ba0e-1f9acdb3ba8c), sends a [**202 Accepted**](#gt_f6843283-03bd-4e0c-8b71-19428a8b8575) or an error response to the client, and sends the QoE metrics to the [**QoE Monitoring Server**](#gt_ea97a536-c9a7-460f-83b7-67216c654c5b).

**QoE Monitoring Server**: A server that collects and processes [**Quality of Experience (QoE)**](#gt_4871331b-4c0b-49f9-82fd-edcf5be31a7e) metrics.

**Quality of Experience (QoE)**: A subjective measure of a user's experiences with a media service.

**Real-Time Transport Protocol (RTP)**: A network transport protocol that provides end-to-end transport functions that are suitable for applications that transmit real-time data, such as audio and video, as described in [[RFC3550]](https://go.microsoft.com/fwlink/?LinkId=90433).

**remote endpoint**: See peer.

**reporting endpoint**: A protocol client that sends [**Quality of Experience (QoE)**](#gt_4871331b-4c0b-49f9-82fd-edcf5be31a7e) metrics to a [**QoE Monitoring Server**](#gt_ea97a536-c9a7-460f-83b7-67216c654c5b).

**RTP packet**: A data packet consisting of the fixed RTP header, a possibly empty list of contributing sources, and the payload data. Some underlying protocols could require an encapsulation of the RTP packet to be defined. Typically one packet of the underlying protocol contains a single RTP packet, but several RTP packets can be contained if permitted by the encapsulation method. See [RFC3550] section 3.

**RTVideo**: A video [**stream (2)**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6) that carries an RTVC1 bit stream.

**service**: A process or agent that is available on the network, offering resources or services for clients. Examples of services include file servers, web servers, and so on.

**session**: A collection of multimedia senders and receivers and the data streams that flow between them. A multimedia conference is an example of a multimedia session.

**Session Description Protocol (SDP)**: A protocol that is used for session announcement, session invitation, and other forms of multimedia session initiation. For more information see [[MS-SDP]](%5bMS-SDP%5d.pdf#Section_697845ff53574eb78bcb162a0bc84deb) and [RFC3264].

**Session Initiation Protocol (SIP)**: An application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants. [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) is defined in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410).

**SIP message**: The data that is exchanged between [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) elements as part of the protocol. An SIP message is either a request or a response.

**SIP transaction**: A [**SIP transaction**](#gt_f45dabe6-9287-40c0-835b-43c83011b943) occurs between a [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) and a [**UAS**](#gt_6f39aa0f-2438-4c06-8ccc-5d36b6e50a28). The [**SIP transaction**](#gt_f45dabe6-9287-40c0-835b-43c83011b943) comprises all messages from the first request sent from the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) to the [**UAS**](#gt_6f39aa0f-2438-4c06-8ccc-5d36b6e50a28) up to a final response (non-1xx) sent from the [**UAS**](#gt_6f39aa0f-2438-4c06-8ccc-5d36b6e50a28) to the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb). If the request is INVITE, and the final response is a non-2xx, the [**SIP transaction**](#gt_f45dabe6-9287-40c0-835b-43c83011b943) also includes an ACK to the response. The ACK for a 2xx response to an INVITE request is a separate [**SIP transaction**](#gt_f45dabe6-9287-40c0-835b-43c83011b943).

**stream**: (1) An element of a compound file, as described in [[MS-CFB]](%5bMS-CFB%5d.pdf#Section_53989ce47b054f8d829bd08d6148375b). A stream contains a sequence of bytes that can be read from or written to by an application, and they can exist only in storages.

(2) A flow of data from one host to another host, or the data that flows between two hosts.

**Super P-frame (SP-frame)**: A special P-frame that uses the previous cached frame instead of the previous [**P-frame**](#gt_0b9676d2-c63c-455a-b994-54bdda204376) or [**I-frame**](#gt_0bf0924b-a250-4423-bb9d-4b86549e9c3c) as a reference frame.

**synchronization source (SSRC)**: The source of a stream of [**RTP packets**](#gt_a2d9cf75-7cbd-496c-bd8f-d79325f9858d), identified by a 32-bit numeric SSRC identifier carried in the RTP header so as not to be dependent upon the network address. All packets from a synchronization source form part of the same timing and sequence number space, so a receiver groups packets by synchronization source for playback. Examples of synchronization sources include the sender of a [**stream**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6) of packets derived from a signal source such as a microphone or a camera, or an RTP mixer. A synchronization source could change its data format (for example, audio encoding) over time. The SSRC identifier is a randomly chosen value meant to be globally unique within a particular RTP session. A participant need not use the same SSRC identifier for all the RTP sessions in a multimedia session; the binding of the SSRC identifiers is provided through RTCP. If a participant generates multiple streams in one RTP session, for example from separate video cameras, each has to be identified as a different SSRC. See [RFC3550] section 3.

**Transmission Control Protocol (TCP)**: A protocol used with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. TCP handles keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

**TURN server**: An [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) that receives Traversal Using Relay NAT (TURN) request messages and sends TURN response messages. The protocol server acts as a data relay, receiving data on the public address that is allocated to a protocol client and forwarding that data to the client.

**Uniform Resource Identifier (URI)**: A string that identifies a resource. The URI is an addressing mechanism defined in Internet Engineering Task Force (IETF) Uniform Resource Identifier (URI): Generic Syntax [[RFC3986]](https://go.microsoft.com/fwlink/?LinkId=90453).

**user agent client (UAC)**: A logical entity that creates a new request, and then uses the client transaction state machinery to send it. The role of [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) lasts only for the duration of that transaction. In other words, if a piece of software initiates a request, it acts as a [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) for the duration of that transaction. If it receives a request later, it assumes the role of a [**user agent server (UAS)**](#gt_6f39aa0f-2438-4c06-8ccc-5d36b6e50a28) for the processing of that transaction.

**user agent server (UAS)**: A logical entity that generates a response to a [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) request. The response either accepts, rejects, or redirects the request. The role of the UAS lasts only for the duration of that transaction. If a process responds to a request, it acts as a UAS for that transaction. If it initiates a request later, it assumes the role of a [**user agent client (UAC)**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) for that transaction.

**User Datagram Protocol (UDP)**: The connectionless protocol within TCP/IP that corresponds to the transport layer in the ISO/OSI reference model.

**XML schema**: A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by XML itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

**XML schema definition (XSD)**: The World Wide Web Consortium (W3C) standard language that is used in defining XML schemas. Schemas are useful for enforcing structure and constraining the types of data that can be used validly within other XML documents. XML schema definition refers to the fully specified and currently recommended standard for use in authoring [**XML schemas**](#gt_bd0ce6f9-c350-4900-827e-951265294067).

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as defined in [[RFC2119]](https://go.microsoft.com/fwlink/?LinkId=90317). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](https://go.microsoft.com/fwlink/?linkid=850906).

### Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

[IETFDRAFT-SIPSOAP-00] Deason, N., "SIP and SOAP", draft-deason-sip-soap-00, June 30 2000, [http://www.softarmor.com/wgdb/docs/draft-deason-sip-soap-00.txt](https://go.microsoft.com/fwlink/?LinkId=114619)

[MS-RTP] Microsoft Corporation, "[Real-time Transport Protocol (RTP) Extensions](%5bMS-RTP%5d.pdf#Section_26dda7646e96456b810b9ae0275af564)".

[MS-SDPEXT] Microsoft Corporation, "[Session Description Protocol (SDP) Version 2.0 Extensions](%5bMS-SDPEXT%5d.pdf#Section_cd17a549b94842a6aa6bfa707710faac)".

[MS-TURN] Microsoft Corporation, "[Traversal Using Relay NAT (TURN) Extensions](%5bMS-TURN%5d.pdf#Section_9e434b27eb134249b0312d15c3835c8b)".

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, [https://www.rfc-editor.org/info/rfc2119](https://go.microsoft.com/fwlink/?LinkId=90317)

[RFC3550] Schulzrinne, H., Casner, S., Frederick, R., and Jacobson, V., "RTP: A Transport Protocol for Real-Time Applications", STD 64, RFC 3550, July 2003, [https://www.rfc-editor.org/info/rfc3550](https://go.microsoft.com/fwlink/?LinkId=90433)

[RFC3551] Schulzrinne, H., and Casner, S., "RTP Profile for Audio and Video Conferences with Minimal Control", STD 65, RFC 3551, July 2003, [http://www.ietf.org/rfc/rfc3551.txt](https://go.microsoft.com/fwlink/?LinkId=116464)

[RFC3611] Friedman, T., Ed., Caceres, R., Ed., and Clark, A., Ed., "RTP Control Protocol Extended Reports (RTCP XR)", RFC 3611, November 2003, [http://www.ietf.org/rfc/rfc3611.txt](https://go.microsoft.com/fwlink/?LinkId=90438)

[RFC4737] Morton, A., Ciavattone, L., Ramachandran, G., et al., "Packet Reordering Metrics", RFC 4737, November 2006, [https://www.rfc-editor.org/rfc/rfc4737.txt](https://go.microsoft.com/fwlink/?LinkId=613618)

### Informative References

[ITUP.562] ITU-T, "P.562 : Analysis and interpretation of INMD voice-service measurements", Recommendation P.562, May 2004, [http://www.itu.int/rec/T-REC-P.562-200405-I/en](https://go.microsoft.com/fwlink/?LinkId=114474)

[ITUP.800.1] ITU-T, "P.800.1 : Mean Opinion Score (MOS) terminology", Recommendation P.800.1, July 2006, [http://www.itu.int/rec/T-REC-P.800.1-200607-I/en](https://go.microsoft.com/fwlink/?LinkId=114475)

[MS-RTVPF] Microsoft Corporation, "[RTP Payload Format for RT Video Streams Extensions](%5bMS-RTVPF%5d.pdf#Section_3f37858bc99141c4bbbddf10fcffc89e)".

[MS-SIPRE] Microsoft Corporation, "[Session Initiation Protocol (SIP) Routing Extensions](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83)".

## Overview

This protocol is a proprietary protocol for publishing QoE metrics from a protocol client to a [**QoE Monitoring Agent**](#gt_362d3833-159f-4189-b4a3-3fb6661b1075).

A protocol client publishes QoE metrics for each [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12). The QoE metrics are categorized into two types: one type capturing objective metrics during the session, and the other containing subjective metrics collected from the end user. The protocol client encodes the QoE metrics to conform to the [**XML schema**](#gt_bd0ce6f9-c350-4900-827e-951265294067) that is specified in section [2](#Section_9c2ba6cddc364c39956fcbb804cce695), and then publishes the metrics in the form of a SIP [**SERVICE**](#gt_2dc07ca2-2b40-437e-a5ec-ed28ebfb116a) message that the protocol client sends to the QoE Monitoring Agent through a SIP [**proxy**](#gt_2b529701-3e64-4bf8-97ec-15afbba18b73). QoE Monitoring Agent then converts the messages into an internal format and sends them to QoE Monitoring Server and/or a registered 3rd consumer.

**Note**: The routing behavior of the SIP proxy is based on the SIP routing rules that are described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.

The QoE Monitoring Agent runs along with SIP proxy and it validates the SIP SERVICE message and returns a final SIP SERVICE response. The response is based on standard SIP rules and is either response code [**202 Accepted**](#gt_f6843283-03bd-4e0c-8b71-19428a8b8575), or an error code.

**Note**: A SIP 202 response indicates that the QoE Monitoring Agent accepted the report, but not that it processed the report.

This sequence of events is illustrated in the following figure in which, at the end of a session between two protocol clients, each protocol client publishes QoE metrics to the QoE Monitoring Agent through the SIP Proxy that mediated the session, and the QoE Monitoring Agent returns a SIP 202 response to each protocol client.

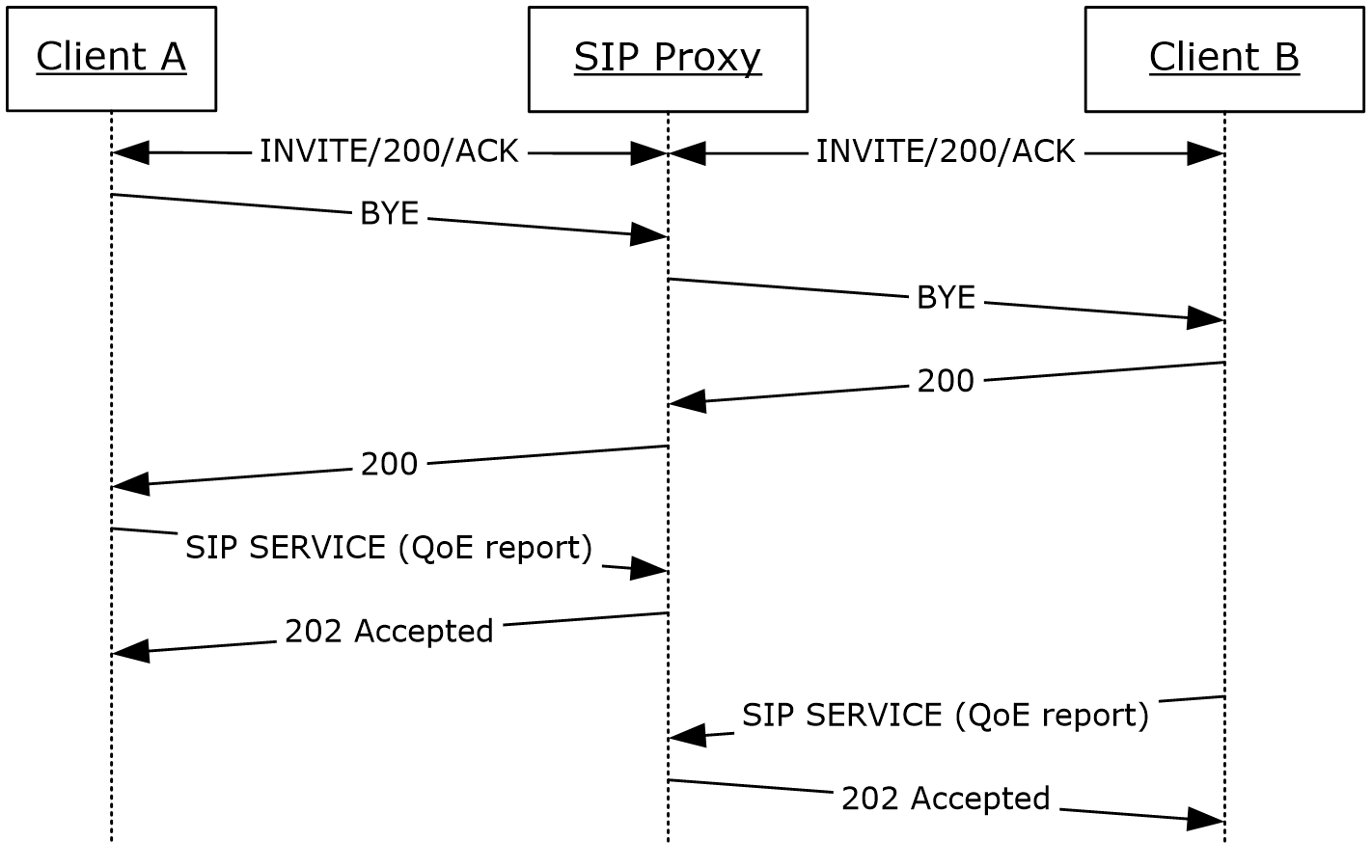


Figure 1: SIP message sequence from protocol client session end through QoE reporting

The QoE Monitoring Server can use QoE metrics for:

* Generating alerts regarding abnormal media quality conditions.
* Generating media quality and resource utilization reports.
* Building a history database for advanced diagnostics and analytic applications.

## Relationship to Other Protocols

This protocol depends on [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89). More specifically, this protocol depends on the SIP [**SERVICE**](#gt_2dc07ca2-2b40-437e-a5ec-ed28ebfb116a) method.

## Prerequisites/Preconditions

A [**QoE Monitoring Server**](#gt_ea97a536-c9a7-460f-83b7-67216c654c5b) is required to collect and aggregate QoE metrics and QoE is enabled.

## Applicability Statement

Use this protocol in scenarios that require monitoring quality of [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**sessions**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12).

## Versioning and Capability Negotiation

None.

## Vendor-Extensible Fields

None.

## Standards Assignments

None.

# Messages

## Transport

This protocol relies on [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) transport.

## Message Syntax

The [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**SERVICE**](#gt_2dc07ca2-2b40-437e-a5ec-ed28ebfb116a) message and response message syntax are specified in [[IETFDRAFT-SIPSOAP-00]](https://go.microsoft.com/fwlink/?LinkId=114619) section 4.0. Depending on the type of QoE metrics being published, the SIP SERVICE message that is used for this protocol MUST include either an **application/vq-rtcpxr+xml Content-Type**  header or an **application/ms-cqf+xml Content-Type**. The content is formatted as a [**Multipurpose Internet Mail Extensions (MIME)**](#gt_af6ba277-34c1-493d-8103-71d2af36ce30) type SIP SERVICE message.

QoE Monitoring Agent will process the request only when the request URI is one of the following.

* SIP URI of QoE. Each pool has a SIP URI for QoE (also known as QoE GRUU).
* SIP URI of the pool in which QoE Monitoring Agent is hosted
* Request URI is same to TO header. In this case, the request will be sent to home pool of the target user, and the QoE Monitoring Agent hosted on the home pool will process it.

The subsequent sections follow the product behavior specified in footnote[<1>](#Appendix_A_1" \o "Product behavior note 1).

Each section contains a detailed specification of the [**XML schema**](#gt_bd0ce6f9-c350-4900-827e-951265294067) to which QoE payloads MUST conform. Each element is described in a subsection, along with the child elements and attributes for that element. For each element, the following information is listed:

* **Element information**: Element type and a description of the element.
* **Child elements**: Name, type, availability, and description.If a child element is marked as not available, it is shown in the XML schema, but not populated by the protocol client. This protocol only includes descriptions for elements that are published by protocol clients. If a child element is marked as not supported for a specific product version, the [**QoE Monitoring Agent**](#gt_362d3833-159f-4189-b4a3-3fb6661b1075) will return an error code as described in section [3.2](#Section_ece847218d2f4928a7b1ba8e23c4de17).
* **Attributes (if any)**: Element ID, type, required, availability, description, and unit. If an attribute is marked as required, it MUST be present in the XML document. If an attribute is marked as not available, it is shown in the XML schema, but not populated by the protocol client. This protocol only includes descriptions for attributes that are published by protocol clients.

All string types defined within these sections are encoded in Unicode. Unless otherwise stated, if the string exceeds the number of characters specified within [], the value will be truncated. All values SHOULD be formatted as invariant culture.

### application/vq-rtcpxr+xml

The XML schema in this section uses four namespaces:

* ms-rtcp-metrics
* ms-rtcp-metrics.v2
* ms-rtcp-metrics.v3[<2>](#Appendix_A_2" \o "Product behavior note 2)
* ms-rtcp-metrics.v4[<3>](#Appendix_A_3" \o "Product behavior note 3)

Elements defined in the **ms-rtcp-metrics.v2** namespace are named with a "v2" prefix. Similarly, elements defined in the **ms-rtcp-metrics.v3** namespace are named with a "v3" prefix and elements defined in the **ms-rtcp-metrics.v4** namespace are named with a "v4" prefix. Elements that are not named with a "v2" or a "v3" or "v4" prefix are defined in the **ms-rtcp-metrics** namespace.

#### VQReportEvent Element

A **VQReportEvent** element is a quality report envelope. The type of this element is **VQReportEventType**.

The **VQReportEvent** element is defined as follows[<4>](#Appendix_A_4" \o "Product behavior note 4):

1. <xs:element name="VQReportEvent" type="tns:VQReportEventType"/>
2. <xs:complexType name="VQReportEventType">
3. <xs:choice>
4. <xs:element name="VQSessionReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
5. <xs:element name="VQSessionIntervalReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
6. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
7. </xs:choice>
8. <xs:attribute name="Version" type="xs:string" use="optional"/>
9. <xs:attribute ref="v2:SchemaVersion" use="optional"/>
10. <xs:anyAttribute namespace="##other" processContents="lax"/>
11. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **VQReportEvent** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **VQSessionReport** | **SessionReportType** | Yes | Quality report for a [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12) ([**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331)). |
| **VQSessionIntervalReport** | **SessionReportType** | No | Not used. |

##### Attributes

The following table lists the attributes of the **VQReportEvent** element.

| Attribute | Type | Available | Description |
| --- | --- | --- | --- |
| **Version**[<5>](#Appendix_A_5" \o "Product behavior note 5) | **xs:string** | Yes | Describes version number of the reporting schema. |
| **v2:SchemaVersion**[<6>](#Appendix_A_6" \o "Product behavior note 6) | **xs:string** | Yes | Describes version number of the reporting schema and replaces the **Version** element. |

#### VQSessionReport Element

**VQSessionReport** element is a quality report for a [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12), or [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331). The type of this element is **SessionReportType**.

The **SessionReportType** type is defined as follows[<7>](#Appendix_A_7" \o "Product behavior note 7):

<xs:complexType name="SessionReportType">

  <xs:sequence>

    <xs:element name="LocationProfile" type="xs:string"

     minOccurs="0"/>

    <xs:element name="Pool" type="xs:string" minOccurs="0"/>

    <xs:element name="Endpoint" type="tns:EndpointType"/>

    <xs:element name="DialogInfo" type="tns:DialogInfoType"/>

    <xs:element name="MediaLine" type="tns:MediaLineType"

     maxOccurs="unbounded"/>

<xs:element ref="v2:OpaqueClientPlatformData" minOccurs="0" />

<xs:element ref="v2:OpaqueServerPlatformData" minOccurs="0" />

<xs:element ref="v2:OpaqueConferenceData" minOccurs="0" />

<xs:sequence minOccurs="0">

<xs:element ref="v2:Separator" />

<xs:any namespace="##other" processContents="lax"

minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

 </xs:sequence>

<xs:attribute name="SessionId" type="xs:string" use="required"/>

<xs:anyAttribute namespace="##other" processContents="lax"/> </xs:complexType>

1. <xs:complexType name="OpaqueClientPlatformDataType">
2. <xs:sequence>
3. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
4. </xs:sequence>
5. <xs:anyAttribute namespace="##any" processContents="lax" />
6. </xs:complexType>
7. <xs:complexType name="OpaqueServerPlatformDataType">
8. <xs:sequence>
9. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
10. </xs:sequence>
11. <xs:anyAttribute namespace="##any" processContents="lax" />
12. </xs:complexType>
13. <xs:complexType name="OpaqueConferenceDataType">
14. <xs:sequence>
15. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
16. </xs:sequence>
17. <xs:anyAttribute namespace="##any" processContents="lax" />

</xs:complexType>

1. <xs:element name="Separator">
2. <xs:complexType></xs:complexType>
3. </xs:element>

##### Child Elements

The following table lists the child elements of the **VQSessionReport** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **LocationProfile** | **xs:string** | No | Not used. |
| **Pool** | **xs:string** | No | Not used. |
| **Endpoint** | **EndpointType** | Yes | Information about the [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) that created the report. |
| **DialogInfo** | **DialogInfoType** | Yes | Information regarding the [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331). |
| **MediaLine** | **MediaLineType** | Yes | A media line is the logical equivalent to an m-line in [**Session Description Protocol (SDP)**](#gt_5ecff0fe-93f3-480a-aa69-57586d46967b). |
| **v2:OpaqueClientPlatformData**[<8>](#Appendix_A_8" \o "Product behavior note 8) | **OpaqueClientPlatformDataType** | No | Not used. |
| **v2:OpaqueServerPlatformData**[<9>](#Appendix_A_9" \o "Product behavior note 9) | **OpaqueServerPlatformDataType** | No | Not used. |
| **v2:OpaqueConferenceData**[<10>](#Appendix_A_10" \o "Product behavior note 10) | **OpaqueConferenceDataType** | No | Not used. |
| **v2:Separator**[<11>](#Appendix_A_11" \o "Product behavior note 11) | default | No | Separator element used for future schema extensions. |

##### Attributes

The following table lists the attributes of the **VQSessionReport** element.

| Attribute | Type | Required | Available | Description |
| --- | --- | --- | --- | --- |
| **SessionId** | **xs:string [755]** | Yes | Yes | SIP dialog ID of the reported session. If maximum string length is exceeded, the report is rejected. |

#### Endpoint Element

**Endpoint** element contains information about the [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) that created the report. The type of this element is **EndpointType**.

The **EndpointType** typeis defined as follows[<12>](#Appendix_A_12" \o "Product behavior note 12):

<xs:complexType name="EndpointType">

  <xs:sequence>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:attribute name="Name" type="xs:string" use="required"/>

  <xs:attribute name="ProfileId" type="xs:string"/>

<xs:attribute ref="v2:OS" use="optional"/>

<xs:attribute ref="v2:CPUName" use="optional"/>

<xs:attribute ref="v2:CPUNumberOfCores" use="optional"/>

<xs:attribute ref="v2:CPUProcessorSpeed" use="optional"/>

<xs:attribute ref="v2:VirtualizationFlag" use="optional"/>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

1. </xs:complexType>

##### Child Elements

None.

##### Attributes

The following table lists the attributes of the **Endpoint** element.

| Attribute | Type | Required | Available | Description |
| --- | --- | --- | --- | --- |
| **Name** | **xs:string [256]** | Yes | Yes | Computer name of the device that created the report. If the maximum string length is exceeded, the report is rejected. |
| **ProfileID** | **xs:string** | No | No | Not used. |
| **v2:OS**[<13>](#Appendix_A_13" \o "Product behavior note 13) | **xs:string [128]** | No | Yes | The operating system used for the [**reporting endpoint**](#gt_06404920-b445-4f67-86c2-864cc359fcf8). |
| **v2:CPUName**[<14>](#Appendix_A_14" \o "Product behavior note 14) | **xs:string [128]** | No | Yes | The name of the central processing unit (CPU) used for the reporting endpoint. |
| **v2:CPUNumberOfCores**[<15>](#Appendix_A_15" \o "Product behavior note 15) | **xs:short** | No | Yes | The number of processor CPU cores used for the reporting endpoint. |
| **v2:CPUProcessorSpeed**[<16>](#Appendix_A_16" \o "Product behavior note 16) | **xs:int** | No | Yes | The speed in megahertz of the CPU used for the reporting endpoint. |
| **v2:VirtualizationFlag**[<17>](#Appendix_A_17" \o "Product behavior note 17) | **xs:byte** | No | Yes | Flag indicating the type of virtualization environment:  "0x00" - None  "0x01" - HyperV  "0x02" - VMWare  "0x04" - Virtual PC  "0x08" - Xen PC |

#### DialogInfo Element

**DialogInfo** element contains information regarding the [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331). The type of this element is **DialogInfoType**.

The **DialogInfoType** typeis defined as follows[<18>](#Appendix_A_18" \o "Product behavior note 18):

1. <xs:complexType name="DialogInfoType">
2. <xs:sequence>
3. <xs:element name="DialogCategory" type="tns:DialogCategoryType" minOccurs="0"/>
4. <xs:element name="CorrelationID" type="xs:string" minOccurs="0"/>
5. <xs:element name="FromURI" type="xs:anyURI"/>
6. <xs:element name="ToURI" type="xs:anyURI"/>
7. <xs:element name="Caller" type="xs:boolean"/>
8. <xs:element name="LocalContactURI" type="xs:anyURI"/>
9. <xs:element name="RemoteContactURI" type="xs:anyURI"/>
10. <xs:element name="LocalUserAgent" type="xs:string"/>
11. <xs:element name="RemoteUserAgent" type="xs:string"/>
12. <xs:element name="LocalPAI" type="xs:anyURI" minOccurs="0"/>
13. <xs:element name="RemotePAI" type="xs:anyURI" minOccurs="0"/>
14. <xs:element name="ConfURI" type="xs:anyURI" minOccurs="0"/>
15. <xs:element ref="v2:CallPriority" minOccurs="0"/>
16. <xs:element ref="v2:MediationServerBypassFlag" minOccurs="0"/>
17. <xs:element ref="v2:TrunkingPeer" minOccurs="0"/>
18. <xs:element ref="v2:MediaBypassWarningFlag" minOccurs="0"/>
19. <xs:sequence minOccurs="0">
20. <xs:element ref="v2:Separator" />
21. <xs:element ref="v2:RegisteredInside" minOccurs="0"/>
22. <xs:sequence minOccurs="0">
23. <xs:element ref="v2:Separator" />
24. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
25. </xs:sequence>
26. </xs:sequence>
27. </xs:sequence>
28. <xs:attribute name="CallId" type="xs:string" use="required"/>
29. <xs:attribute name="FromTag" type="xs:string"/>
30. <xs:attribute name="ToTag" type="xs:string"/>
31. <xs:attribute name="Start" type="xs:dateTime" use="required"/>
32. <xs:attribute name="End" type="xs:dateTime" use="required"/>
33. <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="DialogCategoryType">

<xs:restriction base="xs:string">

  <xs:enumeration value="OCS" />

  <xs:enumeration value="TRUNK" />

  </xs:restriction>

</xs:simpleType>

1. <xs:element name="CallPriority" type="xs:short"/>
2. <xs:element name="MediationServerBypassFlag" type="xs:boolean"/>
3. <xs:element name="TrunkingPeer" type="xs:string"/>
4. <xs:element name="BSSID" type="xs:string"/>
5. <xs:element name="MediaBypassWarningFlag" type="xs:int"/>
6. <xs:element name="RegisteredInside" type="xs:boolean"/>

##### Child Elements

The following table lists the child elements of the **DialogInfo** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **DialogCategory**[<19>](#Appendix_A_19" \o "Product behavior note 19) | **DialogCategoryType** | Yes | Information about the QoE Report leg type, which is either a UC or Mediation Server-GW trunk. For more information, see the enumeration types in section [2.2.1.4](#Section_3a04febbf0aa465d8278901a0893e8d8). |
| **CorrelationID**[<20>](#Appendix_A_20" \o "Product behavior note 20) | **xs:string [775]** | Yes | A unique alphanumeric key that is included by [**reporting endpoints**](#gt_06404920-b445-4f67-86c2-864cc359fcf8) for [**calls**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d) that involve multiple [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) legs. |
| **FromURI** | **xs:anyURI** | Yes | SIP [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) in the SIP **From** header that the reporting endpoint uses if it makes a [**SIP transaction**](#gt_f45dabe6-9287-40c0-835b-43c83011b943) using the reported SIP [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331). |
| **ToURI** | **xs:anyURI** | Yes | SIP URI in the SIP **To** header that the reporting endpoint uses if it makes a SIP transaction using the reported SIP dialog. |
| **Caller** | **xs:boolean** | Yes | "True" if the reporter was the caller of the SIP dialog. "False" if the reporter was not the caller of the SIP dialog. |
| **LocalContactURI** | **xs:anyURI** | Yes | SIP URI in the SIP **Contact** header of the reported SIP dialog that was sent from the reporting endpoint. |
| **RemoteContactURI** | **xs:anyURI** | Yes | SIP URI in the **Contact** header of the reported SIP dialog that was sent from the [**remote endpoint**](#gt_526bb9a7-8b34-4bd4-803b-d0589a44d576). |
| **LocalUserAgent** | **xs:string [450]** | Yes | SIP **User-Agent** or **Server** header content of the reported SIP dialog that was sent from the reporting endpoint. |
| **RemoteUserAgent** | **xs:string [450]** | Yes | SIP **User-Agent** or **Server** header content of the reported SIP dialog that was sent from the remote endpoint. |
| **LocalPAI** | **xs:anyURI** | Yes | SIP URI in the SIP **p-asserted-identity** (PAI) header of the reported dialog that was sent from the reporting endpoint. |
| **RemotePAI** | **xs:anyURI** | Yes | The SIP URI in the SIP **p-asserted-identity** (PAI) header of the reported dialog that was sent from the remote endpoint. |
| **ConfURI** | **xs:anyURI** | Yes | The SIP URI of a [**conference**](#gt_6c50ca24-7eaa-4901-a837-c91356e8a554) bridge that hosted a conference and terminated this dialog. This URI is unique to each conference and common to all the dialogs that participated in the same conference. **ConfURI** is available for conferences only. |
| **v2:CallPriority**[<21>](#Appendix_A_21" \o "Product behavior note 21) | **xs:short** | Yes | The SIP **Priority** header that indicates the priority selected for the call. |
| **v2:MediationServerBypassFlag**[<22>](#Appendix_A_22" \o "Product behavior note 22) | **xs:boolean** | Yes | "True" if the reporting endpoint selected the bypass [**SDP**](#gt_5ecff0fe-93f3-480a-aa69-57586d46967b). |
| **v2:TrunkingPeer**[<23>](#Appendix_A_23" \o "Product behavior note 23) | **xs:string [256]** | Yes | The SIP **ms-trunking-peer** header that reports the [**fully qualified domain name (FQDN)**](#gt_1769aec9-237e-44ed-9014-1abb3ec6de6e) of the [**public switched telephone network (PSTN)**](#gt_475991aa-abb2-4521-a0a5-6993d27dba9f) gateway. |
| **v2:MediaBypassWarningFlag**[<24>](#Appendix_A_24" \o "Product behavior note 24) | **xs:int** | Yes | Warning flags to indicate failures that prevent bypass of the mediation server in a PSTN call. The following values are defined:   * "0x0000" – No error * "0x0001" – Unable to determine bypass identifier for the network interface used for the call. |
| **v2:RegisteredInside**[<25>](#Appendix_A_25" \o "Product behavior note 25) | xs:boolean | Yes | "True" if the listening address is registered within the enterprise. This replaces the **Inside** element in **AddrType**. |
| **v2:Separator**[<26>](#Appendix_A_26" \o "Product behavior note 26) | default | No | Separator element used for future schema extensions. |

##### Attributes

The following table lists the attributes of the **DialogInfo** element.

| Attribute | Type | Required | Available | Description | Units |
| --- | --- | --- | --- | --- | --- |
| **CallId** | **xs:string** [755] | Yes | Yes | SIP Call-ID of the dialog.  If the maximum string length is exceeded, the report is rejected. | Not applicable |
| **FromTag** | **xs:string** [256] | No | Yes | SIP **From** tag of the dialog. | Not applicable |
| **ToTag** | **xs:string** [256] | No | Yes | SIP **To** tag of the dialog. | Not applicable |
| **Start** | **xs:dateTime** | Yes | Yes | Start time of the dialog. | [**Coordinated Universal Time (UTC)**](#gt_f2369991-a884-4843-a8fa-1505b6d5ece7) |
| **End** | **xs:dateTime** | Yes | Yes | End time of the dialog. | UTC |

#### MediaLine Element

**MediaLine** element is the logical equivalent to an **m-line** in [**SDP**](#gt_5ecff0fe-93f3-480a-aa69-57586d46967b). The type of this element is **MediaLineType**. Every QoE report MUST have at least one medialine element.

The **MediaLineType** type is defined as follows[<27>](#Appendix_A_27" \o "Product behavior note 27):

<xs:complexType name="MediaLineType">

  <xs:sequence>

    <xs:element name="Description"

     type="tns:MediaLineDescriptionType"/>

    <xs:element name="InboundStream" type="tns:StreamType"

     minOccurs="0"/>

    <xs:element name="OutboundStream" type="tns:StreamType"

     minOccurs="0"/>

    <xs:element name="LocalConversationalMOS" type="xs:float"

     minOccurs="0"/>

    <xs:element name="RemoteConversationalMOS" type="xs:float"

 minOccurs="0"/>

    <xs:element name="LocalConversationalMOSAlg" type="xs:string"

     minOccurs="0"/>

<xs:element name="RemoteConversationalMOSAlg" type="xs:string"

     minOccurs="0"/>

<xs:element ref="v2:AppliedBandwidthLimit" minOccurs="0" />

<xs:element ref="v2:AppliedBandwidthSource" minOccurs="0" />

<xs:element ref="v2:LocalClientEvent" minOccurs="0"/>

<xs:element ref="v2:RemoteClientEvent" minOccurs="0"/>

<xs:element ref="v2:OpaqueCoreEndpointData" minOccurs="0" />

<xs:element ref="v2:OpaqueChannelData" minOccurs="0" />

<xs:sequence minOccurs="0">

<xs:element ref="v2:Separator" />

<xs:any namespace="##other" processContents="lax"

minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

  </xs:sequence>

  <xs:attribute name="Label" type="xs:string" use="required"/>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

<xs:element name="AppliedBandwidthLimit" type="xs:int"/>

<xs:element name="AppliedBandwidthSource" type="xs:string"/>

1. <xs:complexType name="OpaqueChannelDataType" >
2. <xs:sequence>
3. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
4. </xs:sequence>
5. <xs:anyAttribute namespace="##any" processContents="lax" />

</xs:complexType>

1. <xs:complexType name="OpaqueCoreEndpointDataType">
2. <xs:sequence>
3. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
4. </xs:sequence>
5. <xs:anyAttribute namespace="##any" processContents="lax" />

</xs:complexType>

1. <xs:element name="Separator">
2. <xs:complexType></xs:complexType>

</xs:element>

##### Child Elements

The following table lists the child elements of the **MediaLine** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **Description** | **MediaLineDescriptionType** | Yes | Media Line context information. | Not applicable |
| **InboundStream** | **StreamType** | Yes | Information regarding the inbound  media [**stream (2)**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6). | Not applicable |
| **OutboundStream** | **StreamType** | Yes | Information regarding the outbound media stream (2). | Not applicable |
| **LocalConversationalMOS** | **xs:float** | Yes | Conversational clarity index for remote party, as described in [[ITUP.562]](https://go.microsoft.com/fwlink/?LinkId=114474) section 6.3. | [**mean opinion score (MOS)**](#gt_70e4747b-4496-44fe-9545-66a90c45370b) |
| **RemoteConversationalMOS** | **xs:float** | No | Not used. |  |
| **LocalConversationalMOSAlg** | **xs:string** | No | Not used. |  |
| **RemoteConversationalMOSAlg** | **xs:string** | No | Not used. |  |
| **v2:AppliedBandwidthLimit**[<28>](#Appendix_A_28" \o "Product behavior note 28) | **xs:int** | Yes | The bandwidth limit applied for sending media. | bits per second |
| **v2:AppliedBandwidthSource**[<29>](#Appendix_A_29" \o "Product behavior note 29) | **xs:string [256]** | Yes | The source of the bandwidth limit policy that was applied for the sending of media. | Not applicable |
| **v2:LocalClientEvent**[<30>](#Appendix_A_30" \o "Product behavior note 30) | **ClientEventType** | Yes | Information about quality events detected by the [**reporting endpoint**](#gt_06404920-b445-4f67-86c2-864cc359fcf8). | Not applicable |
| **v2:RemoteClientEvent**[<31>](#Appendix_A_31" \o "Product behavior note 31) | **ClientEventType** | Yes | Information about quality events detected by the [**remote endpoint**](#gt_526bb9a7-8b34-4bd4-803b-d0589a44d576). | Not applicable |
| **v2:OpaqueCoreEndpointData**[<32>](#Appendix_A_32" \o "Product behavior note 32) | **OpaqueCoreEndpointDataType** | No | Not used. |  |
| **v2:OpaqueChannelData**[<33>](#Appendix_A_33" \o "Product behavior note 33) | **v2:OpaqueChannelData** | No | Not used. |  |
| **v2:Separator**[<34>](#Appendix_A_34" \o "Product behavior note 34) | default | No | Separator element used for future schema extensions. | Not applicable |

##### Attributes

The following table lists the attributes of the **MediaLine** element.

| Attribute | Type | Required | Available | Description |
| --- | --- | --- | --- | --- |
| **Label** | **xs:string** | Yes | Yes | Identifies the Media Line.  Currently supported values:   * "main-audio" * "main-video" * "panoramic-video" * "data"[<35>](#Appendix_A_35" \o "Product behavior note 35) * "main-video1" * "main-video2" * "main-video3" * "main-video4" * "main-video5" * "main-video6"   If the value does not match one of these listed strings, the report is rejected. |

#### Description Element

A **Description** element contains **MediaLine** context information. The type of this element is **MediaLineDescriptionType**.

The **MediaLineDescriptionType** type is defined as follows[<36>](#Appendix_A_36" \o "Product behavior note 36):

1. <xs:complexType name="MediaLineDescriptionType">
2. <xs:sequence>
3. <xs:element name="Connectivity" type="tns:ConnectivityType"
4. minOccurs="0"/>
5. <xs:element name="Security" type="xs:string" minOccurs="0"/>
6. <xs:element name="Offerer" type="xs:boolean" minOccurs="0"/>
7. <xs:element name="Transport" type="tns:TransportType"
8. minOccurs="0"/>
9. <xs:element name="NetworkConnectivityInfo"
10. type="tns:NetworkConnectivityInfoType" minOccurs="0" />
11. <xs:element name="LocalAddr" type="tns:AddrType"/>
12. <xs:element name="RemoteAddr" type="tns:AddrType"/>
13. <xs:element name="CaptureDev" type="tns:DeviceType" minOccurs="0"/>
14. <xs:element name="RenderDev" type="tns:DeviceType" minOccurs="0"/>
15. <xs:element ref="v3:ReflexiveLocalIPAddress" minOccurs="0"/>
16. <xs:element ref="v3:MidCallReport" minOccurs="0"/>
17. <xs:sequence minOccurs="0">
18. <xs:element ref="v3:Separator3"></xs:element>
19. <xs:element ref="v4:WifiRadioType" minOccurs="0"/>
20. <xs:element ref="v4:WifiRSSI" minOccurs="0"/>
21. <xs:element ref="v4:SSID" minOccurs="0"/>
22. <xs:element ref="v4:WifiChannel" minOccurs="0"/>
23. <xs:element ref="v4:ActivePowerProfile" minOccurs="0"/>
24. <xs:element ref="v4:WifiHandovers" minOccurs="0"/>
25. <xs:element ref="v4:WifiChannelSwitches" minOccurs="0"/>
26. <xs:element ref="v4:WifiChannelReassociations" minOccurs="0"/>
27. <xs:element ref="v4:RecvQoSMarking" minOccurs="0"/>
28. <xs:element ref="v4:SendQoSMarking" minOccurs="0"/>
29. <xs:element ref="v4:WifiRadioFrequency" minOccurs="0"/>
30. <xs:element ref="v4:WifiMTU" minOccurs="0"/>
31. <xs:element ref="v4:WifiSupportFlags" minOccurs="0"/>
32. <xs:element ref="v4:WifiStatusFlags" minOccurs="0"/>
33. <xs:element ref="v4:WifiTunnelType" minOccurs="0"/>
34. <xs:element ref="v4:WifiSignalStrength" minOccurs="0"/>
35. <xs:element ref="v4:WifiBatteryCharge" minOccurs="0"/>
36. <xs:element ref="v4:ConnectionName" minOccurs="0"/>
37. <xs:element ref="v4:DNSSuffix" minOccurs="0"/>
38. <xs:element ref="v4:LastRTPSendTime" minOccurs="0"/>
39. <xs:element ref="v4:LastRTCPSendTime" minOccurs="0"/>
40. <xs:element ref="v4:LastRTPReceiveTime" minOccurs="0"/>
41. <xs:element ref="v4:LastRTCPReceiveTime" minOccurs="0"/>
42. <xs:sequence minOccurs="0">
43. <xs:element ref="v4:Separator4"></xs:element>
44. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
45. </xs:sequence>
46. </xs:sequence>
47. </xs:sequence>
48. <xs:anyAttribute namespace="##other" processContents="lax"/>
49. </xs:complexType>
50. <xs:simpleType name="TransportType">
51. <xs:restriction base="xs:string">
52. <xs:enumeration value="UDP"/>
53. <xs:enumeration value="TCP"/>
54. </xs:restriction>

</xs:simpleType>

##### Child Elements

The following table lists the child elements of the **Description** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Connectivity** | **ConnectivityType** | Yes | [**Interactive Connectivity Establishment (ICE)**](#gt_b23dcabd-6ae7-4af7-a5b2-0517ea7718f8) connectivity information. |
| **Security** | **xs:string [128]** | Yes | The security profile in use. Supported values are "V1", "SRTP" and "None". |
| **Offerer** | **xs:boolean** | Yes[<37>](#Appendix_A_37" \o "Product behavior note 37) | "True" if the [**reporting endpoint**](#gt_06404920-b445-4f67-86c2-864cc359fcf8) offered the Media Line; otherwise, "False". |
| **Transport** | **TransportType** | Yes | The type of transport in use. Supported values are "TCP" and "UDP". |
| **NetworkConnectivityInfo**[<38>](#Appendix_A_38" \o "Product behavior note 38) | **NetworkConnectivityInfoType** | Yes | Information about network connectivity of the [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee). |
| **LocalAddr** | **AddrType** | Yes | Internet Protocol (IP) address related information for the reporting endpoint. |
| **RemoteAddr** | **AddrType** | Yes | IP address related information for the [**remote endpoint**](#gt_526bb9a7-8b34-4bd4-803b-d0589a44d576). |
| **CaptureDev** | **DeviceType** | Yes | A device that is used to capture audio and video media, such as a microphone, a USB phone or a camera. |
| **RenderDev** | **DeviceType** | Yes | A device that is used to render audio and video media, such as speakers, a headset, or a USB phone. |
| **v3:ReflexiveLocalIPAddress**[<39>](#Appendix_A_39" \o "Product behavior note 39) | **AddrType** | Yes | The IP address from which the Media Relay received the allocate request. This address is returned by the Media Relay. |
| **v3:MidCallReport**[<40>](#Appendix_A_40" \o "Product behavior note 40) | **xs:boolean** | Yes | A flag that indicates whether the QoE data is reported during the middle of the call. |
| **v3:Separator3**[<41>](#Appendix_A_41" \o "Product behavior note 41) | default | No | Separator element used for future schema extensions. |
| **v4:WifiRadioType**[<42>](#Appendix_A_42" \o "Product behavior note 42) | **xs:unsignedByte** | Yes | Average render speech level after dynamic range compression or analog gain control is applied. |
| **v4:WifiRSSI**[<43>](#Appendix_A_43" \o "Product behavior note 43) | **xs:int** | Yes | Average WiFi Received Signal Strength Indication value expressed in percentage points [0-99]. |
| **v4:SSID**[<44>](#Appendix_A_44" \o "Product behavior note 44) | **xs:string** | Yes | Name of WiFi Service Set Identifier. |
| **v4:WifiChannel**[<45>](#Appendix_A_45" \o "Product behavior note 45) | **xs:int** | Yes | WiFi channel used during session. |
| **v4:ActivePowerProfile**[<46>](#Appendix_A_46" \o "Product behavior note 46) | **xs:int** | Yes | Was WiFi placed in lower power mode during session. |
| **v4:WifiHandovers**[<47>](#Appendix_A_47" \o "Product behavior note 47) | **xs:int** | Yes | Number of WiFi hand overs to other access points during session. |
| **v4:WifiChannelSwitches**[<48>](#Appendix_A_48" \o "Product behavior note 48) | **xs:int** | Yes | Number of times the WiFi channel switched during session. |
| **v4:WifiChannelReassociations**[<49>](#Appendix_A_49" \o "Product behavior note 49) | **xs:int** | Yes | Number of WiFi channel reassociated during session. |
| **v4:RecvQoSMarking**[<50>](#Appendix_A_50" \o "Product behavior note 50) | **xs:unsignedByte** | Yes | Quality of Service marking on packets received during session. Currently not used. |
| **v4:SendQoSMarking**[<51>](#Appendix_A_51" \o "Product behavior note 51) | **xs:unsignedByte** | Yes | Quality of Service marking on packets sent during session. Currently not used. |
| **v4:WifiRadioFrequency** | **xs:int** | Yes | WiFi frequency used during session. |
| **v4:WifiMTU** | **xs:int** | Yes | The maximum transmission unit (MTU) for the Wi-Fi connection. |
| **v4:WifiSupportFlags** | **xs:int** | Yes | A flag that indicates whether the IPv4 or IPv6 protocols are supported. SupportFalg\_IPv4 = (1<<0); SupportFlag\_IPv6 = (1<<1). |
| **v4:WifiStatusFlags** | **xs:int** | Yes | A flag that indicates the current connection status. StatusFlag\_VPN = (1<<0). |
| **v4:WifiTunnelType** | **xs:int** | Yes | A flag that indicates the active tunneling technology between IPv6 and IPv4. The value is one of the following: None = 0 Other = 1  Direct = 2  6To4 = 3  ISATAP = 4  Teredo = 5  IPHTTPS = 6 |
| **v4:WifiSignalStrength** | **xs:int** | Yes | The Wi-Fi signal strength in percentage points [0-99]. |
| **v4:WifiBatteryCharge** | **xs:int** | Yes | The estimated remaining battery charge in percentage points [0-99], with 0 indicating that the device was plugged in. |
| **v4:ConnectionName** | **xs:string** | Yes | The currently active VPN network name. |
| **v4:DNSSuffix** | **xs:string** | Yes | The DNS suffix associated with the network adapter. |
| **v4:LastRTPSendTime**[<52>](#Appendix_A_52" \o "Product behavior note 52) | **xs:dateTime** | Yes | Date and time the last RTP packet was sent. |
| **v4:LastRTCPSendTime**[<53>](#Appendix_A_53" \o "Product behavior note 53) | **xs:dateTime** | Yes | Date and time the last RTP packet was sent. |
| **v4:LastRTPReceiveTime**[<54>](#Appendix_A_54" \o "Product behavior note 54) | **xs:dateTime** | Yes | Date and time the last RTP packet was received. |
| **v4:LastRTCPReceiveTime**[<55>](#Appendix_A_55" \o "Product behavior note 55) | **xs:dateTime** | Yes | Date and time the last RTP packet was received. |
| **v4:Separator4**[<56>](#Appendix_A_56" \o "Product behavior note 56) | default | Yes | Separator used for future schema extensions. |

#### Connectivity Element

A **Connectivity** element contains [**ICE**](#gt_b23dcabd-6ae7-4af7-a5b2-0517ea7718f8) connectivity information. The type of this element is **ConnectivityType**.

The **ConnectivityType** type is defined as follows:

<xs:complexType name="ConnectivityType">

  <xs:sequence>

    <xs:element name="Ice" type="tns:IceStatusType" minOccurs="0"/>

    <xs:element name="IceWarningFlags" type="xs:unsignedInt"

     minOccurs="0"/>

    <xs:element name="RelayAddress" type="tns:AddrType" minOccurs="0"

     maxOccurs="unbounded"/>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="IceStatusType">

  <xs:restriction base="xs:string">

    <xs:enumeration value="FAILED"/>

    <xs:enumeration value="DIRECT"/>

    <xs:enumeration value="RELAY"/>

    <xs:enumeration value="HTTP-PROXY"/>

  </xs:restriction>

</xs:simpleType>

##### Child Elements

The following table lists the child elements of the **Connectivity** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Ice** | **tns:iceStatusType** | Yes | Information about the media path, such as direct or relayed. For more information, see the enumeration types in section [2.2.1.7](#Section_82b0f63414874f34b375cb542a69ef44). |
| **IceWarningFlags** | **xs:unsignedInt** | Yes | Information about [**ICE**](#gt_b23dcabd-6ae7-4af7-a5b2-0517ea7718f8) process described in bits flags. For more information, see the following table. |
| **RelayAddress** | **tns:AddrType** | Yes | IP address related information of the [**Audio/Video Edge Server (A/V Edge Server)**](#gt_c4bddb85-2ec1-4b6a-80ee-7149b85b534c). |

The following table shows the possible values and descriptions for the **IceWarningFlags** applicable to footnote[<57>](#Appendix_A_57" \o "Product behavior note 57).

| Value | Description |
| --- | --- |
| "0x000" | There were no failures or ICE was not used. |
| "0x0010" | [**TURN server**](#gt_e6b10c2b-c9fd-4365-9d49-760f3082939b) is unreachable. |
| "0x0020" | Shared secret with TURN server failed. |
| "0x0040" | An attempt to allocate a [**User Datagram Protocol (UDP)**](#gt_a70f5e84-6960-42f0-a160-ba0281eb548d) port on the TURN server failed. |
| "0x0200" | An attempt to allocate a [**Transmission Control Protocol (TCP)**](#gt_b08d36f6-b5c6-4ce4-8d2d-6f2ab75ea4cb) port on the TURN server failed. |
| "0x4000" | UDP local connectivity failed. |
| "0x8000" | UDP [**network address translation (NAT)**](#gt_7ee5c1a4-6768-4256-817c-6686382e0f39) connectivity failed. |
| "0x10000" | UDP TURN server connectivity failed. |
| "0x40000" | TCP NAT connectivity failed. |
| "0x80000" | TCP TURN server connectivity failed. |
| "0x100000" | Message Integrity failed in [**connectivity check**](#gt_05dec97c-8453-40fc-aa15-5ea43409cd57) request. |
| "0x200000" | Message Integrity failed in connectivity check response. |
| "0x400000" | [**Candidate**](#gt_9d15fb12-6cfa-42b7-8b7a-830c4387da23) lookup failed upon receiving the connectivity check request. |
| "0x800000" | Candidate lookup failed upon receiving the connectivity check response. |
| "0x1000000" | Connectivity check request failed because of memory problem or other reasons that prevent sending packets. |
| "0x2000000" | Connectivity check response failed because of memory problem or other reasons that prevent sending packets. |
| "0x4000000" | TURN server [**FQDN**](#gt_1769aec9-237e-44ed-9014-1abb3ec6de6e) was not resolved. |
| "0x8000000" | TURN server credentials are unknown. |
| "0x10000000" | TURN allocation failure due to client security mode. |

The following table shows the possible values and descriptions for the **IceWarningFlags** applicable to footnote [<58>](#Appendix_A_58" \o "Product behavior note 58).

| Value | Description |
| --- | --- |
| "0x0000000" | There were no failures or ICE was not used. |
| "0x0000001" | TURN server is unreachable. |
| "0x0000002" | An attempt to allocate a UDP port on the TURN server failed. |
| "0x0000004" | An attempt to send UDP on the TURN server failed. |
| "0x0000008" | An attempt to allocate a TCP port on the TURN server failed. |
| "0x0000010" | An attempt to send TCP on the TURN server failed. |
| "0x0000020" | UDP local connectivity failed. |
| "0x0000040" | UDP NAT connectivity failed. |
| "0x0000080" | UDP TURN server connectivity failed. |
| "0x0000100" | TCP NAT connectivity failed. |
| "0x0000200" | TCP TURN server connectivity failed. |
| "0x0000400" | Message integrity failed in connectivity check request. |
| "0x0000800" | The message integrity on the response message was incorrect. |
| "0x0001000" | A bandwidth policy server is configured. |
| "0x0002000" | Connectivity check request failed because of memory problem or other reasons that prevent sending packets. |
| "0x0004000" | TURN server credentials expired or are unknown. |
| "0x0008000" | Bandwidth policy restrictions removed candidates. |
| "0x0010000" | Bandwidth policy restrictions reduced bandwidth for some candidates. |
| "0x0020000" | Bandwidth policy keep-alive failed. |
| "0x0040000" | Bandwidth policy allocation failure. |
| "0x0080000" | No TURN server configured. |
| "0x0100000" | Multiple TURN servers were attempted for the allocation. |
| "0x0200000" | Port range exhausted. |
| "0x0400000" | Received alternate TURN server. |
| "0x0800000" | Pseudo-TLS failure. See [[MS-TURN]](%5bMS-TURN%5d.pdf#Section_9e434b27eb134249b0312d15c3835c8b) section 2.1.1. |
| "0x1000000" | HTTP [**proxy**](#gt_2b529701-3e64-4bf8-97ec-15afbba18b73) is configured. |
| "0x2000000" | HTTP proxy authentication failed. |
| "0x4000000" | TCP-TCP connectivity checks failed over TURN server. |
| "0x8000000" | Use candidates check failed. |

#### NetworkConnectivityInfo Element

A **NetworkConnectivityInfo** element contains information specific to the network connection. The type of this element is **NetworkConnectivityInfoType**.

The **NetworkConnectivityInfoType** type is defined as follows[<59>](#Appendix_A_59" \o "Product behavior note 59):

1. <xs:complexType name="NetworkConnectivityInfoType">
2. <xs:sequence>
3. <xs:element name="NetworkConnection"
4. type="tns:NetworkConnectionType" minOccurs="0"/>
5. <xs:element name="VPN" type="xs:boolean" minOccurs="0"/>
6. <xs:element name="LinkSpeed" type="xs:float" minOccurs="0"/>
7. <xs:element ref="v2:BSSID" minOccurs="0"/>
8. <xs:sequence minOccurs="0">
9. <xs:element ref="v2:Separator" />
10. <xs:element ref="v3:NetworkConnectionDetails" type="xs:string" minOccurs="0"/>
11. <xs:element ref="v3:WifiDriverDeviceDesc" type="xs:string" minOccurs="0"/>
12. <xs:element ref="v3:WifiDriverVersion" type="xs:string" minOccurs="0"/>
13. <xs:element ref="v3:TraceRoute" type="v3:TraceRouteType" minOccurs="0"/>
14. </xs:sequence>
15. </xs:sequence>
16. <xs:anyAttribute namespace="##other" processContents="lax"/>
17. </xs:complexType>
18. <xs:simpleType name="NetworkConnectionType">
19. <xs:restriction base="xs:string">
20. <xs:enumeration value="wired" />
21. <xs:enumeration value="wifi" />
22. </xs:restriction>
23. </xs:simpleType>
24. <xs:element name="BSSID" type="xs:string"/>
25. <xs:element name="Separator">
26. <xs:complexType></xs:complexType>
27. </xs:element>

##### Child Elements

This section follows the product behavior described in footnote[<60>](#Appendix_A_60" \o "Product behavior note 60).

The following table lists the child elements of the **NetworkConnectivityInfo** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **NetworkConnection** | **NetworkConnectionType** | Yes | Information about the **NetworkConnection** type. See section [2.2.1.8](#Section_b9daa559be0c4015a0c37c31a8e48240). | Not applicable |
| **VPN** | **xs:boolean** | Yes | "True" if user is on VPN, "False" if not. | True/False |
| **LinkSpeed** | **xs:float** | Yes | The link speed of the network interface of the [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee). | Bits per second |
| **v2:BSSID**[<61>](#Appendix_A_61" \o "Product behavior note 61) | **xs:string [32]** | Yes | Wireless LAN basic service set identifier. | Not applicable |
| **v2:Separator**[<62>](#Appendix_A_62" \o "Product behavior note 62) | default | No | Separator element used for future schema extensions. | Not applicable |
| **v3:NetworkConnectionDetails**[<63>](#Appendix_A_63" \o "Product behavior note 63) | **xs:string [32]** | Yes | Information about the Network media type. | Not applicable |
| **v3:WifiDriverDeviceDesc**[<64>](#Appendix_A_64" \o "Product behavior note 64) | **xs:string [32]** | Yes | Manufacturer of WiFi driver installed. | Not applicable |
| **v3:WifiDriverVersion**[<65>](#Appendix_A_65" \o "Product behavior note 65) | **xs:string [32]** | Yes | Version number of WiFi driver installed. | Not applicable |
| **v3:TraceRoute**[<66>](#Appendix_A_66" \o "Product behavior note 66) | **TraceRouteType** | Yes | Trace route results to the remote endpoint. | Not applicable |

###### TraceRoute Element

A TraceRoute element contains trace route information between the endpoint and the destination IP address to which the endpoint is sending media.[<67>](#Appendix_A_67" \o "Product behavior note 67) The type of this element is **TraceRouteType**.

1. <xs:element name="TraceRoute" type="v3:TraceRouteType"/>
2. <xs:complexType name="TraceRouteType">
3. <xs:sequence>
4. <xs:element name="Hop" type="xs:int" minOccurs="1"/>
5. <xs:element name="IPAddress" type="xs:string" minOccurs="0"/>
6. <xs:element name="RTT" type="xs:int" minOccurs="0"/>
7. <xs:sequence minOccurs="0">
8. <xs:element ref="v3:Separator3"/>
9. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
10. </xs:sequence>
11. </xs:sequence>
12. <xs:anyAttribute namespace="##any" processContents="lax"/>
13. </xs:complexType>

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **TraceRoute** | **TraceRouteType** | Yes | Information about the **TraceRoute** type. See section [2.2.1.8](#Section_b9daa559be0c4015a0c37c31a8e48240). | Not applicable |
| **Hop** | **xs:int** | Yes | The hop associated with this **TraceRoute** element. | True/False |
| **IPAddress** | **xs:float** | Yes | The IP address associated with this **TraceRoute** element. | Bits per second |
| **RTT** | **xs:string [32]** | Yes | The RTT associated with this **TraceRoute** element. | Not applicable |
| **v3:Separator3**[<68>](#Appendix_A_68" \o "Product behavior note 68) | default | No | Separator element used for future schema extensions. | Not applicable |

#### LocalAddr, RemoteAddr, and RelayAddress Elements

**LocalAddr**, **RemoteAddr**, and **RelayAddress** elements contain IP address-related information for an [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) in the [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331). The type for these elements is **AddrType**.

The **AddrType** type is defined as follows[<69>](#Appendix_A_69" \o "Product behavior note 69):

<xs:complexType name="AddrType">

  <xs:sequence>

    <xs:element name="IPAddr" type="xs:string"/>

    <xs:element name="Port" type="xs:unsignedShort" minOccurs="0"/>

    <xs:element name="Inside" type="xs:boolean" minOccurs="0"/>

    <xs:element name="SubnetMask" type="xs:string" minOccurs="0"/>

<xs:element ref="v2:MACAddr" minOccurs="0" />

<xs:sequence minOccurs="0">

<xs:element ref="v2:Separator"></xs:element>

<xs:any namespace="##other" processContents="lax"

minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

<xs:element name="MACAddr" type="xs:string"/>

1. <xs:element name="Separator">
2. <xs:complexType></xs:complexType>
3. </xs:element>

##### Child Elements

The following table lists the child elements of **LocalAddr**, **RemoteAddr**, and **RelayAddress** elements.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **IPAddr** | **xs:string** | Yes | The IP listening address for the [**stream (2)**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6) in dotted notation. | IPv4 or IPv6 |
| **Port** | **xs:unsignedShort** | Yes\* | The listening port for the stream (2). | Not applicable |
| **Inside**[<70>](#Appendix_A_70" \o "Product behavior note 70) | **xs:boolean** | Yes\*\* | "True" if the listening address is inside the OCS Enterprise, otherwise "False". | Not applicable |
| **SubnetMask** | **xs:string** | Yes\*\* | The subnet masks of the listing address for the stream (2), in dotted notation if the IP address is IPv4. The subnet mask length If the address is IPv6. | IPv4 or subnet mask length if address is IPv6. |
| **v2:MACAddr**[<71>](#Appendix_A_71" \o "Product behavior note 71) | **xs:string [32]** | Yes\*\* | The media access control address of the network interface adapter associated with the **IPAddr.** | Hexadecimal string |
| **v2:Separator**[<72>](#Appendix_A_72" \o "Product behavior note 72) | default | No | Separator element used for future schema extensions. | Not applicable |

\* Only available for the **LocalAddr** and **RemoteAddr** elements.

\*\* Only available for **LocalAddr**.

#### CaptureDev and RenderDev Elements

**CaptureDev** and **RenderDev** elements contain microphone, USB phone, or camera device type information. The type for these elements is **DeviceType**.[<73>](#Appendix_A_73" \o "Product behavior note 73)

The **DeviceType** type is defined as follows:

<xs:complexType name="DeviceType">

  <xs:sequence>

    <xs:element name="Name" type="xs:string" minOccurs="0"/>

    <xs:element name="Driver" type="xs:string" minOccurs="0"/>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of **CaptureDev** and **RenderDev** elements.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| Name | **xs:string [256]** | Yes | Media capture or render device name. For more information, see section [6](#Section_e500001fb57c4ee597da457ec7b5736c). |
| Driver[<74>](#Appendix_A_74" \o "Product behavior note 74) | **xs:string [256]** | Yes | Manufacturer and version information about the device driver used for the device. |

#### InboundStream and OutboundStream Elements

**InboundStream** and **OutboundStream** elements contain information regarding a media stream. The type for these elements is **StreamType**.

The **StreamType** type is defined as follows:

<xs:complexType name="StreamType">

  <xs:sequence>

    <xs:element name="Network" type="tns:NetworkMetricsType"

     minOccurs="0"/>

    <xs:element name="Payload" type="tns:PayloadMetricsType"/>

    <xs:element name="QualityEstimates" type="tns:QualityEstimatesType"

     minOccurs="0"/><!-- Support reporting multiple payloads per stream-->

<xs:element ref="v3:AdditionalPayload" minOccurs="0" maxOccurs="unbounded"/>

<xs:sequence minOccurs="0">

<xs:element ref="v3:Separator3"></xs:element>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

  </xs:sequence>

  <xs:attribute name="Id" type="xs:unsignedInt" use="required"/>

  <xs:attribute name="Start" type="xs:dateTime"/>

  <xs:attribute name="End" type="xs:dateTime"/>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of **InboundStream** and **OutboundStream** elements.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Network** | **NetworkMetricsType** | Yes | Network-based metrics. |
| **Payload** | **PayloadMetricsType** | Yes | Payload-based metrics. |
| **QualityEstimates** | **QualityEstimatesType** | Yes | Metrics estimating the quality of the media. |
| **v3:AdditionalPayload**[<75>](#Appendix_A_75" \o "Product behavior note 75) | **PayloadMetricsType** | Yes | Additional payload-based metrics for second codec. |

##### Attributes

The following table lists the attributes of **InboundStream** and **OutboundStream** elements.

| Attribute | Type | Required | Available | Description |
| --- | --- | --- | --- | --- |
| **Id** | **xs:unsignedInt** | Yes | Yes | [**Synchronization Source (SSRC)**](#gt_bc2beb5b-66f9-435f-9ffd-f7cf713f836a) identifier, as specified in [[RFC3550]](https://go.microsoft.com/fwlink/?LinkId=90433) section 8. |
| **Start** | **xs:dateTime** | No | No | Not used. |
| **End** | **xs:dateTime** | No | No | Not used. |

#### Network Element

A **Network** element contains network-based metrics. The type of this element is **NetworkMetricsType**.

The **NetworkMetricsType** type is defined as follows[<76>](#Appendix_A_76" \o "Product behavior note 76):

<xs:complexType name="NetworkMetricsType">

  <xs:sequence>

    <xs:element name="DSCP" type="xs:byte" minOccurs="0"/>

    <xs:element name="VLAN" type="xs:int" minOccurs="0"/>

<xs:element name="Jitter" type="tns:JitterType" minOccurs="0"/>

<xs:element name="PacketLoss" type="tns:PacketLossType" minOccurs="0"/>

<xs:element name="BurstGapLoss" type="tns:BurstGapLossType" minOccurs="0"/>

<xs:element name="Delay" type="tns:DelayType" minOccurs="0"/>

<xs:element name="Utilization" type="tns:NetworkUtilizationType" minOccurs="0"/>

<xs:element ref="v2:RatioConcealedSamplesAvg" minOccurs="0"/>

<xs:element ref="v2:RatioStretchedSamplesAvg" minOccurs="0"/>

<xs:element ref="v2:RatioCompressedSamplesAvg" minOccurs="0"/>

<xs:sequence minOccurs="0">

<xs:element ref="v2:Separator" />

<xs:element ref="v3:ConcealRatioMax" minOccurs="0"/>

<xs:element ref="v3:ConcealRatioSd" minOccurs="0"/>

<xs:element ref="v3:HealerPacketDropRatio" minOccurs="0"/>

<xs:element ref="v3:HealerFECPacketUsedRatio" minOccurs="0"/>

<xs:element ref="v3:MaxCompressedSamples" minOccurs="0"/>

<xs:element ref="v3:LossCongestionPercent" minOccurs="0"/>

<xs:element ref="v3:DelayCongestionPercent" minOccurs="0"/>

<xs:element ref="v3:ContentionDetectedPercent" minOccurs="0"/>

<xs:sequence minOccurs="0">

<xs:element ref="v3:Separator3" />

<xs:element ref="v4:WifiRetransmissionRate" minOccurs="0"/>

<xs:element ref="v4:WifiSendRate" minOccurs="0"/>

<xs:element ref="v4:WifiReceiveRate" minOccurs="0"/>

<xs:element ref="v4:WifiRetryCount" minOccurs="0"/>

<xs:element ref="v4:WifiTransmittedFrameCount" minOccurs="0"/>

<xs:element ref="v4:WifiMaxSendSpeed" minOccurs="0"/>

<xs:element ref="v4:WifiMaxReceiveSpeed" minOccurs="0"/>

<xs:element ref="v4:QoSMarkedRate" minOccurs="0"/>

<xs:sequence minOccurs="0">

<xs:element ref="v4:Separator4" />

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:sequence>

</xs:sequence>

</xs:sequence>

<xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

<xs:element name="RatioConcealedSamplesAvg" type="xs:float"/>

<xs:element name="RatioStretchedSamplesAvg" type="xs:float"/>

<xs:element name="RatioCompressedSamplesAvg" type="xs:float"/>

<xs:element name="Separator">

<xs:complexType></xs:complexType>

</xs:element>

##### Child Elements

The following table lists the child elements of the **Network** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **DSCP** | **xs:byte** | No | Not used. |
| **VLAN** | **xs:byte** | No | Not used. |
| **Jitter** | **JitterType** | Yes | [**Jitter**](#gt_f3b414cd-7c32-4a8f-a948-185e07661987) related metrics. |
| **PacketLoss** | **PacketLossType** | Yes | Packet loss related metrics. |
| **BurstGapLoss** | **BurstGapLossType** | Yes\*\* | Burst related metrics. |
| **Delay** | **DelayType** | Yes[<77>](#Appendix_A_77" \o "Product behavior note 77) | Delay related metrics. |
| **Utilization** | **NetworkUtilizationType** | Yes | Utilization related metrics. |
| **v2:RatioConcealedSamplesAvg** | **xs:float** | Yes\*\* | Ratio of the number of audio frames with samples generated by packet loss concealment to the total number of audio frames. |
| **v2:RatioStretchedSamplesAvg**[<78>](#Appendix_A_78" \o "Product behavior note 78) | **xs:float** | Yes\*\* | Ratio of the number of audio frames with samples that have been stretched to compensate for jitter or loss to the total number of audio frames. |
| **v2:RatioCompressedSamplesAvg**[<79>](#Appendix_A_79" \o "Product behavior note 79) | **xs:float** | Yes\*\* | Ratio of the number of audio frames with samples that have been compressed to compensate for jitter or loss to the total number of audio frames. |
| **v2:Separator**[<80>](#Appendix_A_80" \o "Product behavior note 80) | default | Yes | Separator element used for future schema extensions. |
| **v3:ConcealRatioMax**[<81>](#Appendix_A_81" \o "Product behavior note 81) | **xs:float** | Yes | Maximum value of the short term concealment ratio, which is the ratio of the number of audio frames (10 seconds) with samples that are compensated for jitter or loss to the total number of audio frames. |
| **v3:ConcealRatioSD** [<82>](#Appendix_A_82" \o "Product behavior note 82) | **xs:float** | Yes | Standard deviation of the short term concealment ratio, which is the ratio of the number of audio frames (10 seconds) with samples that are compensated for jitter or loss to the total number of audio frames. |
| **v3:HealerPacketDropRatio**[<83>](#Appendix_A_83" \o "Product behavior note 83) | **xs:float** | Yes | Ratio of audio packets dropped by healer over total number of audio packets received by healer. |
| **v3:HealerFECPacketUsedRatio**[<84>](#Appendix_A_84" \o "Product behavior note 84) | **xs:float** | Yes | Ratio of used FEC packets over total number of received FEC packets. |
| **v3:MaxCompressedSamples**[<85>](#Appendix_A_85" \o "Product behavior note 85) | **xs:int** | Yes | Maximum number of contiguous audio packets compressed by the healer. |
| **v3:LossCongestionPercent**[<86>](#Appendix_A_86" \o "Product behavior note 86) | **xs:float** | Outbound | Percentage of the call that congestion is detected due to high loss rate. |
| **v3:DelayCongestionPercent**[<87>](#Appendix_A_87" \o "Product behavior note 87) | **xs:float** | Outbound | Percentage of the call that congestion is detected due to high one way delay. |
| **v3:ContentionDetectedPercent**[<88>](#Appendix_A_88" \o "Product behavior note 88) | **xs:float** | Outbound | Percentage of the call that contention is detected. |
| **v3:Separator3**[<89>](#Appendix_A_89" \o "Product behavior note 89) | default | Yes | Separator element used for future schema extensions. |
| **v4:WifiRetransmissionRate**[<90>](#Appendix_A_90" \o "Product behavior note 90) | **xs:int** | Yes | The ratio of Wi-Fi frames that were transmitted unsuccessfully to total frames sent. |
| **v4:WifiSendRate**[<91>](#Appendix_A_91" \o "Product behavior note 91) | **xs:int** | Yes | The send rate of the Wi-Fi connection. |
| **v4:WifiReceiveRate**[<92>](#Appendix_A_92" \o "Product behavior note 92) | **xs:int** | Yes | The receive rate of the Wi-Fi connection. |
| **v4:WifiRetryCount**[<93>](#Appendix_A_93" \o "Product behavior note 93) | **xs:long** | Yes | The number of Wi-Fi frames that were sent successfully after one or more retry. |
| **v4:WifiTransmittedFrameCount**[<94>](#Appendix_A_94" \o "Product behavior note 94) | **xs:long** | Yes | The number of Wi-Fi frames that were successfully transmitted. |
| **v4:WifiMaxSendSpeed**[<95>](#Appendix_A_95" \o "Product behavior note 95) | **xs:int** | Yes | Maximum theoretical send speed in kbps. |
| **v4:WifiMaxReceiveSpeed**[<96>](#Appendix_A_96" \o "Product behavior note 96) | **xs:int** | Yes | Maximum theoretical receive speed in kbps. |
| **v4:QoSMarkedRate**[<97>](#Appendix_A_97" \o "Product behavior note 97) | **xs:int** | Yes | Percentage of packets that had QoS marked. Currently not used. |
| **v4:Separator4**[<98>](#Appendix_A_98" \o "Product behavior note 98) | default | Yes | Separator element used for future schema extensions. |

\*\* Available for **InboundStream** only

#### Payload Element

A **Payload** element contains payload-based metrics. The type of this element is **PayloadMetricsType**.

The **PayloadMetricsType** typeis defined as follows:

<xs:complexType name="PayloadMetricsType">

  <xs:choice>

    <xs:element name="Audio" type="tns:AudioPayloadMetricsType"/>

    <xs:element name="Video" type="tns:VideoPayloadMetricsType"/>

<xs:element name="ApplicationSharing" type="v3:ApplicationSharingPayloadMetricsType" />

    <xs:any namespace="##other" processContents="lax"

     maxOccurs="unbounded"/>

  </xs:choice>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **Payload** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Audio** | **AudioPayloadMetricsType** | Yes | Audio-based payload metrics. |
| **Video** | **VideoPayloadMetricsType** | Yes | Video-based payload metrics. |
| **ApplicationSharing****[<99>](#Appendix_A_99" \o "Product behavior note 99)** | **v3:ApplicationSharingPayloadMetricsType** | Yes | **ApplicationSharing** payload metrics. |

#### Payload.Audio Element

A **Payload.Audio** element contains audio-based payload metrics. The type of this element is **AudioPayloadMetricsType**.

The **AudioPayloadMetricsType** typeis defined as follows[<100>](#Appendix_A_100" \o "Product behavior note 100):

1. <xs:complexType name="AudioPayloadMetricsType">
2. <xs:sequence>
3. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
4. <xs:element name="PayloadDescription" type="xs:string"
5. minOccurs="0"/>
6. <xs:element name="SampleRate" type="xs:int" minOccurs="0"/>
7. <xs:element name="FrameDuration" type="xs:int" minOccurs="0"/>
8. <xs:element name="FrameOctets" type="xs:int" minOccurs="0"/>
9. <xs:element name="FramesPerPacket" type="xs:int" minOccurs="0"/>
10. <xs:element name="PacketsPerSecond" type="xs:int" minOccurs="0"/>
11. <xs:element name="FMTP" type="xs:string" minOccurs="0"/>
12. <xs:element name="Signal" type="tns:SignalType" minOccurs="0"/>
13. <xs:element name="JitterBuffer" type="tns:JitterBufferType"
14. minOccurs="0"/>
15. <xs:element name="SilenceSupress"
16. type="tns:SilenceSuppressionStateType" minOccurs="0"/>
17. <xs:element ref="v2:AudioFECUsed" minOccurs="0"/>
18. <xs:element ref="v2:OpaqueAudioData" minOccurs="0" />
19. <xs:sequence minOccurs="0">
20. <xs:element ref="v3:AudioPostFECPLR" minOccurs="0"/>
21. <xs:element ref="v2:Separator" />
22. <xs:element ref="v3:DecodeStereoPercent" minOccurs="0"/>
23. <xs:element ref="v3:AecRenderStereoPercent" minOccurs="0"/>
24. <xs:element ref="v3:EncodeStereoPercent" minOccurs="0"/>
25. <xs:element ref="v3:AecCaptureStereoPercent" minOccurs="0"/>
26. <xs:sequence minOccurs="0">
    1. <xs:element ref="v3:Separator3" />
    2. <xs:element ref="v4:JitterBufferSizeAvg" minOccurs="0"/>
    3. <xs:element ref="v4:JitterBufferSizeMax" minOccurs="0"/>
    4. <xs:element ref="v4:JitterBufferSizeMin" minOccurs="0"/>
    5. <xs:element ref="v4:JitterBufferSizeSD" minOccurs="0"/>
    6. <xs:element ref="v4:NetworkJitterAvg" minOccurs="0"/>
    7. <xs:element ref="v4:NetworkJitterMax" minOccurs="0"/>
    8. <xs:element ref="v4:NetworkJitterMin" minOccurs="0"/>
    9. <xs:element ref="v4:NetworkJitterSD" minOccurs="0"/>
    10. <xs:element ref="v4:PacketReorderRatio" minOccurs="0"/>
    11. <xs:element ref="v4:PacketReorderDepthAvg" minOccurs="0"/>
    12. <xs:element ref="v4:PacketReorderDepthMax" minOccurs="0"/>
    13. <xs:element ref="v4:BurstLossLength1" minOccurs="0"/>
    14. <xs:element ref="v4:BurstLossLength2" minOccurs="0"/>
    15. <xs:element ref="v4:BurstLossLength3" minOccurs="0"/>
    16. <xs:element ref="v4:BurstLossLength4" minOccurs="0"/>
    17. <xs:element ref="v4:BurstLossLength5" minOccurs="0"/>
    18. <xs:element ref="v4:BurstLossLength6" minOccurs="0"/>
    19. <xs:element ref="v4:BurstLossLength7" minOccurs="0"/>
    20. <xs:element ref="v4:BurstLossLength8OrHigher" minOccurs="0"/>
    21. <xs:element ref="v4:FECRecvOnPercent" minOccurs="0"/>
    22. <xs:element ref="v4:FECRecvDistance1" minOccurs="0"/>
    23. <xs:element ref="v4:FECRecvDistance2" minOccurs="0"/>
    24. <xs:element ref="v4:FECRecvDistance3" minOccurs="0"/>
    25. <xs:element ref="v4:FECRecvDistance4" minOccurs="0"/>
    26. <xs:element ref="v4:FECRecvDistance5" minOccurs="0"/>
    27. <xs:element ref="v4:FECRecvDistance6" minOccurs="0"/>
    28. <xs:element ref="v4:FECRecvDistance7" minOccurs="0"/>
    29. <xs:element ref="v4:FECRecvDistance8OrHigher" minOccurs="0"/>
    30. <xs:element ref="v4:FECRecvScheme" minOccurs="0"/>
    31. <xs:element ref="v4:FECRecvRedundancy" minOccurs="0"/>
    32. <xs:element ref="v4:HealerPushCount" minOccurs="0"/>
    33. <xs:element ref="v4:HealerPullCount" minOccurs="0"/>
    34. <xs:element ref="v4:SendMutePercent" minOccurs="0"/>
    35. <xs:element ref="v4:CaptureOffloadedEffectsAudio" minOccurs="0"/>
    36. <xs:element ref="v4:RenderOffloadedEffectsAudio" minOccurs="0"/>
    37. <xs:sequence minOccurs="0">
    38. <xs:element ref="v4:Separator4" />
    39. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:sequence>

</xs:sequence>

</xs:sequence>

</xs:complexType>

1. <xs:element name="AudioFECUsed" type="xs:boolean"/>
2. <xs:element name="Separator">
3. <xs:complexType></xs:complexType>
4. </xs:element>
5. <xs:simpleType name="SilenceSuppressionStateType">
6. <xs:restriction base="xs:string">
7. <xs:enumeration value="ON" />
8. <xs:enumeration value="OFF" />
9. </xs:restriction>
10. </xs:simpleType>
11. <xs:complexType name="JitterBufferType">
12. <xs:sequence>
13. <xs:element name="Type" type="tns:JitterBufferAdaptiveType"
14. minOccurs="0" />
15. <xs:element name="Rate" type="xs:int" minOccurs="0" />
16. <xs:element name="Nominal" type="xs:int" minOccurs="0" />
17. <xs:element name="Max" type="xs:int" minOccurs="0" />
18. <xs:element name="AbsMax" type="xs:int" minOccurs="0" />
19. <xs:any namespace="##other" processContents="lax" minOccurs="0"
20. maxOccurs="unbounded" />
21. </xs:sequence>
22. <xs:anyAttribute namespace="##other" processContents="lax" />
23. </xs:complexType>
24. <xs:simpleType name="JitterBufferAdaptiveType">
25. <xs:restriction base="xs:string">
26. <xs:enumeration value="UNKNOWN" />
27. <xs:enumeration value="RESERVED" />
28. <xs:enumeration value="NON-ADAPTIVE" />
29. <xs:enumeration value="ADAPTIVE" />
30. </xs:restriction>
31. </xs:simpleType>

##### Child Elements

The following table lists the child elements of the **Payload.Audio** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **PayloadType**[<101>](#Appendix_A_101" \o "Product behavior note 101) | **xs:int** | Yes | Payload number used for the [**codec**](#gt_6a2586b1-9b2a-4a00-aab6-70fef24bfddb), as specified in [[MS-RTP]](%5bMS-RTP%5d.pdf#Section_26dda7646e96456b810b9ae0275af564) section 2.2.1. | Integer |
| **PayloadDescription** | **xs:string [256]** | Yes | Codec name, as specified in [[MS-SDPEXT]](%5bMS-SDPEXT%5d.pdf#Section_cd17a549b94842a6aa6bfa707710faac) section 3.1.5.3 or [[RFC3551]](https://go.microsoft.com/fwlink/?LinkId=116464) section 6. | Not applicable |
| **SampleRate** | **xs:int** | Yes | Audio sample rate. | Samples per second |
| **FrameDuration** | **xs:int** | No | Not used. |  |
| **FrameOctets** | **xs:int** | No | Not used. |  |
| **FramesPerSecond** | **xs:int** | No | Not used. |  |
| **PacketsPerSecond** | **xs:int** | No | Not used. |  |
| **FMTP** | **xs:string** | No | Not used. |  |
| **Signal** | **SignalType** | Yes | Metrics regarding signal level and noise. | Not applicable |
| **JitterBuffer** | **JitterBufferType** | No | Not used. |  |
| **SilenceSupress** | **SilenceSuppressionStateType** | No | Not used. |  |
| **v2:AudioFECUsed**[<102>](#Appendix_A_102" \o "Product behavior note 102) | **xs:boolean** | Yes | "True" means that audio [**forward error correction (FEC)**](#gt_abc86a79-bd31-443b-9e73-83ef488303ff) was used at some point during the [**call**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d). "False" means that no audio FEC was used during the call. | Not applicable |
| **v2:OpaqueAudioData****[<103>](#Appendix_A_103" \o "Product behavior note 103)** | **v2:OpaqueAudioDataType** | No | Not used. |  |
| **v3:AudioPostFECPLR**[<104>](#Appendix_A_104" \o "Product behavior note 104) | **xs:float** | No | Reports packet loss rate after FEC has been applied for audio. Value between 0.00 and 1.00. | Percentage |
| **v2:Separator**[<105>](#Appendix_A_105" \o "Product behavior note 105) | default | No | Separator element used for future schema extensions. | Not applicable |
| **v3:DecodeStereoPercent** [<106>](#Appendix_A_106" \o "Product behavior note 106) | **xs:float** | Yes | Percentage of audio decoded as stereo. | Percentage |
| **v3:AecRenderStereoPercent**[<107>](#Appendix_A_107" \o "Product behavior note 107) | **xs:float** | Yes | Percentage of call processed by AEC as stereo render. | Percentage |
| **v3:EncodeStereoPercent** [<108>](#Appendix_A_108" \o "Product behavior note 108) | **xs:float** | Yes | Percentage of audio encoded as stereo. | Percentage |
| **v3:AecCaptureStereoPercent** [<109>](#Appendix_A_109" \o "Product behavior note 109) | **xs:float** | Yes | Percentage of call processed by AEC as stereo capture. | Percentage |
| **v3:Separator3**[<110>](#Appendix_A_110" \o "Product behavior note 110) | default | No | Separator element used for future schema extensions. | Not applicable |
| **v4:JitterBufferSizeAvg**[<111>](#Appendix_A_111" \o "Product behavior note 111) | **xs:int** | Yes | Average size of jitter buffer during session. | milliseconds |
| **v4:JitterBufferSizeMax**[<112>](#Appendix_A_112" \o "Product behavior note 112) | **xs:int** | Yes | Maximum size of jitter buffer during session. | Milliseconds |
| **v4:JitterBufferSizeMin**[<113>](#Appendix_A_113" \o "Product behavior note 113) | **xs:int** | Yes | Minimum size of jitter buffer during session. | Milliseconds |
| **v4:JitterBufferSizeSD**[<114>](#Appendix_A_114" \o "Product behavior note 114) | **xs:int** | Yes | Standard deviation of jitter buffer size during session. | milliseconds |
| **v4:NetworkJitterAvg**[<115>](#Appendix_A_115" \o "Product behavior note 115) | **xs:float** | Yes | Average of network jitter computed over 20 second windows during the session. | milliseconds |
| **v4:NetworkJitterMax**[<116>](#Appendix_A_116" \o "Product behavior note 116) | **xs:float** | Yes | Maximum of network jitter computed over 20 second windows during the session. | milliseconds |
| **v4:NetworkJitterMin**[<117>](#Appendix_A_117" \o "Product behavior note 117) | **xs:float** | Yes | Minimum of network jitter computed over 20 second window during the session. | milliseconds |
| **v4:NetworkJitterSD**[<118>](#Appendix_A_118" \o "Product behavior note 118) | **xs:float** | Yes | Standard deviation of network jitter computed over 20 second window during the session. | milliseconds |
| **v4:PacketReorderRatio**[<119>](#Appendix_A_119" \o "Product behavior note 119) | **xs:float** | Yes | Ratio of packets received that were out of sequence during the session. | Fraction |
| **v4:PacketReorderDepthAvg**[<120>](#Appendix_A_120" \o "Product behavior note 120) | **xs:int** | Yes | Average of the number of packets between the when the current packet and the out-of sequence packet was received. | packets |
| **v4:PacketReorderDepthMax**[<121>](#Appendix_A_121" \o "Product behavior note 121) | **xs:int** | Yes | Maximum of the number of packets between the when the current packet and the out-of sequence packet was received. | packets |
| **v4:BurstLossLength1**[<122>](#Appendix_A_122" \o "Product behavior note 122) | **xs:float** | Yes | Ratio of lost single lost packet over the total number packets for the session. | Fraction |
| **v4:BurstLossLength2**[<123>](#Appendix_A_123" \o "Product behavior note 123) | **xs:float** | Yes | Ratio of 2 consecutive lost packets over the total number packets for the session. | Fraction |
| **v4:BurstLossLength3**[<124>](#Appendix_A_124" \o "Product behavior note 124) | **xs:float** | Yes | Ratio of 3 consecutive lost packets over the total number packets for the session. | Fraction |
| **v4:BurstLossLength4**[<125>](#Appendix_A_125" \o "Product behavior note 125) | **xs:float** | Yes | Ratio of 4 consecutive lost packets over the total number packets for the session. | Fraction |
| **v4:BurstLossLength5**[<126>](#Appendix_A_126" \o "Product behavior note 126) | **xs:float** | Yes | Ratio of 5 consecutive lost packets over the total number packets for the session. | Fraction |
| **v4:BurstLossLength6**[<127>](#Appendix_A_127" \o "Product behavior note 127) | **xs:float** | Yes | Ratio of 6 consecutive lost packets over the total number packets for the session. | Fraction |
| **v4:BurstLossLength7**[<128>](#Appendix_A_128" \o "Product behavior note 128) | **xs:float** | Yes | Ratio of 7 consecutive lost packets over the total number packets for the session. | Fraction |
| **v4:BurstLossLength8OrHigher**[<129>](#Appendix_A_129" \o "Product behavior note 129) | **xs:float** | Yes | Ratio of 8 or more consecutive lost packets over the total number packets for the session. | Fraction |
| **v4:FECRecvOnPercent**[<130>](#Appendix_A_130" \o "Product behavior note 130) | **xs:float** | Yes | Percentage of session where FEC was enabled for packets received. | Percentage |
| **v4:FECRecvDistance1**[<131>](#Appendix_A_131" \o "Product behavior note 131) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 1 was received. | Percentage |
| **v4:FECRecvDistance2**[<132>](#Appendix_A_132" \o "Product behavior note 132) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 2 was received. | Percentage |
| **v4:FECRecvDistance3**[<133>](#Appendix_A_133" \o "Product behavior note 133) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 3 was received. | Percentage |
| **v4:FECRecvDistance4**[<134>](#Appendix_A_134" \o "Product behavior note 134) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 4 was received. | Percentage |
| **v4:FECRecvDistance5**[<135>](#Appendix_A_135" \o "Product behavior note 135) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 5 was received. | Percentage |
| **v4:FECRecvDistance6**[<136>](#Appendix_A_136" \o "Product behavior note 136) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 6 was received. | Percentage |
| **v4:FECRecvDistance7**[<137>](#Appendix_A_137" \o "Product behavior note 137) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 7 was received. | Percentage |
| **v4:FECRecvDistance8OrHigher**[<138>](#Appendix_A_138" \o "Product behavior note 138) | **xs:float** | Yes | Percentage of session where packets with FEC distance of 8 or larger was received. | Percentage |
| **v4:FECRecvScheme**[<139>](#Appendix_A_139" \o "Product behavior note 139) | **xs:float** | Yes | Track which FEC scheme is being used during session. | 0 – codec level FEC (in-band)  1 –external FEC (RFC 2198) |
| **v4:FECRecvRedundancy**[<140>](#Appendix_A_140" \o "Product behavior note 140) | **xs:float** | Yes | Average FEC redundancy for packets received. | float |
| **v4:HealerPushCount**[<141>](#Appendix_A_141" \o "Product behavior note 141) | **xs:int** | Yes | Number of packets pushed into the audio healer/jitter buffer from network. | packets |
| **v4:HealerPullCount**[<142>](#Appendix_A_142" \o "Product behavior note 142) | **xs:int** | Yes | Number of packets pulled from the audio healer/jitter buffer to be rendered or mixed. | packets |
| **v4:SendMutePercent**[<143>](#Appendix_A_143" \o "Product behavior note 143) | **xs:float** | Yes | Percentage of session duration where the client was muted. | percentage |
| **v4:CaptureOffloadedEffectsAudio**[<144>](#Appendix_A_144" \o "Product behavior note 144) | **xs:int** | Yes | Bitmask representing which audio capture DSP effects were used in hardware. | TBD |
| **v4:RenderOffloadedEffectsAudio**[<145>](#Appendix_A_145" \o "Product behavior note 145) | **xs:int** | Yes | Bitmask representing which audio render DSP effects were used in hardware. | TBD |
| **v4:Separator4**[<146>](#Appendix_A_146" \o "Product behavior note 146) | default | Yes | Separator used for future schema extensions. | Not applicable |

#### Payload.Video Element

A **Payload.Video** element contains video-based payload metrics. The type of this element is **VideoPayloadMetricsType**.

The **VideoPayloadMetricsType** type is defined as follows[<147>](#Appendix_A_147" \o "Product behavior note 147):

1. <xs:complexType name="VideoPayloadMetricsType">
2. <xs:sequence>
3. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
4. <xs:element name="PayloadDescription" type="xs:string"
5. minOccurs="0"/>
6. <xs:element name="Resolution" type="xs:string" minOccurs="0"/>
7. <xs:element name="VideoBitRateAvg" type="xs:int" minOccurs="0"/>
8. <xs:element name="VideoBitRateMax" type="xs:int" minOccurs="0"/>
9. <xs:element name="VideoFrameRateAvg" type="xs:float" minOccurs="0"/>
10. <xs:element name="VideoPacketLossRate" type="xs:float"
11. minOccurs="0"/>
12. <xs:element name="VideoFrameLossRate" type="xs:float"
13. minOccurs="0"/>
14. <xs:element name="VideoFrameEncodingTime" type="xs:float"
15. minOccurs="0"/>
16. <xs:element name="VideoFrameDecodingTime" type="xs:float"
17. minOccurs="0"/>
18. <xs:element name="VideoFEC" type="xs:boolean" minOccurs="0"/>
19. <xs:element name="FrozenVideoFreq" type="xs:float" minOccurs="0"/>
20. <xs:element name="FrozenPeriodPercentAvg" type="xs:float" minOccurs="0"/>
21. <xs:element name="ConsecutivePacketLossAvg" type="xs:float"
22. minOccurs="0"/>
23. <xs:element name="RateMatchLevel" type="xs:float" minOccurs="0"/>
24. <xs:element ref="v2:VideoAllocateBWAvg" minOccurs="0"/>
25. <xs:element ref="v2:VideoLocalFrameLossPercentageAvg" minOccurs="0"/>
26. <xs:sequence minOccurs="0">
27. <xs:element ref="v2:Separator" />
28. <xs:element ref="v2:VideoResolutionDistribution" minOccurs="0" />
29. <xs:element ref="v2:VideoRateMatchingLevelDistribution" minOccurs="0" />
30. <xs:sequence minOccurs="0">
31. <xs:element ref="v2:Separator" />
32. <xs:element ref="v3:SendCodecTypes" minOccurs="0"/>
33. <xs:element ref="v3:SendFrameRateAverage" minOccurs="0"/>
34. <xs:element ref="v3:SendBitRateMaximum" minOccurs="0"/>
35. <xs:element ref="v3:SendBitRateAverage" minOccurs="0"/>
36. <xs:element ref="v3:SendVideoStreamsMax" minOccurs="0"/>
37. <xs:element ref="v3:SendResolutionWidth" minOccurs="0"/>
38. <xs:element ref="v3:SendResolutionHeight" minOccurs="0"/>
40. <xs:element ref="v3:RecvCodecTypes" minOccurs="0"/>
41. <xs:element ref="v3:RecvResolutionWidth" minOccurs="0"/>
42. <xs:element ref="v3:RecvResolutionHeight" minOccurs="0"/>
43. <xs:element ref="v3:RecvFrameRateAverage" minOccurs="0"/>
44. <xs:element ref="v3:RecvBitRateMaximum" minOccurs="0"/>
45. <xs:element ref="v3:RecvBitRateAverage" minOccurs="0"/>
46. <xs:element ref="v3:RecvVideoStreamsMax" minOccurs="0"/>
47. <xs:element ref="v3:RecvVideoStreamsMin" minOccurs="0"/>
48. <xs:element ref="v3:RecvVideoStreamsMode" minOccurs="0"/>
49. <xs:element ref="v3:VideoPostFECPLR" minOccurs="0"/>
51. <xs:element ref="v3:DynamicCapabilityPercent" minOccurs="0"/>
52. <xs:element ref="v3:ResolutionMin" minOccurs="0"/>
53. <xs:element ref="v3:LowBitRateCallPercent" minOccurs="0"/>
54. <xs:element ref="v3:LowFrameRateCallPercent" minOccurs="0"/>
55. <xs:element ref="v3:LowResolutionCallPercent" minOccurs="0"/>
56. <!-- Added to support multiple video payloads in single stream-->
57. <xs:element ref="v3:DurationSeconds" minOccurs="0" />
58. <xs:element ref="v3:IsAggregatedData" minOccurs="0" />
59. <xs:element ref="v3:UseForCallClassification" minOccurs="0" />
61. <xs:sequence minOccurs="0">
62. <xs:element ref="v3:Separator3" />
63. <xs:element ref="v4:RecvReorderBufferTotalPackets" minOccurs="0" />
64. <xs:element ref="v4:RecvReorderBufferReorderedPackets" minOccurs="0" />
65. <xs:element ref="v4:RecvReorderBufferReorderedPacketsSuccessfullyOrdered" minOccurs="0" />
66. <xs:element ref="v4:RecvReorderBufferPacketsDroppedDueToBufferExhaustion" minOccurs="0" />
67. <xs:element ref="v4:RecvReorderBufferMaxSuccessfullyOrderedExtent" minOccurs="0" />
68. <xs:element ref="v4:RecvReorderBufferMaxSuccessfullyOrderedLateTime" minOccurs="0" />
69. <xs:element ref="v4:RecvReorderBufferPacketsDroppedDueToTimeout" minOccurs="0" />
71. <xs:sequence minOccurs="0">
72. <xs:element ref="v4:Separator4" />
73. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
74. </xs:sequence>
75. </xs:sequence>
76. </xs:sequence>
77. </xs:sequence>
78. </xs:sequence>
79. </xs:complexType>
80. <xs:element name="VideoAllocateBWAvg" type="xs:int"/>
81. <xs:element name="VideoLocalFrameLossPercentageAvg" type="xs:float"/>
82. <xs:element name="Separator">
83. <xs:complexType></xs:complexType>
84. </xs:element>

##### Child Elements

The following table lists the child elements of the **Payload.Video** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **PayloadType**[<148>](#Appendix_A_148" \o "Product behavior note 148) | **xs:int** | Yes | Payload number used for the [**codec**](#gt_6a2586b1-9b2a-4a00-aab6-70fef24bfddb), as specified in [[MS-RTP]](%5bMS-RTP%5d.pdf#Section_26dda7646e96456b810b9ae0275af564) section 2.2.1. | Integer |
| **PayloadDescription** | **xs:string [256]** | Yes | Codec name, as specified in [[MS-SDPEXT]](%5bMS-SDPEXT%5d.pdf#Section_cd17a549b94842a6aa6bfa707710faac) section 3.1.5.3 or [[RFC3551]](https://go.microsoft.com/fwlink/?LinkId=116464) section 6. | Not applicable |
| **Resolution** | **xs:string [9]** | Yes | Report video resolution in pixels, in the string format of Width x Height without spaces, for example "640x480". | Pixels |
| **VideoBitRateAvg** | **xs:int** | Yes | Average bit rate, or bits per second, sent or received for a video [**stream (2)**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6), computed over the duration of the [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12). This includes raw video and transport bits. | Bits per second |
| **VideoBitRateMax** | **xs:int** | Yes | Maximum bit rate, or bits per second, sent or received for a video stream (2), computed over the duration of the session. | Bits per second |
| **VideoFrameRateAvg** | **xs:float** | Yes | Average frames per second sent or received for a video stream (2), computed over the duration of the session. | Frames per second |
| **VideoPacketLossRate** | **xs:float** | Outbound | The average fraction lost, as specified in [[RFC3550]](https://go.microsoft.com/fwlink/?LinkId=90433) section 6.4.1, computed over the duration of the session. | Fraction |
| **VideoFrameLossRate** | **xs:float** | Inbound | The average fraction of frames lost on the video receiver side, computed over the duration of the session. | Fraction |
| **VideoFrameEncodingTime** | **xs:float** | Outbound | Average frame encoding time. This is the time difference between encoding start and encoding finish, computed over the duration of the session. | Milliseconds |
| **VideoFrameDecodingTime** | **xs:float** | Inbound | Average frame decoding time. This is the time difference between decoding start and decoding finish, computed over the duration of the session. | Milliseconds |
| **VideoFEC** | **xs:boolean** | No | Not used. | Not applicable |
| **FrozenVideoFreq** | **xs:float** | Inbound | Frequency of occurrence of long duration frozen video, where long duration is defined as no video frames displayed for more than 1 second. Equal to the ratio of total occurrence over session duration. | Fraction |
| **FrozenPeriodPercentAvg**[<149>](#Appendix_A_149" \o "Product behavior note 149) | **xs:float** | Inbound | Percentage of total [**call**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d) duration for which frozen video was observed. | Percentage |
| **ConsecutivePacketLossAvg**[<150>](#Appendix_A_150" \o "Product behavior note 150) | **xs:float** | Inbound | Average number of consecutive packets lost during a video session. | Packets |
| **RateMatchLevel**[<151>](#Appendix_A_151" \o "Product behavior note 151) | **xs:float** | Outbound | Describes the level of frame rate matching in video sessions. This is the average of the level values encountered in the [**RTVideo**](#gt_77b95337-3c30-404e-8267-05b28aa896c5) bit stream (2). Zero ("0") corresponds to the case where all frame types ([**I-frames**](#gt_0bf0924b-a250-4423-bb9d-4b86549e9c3c), [**Super P-frames (SP-frames)**](#gt_c634a7a2-4e78-47ec-9fd5-8d92fad97348), [**P-frames**](#gt_0b9676d2-c63c-455a-b994-54bdda204376), and [**B-frames**](#gt_1d5b0620-76d3-4981-8b8b-671639f970b7)) are transmitted. "1" corresponds to the case where I-frames, SP-frames, and P-frames are transmitted. "2" corresponds to the case where I-frames and SP-frames are transmitted. "3" corresponds to the case where only I-frames are transmitted. | Not applicable |
| **v2:VideoAllocateBWAvg**[<152>](#Appendix_A_152" \o "Product behavior note 152) | **xs:int** | Outbound | The bandwidth allocated for sending video. | Bits per second |
| **v2:VideoLocalFrameLossPercentageAvg**[<153>](#Appendix_A_153" \o "Product behavior note 153) | **xs:float** | Inbound | The average percentage of video frames lost as displayed to the user. This includes frames recovered from network losses. | Percentage |
| **v2:Separator**[<154>](#Appendix_A_154" \o "Product behavior note 154) | default | No | Separator element used for future schema extensions. | Not applicable |
| **v2:VideoResolutionDistribution**[<155>](#Appendix_A_155" \o "Product behavior note 155) | **VideoResolutionDistributionType** | Inbound/Outbound | The distribution of received or sent video resolution. | Not applicable |
| **v2:** **VideoRateMatchingLevelDistribution**[<156>](#Appendix_A_156" \o "Product behavior note 156) | **VideoRateMatchingLevelDistributionType** | Inbound | The distribution of received video rate matching level. | Not applicable |
| **v2:Separator**[<157>](#Appendix_A_157" \o "Product behavior note 157) | default | No | Separator element used for future schema extensions. | Not applicable |
| **v3:SendCodecTypes**[<158>](#Appendix_A_158" \o "Product behavior note 158) | **xs:string [256]** | Outbound | Codec name, as specified in [MS-SDPEXT] section 3.1.5.3 or [RFC3551] section 6 concatenated by an indicator of resource type of the codec. See section [2.2.1.15.1.1](#Section_04acc27013af4111989db4c5af9f5250). | Not applicable |
| **v3:SendResolutionWidth**[<159>](#Appendix_A_159" \o "Product behavior note 159) | **xs:int** | Outbound | The maximum video image width sent for all video streams (2), computed over the duration of the session. | Pixels |
| **v3:SendResolutionHeight**[<160>](#Appendix_A_160" \o "Product behavior note 160) | **xs:int** | Outbound | The maximum video image height sent for all video streams (2), computed over the duration of the session. | Pixels |
| **v3:SendFrameRateAverage**[<161>](#Appendix_A_161" \o "Product behavior note 161) | **xs:float** | Outbound | Average frames per second sent for all video streams (2), computed over the duration of the session. | Frames per second |
| **v3:SendBitRateMaximum**[<162>](#Appendix_A_162" \o "Product behavior note 162) | **xs:int** | Outbound | The maximum bandwidth actually sent for all video streams (2), computed over the duration of the session. | Bits per second |
| **v3:SendBitRateAverage**[<163>](#Appendix_A_163" \o "Product behavior note 163) | **xs:int** | Outbound | The average bandwidth actually sent for all video streams (2), computed over the duration of the session. | Bits per second |
| **v3:SendVideoStreamsMax**[<164>](#Appendix_A_164" \o "Product behavior note 164) | **xs:int** | Outbound | The maximum number of video streams (2), active during any one second interval, computed over the duration of the session. | Streams |
| **v3:RecvCodecTypes**[<165>](#Appendix_A_165" \o "Product behavior note 165) | **xs:string [256]** | Inbound | Codec name, as specified in [MS-SDPEXT] section 3.1.5.3 or [RFC3551] section 6 concatenated by resource type. See section [2.2.1.15.1.2](#Section_4aecc063042b44eca2921a6abff80b80) | Not applicable |
| **v3:RecvResolutionWidth**[<166>](#Appendix_A_166" \o "Product behavior note 166) | **xs:int** | Inbound | The maximum video image width received for all video streams (2), computed over the duration of the session. | Pixels |
| **v3:RecvResolutionHeight**[<167>](#Appendix_A_167" \o "Product behavior note 167) | **xs:int** | Inbound | The maximum video image height received for all video streams (2), computed over the duration of the session. | Pixels |
| **v3:RecvFrameRateAverage**[<168>](#Appendix_A_168" \o "Product behavior note 168) | **xs:float** | Inbound | Average frames per second received for all video streams (2), computed over the duration of the session. | Frames per second |
| **v3:RecvBitRateMaximum**[<169>](#Appendix_A_169" \o "Product behavior note 169) | **xs:int** | Inbound | The maximum bandwidth received for all video streams (2), computed over the duration of the session. | Bits per second |
| **v3:RecvBitRateAverage**[<170>](#Appendix_A_170" \o "Product behavior note 170) | **xs:int** | Inbound | The average bandwidth received for all video streams (2), computed over the duration of the session. | Bits per second |
| **v3:RecvVideoStreamsMax**[<171>](#Appendix_A_171" \o "Product behavior note 171) | **xs:int** | Inbound | The maximum number of video streams (2), received during any one second interval, computed over the duration of the session. | Streams |
| **v3:RecvVideoStreamsMin**[<172>](#Appendix_A_172" \o "Product behavior note 172) | **xs:int** | Inbound | The minimum number of video streams (2), received during any one second interval, computed over the duration of the session. | Streams |
| **v3:RecvVideoStreamsMode**[<173>](#Appendix_A_173" \o "Product behavior note 173) | **xs:int** | Inbound | The most common number ("mode") of video streams (2), received during any one second interval, computed over the duration of the session. | Streams |
| **v3:VideoPostFECPLR**[<174>](#Appendix_A_174" \o "Product behavior note 174) | **xs:float** | Inbound | Reports packet loss rate after FEC has been applied for video. Aggregated across all video streams and codecs. Value between 0.00 and 1.00. | Percentage |
| **v3:DynamicCapabilityPercent**[<175>](#Appendix_A_175" \o "Product behavior note 175) | **xs:float** | Inbound/Outbound | Percentage of time that the client is running under capability of less than 0.7 of expected capability for this type of CPU. Inbound and Outbound are identical since it measures the client, not the channel. | Percentage |
| **v3:ResolutionMin**[<176>](#Appendix_A_176" \o "Product behavior note 176) | **xs:boolean** | No | True if channel ever received resolution less than 120 (for smaller dimension). False otherwise. |  |
| **v3:LowBitRateCallPercent**[<177>](#Appendix_A_177" \o "Product behavior note 177) | **xs:float** | Inbound | Percentage of time of the call where bit rate is 70 kilobits per second or less. | Percentage |
| **v3:LowFrameRateCallPercent**[<178>](#Appendix_A_178" \o "Product behavior note 178) | **xs:float** | Inbound | Percentage of time of the call where frame rate is less than 7.5 frames per second. | Percentage |
| **v3:LowResolutionCallPercent**[<179>](#Appendix_A_179" \o "Product behavior note 179) | **xs:float** | No | Percentage of time of the call where resolution is low. Threshold is 120 pixels for smaller dimension. |  |
| **v3:DurationSeconds** | **xs:float** | Inbound/Outbound | Length of the call in seconds. | Seconds |
| **v3:IsAggregatedData** | **xs:boolean** | Inbound/Outbound | Indicates whether the data has been aggregated from multiple calls. | Not applicable |
| **v3:UseForCallClassification** | **xs:boolean** | Inbound/Outbound | Indicates whether the stream is for call classification. | Not applicable |
| **v3:Separator3**[<180>](#Appendix_A_180" \o "Product behavior note 180) | default | No | Separator element used for future schema extensions. | Not applicable |
| **v4:RecvReorderBufferTotalPackets**[<181>](#Appendix_A_181" \o "Product behavior note 181) | **xs:int** | Inbound | Total video packets received during the call. | Packets |
| **v4:** **RecvReorderBufferReorderedPackets**[<182>](#Appendix_A_182" \o "Product behavior note 182) | **xs:int** | Inbound | Total video packets received out of order during the call. | Packets |
| **v4:** **RecvReorderBufferReorderedPacketsSuccessfullyOrdered**[<183>](#Appendix_A_183" \o "Product behavior note 183) | **xs:int** | Inbound | Total video packets received out of sequence but were successfully ordered. | Packets |
| **v4:** **RecvReorderBufferPacketsDroppedDueToBufferExhaustion**[<184>](#Appendix_A_184" \o "Product behavior note 184) | **xs:int** | Inbound | Total video packets dropped resulting from high jitter/packet loss during high bitrate video calls. | Packets |
| **v4:** **RecvReorderBufferMaxSuccessfullyOrderedExtent**[<185>](#Appendix_A_185" \o "Product behavior note 185) | **xs:int** | Inbound | Maximum reordering extent of received reordered packets.  Reordering extent is defined by [[RFC4737]](https://go.microsoft.com/fwlink/?LinkId=613618) section 4.2. |  |
| **v4:** **RecvReorderBufferMaxSuccessfullyOrderedLateTime**[<186>](#Appendix_A_186" \o "Product behavior note 186) | **xs:int** | Inbound | Maximum late time offset of received reordered packets in 100ns units.  Late time offset is defined by [RFC4737] section 4.3. |  |
| **v4:** **RecvReorderBufferPacketsDroppedDueToTimeout**[<187>](#Appendix_A_187" \o "Product behavior note 187) | **xs:int** | Inbound | Total video packets received by the network, but discarded because they arrived too late relative to other packets, due to high network jitter. | Packets |
| **v4:Separator4**[<188>](#Appendix_A_188" \o "Product behavior note 188) | default | No | Separator element used for future schema extensions. | Not applicable |

###### v3:SendCodecTypes Element

This is filled by the codec name, as specified in [[MS-SDPEXT]](%5bMS-SDPEXT%5d.pdf#Section_cd17a549b94842a6aa6bfa707710faac) section 3.1.5.3 or [[RFC3551]](https://go.microsoft.com/fwlink/?LinkId=116464) section 6 concatenated by a string that describes the type of codec resource used.[<189>](#Appendix_A_189" \o "Product behavior note 189) The codec resource choices for outbound direction (that is, encoding) are as follows:

| Type | String | Description |
| --- | --- | --- |
| Software | SW | Software encoding integrated in app, running on CPU. |
| Inbox Software | SWI | Software encoding using Operating System component, running on CPU. |
| Hardware | HW | Hardware encoding integrated in app, running on DSP or dedicated hardware. |
| Inbox Hardware | HWI | Hardware encoding using Operating System component, running on DSP or dedicated hardware. |
| Camera | CAM | H.264 encoding camera. |

Example: For the H264 codec, if a portion of the call is HW but then the application switches to SW, then **v3:SendCodecTypes** element will be filled with "H264 SW-HW".

###### v3:RecvCodecTypes Element

This is filled by the codec name, as specified in [[MS-SDPEXT]](%5bMS-SDPEXT%5d.pdf#Section_cd17a549b94842a6aa6bfa707710faac) section 3.1.5.3 or [[RFC3551]](https://go.microsoft.com/fwlink/?LinkId=116464) section 6 concatenated by a string that describes the type of codec resource used. [<190>](#Appendix_A_190" \o "Product behavior note 190) The codec resource choices for inbound direction (that is, decoding) are as follows:

| Type | String | Description |
| --- | --- | --- |
| Software | SW | Software decoding integrated in app, running on CPU. |
| Inbox Software | SWI | Software decoding using Operating System component, running on CPU. |
| Hardware | HW | Hardware decoding integrated in app, running on DSP or dedicated hardware. |
| Inbox Hardware | HWI | Hardware decoding using Operating System component, running on DSP or dedicated hardware. |

###### List of combined resource types

The full list of possible ordered combinations for the concatenated string of codec resources is as follows:

"Invalid"

    "SW"

    "SWI"

    "SW-SWI"

    "HW"

    "SW-HW"

    "SWI-HW"

    "SW-SWI-HW"

    "HWI"

    "SW-HWI"

    "SWI-HWI"

    "SW-SWI-HWI"

    "HW-HWI"

    "SW-HW-HWI"

    "SWI-HW-HWI"

    "SW-SWI-HW-HWI"

    "CAM"

    "SW-CAM"

    "SWI-CAM"

    "SW-SWI-CAM"

    "HW-CAM"

    "SW-HW-CAM"

    "SWI-HW-CAM"

    "SW-SWI-HW-CAM"

    "HWI-CAM"

    "SW-HWI-CAM"

    "SWI-HWI-CAM"

    "SW-SWI-HWI-CAM"

    "HW-HWI-CAM"

    "SW-HW-HWI-CAM"

    "SWI-HW-HWI-CAM"

    "SW-SWI-HW-HWI-CAM"

#### v3:AdditionalPayload Element

A **v3:AdditionalPayload** element contains video metrics pertaining to the second codec in the channel.[<191>](#Appendix_A_191" \o "Product behavior note 191) The **Payload** element carries the video metrics pertaining to the first codec in the channel.

If the channel streamed both H.264 and VC-1 video content, then all metrics specific to H.264 are carried in the **Payload** element and all metrics specific to VC-1 are carried in the **v3:AdditionalPayload** element. If only H.264 content is streamed, then the metrics are carried in the **Payload** element and the **v3:AdditionalPayload** element does not exist in the report. If only VC-1 content is streamed then the metrics are placed in the **Payload** element and the **v3:AdditionalPayload** element does not exist in the report.

##### Child Elements

The child elements of **v3:AdditionalPayload** are the same as those of **Payload** (see section [2.2.1.15](#Section_ff080d43ed1543a7a69ff872957e70a2)).

#### v2:VideoResolutionDistribution Element

A **VideoResolutionDistribution** element contains metrics representing a distribution of video resolutions. The type of this element is **VideoResolutionDistributionType**.[<192>](#Appendix_A_192" \o "Product behavior note 192)

The **VideoResolutionDistributionType** type is defined as follows:

1. <xs:complexType name="VideoResolutionDistributionType">
2. <xs:sequence>
3. <xs:element name="CIFQuality" type="xs:unsignedByte" />
4. <xs:element name="VGAQuality" type="xs:unsignedByte" />
5. <xs:element name="HD720Quality" type="xs:unsignedByte" />
6. <xs:sequence minOccurs="0">
7. <xs:element ref="tns:Separator"/>
8. <xs:any namespace="##any" processContents="lax"
9. minOccurs="0" maxOccurs="unbounded"/>
10. </xs:sequence>
11. </xs:sequence>
12. <xs:anyAttribute namespace="##any" processContents="lax"/>
13. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **VideoResolutionDistribution** element.[<193>](#Appendix_A_193" \o "Product behavior note 193)

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **CIFQuality**[<194>](#Appendix_A_194" \o "Product behavior note 194) | **xs:unsigned byte** | Yes | The percentage of the duration of a [**call**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d) that is using the [**CIF**](#gt_f51b459e-f8af-4dc7-ba4c-023f13d81ec9) resolution defined in the following table. | Percentage (0-100) |
| **VGAQuality**[<195>](#Appendix_A_195" \o "Product behavior note 195) | **xs:unsigned byte** | Yes | The percentage of the duration of a call that is using the VGA resolution defined in the following table. | Percentage (0-100) |
| **HD720Quality**[<196>](#Appendix_A_196" \o "Product behavior note 196) | **xs:unsigned byte** | Yes | The percentage of the duration of a call that is using the HD720 resolution defined in the following table. | Percentage (0-100) |
| **Separator**[<197>](#Appendix_A_197" \o "Product behavior note 197) | default | No | Separator element used for future schema extensions. | Not applicable |

The following table lists the values of height and width in pixels of the resolution used by elements within the **VideoResolutionDistribution** element.

| Resolution | Width | Height |
| --- | --- | --- |
| CIF | 240 ≤ width < 480 | height ≥ 180 |
| CIF | width ≥ 240 | 180 ≤ height < 360 |
| VGA | 480 ≤ width < 960 | height ≥ 360 |
| VGA | width ≥ 480 | 360 ≤ height < 600 |
| HD720 | width ≥ 960 | height ≥ 600 |

#### v2:VideoRateMatchingLevelDistribution Element

A **VideoRateMatchingLevelDistribution** element contains metrics describing the portion of the [**call**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d) where video frames are discarded to reduce bandwidth. The type of this element is **VideoRateMatchingLevelDistributionType**.[<198>](#Appendix_A_198" \o "Product behavior note 198)

The **VideoRateMatchingLevelDistributionType** type is defined as follows:

1. <xs:complexType name="VideoRateMatchingLevelDistributionType">
2. <xs:sequence>
3. <xs:element name="None\_Drop" type="xs:unsignedByte" />
4. <xs:element name="B\_Drop" type="xs:unsignedByte" />
5. <xs:element name="BP\_Drop" type="xs:unsignedByte" />
6. <xs:element name="BPSP\_Drop" type="xs:unsignedByte" />
7. <xs:element name="BPSPI\_Drop" type="xs:unsignedByte" />
8. <xs:sequence minOccurs="0">
9. <xs:element ref="tns:Separator"/>
10. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
11. </xs:sequence>
12. </xs:sequence>
13. <xs:anyAttribute namespace="##any" processContents="lax"/>
14. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **VideoRateMatchingLevelDistribution** element.[<199>](#Appendix_A_199" \o "Product behavior note 199)

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **None\_Drop**[<200>](#Appendix_A_200" \o "Product behavior note 200) | **xs:unsigned byte** | Yes | The percentage of the duration of a [**call**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d) where no frame types were dropped to reduce bandwidth. | Percentage (0-100) |
| **B\_Drop**[<201>](#Appendix_A_201" \o "Product behavior note 201) | **xs:unsigned byte** | Yes | The percentage of the duration of a call where only [**B-frames**](#gt_1d5b0620-76d3-4981-8b8b-671639f970b7) were dropped to reduce bandwidth. Refer to [[MS-RTVPF]](%5bMS-RTVPF%5d.pdf#Section_3f37858bc99141c4bbbddf10fcffc89e) section 1.1 for details about frame types. | Percentage (0-100) |
| **BP\_Drop**[<202>](#Appendix_A_202" \o "Product behavior note 202) | **xs:unsigned byte** | Yes | The percentage of the duration of a call where B-frames and [**P-frames**](#gt_0b9676d2-c63c-455a-b994-54bdda204376) were dropped to reduce bandwidth. Refer to [MS-RTVPF] section 1.1 for details about frame types. | Percentage (0-100) |
| **BPSP\_Drop**[<203>](#Appendix_A_203" \o "Product behavior note 203) | **xs:unsigned byte** | Yes | The percentage of the duration of a call where B-frames, P-frames, and [**SP-frames**](#gt_c634a7a2-4e78-47ec-9fd5-8d92fad97348) were dropped to reduce bandwidth. Refer to [MS-RTVPF] section 1.1 for details about frame types. | Percentage (0-100) |
| **BPSPI\_Drop** | **xs:unsigned byte** | Yes | The percentage of the duration of a call where B-frames, P-frames, SP-frames, and [**I-frames**](#gt_0bf0924b-a250-4423-bb9d-4b86549e9c3c) were dropped to reduce bandwidth.[<204>](#Appendix_A_204" \o "Product behavior note 204) Refer to [MS-RTVPF] section 1.1 for details about frame types. | Percentage (0-100) |
| **Separator**[<205>](#Appendix_A_205" \o "Product behavior note 205) | default | No | Separator element used for future schema extensions. | Not applicable |

#### Payload.ApplicationSharing Element

A **Payload.ApplicationSharing** element contains ApplicationSharing-based payload metrics. The type of this element is **v3:ApplicationSharingPayloadMetricsType**.

The **ApplicationSharingPayloadMetricsType** type is defined as follows[<206>](#Appendix_A_206" \o "Product behavior note 206):

1. <xs:complexType name="ApplicationSharingPayloadMetricsType">
2. <xs:sequence>
3. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
4. <xs:element name="AverageRectangleHeight" type="xs:int" minOccurs="0"/>
5. <xs:element name="AverageRectangleWidth" type="xs:int" minOccurs="0"/>
6. <xs:element name="ApplicationShared" type="xs:string" minOccurs="0"/>
7. <xs:element name="RDPTileProcessingLatency" type="v3:MetricAggregationType" minOccurs="0"/>
8. <xs:element name="CaptureTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
9. <xs:element name="SpoiledTilePercent" type="v3:MetricAggregationType" minOccurs="0"/>
10. <xs:element name="ScrapingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
11. <xs:element name="IncomingTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
12. <xs:element name="IncomingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
13. <xs:element name="OutgoingTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
14. <xs:element name="OutgoingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
15. <xs:element name="OpaqueAppSharingData" type="v2:OpaqueChannelDataType" minOccurs="0"/>
16. <xs:sequence minOccurs="0">
17. <xs:element ref="v3:Separator3"/>
18. <xs:element ref="v4:InitialFrameReceivedTime" minOccurs="0"/>
19. <xs:element ref="v4:InitialFrameSentSize" minOccurs="0"/>
20. <xs:element ref="v4:NumSharingStarted" minOccurs="0"/>
21. <xs:element ref="v4:NumRemoteControlChanges" minOccurs="0"/>
22. <xs:element name="SharerAppSharingEstablishTime" type="v4:AppSharingEstablishTime" minOccurs="0"/>
23. <xs:element name="ViewerAppSharingEstablishTime" type="v4:AppSharingEstablishTime" minOccurs="0"/>
24. <xs:sequence minOccurs="0">
25. <xs:element ref="v4:Separator4" />
26. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
27. </xs:sequence>
28. </xs:sequence>
29. </xs:sequence>
30. <xs:anyAttribute namespace="##any" processContents="lax"/>
31. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **Payload.ApplicationSharing** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **PayloadDescription**[<207>](#Appendix_A_207" \o "Product behavior note 207) | **xs:string** | Yes | ApplicationSharing payload name. | Not applicable |
| **AverageRectangleHeight**[<208>](#Appendix_A_208" \o "Product behavior note 208) | **xs:int** | Yes | Average height of the region being shared or viewed in the ApplicationSharing session. | Pixels |
| **AverageRectangleWidth**[<209>](#Appendix_A_209" \o "Product behavior note 209) | **xs:int** | Yes | Average width of the region being shared or viewed in the ApplicationSharing session. | Pixels |
| **ApplicationShared**[<210>](#Appendix_A_210" \o "Product behavior note 210) | **xs:string** | Yes | "Desktop" or "Application" being shared in the ApplicationSharing session. If the user is viewing the ApplicationSharing session then the value of this element is "Viewer." | Not applicable |
| **RDPTileProcessingLatency**[<211>](#Appendix_A_211" \o "Product behavior note 211) | **v3:MetricAggregationType** | Yes | Latency of processing tiles on the RDP Stack at the MCU. | Milliseconds |
| **CaptureTileRate**[<212>](#Appendix_A_212" \o "Product behavior note 212) | **v3:MetricAggregationType** | Yes | Raw tile capture rate from the graphics capture source. | Tiles per second |
| **SpoiledTilePercent**[<213>](#Appendix_A_213" \o "Product behavior note 213) | **v3:MetricAggregationType** | Yes | Percentage of tiles which are discarded instead of being sent to a remote peer (for example, from the MCU to a viewer). | Percentage |
| **ScrapingFrameRate**[<214>](#Appendix_A_214" \o "Product behavior note 214) | **v3:MetricAggregationType** | Yes | Raw scraping rate from the graphics capture source. | Frames per second |
| **IncomingTileRate**[<215>](#Appendix_A_215" \o "Product behavior note 215) | **v3:MetricAggregationType** | Yes | Rate of tile received. | Tiles per second |
| **IncomingFrameRate**[<216>](#Appendix_A_216" \o "Product behavior note 216) | **v3:MetricAggregationType** | Yes | Rate of frame received. | Frames per second |
| **OutgoingTileRate**[<217>](#Appendix_A_217" \o "Product behavior note 217) | **v3:MetricAggregationType** | Yes | Rate of tile sent. | Tiles per second |
| **OutgoingFrameRate**[<218>](#Appendix_A_218" \o "Product behavior note 218) | **v3:MetricAggregationType** | Yes | Rate of frame sent. | Frames per second |
| **OpaqueAppSharingData**[<219>](#Appendix_A_219" \o "Product behavior note 219) | **v2:OpaqueChannelDataType** | No | Not used. |  |
| **v3:Separator3** | default | No | Separator element used for future schema extensions. | Not applicable |
| **v4:InitialFrameReceivedTime**[<220>](#Appendix_A_220" \o "Product behavior note 220) | **xs:dateTime** | Yes | Time the initial frame was received. | datetime |
| **v4:InitialFrameSentSize**[<221>](#Appendix_A_221" \o "Product behavior note 221) | **xs:int** | Yes | Size of the initial frame of screen data sent. | bytes |
| **v4:NumSharingStarted**[<222>](#Appendix_A_222" \o "Product behavior note 222) | **xs:int** | Yes | Number of times during session sharing was started. | count |
| **v4:NumRemoteControlChanges**[<223>](#Appendix_A_223" \o "Product behavior note 223) | **xs:int** | Yes | Number of timers during remote control of sharing occurred. | count |
| **v4:SharerAppSharingEstablishTime**[<224>](#Appendix_A_224" \o "Product behavior note 224) | **v4:AppSharingEstablishTime** | Yes | Time spent by sharer establishing session. | Not applicable |
| **v4:ViewerAppSharingEstablishTime**[<225>](#Appendix_A_225" \o "Product behavior note 225) | **V4:AppSharingEstablishTime** | Yes | Time spent by viewer establishing session. | Not applicable |
| **v4:Separator4**[<226>](#Appendix_A_226" \o "Product behavior note 226) | default | Yes | Separator used for future schema extensions. | Not applicable |

###### MetricAggregationType

The **MetricAggregationType** typeis defined as follows.

1. <xs:complexType name="MetricAggregationType">
2. <xs:sequence>
3. <xs:element name="Total" type="xs:float" minOccurs="0"/>
4. <xs:element name="Average" type="xs:float" minOccurs="0"/>
5. <xs:element name="Max" type="xs:float" minOccurs="0"/>
6. <xs:element name="Burst" type="v3:MetricBurstGapType" minOccurs="0"/>
7. <xs:element name="Gap" type="v3:MetricBurstGapType" minOccurs="0"/>
8. <xs:sequence minOccurs="0">
9. <xs:element ref="v3:Separator3"/>
10. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
11. </xs:sequence>
12. </xs:sequence>
13. <xs:anyAttribute namespace="##any" processContents="lax"/>
14. </xs:complexType>

Child Elements

The following table lists the child elements of the **MetricAggregationType**. For units and the data it represents see section [2.2.1.19.1](#Section_3d9d9a5e28154f6080411d5cedd47347).

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Total** | **xs:float** | Yes | Total aggregated value. |
| **Average** | **xs:float** | Yes | Average aggregated value. |
| **Max** | **xs:float** | Yes | Maximum aggregated value. |
| **Burst** | **v3:MetricBurstGapType** | Yes | Computed burst metrics. |
| **Gap** | **v3:MetricBurstGapType** | Yes | Computed gap metrics. |
| **v3:Separator3** | default | No | Separator element used for future schema extensions. |

###### MetricBurstGapType

The **MetricBurstGapType** typeis defined as follows.

1. <xs:complexType name="MetricBurstGapType">
2. <xs:sequence>
3. <xs:element name="Occurrences" type="xs:int" minOccurs="0"/>
4. <xs:element name="Density" type="xs:float" minOccurs="0"/>
5. <xs:element name="Duration" type="xs:float" minOccurs="0"/>
6. <xs:sequence minOccurs="0">
7. <xs:element ref="v3:Separator3"/>
8. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
9. </xs:sequence>
10. </xs:sequence>
11. <xs:anyAttribute namespace="##any" processContents="lax"/>
12. </xs:complexType>

Child Elements

The following table lists the child elements of the **MetricBurstGapType**. For units and data it represents see section [2.2.1.19.1](#Section_3d9d9a5e28154f6080411d5cedd47347). Each element of **MetricBurstGapType** represents either the computed Burst metrics or the computed Gap metrics.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Occurrences**[<227>](#Appendix_A_227" \o "Product behavior note 227) | **xs:int** | Yes | Number of instances of Burst or Gap. |
| **Density**[<228>](#Appendix_A_228" \o "Product behavior note 228) | **xs:float** | Yes | Average density of Burst or Gap. |
| **Duration**[<229>](#Appendix_A_229" \o "Product behavior note 229) | **xs:float** | Yes | Average duration of Burst or Gap. |
| **v3:Separator3**[<230>](#Appendix_A_230" \o "Product behavior note 230) | default | No | Separator element used for future schema extensions. |

###### AppSharingEstablishTime

The **AppSharingEstablishTime** type is defined as follows.

1. <xs:complexType name="AppSharingEstablishTime">
2. <xs:sequence>
3. <xs:element name="SignalingTime" type="xs:int"/>
4. <xs:element name="MediaSetupTime" type="xs:int"/>
5. <xs:element name="ProtocolConnectTime" type="xs:int"/>
6. </xs:sequence>
7. <xs:anyAttribute namespace="##any" processContents="lax"/>
8. </xs:complexType>

Child Elements

The following table lists the child elements of **AppSharingEstablishTime**. For units and the data it represents see section [2.2.1.19.1](#Section_3d9d9a5e28154f6080411d5cedd47347).

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **SignalingTime**[<231>](#Appendix_A_231" \o "Product behavior note 231) | **xs:int** | Yes | Total time spent in signaling processing. |
| **MediaSetupTime**[<232>](#Appendix_A_232" \o "Product behavior note 232) | **xs:int** | Yes | Total time spent in media processing. |
| **ProtocolConnectTime**[<233>](#Appendix_A_233" \o "Product behavior note 233) | **xs:int** | Yes | Total time spent in protocol connection processing. |

#### QualityEstimates Element

A **QualityEstimates** element contains metrics estimating the quality of the media. The type of this element is **QualityEstimatesType**.

The **QualityEstimatesType** type is defined as follows:

<xs:complexType name="QualityEstimatesType">

  <xs:choice>

    <xs:element name="Audio" type="tns:AudioQualityEstimatesType"/>

    <xs:element name="Video" type="tns:VideoQualityEstimatesType"/>

<xs:any namespace="##other" processContents="lax"

     maxOccurs="unbounded"/>

  </xs:choice>

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **QualityEstimates** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Audio** | **AudioQualityEstimatesType** | Yes | Audio metrics estimating quality of the media. |
| **Video** | **VideoQualityEstimatesType** | No | Not used. |

#### QualityEstimates.Audio Element

A **QualityEstimates.Audio** element contains audio metrics estimating the quality of the media. The type of this element is **AudioQualityEstimatesType**.

The **AudioQualityEstimatesType** type is defined as follows:

<xs:complexType name="AudioQualityEstimatesType">

  <xs:sequence>

    <xs:element name="RecvListenMOS" type="xs:float" minOccurs="0"/>

    <xs:element name="RecvListenMOSMin" type="xs:float" minOccurs="0"/>

    <xs:element name="RecvListenMOSAlg" type="xs:string" minOccurs="0"/>

    <xs:element name="SendListenMOS" type="xs:float" minOccurs="0"/>

    <xs:element name="SendListenMOSMin" type="xs:float" minOccurs="0"/>

    <xs:element name="SendListenMOSAlg" type="xs:string" minOccurs="0"/>

    <xs:element name="NetworkMOS" type="tns:NetworkAudioMOSType"

     minOccurs="0"/>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **QualityEstimates.Audio** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **RecvListenMOS** | **xs: float** | Inbound | The MOS-LQO wideband, as specified by [[ITUP.800.1]](https://go.microsoft.com/fwlink/?LinkId=114475) section 2.1.2, for decoded audio received by the reporting entity during the [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12). | MOS |
| **RecvListenMOSMin** | **xs: float** | Inbound | Minimum of the **RecvListenMOS** for the [**stream (2)**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6) during the session. | MOS |
| **RecvListenMOSAlg** | **xs: float** | No | Not used. |  |
| **SendListenMOS** | **xs: float** | Outbound | The MOS-LQO wideband, as specified by [ITUP.800.1] section 2.1.2 for pre-encoded audio sent by the reporting entity during the session. | MOS |
| **SendListenMOSMin** | **xs: float** | Outbound | Minimum of the **SendListenMOS** for the stream (2) over the duration of the session. | MOS |
| **SendListenMOSAlg** | **xs: float** | No | Not used. |  |
| **NetworkMOS** | **NetworkAudioMOSType** | Inbound | Predictive metrics based on network factors alone. | MOS |

#### NetworkMOS Element

A **NetworkMOS** element contains predictive metrics based on network factors alone. The type of this element is **NetworkAudioMOSType**.

The **NetworkAudioMOSType** type is defined as follows[<234>](#Appendix_A_234" \o "Product behavior note 234):

<xs:complexType name="NetworkAudioMOSType">

  <xs:sequence>

    <xs:element name="OverallAvg" type="xs:float" minOccurs="0"/>

    <xs:element name="OverallMin" type="xs:float" minOccurs="0"/>

    <xs:element name="DegradationAvg" type="xs:float" minOccurs="0"/>

    <xs:element name="DegradationMax" type="xs:float" minOccurs="0"/>

    <xs:element name="DegradationJitterAvg" type="xs:float"

     minOccurs="0"/>

    <xs:element name="DegradationPacketLossAvg" type="xs:float"

     minOccurs="0"/>

<xs:element ref="v2:NetworkMOSAlg" minOccurs="0"/>

<xs:sequence minOccurs="0">

<xs:element ref="v2:Separator" />

<xs:any namespace="##other" processContents="lax"

minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:sequence>

<xs:anyAttribute namespace="##other" processContents="lax"/></xs:complexType>

<xs:element name="NetworkMOSAlg" type="xs:string"/>

<xs:element name="Separator">

<xs:complexType></xs:complexType>

</xs:element>

##### Child Elements

The following table lists the child elements of the **NetworkMOS** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **OverallAvg** | **xs:float** | Inbound | The average of MOS-LQO wideband, as specified by [[ITUP.800.1]](https://go.microsoft.com/fwlink/?LinkId=114475) section 2.1.2, based on the audio [**codec**](#gt_6a2586b1-9b2a-4a00-aab6-70fef24bfddb) used and the observed packet loss and inter-arrival packet [**jitter**](#gt_f3b414cd-7c32-4a8f-a948-185e07661987). | MOS |
| **OverallMin** | **xs:float** | Inbound | The minimum of MOS-LQO wideband, as specified by [ITUP.800.1] section 2.1.2, based on the audio codec used and the observed packet loss and inter-arrival packet jitter. | MOS |
| **DegradationAvg** | **xs:float** | Inbound | The difference between the **OverallAvg** and the maximum possible MOS-LQO for the audio codec used in the [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12). | MOS |
| **DegradationMax** | **xs:float** | Inbound | The difference between the **OverallMin** and the maximum possible MOS-LQO for the audio codec used in the session. | MOS |
| **DegradationJitterAvg** | **xs: float** | Inbound | The average fraction of the **DegradationAvg** that was caused by inter-arrival packet jitter. | Fraction |
| **DegradationPacketLossAvg** | **xs:float** | Inbound | The average fraction of the **DegradationAvg** that was caused by packet loss. | Fraction |
| **v2:NetworkMOSAlg**[<235>](#Appendix_A_235" \o "Product behavior note 235) | **xs:string** | No | The algorithm used for computing the **OverallAvg**, **OverallMin, DegradationAvg**, **DegradationMax**, **DegradationJitterAvg** and **DegradationPacketLossAvg** values. | Not applicable |
| **v2:Separator**[<236>](#Appendix_A_236" \o "Product behavior note 236) | default | No | Separator element used for future schema extensions. | Not applicable |

#### Utilization Element

A **Utilization** element contains metrics related to network utilization. The type of this element is **NetworkUtilizationType**.

The **NetworkUtilizationType** type is defined as follows:

<xs:complexType name="NetworkUtilizationType">

  <xs:sequence>

    <xs:element name="Packets" type="xs:int" minOccurs="0"/>

    <xs:element name="BandwidthEst" type="xs:int" minOccurs="0"/>

    <xs:element name="BandwidthAlloc" type="xs:int" minOccurs="0"/>

<xs:element name="BandwidthEstMin" type="xs:int" minOccurs="0"/>

<xs:element name="BandwidthEstMax" type="xs:int" minOccurs="0"/>

<xs:element name="BandwidthEstStdDev" type="xs:int" minOccurs="0"/>

<xs:element name="BandwidthEstAvge" type="xs:int" minOccurs="0"/>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **Utilization** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **Packets** | **xs:int** | Yes | Number of [**Real-Time Transport Protocol (RTP)**](#gt_7c02483a-b2ed-4381-ae07-5332ee087a45) packets sent in the [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12). | Packets |
| **BandwidthEst** | **xs:int** | Outbound | Estimated one way available bandwidth of the [**stream (2)**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6) at the end of the session. | Bits per second |
| **BandwidthAlloc** | **xs:int** | No | Not used. |  |
| **v3:BandwidthEstMin**[<237>](#Appendix_A_237" \o "Product behavior note 237) | **xs:int** | Outbound | Minimal estimated one way available bandwidth of the stream (2) at the end of the session. | Bits per second |
| **v3:BandwidthEstMax**[<238>](#Appendix_A_238" \o "Product behavior note 238) | **xs:int** | Outbound | Maximum estimated one way available bandwidth of the stream (2) at the end of the session. | Bits per second |
| **v3:BandwidthEstStdDev**[<239>](#Appendix_A_239" \o "Product behavior note 239) | **xs:int** | Outbound | Standard deviation of estimated one way available bandwidth of the stream (2) at the end of the session. | Bits per second |
| **v3:BandwidthEstAvge**[<240>](#Appendix_A_240" \o "Product behavior note 240) | **xs:int** | Outbound | Average estimated one way available bandwidth of the stream (2) at the end of the session. | Bits per second |

#### PacketLoss Element

A **PacketLoss** element contains metrics related to packet loss. The type of this element is **PacketLossType**.

The **PacketLossType** type is defined as follows:

<xs:complexType name="PacketLossType">

  <xs:sequence>

    <xs:element name="LossRate" type="xs:float" minOccurs="0"/>

    <xs:element name="LossRateMax" type="xs:float" minOccurs="0"/>

    <xs:element name="DiscardRate" type="xs:float" minOccurs="0"/>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **PacketLoss** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **LossRate** | **xs:float** | Yes | The average fraction lost, as specified in [[RFC3550]](https://go.microsoft.com/fwlink/?LinkId=90433) section 6.4.1, computed over the duration of the [**session**](#gt_0cd96b80-a737-4f06-bca4-cf9efb449d12). | Fraction |
| **LossRateMax** | **xs:float** | Yes | The maximum fraction lost, as specified in [RFC3550] section 6.4.1, computed over the duration of the session. | Fraction |
| **DiscardRate** | **xs:float** | No | Not used. |  |

#### BurstGapLoss Element

A **BurstGapLoss** element contains metrics related to **Burst** and **Gap**. The type of this element is **BurstGapLossType**.

The **BurstGapLossType** type is defined as follows:

<xs:complexType name="BurstGapLossType">

  <xs:sequence>

    <xs:element name="BurstDensity" type="xs:float" minOccurs="0"/>

    <xs:element name="BurstDuration" type="xs:int" minOccurs="0"/>

    <xs:element name="GapDensity" type="xs:float" minOccurs="0"/>

    <xs:element name="GapDuration" type="xs:int" minOccurs="0"/>

    <xs:element name="MinGapThreshold" type="xs:int" minOccurs="0"/>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **BurstGapLoss** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **BurstDensity** | **xs:float** | Inbound | The average burst density, as specified in [[RFC3611]](https://go.microsoft.com/fwlink/?LinkId=90438) section 4.7.2, computed with a Gmin=16 for the [**RTP packets**](#gt_a2d9cf75-7cbd-496c-bd8f-d79325f9858d) received. | Percentage \* 100 |
| **BurstDuration** | **xs:int** | Inbound | The average burst duration, as specified in [RFC3611] section 4.7.2, computed with a Gmin=16 for the RTP packets received. | Milliseconds |
| **GapDensity** | **xs:float** | Inbound | The average gap density, as specified in [RFC3611] section 4.7.2, computed with a Gmin=16 for the RTP packets received. | Percentage \* 100 |
| **GapDuration** | **xs:int** | Inbound | The average gap duration, as specified in [RFC3611] section 4.7.2, computed with a Gmin=16 for the RTP packets received. | Milliseconds |
| **MinGapThreshold** | **xs:int** | No | Not used. |  |

#### Delay Element

A **Delay** element contains metrics related to delays. The type of this element is **DelayType**.

The **DelayType** type is defined as follows:

1. <xs:complexType name="DelayType">
2. <xs:sequence>
3. <xs:element name="RoundTrip" type="xs:int" minOccurs="0"/>
4. <xs:element name="RoundTripMax" type="xs:int" minOccurs="0"/>
5. <xs:element name="EndSystem" type="xs:int" minOccurs="0"/>
6. <xs:element name="OneWay" type="xs:int" minOccurs="0"/>
7. <xs:element ref="v3:RelativeOneWay" minOccurs="0"/>
8. <xs:sequence minOccurs="0">
9. <xs:element ref="v3:Separator3" />
10. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
11. </xs:sequence>
12. </xs:sequence>
13. <xs:anyAttribute namespace="##other" processContents="lax"/>
14. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **Delay** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **RoundTrip** | **xs:int** | Outbound | The average network propagation round-trip time computed as specified in [[RFC3550]](https://go.microsoft.com/fwlink/?LinkId=90433) section 6.4.1. | Milliseconds |
| **RoundTripMax** | **xs:int** | Outbound | The maximum network propagation round-trip time computed as specified in [RFC3550] section 6.4.1. | Milliseconds |
| **EndSystem** | **xs:int** | No | Not used. |  |
| **OneWay** | **xs:int** | No | Not used. |  |
| **v3:RelativeOneWay**[<241>](#Appendix_A_241" \o "Product behavior note 241) | **v3:MetricAggregationType** | Yes | The computed relative one way delay of the peer. MetricAggregationType is described in section [2.2.1.19.1.1](#Section_6a739bbb09214cf7a6b77501a9c96833). |  |
| **v3:Separator3**[<242>](#Appendix_A_242" \o "Product behavior note 242) | default | No | Separator element used for future schema extensions. | Not applicable |

#### Jitter Element

A **Jitter** element contains metrics related to [**jitter**](#gt_f3b414cd-7c32-4a8f-a948-185e07661987). The type of this element is **JitterType**.

The **JitterType** type is defined as follows:

<xs:complexType name="JitterType">

  <xs:sequence>

    <xs:element name="InterArrival" type="xs:int" minOccurs="0"/>

    <xs:element name="InterArrivalMax" type="xs:int" minOccurs="0"/>

    <xs:element name="MeanAbs" type="xs:int" minOccurs="0"/>

<xs:element name="v3:InterArrivalSD" type="xs:float" minOccurs="0"/>

    <xs:any namespace="##other" processContents="lax" minOccurs="0"

     maxOccurs="unbounded"/>

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax"/>

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **Jitter** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **InterArrival** | **xs:int** | Yes | The average inter-arrival [**jitter**](#gt_f3b414cd-7c32-4a8f-a948-185e07661987), as specified in [[RFC3550]](https://go.microsoft.com/fwlink/?LinkId=90433) section 6.4.1. | Milliseconds |
| **InterArrivalMax** | **xs:int** | Yes | The maximum inter-arrival jitter, as specified in [RFC3550] section 6.4.1. | Milliseconds |
| **MeanAbs** | **xs:int** | No | Not used. |  |
| **v3:InterArrivalSD**[<243>](#Appendix_A_243" \o "Product behavior note 243) | **xs:float** | Yes | The standard deviation of inter-arrival jitter, as specified in [RFC3550] section 6.4.1. | Not applicable |

#### Signal Element

A **Signal** element contains metrics related to the signal. The type of this element is **SignalType**.

The **SignalType** type is defined as follows[<244>](#Appendix_A_244" \o "Product behavior note 244):

<xs:complexType name="SignalType">

  <xs:sequence>

    <xs:element name="SignalLevel" type="xs:int" minOccurs="0" />

    <xs:element name="NoiseLevel" type="xs:int" minOccurs="0" />

    <xs:element name="EchoReturn" type="xs:int" minOccurs="0" />

<xs:element name="SpeakerFeedbackMicIn" type="xs:int" minOccurs="0"/>

<xs:element name="SpeechLevelMicIn" type="xs:int" minOccurs="0"/>

<xs:element name="SpeechLevelPostProcess" type="xs:int" minOccurs="0"/>

<xs:element name="SignalLevelLoudSpeaker" type="xs:int" minOccurs="0"/>

<xs:element name="BackGroundNoiseMicIn" type="xs:int" minOccurs="0"/>

<xs:element name="BackGroundNoiseSent" type="xs:int" minOccurs="0" />

<xs:element name="LocalSpeechToEcho" type="xs:int" minOccurs="0" />

<xs:element name="SpeakerGlitchRate" type="xs:int" minOccurs="0" />

<xs:element name="MicGlitchRate" type="xs:int" minOccurs="0" />

<xs:element name="SpeakerClipRate" type="xs:int" minOccurs="0" />

<xs:element name="MicClipRate" type="xs:int" minOccurs="0" />

<xs:element name="RxAGCSignalLevel" type="xs:int" minOccurs="0" />

<xs:element name="RxAGCNoiseLevel" type="xs:int" minOccurs="0" />

<xs:element ref="v2:InitialSignalLevelRMS" minOccurs="0"/>

<xs:element ref="v2:AudioTimestampDriftRateMic" minOccurs="0"/>

<xs:element ref="v2:AudioTimestampDriftRateSpk" minOccurs="0"/>

<xs:element ref="v2:AudioTimestampErrorMicMs" minOccurs="0"/>

<xs:element ref="v2:AudioTimestampErrorSpkMs" minOccurs="0"/>

<xs:element ref="v2:VsEntryCauses" minOccurs="0"/>

<xs:element ref="v2:EchoEventCauses" minOccurs="0"/>

<xs:element ref="v2:EchoPercentMicIn" minOccurs="0"/>

<xs:element ref="v2:EchoPercentSend" minOccurs="0"/>

<xs:element ref="v2:RxAvgAGCGain" minOccurs="0"/>

<xs:sequence minOccurs="0">

<xs:element ref="v2:Separator" />

1. <xs:element ref="v3:RecvSignalLevelCh1" minOccurs="0"/>
2. <xs:element ref="v3:RecvSignalLevelCh2" minOccurs="0"/>
3. <xs:element ref="v3:RecvNoiseLevelCh1" minOccurs="0"/>
4. <xs:element ref="v3:RecvNoiseLevelCh2" minOccurs="0"/>
5. <xs:element ref="v3:SendSignalLevelCh1" minOccurs="0"/>
6. <xs:element ref="v3:SendSignalLevelCh2" minOccurs="0"/>

<xs:element ref="v3:SendNoiseLevelCh1" minOccurs="0"/>

<xs:element ref="v3:SendNoiseLevelCh2" minOccurs="0"/>

<xs:sequence minOccurs="0">

<xs:element ref="v3:Separator3"/>

<xs:element ref="v4:RenderSignalLevel" minOccurs="0"/>

<xs:element ref="v4:RenderNoiseLevel" minOccurs="0"/>

<xs:element ref="v4:RenderLoopbackSignalLevel" minOccurs="0"/>

<xs:sequence minOccurs="0">

<xs:element ref="v4:Separator4" />

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:sequence>

</xs:sequence>

</xs:sequence>

<xs:anyAttribute namespace="##other" processContents="lax" />

</xs:complexType>

##### Child Elements

The following table lists the child elements of the **Signal** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **SignalLevel** | **xs:int** | Yes | The average energy level of received or sent audio classified as speech. | dB |
| **NoiseLevel** | **xs:int** | Yes | The average energy level of received or sent audio classified as noise. | dB |
| **EchoReturn** | **xs:int** | No | Not used. |  |
| **SpeakerFeedbackMicIn**[<245>](#Appendix_A_245" \o "Product behavior note 245) | **xs:int** | Yes | Signal level of the leakage of Loudspeaker or Headphone output into the microphone input. | dBoV |
| **SpeechLevelMicIn**[<246>](#Appendix_A_246" \o "Product behavior note 246) | **xs:int** | Yes | The speech level into the microphone at a given [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee). | dBoV |
| **SpeechLevelPostProcess**[<247>](#Appendix_A_247" \o "Product behavior note 247) | **xs:int** | Yes | Overall average speech level sent from an endpoint after all processing. | dBoV |
| **SignalLevelLoudSpeaker**[<248>](#Appendix_A_248" \o "Product behavior note 248) | **xs:int** | Yes | Input level to the loudspeaker or headphone input. | dBoV |
| **BackGroundNoiseMicIn**[<249>](#Appendix_A_249" \o "Product behavior note 249) | **xs:int** | Yes | Background noise input to the microphone. | dBoV |
| **BackGroundNoiseSent**[<250>](#Appendix_A_250" \o "Product behavior note 250) | **xs:int** | Yes | Background noise left over after all processing. | dBoV |
| **LocalSpeechToEcho**[<251>](#Appendix_A_251" \o "Product behavior note 251) | **xs:int** | Yes | If less than 10 decibels, speech level is too low compared to echo level, and distorted speech might occur. | dB |
| **SpeakerGlitchRate**[<252>](#Appendix_A_252" \o "Product behavior note 252) | **xs:int** | Yes | Average glitches per 5 minutes for the loudspeaker rendering. | Glitch count |
| **MicGlitchRate**[<253>](#Appendix_A_253" \o "Product behavior note 253) | **xs:int** | Yes | Average glitches per 5 minutes for the microphone capture. | Glitch count |
| **SpeakerClipRate**[<254>](#Appendix_A_254" \o "Product behavior note 254) | **xs:int** | Yes | Average clips per 5 minutes during the [**call**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d) for the loudspeaker rendering. | Glitch count |
| **MicClipRate**[<255>](#Appendix_A_255" \o "Product behavior note 255) | **xs:int** | Yes | Average clips per 5 minutes during the call for the microphone capture. | Glitch count |
| **RxAGCSignalLevel**[<256>](#Appendix_A_256" \o "Product behavior note 256) | **xs:int** | Yes | Signal level received at the automatic gain control for the inbound audio [**stream (2)**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6). | dBoV |
| **RxAGCNoiseLevel**[<257>](#Appendix_A_257" \o "Product behavior note 257) | **xs:int** | Yes | Noise level received at the automatic gain control for the inbound audio stream (2). | dBoV |
| **v2:InitialSignalLevelRMS**[<258>](#Appendix_A_258" \o "Product behavior note 258) | **xs:float** | Yes | The root-mean-square of the received signal for the first 30 seconds of the call. | sample level |
| **v2:AudioTimestampDriftRateMic**[<259>](#Appendix_A_259" \o "Product behavior note 259) | **xs:float** | Yes | Microphone or capture device clock drift rate. | percent |
| **v2:AudioTimestampDriftRateSpk**[<260>](#Appendix_A_260" \o "Product behavior note 260) | **xs:float** | Yes | Speaker or render device clock drift rate. | percent |
| **v2:AudioTimestampErrorMicMs**[<261>](#Appendix_A_261" \o "Product behavior note 261) | **xs:float** | Yes | Noise in timestamp information from microphone or capture device. | milliseconds |
| **v2:AudioTimestampErrorSpkMs**[<262>](#Appendix_A_262" \o "Product behavior note 262) | **xs:float** | Yes | Noise in timestamp information from speaker or render device. | milliseconds |
| **v2:VsEntryCauses**[<263>](#Appendix_A_263" \o "Product behavior note 263) | **xs:unsignedByte** | Yes | The bit flag indicating the reason(s) the AEC entered half-duplex mode:   * "0x01" – Sample timestamps from capture or render device were poor quality. * "0x02" – High level of echo remained after echo cancellation. * "0x04" – Policy forced echo canceller into half-duplex mode. * "0x10" – Echo canceller placed into half-duplex mode to reduce CPU consumption. * "0x20" – Severe quality degradation because of sample timestamp issues from capture or render device. | unsigned byte |
| **v2:EchoEventCauses**[<264>](#Appendix_A_264" \o "Product behavior note 264) | **xs:unsignedByte** | Yes | The bit flag indicating the reasons the **DeviceEchoEvent** was detected:   * "0x01" – Sample timestamps from capture or render device were poor quality. * "0x04" – High level of echo remained after echo cancellation. * "0x10" – Signal from capture device had significant instances of maximum signal level. | flag |
| **v2:EchoPercentMicIn**[<265>](#Appendix_A_265" \o "Product behavior note 265) | **xs:float** | Yes | Percentage of time when echo is detected in the audio from the capture or microphone device prior to echo cancellation. | Percentage |
| **v2:EchoPercentSend**[<266>](#Appendix_A_266" \o "Product behavior note 266) | **xs:float** | Yes | Percentage of time when echo is detected in the audio from the capture or microphone device after echo cancellation. | Percentage |
| **v2:RxAvgAGCGain**[<267>](#Appendix_A_267" \o "Product behavior note 267) | **xs:float** | Yes | The gain level applied to the received signal. | dB |
| **v2:Separator**[<268>](#Appendix_A_268" \o "Product behavior note 268) | default | Yes | Separator element used for future schema extensions. | Not applicable |
| **v3: RecvSignalLevelCh1**[<269>](#Appendix_A_269" \o "Product behavior note 269) | **xs:int** | Yes | Average energy level of received for audio classified as mono speech, or left channel of stereo speech. | dB |
| **v3: RecvSignalLevelCh2**[<270>](#Appendix_A_270" \o "Product behavior note 270) | **xs:int** | Yes | Average energy level of received for audio classified as right channel of stereo speech. | dB |
| **v3: RecvNoiseLevelCh1**[<271>](#Appendix_A_271" \o "Product behavior note 271) | **xs:int** | Yes | Average energy level of received for audio classified as noise, mono signal or the left channel of stereo signal. | dB |
| **v3: RecvNoiseLevelCh2**[<272>](#Appendix_A_272" \o "Product behavior note 272) | **xs:int** | Yes | Average energy level of received for audio classified as noise, the right channel of stereo signal. | dB |
| **v3: SendSignalLevelCh1**[<273>](#Appendix_A_273" \o "Product behavior note 273) | **xs:int** | Yes | Average energy level of sent for audio classified as mono speech, or left channel of stereo speech. | dB |
| **v3: SendSignalLevelCh2**[<274>](#Appendix_A_274" \o "Product behavior note 274) | **xs:int** | Yes | Average energy level of sent for audio classified as right channel of stereo speech. | dB |
| **v3: RecvNoiseLevelCh1**[<275>](#Appendix_A_275" \o "Product behavior note 275) | **xs:int** | Yes | Average energy level of sent for audio classified as noise, mono signal or the left channel of stereo signal. | dB |
| **v3: RecvNoiseLevelCh2**[<276>](#Appendix_A_276" \o "Product behavior note 276) | **xs:int** | Yes | Average energy level of sent for audio classified as noise, the right channel of stereo signal. | dB |
| **v3:Separator3**[<277>](#Appendix_A_277" \o "Product behavior note 277) | default | Yes | Separator element used for future schema extensions. | Not applicable |
| **v4:RenderSignalLevel**[<278>](#Appendix_A_278" \o "Product behavior note 278) | **xs:float** | Yes | Average render speech level after dynamic range compression or analog gain control is applied. | dBo |
| **v4:RenderNoiseLevel**[<279>](#Appendix_A_279" \o "Product behavior note 279) | **xs:float** | Yes | Average render noise level after dynamic range compression or analog gain control is applied. | dBo |
| **v4:RenderLoopbackSignalLevel**[<280>](#Appendix_A_280" \o "Product behavior note 280) | **xs:float** | Yes | Average level of speaker loopback signal (after any device offload effects have been applied). | dBo |
| **v4:Separator4**[<281>](#Appendix_A_281" \o "Product behavior note 281) | default | Yes | Separator used for future schema extensions. | Not applicable |

#### v2:LocalClientEvent and v2:RemoteClientEvent Elements

**LocalClientEvent** and **RemoteClientEvent** elements contain information about the quality events detected by the [**endpoints**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee). The type of these elements are **ClientEventType**.[<282>](#Appendix_A_282" \o "Product behavior note 282)

The **ClientEventType** type is defined as follows:

1. <xs:complexType name="ClientEventType">
2. <xs:sequence>
3. <xs:element name="NetworkSendQualityEventRatio"
4. type="xs:float" minOccurs="0"/>
5. <xs:element name="NetworkReceiveQualityEventRatio"
6. type="xs:float" minOccurs="0"/>
7. <xs:element name="NetworkDelayEventRatio"
8. type="xs:float" minOccurs="0"/>
9. <xs:element name="NetworkBandwidthLowEventRatio"
10. type="xs:float" minOccurs="0"/>
11. <xs:element name="CPUInsufficientEventRatio"
12. type="xs:float" minOccurs="0"/>
13. <xs:element name="DeviceHalfDuplexAECEventRatio"
14. type="xs:float" minOccurs="0"/>
15. <xs:element name="DeviceRenderNotFunctioningEventRatio"
16. type="xs:float" minOccurs="0"/>
17. <xs:element name="DeviceCaptureNotFunctioningEventRatio"
18. type="xs:float" minOccurs="0"/>
19. <xs:element name="DeviceGlitchesEventRatio"
20. type="xs:float" minOccurs="0"/>
21. <xs:element name="DeviceLowSNREventRatio"
22. type="xs:float" minOccurs="0"/>
23. <xs:element name="DeviceLowSpeechLevelEventRatio"
24. type="xs:float" minOccurs="0"/>
25. <xs:element name="DeviceClippingEventRatio"
26. type="xs:float" minOccurs="0"/>
27. <xs:element name="DeviceEchoEventRatio"
28. type="xs:float" minOccurs="0"/>
29. <xs:element name="DeviceNearEndToEchoRatioEventRatio"
30. type="xs:float" minOccurs="0"/>
31. <xs:element name="DeviceMultipleEndpointsEventCount"
32. type="xs:short" minOccurs="0"/>
33. <xs:element name="DeviceHowlingEventCount"
34. type="xs:short" minOccurs="0"/>
35. <xs:sequence minOccurs="0">

<xs:element ref="v2:Separator"/>

<xs:element ref="v3:DeviceRenderZeroVolumeEventRatio"

type="xs:float" minOccurs="0"/>

<xs:element ref="v3:DeviceRenderMuteEventRatio"

Type="xs:float" minOccurs="0"/>

<xs:sequence minOccurs="0">

1. <xs:element ref="v3:Separator3"/>
2. <xs:any namespace="##any" processContents="lax"
3. minOccurs="0" maxOccurs="unbounded"/>
4. </xs:sequence>
5. </xs:sequence>
6. </xs:sequence>
7. <xs:anyAttribute namespace="##any" processContents="lax" />
8. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **LocalClientEvent** and **RemoteClientEvent** element.

| Element | Type | Available | Description | Units |
| --- | --- | --- | --- | --- |
| **NetworkSendQualityEventRatio**[<283>](#Appendix_A_283" \o "Product behavior note 283) | **xs:float** | Yes | Fraction of the [**call**](#gt_9c30971d-7054-4d6b-90a7-c7410283f71d) that the [**reporting endpoint**](#gt_06404920-b445-4f67-86c2-864cc359fcf8) detected the network was causing poor quality of the audio sent. | Fraction |
| **NetworkReceiveQualityEventRatio**[<284>](#Appendix_A_284" \o "Product behavior note 284) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected the network was causing poor quality of the audio received. | Fraction |
| **NetworkDelayEventRatio**[<285>](#Appendix_A_285" \o "Product behavior note 285) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected the network delay was significant enough to impact the ability to have real-time two-way communication. | Fraction |
| **NetworkBandwidthLowEventRatio**[<286>](#Appendix_A_286" \o "Product behavior note 286) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected the available bandwidth or bandwidth policy was low enough to cause poor quality of the audio sent. | Fraction |
| **CPUInsufficientEventRatio**[<287>](#Appendix_A_287" \o "Product behavior note 287) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected the CPU resources available were insufficient and caused poor quality of the audio sent and received. | Fraction |
| **DeviceHalfDuplexAECEventRatio**[<288>](#Appendix_A_288" \o "Product behavior note 288) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected issues and operated the acoustic echo canceller in half-duplex mode, which impacted the ability to have real-time two-way communication. | Fraction |
| **DeviceRenderNotFunctioningEventRatio**[<289>](#Appendix_A_289" \o "Product behavior note 289) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected the render device was not working properly. | Fraction |
| **DeviceCaptureNotFunctioningEventRatio**[<290>](#Appendix_A_290" \o "Product behavior note 290) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected the capture device was not working properly. | Fraction |
| **DeviceGlitchesEventRatio**[<291>](#Appendix_A_291" \o "Product behavior note 291) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected glitches or gaps in the audio played or captured that caused poor quality of the audio being sent or received. | Fraction |
| **DeviceLowSNREventRatio**[<292>](#Appendix_A_292" \o "Product behavior note 292) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected low speech to noise level that caused poor quality of the audio being sent. | Fraction |
| **DeviceLowSpeechLevelEventRatio**[<293>](#Appendix_A_293" \o "Product behavior note 293) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected low speech level that caused poor quality of the audio being sent. | Fraction |
| **DeviceClippingEventRatio**[<294>](#Appendix_A_294" \o "Product behavior note 294) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected clipping in the captured audio that caused poor quality of the audio being sent. | Fraction |
| **DeviceEchoEventRatio**[<295>](#Appendix_A_295" \o "Product behavior note 295) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected echo that caused poor quality of the audio being sent. | Fraction |
| **DeviceNearEndToEchoRatioEventRatio**[<296>](#Appendix_A_296" \o "Product behavior note 296) | **xs:float** | Yes | Fraction of the call that the reporting endpoint detected a ratio of the near end signal level to the echo level that caused poor quality of the audio being sent. | Fraction |
| **DeviceMultipleEndpointsEventCount**[<297>](#Appendix_A_297" \o "Product behavior note 297) | **xs:short** | Yes | Number of times during the call that the reporting endpoint detected multiple [**endpoints**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) in the same room or acoustic environment. | Not applicable |
| **DeviceHowlingEventCount**[<298>](#Appendix_A_298" \o "Product behavior note 298) | **xs:short** | Yes | Number of times during the call that the reporting endpoint detected two or more endpoints in the same room or acoustic environment that caused poor quality audio in the form of howling or screeching audio. | Not applicable |
| **v2:Separator**[<299>](#Appendix_A_299" \o "Product behavior note 299) | default | Yes | Separator element used for future schema extensions. | Not applicable |
| **v3:DeviceRenderZeroVolumeEventRatio**[<300>](#Appendix_A_300" \o "Product behavior note 300) | **xs:float** | Yes | Fraction of the call that device render volume is set to 0. | Fraction |
| **v3:DeviceRenderMuteEventRatio**[<301>](#Appendix_A_301" \o "Product behavior note 301) | **xs:float** | Yes | Fraction of the call that device render is muted. | Fraction |
| **v3:Separator3**[<302>](#Appendix_A_302" \o "Product behavior note 302) | default | Yes | Separator element used for future schema extensions. | Not applicable |

### application/ms-cqf+xml

The XML schema in this section uses the namespace:

* ms-cqf

#### CallQualityFeedbackReport Element

A **CallQualityFeedbackReport** element is a quality feedback report envelope and contains information regarding the [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331). The type of this element is **CallQualityFeedbackReportType**.

The **CallQualityFeedbackReport** element is defined as follows[<303>](#Appendix_A_303" \o "Product behavior note 303):

1. <xs:element name ="CallQualityFeedbackReport" type="mstns:CallQualityFeedbackReportType"/>
3. <xs:complexType name ="CallQualityFeedbackReportType">
4. <xs:sequence>
5. <xs:element name="ReportingUserURI" type="xs:anyURI" minOccurs="1" maxOccurs="1"/>
6. <xs:element name ="Rating" type="xs:int" minOccurs="1" maxOccurs="1"/>
7. <xs:element name= "Feedback" type="mstns:TextFeedbackType" minOccurs="0" maxOccurs="1"/>
8. <xs:element name ="Tokens" type ="mstns:TokenCollectionType" minOccurs="0" maxOccurs="1"/>
9. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
10. </xs:sequence>
11. <xs:attribute name="CallId" type="xs:string" use="required"/>
12. <xs:attribute name="FromTag" type="xs:string" use="required"/>
13. <xs:attribute name="ToTag" type="xs:string" use="required"/>
14. <xs:attribute name="Start" type="xs:dateTime"/>
15. <xs:attribute name="End" type="xs:dateTime"/>

<xs:anyAttribute namespace="##other" processContents="lax"/>  
</xs:complexType>

##### Child Elements

The following table lists the child elements of the **CallQualityFeedbackReport** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **ReportingUserURI** | **xs:anyURI** | Yes | SIP [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) in the SIP **From** header that the reporting endpoint uses if it makes a [**SIP transaction**](#gt_f45dabe6-9287-40c0-835b-43c83011b943) using the reported SIP [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331). |
| **Rating** | **xs:int** | Yes | Subjective rating given by the end user ranging from 1 to 5. |
| **Feedback** | **TextFeedbackType** | Yes | Information related to the verbose feedback from the end user. |
| **Tokens** | **TokenCollectionType** | Yes | Information on a predefined collection of issue types experienced during the call. |

##### Attributes

The following table lists the attributes of the **CallQualityFeedbackReport** element.

| Attribute | Type | Required | Available | Description | Units |
| --- | --- | --- | --- | --- | --- |
| **CallId** | **xs:string**[755] | Yes | Yes | SIP Call-ID of the dialog.  If the maximum string length is exceeded, the report is rejected. | Not applicable |
| **FromTag** | **xs:string**[256] | Yes | Yes | SIP **From** tag of the dialog. | Not applicable |
| **ToTag** | **xs:string**[256] | Yes | Yes | SIP **To** tag of the dialog. | Not applicable |
| **Start** | **xs:dateTime** | No | Yes | Start time of the call. | [**Coordinated Universal Time (UTC)**](#gt_f2369991-a884-4843-a8fa-1505b6d5ece7) |
| **End** | **Xs:dateTime** | No | Yes | End time of the call. | UTC |

#### Feedback Element

A **Feedback** element contains information related to the verbose feedback from the end user. The type of this element is **TextFeedbackType**.

The **TextFeedbackType** type is defined as follows[<304>](#Appendix_A_304" \o "Product behavior note 304):

1. <xs:complexType name="TextFeedbackType">
2. <xs:sequence>
3. <xs:element name="Text" type="xs:string"/>
4. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
5. </xs:sequence>
6. <xs:attribute name="LanguageTag" type="xs:string"/>
7. <xs:anyAttribute namespace="##other" processContents="lax"/>
8. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **Feedback** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Text** | **xs:string**[4000] | Yes | Additional text feedback about the end user experience regarding the call session. |

##### Attributes

The following table lists the attributes of the **Feedback** element.

| Attribute | Type | Required | Available | Description |
| --- | --- | --- | --- | --- |
| **LanguageTag** | **xs:string** | No | Yes | Language of the client. Format is defined in MS-LCID http://msdn.microsoft.com/en-us/library/cc233965.aspx. |

#### Tokens Element

A **Tokens** element contains a preset collection of feedback reasons. The client determines the set of reasons in the collection based on the call media type. The type of this element is **TokenCollectionType**.

The **TokenCollectionType** type is defined as follows[<305>](#Appendix_A_305" \o "Product behavior note 305):

1. <xs:complexType name ="TokenCollectionType">
2. <xs:sequence>
3. <xs:element name="Token" type="mstns:TokenValueType" minOccurs="1" axOccurs="unbounded"/>
4. </xs:sequence>
5. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **Tokens** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Token** | **TokenValueType** | Yes | Information on a predefined issue type experienced during the call. |

#### Token Element

A **Token** element contains a predefined issue type experienced during the call. The elements contained form a name-value pair where the name corresponds to a predefined issue type and the value indicates whether the issue type was encountered during the call session. The type of this element is **TokenValueType**.

The **TokenValueType** type is defined as follows[<306>](#Appendix_A_306" \o "Product behavior note 306):

1. <xs:complexType name ="TokenValueType">
2. <xs:sequence>
3. <xs:element name ="Id" type="xs:int" minOccurs="1" maxOccurs="1"/>
4. <xs:element name ="Value" type="xs:int" minOccurs="1" maxOccurs="1"/>
5. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
6. </xs:sequence>
7. <xs:anyAttribute namespace="##other" processContents="lax"/>
8. </xs:complexType>

##### Child Elements

The following table lists the child elements of the **Tokens** element.

| Element | Type | Available | Description |
| --- | --- | --- | --- |
| **Id** | **xs:int** | Yes | For audio the ID ranges from 1 to 5. For video the ID ranges from 21 to 25. |
| **Value** | **xs:int** | Yes | Supported values are "0" and "1". |

# Protocol Details

## SIP UAC Details

A protocol client performs the role of a [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**user agent client (UAC)**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb). A SIP user agent client initiates a SIP [**SERVICE**](#gt_2dc07ca2-2b40-437e-a5ec-ed28ebfb116a) transaction by sending a SIP SERVICE message to the SIP [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) of a SIP [**user agent server (UAS)**](#gt_6f39aa0f-2438-4c06-8ccc-5d36b6e50a28). Upon receiving an error, a protocol client can retry to send the report.

### Abstract Data Model

None.

### Timers

None.

### Initialization

None.

### Higher-Layer Triggered Events

None.

### Message Processing Events and Sequencing Rules

None.

### Timer Events

None.

### Other Local Events

None.

## SIP UAS Details

A [**QoE Monitoring Agent**](#gt_362d3833-159f-4189-b4a3-3fb6661b1075) performs the role of a [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**UAS**](#gt_6f39aa0f-2438-4c06-8ccc-5d36b6e50a28). The SIP UAS accepts the [**SERVICE**](#gt_2dc07ca2-2b40-437e-a5ec-ed28ebfb116a) message and responds with a SERVICE response code 202 or a SIP SERVICE response error code. The SIP SERVICE response error code that is returned depends on the issue. The following table lists the error codes that are returned depending on the content of the SIP SERVICE request.

| Error code | Reason |
| --- | --- |
| 606 | Only **VQReportEvent** and **CallQualityFeedbackReport** are supported in current version. 606 is returned if received data is not one of the two specified types. |
| 400 | If there is a schema validation failure or one or more metric values in the report contain an invalid value. |
| 401 | If the From header in SIP request doesn’t match the value of **LocalPAI** or **FromURI** (when **LocalPAI** is missing) obtained from payload body.  If the sender is an anonymous user, 401 could be returned when the focus-uri header in SIP request does not match **ConfURI** obtained from payload body. |
| 415 | If the **Content-Type** header is not "application/vq-rtcpxr+xml" or "application/ms-cqf+xml". |
| 413 | If metric report exceeds the maximum size limit of 300 kilobytes allowed by the QoE Monitoring Agent. |

### Abstract Data Model

None.

### Timers

None.

### Initialization

None.

### Higher-Layer Triggered Events

None.

### Message Processing Events and Sequencing Rules

None.

### Timer Events

None.

### Other Local Events

None.

## SIP Proxy Details

A [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**proxy**](#gt_2b529701-3e64-4bf8-97ec-15afbba18b73) routes the [**SIP messages**](#gt_2690e796-e281-48f3-ba0e-1f9acdb3ba8c) from the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) to the [**UAS**](#gt_6f39aa0f-2438-4c06-8ccc-5d36b6e50a28) and vice versa.

### Abstract Data Model

None.

### Timers

None.

### Initialization

None.

### Higher-Layer Triggered Events

None.

### Message Processing Events and Sequencing Rules

None.

### Timer Events

None.

### Other Local Events

None.

# Protocol Examples

The following examples illustrate [**QoE**](#gt_4871331b-4c0b-49f9-82fd-edcf5be31a7e) metrics message payloads that adheres to the [**XML schema**](#gt_bd0ce6f9-c350-4900-827e-951265294067) described in section [2](#Section_9c2ba6cddc364c39956fcbb804cce695). In the following examples, domain names, server names, e-mail aliases, phone numbers, and IP addresses have been changed to fictitious values.

## application/vq-rtcpxr+xml

1. SERVICE sip:server1@contoso.com;gruu;opaque=srvr:QoS:jcH1fn2RSB6uyC59R-IH8QAA SIP/2.0
2. Via: SIP/2.0/TLS 123.45.67.890:1263
3. Max-Forwards: 70
4. From: <sip:alice@contoso.com>;tag=3d26651a97;epid=782abb8f70
5. To: <sip:server1@contoso.com;gruu;opaque=srvr:QoS:jcH1fn2RSB6uyC59R-IH8QAA>
6. Call-ID: f86d23b698b34a70a2d23772e7391d94
7. CSeq: 1 SERVICE
8. Contact: <sip:alice@contoso.com;opaque=user:epid:reTyjuqAaVmcCIO4qlA4vwAA;gruu>
9. User-Agent: UCCP/2.0.6362.0 OC/2.0.6362.0 (Microsoft Office Communicator)
10. Proxy-Authorization: NTLM qop="auth", realm="SIP Communications Service", opaque="7B435440", crand="40171178", cnum="178", targetname="location-server-01.exchange.corp.contoso.com", response="010000003a516f532e969c311f676e47"
11. Content-Type: application/vq-rtcpxr+xml
12. Content-Length: 3283
13. <?xml version="1.0"?>
14. <VQReportEvent xmlns="ms-rtcp-metrics">
15. <VQSessionReport SessionId="ab323818af644d1eab6bacd6d66d03a7;from-tag=e957a6c0d5;to-tag=313433a5ba">
16. <Endpoint Name="alice.example.corp.contoso.com" />
17. <DialogInfo CallId="ab323818af644d1eab6bacd6d66d03a7" FromTag="e957a6c0d5" ToTag="313433a5ba" Start="2008-01-07T19:47:06.0082Z" End="2008-01-07T19:55:11.0742Z">
18. <FromURI>sip:alice@contoso.com</FromURI>
19. <ToURI>sip:5550100@contoso.com;user=phone</ToURI>
20. <Caller>true</Caller>
21. <LocalContactURI>sip:alice@contoso.com;opaque=user:epid:reTyjuqAaVmcCIO4qlA4vwAA;gruu</LocalContactURI>
22. <RemoteContactURI>sip:server1@contoso.com;gruu;opaque=srvr:MediationServer:WftfTuTVQCSAB0ZJi-j7qAAA;grid=f684305ffb3a4a8184e8cd16846a983c</RemoteContactURI>
23. <LocalUserAgent>UCCP/2.0.6362.0 OC/2.0.6362.0 (Microsoft Office Communicator)</LocalUserAgent>
24. <RemoteUserAgent>RTCC/3.0.0.0 MediationServer</RemoteUserAgent>
25. </DialogInfo>
26. <MediaLine Label="main-audio">
27. <Description>
28. <Connectivity>
29. <Ice>DIRECT</Ice>
30. <IceWarningFlags>327680</IceWarningFlags>
31. </Connectivity>
32. <Security>SRTP</Security>
33. <Offerer>true</Offerer>
34. <Transport>UDP</Transport>
35. <NetworkConnectivityInfo>
36. <VPN>true</VPN>
37. <LinkSpeed>11000000.000000</LinkSpeed>
38. </NetworkConnectivityInfo>
39. <LocalAddr>
40. <IPAddr>123.45.67.890</IPAddr>
41. <Port>50004</Port>
42. <Inside>true</Inside>
43. <SubnetMask>255.255.254.0</SubnetMask>
44. </LocalAddr>
45. <RemoteAddr>
46. <IPAddr>123.12.34.567</IPAddr>
47. <Port>63284</Port>
48. </RemoteAddr>
49. <CaptureDev>
50. <Name>Catalina-V263</Name>
51. </CaptureDev>
52. <RenderDev>
53. <Name>Catalina-V263</Name>
54. </RenderDev>
55. </Description>
56. <InboundStream Id="1536632130">
57. <Network>
58. <Jitter>
59. <InterArrival>2</InterArrival>
60. <InterArrivalMax>3</InterArrivalMax>
61. </Jitter>
62. <PacketLoss>
63. <LossRate>0.000000</LossRate>
64. <LossRateMax>0.009259</LossRateMax>
65. </PacketLoss>
66. <BurstGapLoss>
67. <BurstDensity>0</BurstDensity>
68. <BurstDuration>0</BurstDuration>
69. <GapDensity>0</GapDensity>
70. <GapDuration>461660</GapDuration>
71. </BurstGapLoss>
72. <Utilization>
73. <Packets>23148</Packets>
74. </Utilization>
75. </Network>
76. <Payload>
77. <Audio>
78. <Signal>
79. <SignalLevel>2434</SignalLevel>
80. <NoiseLevel>4861</NoiseLevel>
81. <SignalLevelLoudSpeaker>2502</SignalLevelLoudSpeaker>
82. <SpeakerGlitchRate>7</SpeakerGlitchRate>
83. <SpeakerClipRate>0</SpeakerClipRate>
84. </Signal>
85. </Audio>
86. </Payload>
87. <QualityEstimates>
88. <Audio>
89. <RecvListenMOS>1.880000</RecvListenMOS>
90. <RecvListenMOSMin>1.000000</RecvListenMOSMin>
91. <NetworkMOS>
92. <OverallAvg>2.950000</OverallAvg>
93. <OverallMin>2.940000</OverallMin>
94. <DegradationAvg>0.000000</DegradationAvg>
95. <DegradationMax>0.010000</DegradationMax>
96. <DegradationJitterAvg>0.000000</DegradationJitterAvg>
97. <DegradationPacketLossAvg>0.000000</DegradationPacketLossAvg>
98. </NetworkMOS>
99. </Audio>
100. </QualityEstimates>
101. </InboundStream>
102. <OutboundStream Id="1869098562">
103. <Network>
104. <Jitter>
105. <InterArrival>2</InterArrival>
106. <InterArrivalMax>2</InterArrivalMax>
107. </Jitter>
108. <PacketLoss>
109. <LossRate>0.000000</LossRate>
110. <LossRateMax>0.000000</LossRateMax>
111. </PacketLoss>
112. <Delay>
113. <RoundTrip>1</RoundTrip>
114. <RoundTripMax>2</RoundTripMax>
115. </Delay>
116. <Utilization>
117. <Packets>7497</Packets>
118. <BandwidthEst>23872930</BandwidthEst>
119. </Utilization>
120. </Network>
121. <Payload>
122. <Audio>
123. <PayloadDescription>x-msrta</PayloadDescription>
124. <SampleRate>8000</SampleRate>
125. <Signal>
126. <SignalLevel>1834</SignalLevel>
127. <NoiseLevel>5987</NoiseLevel>
128. <SpeakerFeedbackMicIn>5000</SpeakerFeedbackMicIn>
129. <SpeechLevelMicIn>2404</SpeechLevelMicIn>
130. <SpeechLevelPostProcess>2500</SpeechLevelPostProcess>
131. <BackGroundNoiseMicIn>7000</BackGroundNoiseMicIn>
132. <BackGroundNoiseSent>8100</BackGroundNoiseSent>
133. <LocalSpeechToEcho>-2600</LocalSpeechToEcho>
134. <MicGlitchRate>7</MicGlitchRate>
135. <MicClipRate>10</MicClipRate>
136. </Signal>
137. </Audio>
138. </Payload>
139. <QualityEstimates>
140. <Audio>
141. <SendListenMOS>3.440000</SendListenMOS>
142. <SendListenMOSMin>1.100000</SendListenMOSMin>
143. </Audio>
144. </QualityEstimates>
145. </OutboundStream>
146. <LocalConversationalMOS>3.010000</LocalConversationalMOS>
147. </MediaLine>
148. </VQSessionReport>
149. </VQReportEvent>

## application/ms-cqf+xml

1. SERVICE sip:server1@contoso.com;gruu;opaque=srvr:QoS:jcH1fn2RSB6uyC59R-IH8QAA SIP/2.0
2. Via: SIP/2.0/TLS 123.45.67.890:53507
3. Max-Forwards: 70
4. From: <sip:alice@contoso.com>;tag=3d26651a97;epid=782abb8f70
5. To: <sip:server1@contoso.com;gruu;opaque=srvr:QoS:jcH1fn2RSB6uyC59R-IH8QAA>
6. Call-ID: f86d23b698b34a70a2d23772e7391d94
7. CSeq: 1 SERVICE
8. Contact: <sip:alice@contoso.com;opaque=user:epid:reTyjuqAaVmcCIO4qlA4vwAA;gruu>
9. User-Agent: UCCAPI/15.0.4693.2000 OC/15.0.4693.2000 (Skype for Business)
10. Proxy-Authorization: TLS-DSK qop="auth", realm="SIP Communications Service", opaque="7B435440", targetname="location-server-01.exchange.corp.contoso.com", crand="40171178", cnum="178", response="010000003a516f532e969c311f676e47"
11. Content-Type: application/ms-cqf+xml
12. Content-Length: 632
13. <?xml version="1.0"?>
14. <CallQualityFeedbackReport xmlns="ms-cqf" CallId="ab323818af644d1eab6bacd6d66d03a7" FromTag="e957a6c0d5" ToTag="313433a5ba">
15. <ReportingUserURI>sip:alice@contoso.com</ReportingUserURI>
16. <Rating>4</Rating>
17. <Feedback LanguageTag="en-US">
18. <Text>Nothing more to tell, call quality was great!</Text>
19. </Feedback>
20. <Tokens>
21. <Token>
22. <Id>1</Id>
23. <Value>1</Value>
24. <Tag>DistortedSpeech</Tag>
25. </Token>
26. <Token>
27. <Id>2</Id>
28. <Value>1</Value>
29. <Tag>ElectronicFeedback</Tag>
30. </Token>
31. <Token>
32. <Id>3</Id>
33. <Value>0</Value>
34. <Tag>BackgroundNoise</Tag>
35. </Token>
36. <Token>
37. <Id>4</Id>
38. <Value>1</Value>
39. <Tag>MuffledSpeech</Tag>
40. </Token>
41. <Token>
42. <Id>5</Id>
43. <Value>0</Value>
44. <Tag>Echo</Tag>
45. </Token>
46. </Tokens>
47. </CallQualityFeedbackReport>

# Security

## Security Considerations for Implementers

This protocol has no additional security considerations beyond those described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 5.

## Index of Security Parameters

None.

# Appendix A: Full XML Schema

This section provides the detailed [**XML schema definition (XSD)**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema specification of the [**XML schema**](#gt_bd0ce6f9-c350-4900-827e-951265294067) used for constructing the [**QoE**](#gt_4871331b-4c0b-49f9-82fd-edcf5be31a7e) metrics payload.

## Office Communications Server 2007 Schema

This section follows the product behavior described in footnote [<307>](#Appendix_A_307" \o "Product behavior note 307).

<?xml version="1.0" encoding="UTF-8" ?>

<xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" attributeFormDefault="unqualified">

<!--

RTCP METRICS STATEMENT

  -->

  <xs:element name="VQReportEvent" type="tns:VQReportEventType" />

<!--

RTCP REPORT TYPE

  -->

<xs:complexType name="VQReportEventType">

<xs:choice>

  <xs:element name="VQSessionReport" type="tns:SessionReportType" maxOccurs="unbounded" />

  <xs:element name="VQSessionIntervalReport" type="tns:SessionReportType" maxOccurs="unbounded" />

  <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded" />

  </xs:choice>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

VQ SESSION REPORT TYPE

  -->

<xs:complexType name="SessionReportType">

<xs:sequence>

  <xs:element name="LocationProfile" type="xs:string" minOccurs="0" />

  <xs:element name="Pool" type="xs:string" minOccurs="0" />

  <xs:element name="Endpoint" type="tns:EndpointType" />

  <xs:element name="DialogInfo" type="tns:DialogInfoType" />

  <xs:element name="MediaLine" type="tns:MediaLineType" maxOccurs="unbounded" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:attribute name="SessionId" type="xs:string" use="required" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

<!--

SessionId = DialogID

  -->

  </xs:complexType>

<!--

DIALOG INFO TYPE

  -->

<xs:complexType name="DialogInfoType">

<xs:sequence>

  <xs:element name="FromURI" type="xs:anyURI" />

  <xs:element name="ToURI" type="xs:anyURI" />

  <xs:element name="Caller" type="xs:boolean" />

  <xs:element name="LocalContactURI" type="xs:anyURI" />

  <xs:element name="RemoteContactURI" type="xs:anyURI" />

  <xs:element name="LocalUserAgent" type="xs:string" />

  <xs:element name="RemoteUserAgent" type="xs:string" />

<!--

PAI = P-Asserted-Identity

  -->

  <xs:element name="LocalPAI" type="xs:anyURI" minOccurs="0" />

  <xs:element name="RemotePAI" type="xs:anyURI" minOccurs="0" />

  <xs:element name="ConfURI" type="xs:anyURI" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:attribute name="CallId" type="xs:string" use="required" />

  <xs:attribute name="FromTag" type="xs:string" />

  <xs:attribute name="ToTag" type="xs:string" />

  <xs:attribute name="Start" type="xs:dateTime" use="required" />

  <xs:attribute name="End" type="xs:dateTime" use="required" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

ENDPOINT TYPE

  -->

<xs:complexType name="EndpointType">

<xs:sequence>

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:attribute name="Name" type="xs:string" use="required" />

  <xs:attribute name="ProfileId" type="xs:string" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

<!--

Name = Computer Name

  -->

<!--

ProfileId = Endpoint Report GUID - Note: this attribute is optional

  -->

  </xs:complexType>

<!--

MEDIA LINE REPORT TYPE

  -->

<xs:complexType name="MediaLineType">

<xs:sequence>

  <xs:element name="Description" type="tns:MediaLineDescriptionType" />

  <xs:element name="InboundStream" type="tns:StreamType" minOccurs="0" />

  <xs:element name="OutboundStream" type="tns:StreamType" minOccurs="0" />

  <xs:element name="LocalConversationalMOS" type="xs:float" minOccurs="0" />

  <xs:element name="RemoteConversationalMOS" type="xs:float" minOccurs="0" />

  <xs:element name="LocalConversationalMOSAlg" type="xs:string" minOccurs="0" />

  <xs:element name="RemoteConversationalMOSAlg" type="xs:string" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

<!-- Label values : "main-audio", "main-video","panoramic-video", "data", -->

<!-- Additional Label values in v3 : "main-video1", "main-video2", "main-video3","main-video4","main-video5", "main-video6",-->

  <xs:attribute name="Label" type="xs:string" use="required" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

MEDIA LINE TYPE

  -->

<xs:complexType name="MediaLineDescriptionType">

<xs:sequence>

  <xs:element name="Connectivity" type="tns:ConnectivityType" minOccurs="0" />

<!--

Security values : "None", "SRTP","V1"

  -->

  <xs:element name="Security" type="xs:string" minOccurs="0" />

  <xs:element name="Offerer" type="xs:boolean" minOccurs="0" />

  <xs:element name="Transport" type="tns:TransportType" minOccurs="0" />

  <xs:element name="LocalAddr" type="tns:AddrType" />

  <xs:element name="RemoteAddr" type="tns:AddrType" />

<!--

Microphone or USB Phone or Camera device name

  -->

  <xs:element name="CaptureDev" type="tns:DeviceType" minOccurs="0" />

<!--

Speakers or USB Phone device name

  -->

  <xs:element name="RenderDev" type="tns:DeviceType" minOccurs="0" />

<xs:element name="ReflexiveLocalIPAddress" type="tns:AddrType"/>

<xs:element name="MidCallReport" type="xs:boolean" default="false" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

Device TYPE

  -->

<xs:complexType name="DeviceType">

<xs:sequence>

  <xs:element name="Name" type="xs:string" minOccurs="0" />

  <xs:element name="Driver" type="xs:string" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

STREAM DIRECTIONAL METRICS TYPE

  -->

<xs:complexType name="StreamType">

<xs:sequence>

  <xs:element name="Network" type="tns:NetworkMetricsType" minOccurs="0" />

  <xs:element name="Payload" type="tns:PayloadMetricsType" />

  <xs:element name="QualityEstimates" type="tns:QualityEstimatesType" minOccurs="0" />

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

  <xs:attribute name="Id" type="xs:unsignedInt" use="required" />

  <xs:attribute name="Start" type="xs:dateTime" />

  <xs:attribute name="End" type="xs:dateTime" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

<!--

Id = SSRC

  -->

  </xs:complexType>

<!--

NETWORK METRICS

  -->

<xs:complexType name="NetworkMetricsType">

<xs:sequence>

<!--

DiffServ CodePoint

  -->

  <xs:element name="DSCP" type="xs:byte" minOccurs="0" />

<!--

VLAN is described via 12 bits

  -->

  <xs:element name="VLAN" type="xs:int" minOccurs="0" />

  <xs:element name="Jitter" type="tns:JitterType" minOccurs="0" />

  <xs:element name="PacketLoss" type="tns:PacketLossType" minOccurs="0" />

  <xs:element name="BurstGapLoss" type="tns:BurstGapLossType" minOccurs="0" />

  <xs:element name="Delay" type="tns:DelayType" minOccurs="0" />

  <xs:element name="Utilization" type="tns:NetworkUtilizationType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

ICE TYPE

  -->

<xs:complexType name="ConnectivityType">

<xs:sequence>

  <xs:element name="Ice" type="tns:IceStatusType" minOccurs="0" />

  <xs:element name="IceWarningFlags" type="xs:unsignedInt" minOccurs="0" />

  <xs:element name="RelayAddress" type="tns:AddrType" minOccurs="0" maxOccurs="unbounded" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

ICE CONECTIVITY TYPE

  -->

<xs:simpleType name="IceStatusType">

<xs:restriction base="xs:string">

  <xs:enumeration value="FAILED" />

  <xs:enumeration value="DIRECT" />

  <xs:enumeration value="RELAY" />

  <xs:enumeration value="HTTP-PROXY" />

  </xs:restriction>

  </xs:simpleType>

<!--

NETWORK UTILIZATION TYPE

  -->

<xs:complexType name="NetworkUtilizationType">

<xs:sequence>

  <xs:element name="Packets" type="xs:int" minOccurs="0" />

  <xs:element name="BandwidthEst" type="xs:int" minOccurs="0" />

  <xs:element name="BandwidthAlloc" type="xs:int" minOccurs="0" />

<xs:element name="BandwidthEstMin" type="xs:int" minOccurs="0"/>

<xs:element name="BandwidthEstMax" type="xs:int" minOccurs="0"/>

<xs:element name="BandwidthEstStdDev" type="xs:int" minOccurs="0"/>

<xs:element name="BandwidthEstAvge" type="xs:int" minOccurs="0"/>

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

PAYLOAD METRICS TYPE

  -->

<xs:complexType name="PayloadMetricsType">

<xs:choice>

  <xs:element name="Audio" type="tns:AudioPayloadMetricsType" />

  <xs:element name="Video" type="tns:VideoPayloadMetricsType" />

  <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded" />

  </xs:choice>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

AUDIO METRICS TYPE

  -->

<xs:complexType name="AudioPayloadMetricsType">

<xs:sequence>

  <xs:element name="PayloadType" type="xs:int" minOccurs="0" />

  <xs:element name="PayloadDescription" type="xs:string" minOccurs="0" />

  <xs:element name="SampleRate" type="xs:int" minOccurs="0" />

  <xs:element name="FrameDuration" type="xs:int" minOccurs="0" />

  <xs:element name="FrameOctets" type="xs:int" minOccurs="0" />

  <xs:element name="FramesPerPacket" type="xs:int" minOccurs="0" />

  <xs:element name="PacketsPerSecond" type="xs:int" minOccurs="0" />

  <xs:element name="FMTP" type="xs:string" minOccurs="0" />

  <xs:element name="Signal" type="tns:SignalType" minOccurs="0" />

  <xs:element name="JitterBuffer" type="tns:JitterBufferType" minOccurs="0" />

  <xs:element name="SilenceSupress" type="tns:ratioConcealSuppressionStateType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  </xs:complexType>

<!--

VIDEO METRICS TYPE

  -->

<xs:complexType name="VideoPayloadMetricsType">

<xs:sequence>

  <xs:element name="PayloadType" type="xs:int" minOccurs="0" />

  <xs:element name="PayloadDescription" type="xs:string" minOccurs="0" />

  <xs:element name="Resolution" type="xs:string" minOccurs="0" />

  <xs:element name="VideoBitRateAvg" type="xs:int" minOccurs="0" />

  <xs:element name="VideoBitRateMax" type="xs:int" minOccurs="0" />

  <xs:element name="VideoFrameRateAvg" type="xs:float" minOccurs="0" />

  <xs:element name="VideoPacketLossRate" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFrameLossRate" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFrameEncodingTime" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFrameDecodingTime" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFEC" type="xs:boolean" minOccurs="0" />

  <xs:element name="FrozenVideoFreq" type="xs:float" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  </xs:complexType>

<!--

PACKET LOSS CONCEALMENT TYPE

  -->

<xs:simpleType name="PacketLossConcealmentType">

<xs:restriction base="xs:string">

  <xs:enumeration value="UNSPECIFIED" />

  <xs:enumeration value="DISABLED" />

  <xs:enumeration value="ENHANCED" />

  <xs:enumeration value="STANDARD" />

  </xs:restriction>

  </xs:simpleType>

<!--

SILENCE SUPPRESSION STATE TYPE

  -->

<xs:simpleType name="SilenceSuppressionStateType">

<xs:restriction base="xs:string">

  <xs:enumeration value="ON" />

  <xs:enumeration value="OFF" />

  </xs:restriction>

  </xs:simpleType>

<!--

ADDR TYPE

  -->

<xs:complexType name="AddrType">

<xs:sequence>

  <xs:element name="IPAddr" type="xs:string" />

  <xs:element name="Port" type="xs:unsignedShort" minOccurs="0" />

  <xs:element name="Inside" type="xs:boolean" minOccurs="0" />

  <xs:element name="SubnetMask" type="xs:string" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

JITTER BUFFER TYPE

  -->

<xs:complexType name="JitterBufferType">

<xs:sequence>

  <xs:element name="Type" type="tns:JitterBufferAdaptiveType" minOccurs="0" />

  <xs:element name="Rate" type="xs:int" minOccurs="0" />

  <xs:element name="Nominal" type="xs:int" minOccurs="0" />

  <xs:element name="Max" type="xs:int" minOccurs="0" />

  <xs:element name="AbsMax" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

JITTER BUFFER ADAPTIVE TYPE

  -->

<xs:simpleType name="JitterBufferAdaptiveType">

<xs:restriction base="xs:string">

  <xs:enumeration value="UNKNOWN" />

  <xs:enumeration value="RESERVED" />

  <xs:enumeration value="NON-ADAPTIVE" />

  <xs:enumeration value="ADAPTIVE" />

  </xs:restriction>

  </xs:simpleType>

<!--

PACKET LOSS TYPE

  -->

<xs:complexType name="PacketLossType">

<xs:sequence>

  <xs:element name="LossRate" type="xs:float" minOccurs="0" />

  <xs:element name="LossRateMax" type="xs:float" minOccurs="0" />

  <xs:element name="DiscardRate" type="xs:float" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

BURST GAP LOSS TYPE

  -->

<xs:complexType name="BurstGapLossType">

<xs:sequence>

  <xs:element name="BurstDensity" type="xs:float" minOccurs="0" />

  <xs:element name="BurstDuration" type="xs:int" minOccurs="0" />

  <xs:element name="GapDensity" type="xs:float" minOccurs="0" />

  <xs:element name="GapDuration" type="xs:int" minOccurs="0" />

  <xs:element name="MinGapThreshold" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

DELAY TYPE

  -->

<xs:complexType name="DelayType">

<xs:sequence>

  <xs:element name="RoundTrip" type="xs:int" minOccurs="0" />

  <xs:element name="RoundTripMax" type="xs:int" minOccurs="0" />

  <xs:element name="EndSystem" type="xs:int" minOccurs="0" />

  <xs:element name="OneWay" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

JITTER TYPE

  -->

<xs:complexType name="JitterType">

<xs:sequence>

  <xs:element name="InterArrival" type="xs:int" minOccurs="0" />

  <xs:element name="InterArrivalMax" type="xs:int" minOccurs="0" />

  <xs:element name="MeanAbs" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

SIGNAL TYPE

  -->

<xs:complexType name="SignalType">

<xs:sequence>

  <xs:element name="SignalLevel" type="xs:int" minOccurs="0" />

  <xs:element name="NoiseLevel" type="xs:int" minOccurs="0" />

  <xs:element name="EchoReturn" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

QUALITY ESTIMATES TYPE

  -->

<xs:complexType name="QualityEstimatesType">

<xs:choice>

  <xs:element name="Audio" type="tns:AudioQualityEstimatesType" />

  <xs:element name="Video" type="tns:VideoQualityEstimatesType" />

  <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded" />

  </xs:choice>

  </xs:complexType>

<!--

AUDIO QUALITY ESTIMATES TYPE

  -->

<xs:complexType name="AudioQualityEstimatesType">

<xs:sequence>

  <xs:element name="RecvListenMOS" type="xs:float" minOccurs="0" />

  <xs:element name="RecvListenMOSMin" type="xs:float" minOccurs="0" />

  <xs:element name="RecvListenMOSAlg" type="xs:string" minOccurs="0" />

  <xs:element name="SendListenMOS" type="xs:float" minOccurs="0" />

  <xs:element name="SendListenMOSMin" type="xs:float" minOccurs="0" />

  <xs:element name="SendListenMOSAlg" type="xs:string" minOccurs="0" />

  <xs:element name="NetworkMOS" type="tns:NetworkAudioMOSType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

NETWORK AUDIO MOS FACTOR TYPE

  -->

<xs:complexType name="NetworkAudioMOSType">

<xs:sequence>

  <xs:element name="OverallAvg" type="xs:float" minOccurs="0" />

  <xs:element name="OverallMin" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationAvg" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationMax" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationJitterAvg" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationPacketLossAvg" type="xs:float" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

VIDEO QUALITY ESTIMATES TYPE

  -->

<xs:complexType name="VideoQualityEstimatesType">

<xs:sequence>

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

TRANSPORT TYPE

  -->

<xs:simpleType name="TransportType">

<xs:restriction base="xs:string">

  <xs:enumeration value="UDP" />

  <xs:enumeration value="TCP" />

  </xs:restriction>

  </xs:simpleType>

  </xs:schema>

## Office Communications Server 2007 R2 Schema

This section follows the product behavior described in footnote [<308>](#Appendix_A_308" \o "Product behavior note 308).

<?xml version="1.0" encoding="UTF-8" ?>

<xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" attributeFormDefault="unqualified" version="2.0">

<!--

RTCP METRICS STATEMENT

  -->

  <xs:element name="VQReportEvent" type="tns:VQReportEventType" />

<!--

RTCP REPORT TYPE

  -->

<xs:complexType name="VQReportEventType">

<xs:choice>

  <xs:element name="VQSessionReport" type="tns:SessionReportType" maxOccurs="unbounded" />

  <xs:element name="VQSessionIntervalReport" type="tns:SessionReportType" maxOccurs="unbounded" />

  <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded" />

  </xs:choice>

  <xs:attribute name="Version" type="xs:string" use="optional" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

VQ SESSION REPORT TYPE

  -->

<xs:complexType name="SessionReportType">

<xs:sequence>

  <xs:element name="LocationProfile" type="xs:string" minOccurs="0" />

  <xs:element name="Pool" type="xs:string" minOccurs="0" />

  <xs:element name="Endpoint" type="tns:EndpointType" />

  <xs:element name="DialogInfo" type="tns:DialogInfoType" />

  <xs:element name="MediaLine" type="tns:MediaLineType" maxOccurs="unbounded" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:attribute name="SessionId" type="xs:string" use="required" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

<!--

SessionId = DialogID

  -->

  </xs:complexType>

<!--

DIALOG INFO TYPE

  -->

<xs:complexType name="DialogInfoType">

<xs:sequence>

  <xs:element name="DialogCategory" type="tns:DialogCategoryType" minOccurs="0" />

  <xs:element name="CorrelationID" type="xs:string" minOccurs="0" />

  <xs:element name="FromURI" type="xs:anyURI" />

  <xs:element name="ToURI" type="xs:anyURI" />

  <xs:element name="Caller" type="xs:boolean" />

  <xs:element name="LocalContactURI" type="xs:anyURI" />

  <xs:element name="RemoteContactURI" type="xs:anyURI" />

  <xs:element name="LocalUserAgent" type="xs:string" />

  <xs:element name="RemoteUserAgent" type="xs:string" />

<!--

PAI = P-Asserted-Identity

  -->

  <xs:element name="LocalPAI" type="xs:anyURI" minOccurs="0" />

  <xs:element name="RemotePAI" type="xs:anyURI" minOccurs="0" />

  <xs:element name="ConfURI" type="xs:anyURI" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:attribute name="CallId" type="xs:string" use="required" />

  <xs:attribute name="FromTag" type="xs:string" />

  <xs:attribute name="ToTag" type="xs:string" />

  <xs:attribute name="Start" type="xs:dateTime" use="required" />

  <xs:attribute name="End" type="xs:dateTime" use="required" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

ENDPOINT TYPE

  -->

<xs:complexType name="EndpointType">

<xs:sequence>

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:attribute name="Name" type="xs:string" use="required" />

  <xs:attribute name="ProfileId" type="xs:string" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

<!--

Name = Computer Name

  -->

<!--

ProfileId = Endpoint Report GUID - Note: this attribute is optional

  -->

  </xs:complexType>

<!--

MEDIA LINE REPORT TYPE

  -->

<xs:complexType name="MediaLineType">

<xs:sequence>

  <xs:element name="Description" type="tns:MediaLineDescriptionType" />

  <xs:element name="InboundStream" type="tns:StreamType" minOccurs="0" />

  <xs:element name="OutboundStream" type="tns:StreamType" minOccurs="0" />

  <xs:element name="LocalConversationalMOS" type="xs:float" minOccurs="0" />

  <xs:element name="RemoteConversationalMOS" type="xs:float" minOccurs="0" />

  <xs:element name="LocalConversationalMOSAlg" type="xs:string" minOccurs="0" />

  <xs:element name="RemoteConversationalMOSAlg" type="xs:string" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

<!--

Label values : "main-audio", "main-video","panoramic-video"

  -->

  <xs:attribute name="Label" type="xs:string" use="required" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

MEDIA LINE TYPE

  -->

<xs:complexType name="MediaLineDescriptionType">

<xs:sequence>

  <xs:element name="Connectivity" type="tns:ConnectivityType" minOccurs="0" />

<!--

Security values : "None", "SRTP","V1"

  -->

  <xs:element name="Security" type="xs:string" minOccurs="0" />

  <xs:element name="Offerer" type="xs:boolean" minOccurs="0" />

  <xs:element name="Transport" type="tns:TransportType" minOccurs="0" />

  <xs:element name="NetworkConnectivityInfo" type="tns:NetworkConnectivityInfoType" minOccurs="0" />

  <xs:element name="LocalAddr" type="tns:AddrType" />

  <xs:element name="RemoteAddr" type="tns:AddrType" />

<!--

Microphone or USB Phone or Camera device name

  -->

  <xs:element name="CaptureDev" type="tns:DeviceType" minOccurs="0" />

<!--

Speakers or USB Phone device name

  -->

  <xs:element name="RenderDev" type="tns:DeviceType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

Device TYPE

  -->

<xs:complexType name="DeviceType">

<xs:sequence>

  <xs:element name="Name" type="xs:string" minOccurs="0" />

  <xs:element name="Driver" type="xs:string" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

STREAM DIRECTIONAL METRICS TYPE

  -->

<xs:complexType name="StreamType">

<xs:sequence>

  <xs:element name="Network" type="tns:NetworkMetricsType" minOccurs="0" />

  <xs:element name="Payload" type="tns:PayloadMetricsType" />

  <xs:element name="QualityEstimates" type="tns:QualityEstimatesType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:attribute name="Id" type="xs:unsignedInt" use="required" />

  <xs:attribute name="Start" type="xs:dateTime" />

  <xs:attribute name="End" type="xs:dateTime" />

  <xs:anyAttribute namespace="##other" processContents="lax" />

<!--

Id = SSRC

  -->

  </xs:complexType>

<!--

NETWORK METRICS

  -->

<xs:complexType name="NetworkMetricsType">

<xs:sequence>

<!--

DiffServ CodePoint

  -->

  <xs:element name="DSCP" type="xs:byte" minOccurs="0" />

<!--

VLAN is described via 12 bits

  -->

  <xs:element name="VLAN" type="xs:int" minOccurs="0" />

  <xs:element name="Jitter" type="tns:JitterType" minOccurs="0" />

  <xs:element name="PacketLoss" type="tns:PacketLossType" minOccurs="0" />

  <xs:element name="BurstGapLoss" type="tns:BurstGapLossType" minOccurs="0" />

  <xs:element name="Delay" type="tns:DelayType" minOccurs="0" />

  <xs:element name="Utilization" type="tns:NetworkUtilizationType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

ICE TYPE

  -->

<xs:complexType name="ConnectivityType">

<xs:sequence>

  <xs:element name="Ice" type="tns:IceStatusType" minOccurs="0" />

  <xs:element name="IceWarningFlags" type="xs:unsignedInt" minOccurs="0" />

  <xs:element name="RelayAddress" type="tns:AddrType" minOccurs="0" maxOccurs="unbounded" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

ICE CONECTIVITY TYPE

  -->

<xs:simpleType name="IceStatusType">

<xs:restriction base="xs:string">

  <xs:enumeration value="FAILED" />

  <xs:enumeration value="DIRECT" />

  <xs:enumeration value="RELAY" />

  <xs:enumeration value="HTTP-PROXY" />

  </xs:restriction>

  </xs:simpleType>

<!--

NETWORK UTILIZATION TYPE

  -->

<xs:complexType name="NetworkUtilizationType">

<xs:sequence>

  <xs:element name="Packets" type="xs:int" minOccurs="0" />

  <xs:element name="BandwidthEst" type="xs:int" minOccurs="0" />

  <xs:element name="BandwidthAlloc" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

PAYLOAD METRICS TYPE

  -->

<xs:complexType name="PayloadMetricsType">

<xs:choice>

  <xs:element name="Audio" type="tns:AudioPayloadMetricsType" />

  <xs:element name="Video" type="tns:VideoPayloadMetricsType" />

  <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded" />

  </xs:choice>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

AUDIO METRICS TYPE

  -->

<xs:complexType name="AudioPayloadMetricsType">

<xs:sequence>

  <xs:element name="PayloadType" type="xs:int" minOccurs="0" />

  <xs:element name="PayloadDescription" type="xs:string" minOccurs="0" />

  <xs:element name="SampleRate" type="xs:int" minOccurs="0" />

  <xs:element name="FrameDuration" type="xs:int" minOccurs="0" />

  <xs:element name="FrameOctets" type="xs:int" minOccurs="0" />

  <xs:element name="FramesPerPacket" type="xs:int" minOccurs="0" />

  <xs:element name="PacketsPerSecond" type="xs:int" minOccurs="0" />

  <xs:element name="FMTP" type="xs:string" minOccurs="0" />

  <xs:element name="Signal" type="tns:SignalType" minOccurs="0" />

  <xs:element name="JitterBuffer" type="tns:JitterBufferType" minOccurs="0" />

  <xs:element name="SilenceSupress" type="tns:SilenceSuppressionStateType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  </xs:complexType>

<!--

VIDEO METRICS TYPE

  -->

<xs:complexType name="VideoPayloadMetricsType">

<xs:sequence>

  <xs:element name="PayloadType" type="xs:int" minOccurs="0" />

  <xs:element name="PayloadDescription" type="xs:string" minOccurs="0" />

  <xs:element name="Resolution" type="xs:string" minOccurs="0" />

  <xs:element name="VideoBitRateAvg" type="xs:int" minOccurs="0" />

  <xs:element name="VideoBitRateMax" type="xs:int" minOccurs="0" />

  <xs:element name="VideoFrameRateAvg" type="xs:float" minOccurs="0" />

  <xs:element name="VideoPacketLossRate" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFrameLossRate" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFrameEncodingTime" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFrameDecodingTime" type="xs:float" minOccurs="0" />

  <xs:element name="VideoFEC" type="xs:boolean" minOccurs="0" />

  <xs:element name="FrozenVideoFreq" type="xs:float" minOccurs="0" />

  <xs:element name="FrozenPeriodPercentAvg" type="xs:float" minOccurs="0" />

  <xs:element name="ConsecutivePacketLossAvg" type="xs:float" minOccurs="0" />

  <xs:element name="RateMatchLevel" type="xs:float" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  </xs:complexType>

<!--

PACKET LOSS CONCEALMENT TYPE

  -->

<xs:simpleType name="PacketLossConcealmentType">

<xs:restriction base="xs:string">

  <xs:enumeration value="UNSPECIFIED" />

  <xs:enumeration value="DISABLED" />

  <xs:enumeration value="ENHANCED" />

  <xs:enumeration value="STANDARD" />

  </xs:restriction>

  </xs:simpleType>

<!--

SILENCE SUPPRESSION STATE TYPE

  -->

<xs:simpleType name="SilenceSuppressionStateType">

<xs:restriction base="xs:string">

  <xs:enumeration value="ON" />

  <xs:enumeration value="OFF" />

  </xs:restriction>

  </xs:simpleType>

<!--

ADDR TYPE

  -->

<xs:complexType name="AddrType">

<xs:sequence>

  <xs:element name="IPAddr" type="xs:string" />

  <xs:element name="Port" type="xs:unsignedShort" minOccurs="0" />

  <xs:element name="Inside" type="xs:boolean" minOccurs="0" />

  <xs:element name="SubnetMask" type="xs:string" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

JITTER BUFFER TYPE

  -->

<xs:complexType name="JitterBufferType">

<xs:sequence>

  <xs:element name="Type" type="tns:JitterBufferAdaptiveType" minOccurs="0" />

  <xs:element name="Rate" type="xs:int" minOccurs="0" />

  <xs:element name="Nominal" type="xs:int" minOccurs="0" />

  <xs:element name="Max" type="xs:int" minOccurs="0" />

  <xs:element name="AbsMax" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

JITTER BUFFER ADAPTIVE TYPE

  -->

<xs:simpleType name="JitterBufferAdaptiveType">

<xs:restriction base="xs:string">

  <xs:enumeration value="UNKNOWN" />

  <xs:enumeration value="RESERVED" />

  <xs:enumeration value="NON-ADAPTIVE" />

  <xs:enumeration value="ADAPTIVE" />

  </xs:restriction>

  </xs:simpleType>

<!--

PACKET LOSS TYPE

  -->

<xs:complexType name="PacketLossType">

<xs:sequence>

  <xs:element name="LossRate" type="xs:float" minOccurs="0" />

  <xs:element name="LossRateMax" type="xs:float" minOccurs="0" />

  <xs:element name="DiscardRate" type="xs:float" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

BURST GAP LOSS TYPE

  -->

<xs:complexType name="BurstGapLossType">

<xs:sequence>

  <xs:element name="BurstDensity" type="xs:float" minOccurs="0" />

  <xs:element name="BurstDuration" type="xs:int" minOccurs="0" />

  <xs:element name="GapDensity" type="xs:float" minOccurs="0" />

  <xs:element name="GapDuration" type="xs:int" minOccurs="0" />

  <xs:element name="MinGapThreshold" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

DELAY TYPE

  -->

<xs:complexType name="DelayType">

<xs:sequence>

  <xs:element name="RoundTrip" type="xs:int" minOccurs="0" />

  <xs:element name="RoundTripMax" type="xs:int" minOccurs="0" />

  <xs:element name="EndSystem" type="xs:int" minOccurs="0" />

  <xs:element name="OneWay" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

JITTER TYPE

  -->

<xs:complexType name="JitterType">

<xs:sequence>

  <xs:element name="InterArrival" type="xs:int" minOccurs="0" />

  <xs:element name="InterArrivalMax" type="xs:int" minOccurs="0" />

  <xs:element name="MeanAbs" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

SIGNAL TYPE

  -->

<xs:complexType name="SignalType">

<xs:sequence>

  <xs:element name="SignalLevel" type="xs:int" minOccurs="0" />

  <xs:element name="NoiseLevel" type="xs:int" minOccurs="0" />

  <xs:element name="EchoReturn" type="xs:int" minOccurs="0" />

  <xs:element name="SpeakerFeedbackMicIn" type="xs:int" minOccurs="0" />

  <xs:element name="SpeechLevelMicIn" type="xs:int" minOccurs="0" />

  <xs:element name="SpeechLevelPostProcess" type="xs:int" minOccurs="0" />

  <xs:element name="SignalLevelLoudSpeaker" type="xs:int" minOccurs="0" />

  <xs:element name="BackGroundNoiseMicIn" type="xs:int" minOccurs="0" />

  <xs:element name="BackGroundNoiseSent" type="xs:int" minOccurs="0" />

  <xs:element name="LocalSpeechToEcho" type="xs:int" minOccurs="0" />

  <xs:element name="SpeakerGlitchRate" type="xs:int" minOccurs="0" />

  <xs:element name="MicGlitchRate" type="xs:int" minOccurs="0" />

  <xs:element name="SpeakerClipRate" type="xs:int" minOccurs="0" />

  <xs:element name="MicClipRate" type="xs:int" minOccurs="0" />

  <xs:element name="RxAGCSignalLevel" type="xs:int" minOccurs="0" />

  <xs:element name="RxAGCNoiseLevel" type="xs:int" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

QUALITY ESTIMATES TYPE

  -->

<xs:complexType name="QualityEstimatesType">

<xs:choice>

  <xs:element name="Audio" type="tns:AudioQualityEstimatesType" />

  <xs:element name="Video" type="tns:VideoQualityEstimatesType" />

  <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded" />

  </xs:choice>

  </xs:complexType>

<!--

AUDIO QUALITY ESTIMATES TYPE

  -->

<xs:complexType name="AudioQualityEstimatesType">

<xs:sequence>

  <xs:element name="RecvListenMOS" type="xs:float" minOccurs="0" />

  <xs:element name="RecvListenMOSMin" type="xs:float" minOccurs="0" />

  <xs:element name="RecvListenMOSAlg" type="xs:string" minOccurs="0" />

  <xs:element name="SendListenMOS" type="xs:float" minOccurs="0" />

  <xs:element name="SendListenMOSMin" type="xs:float" minOccurs="0" />

  <xs:element name="SendListenMOSAlg" type="xs:string" minOccurs="0" />

  <xs:element name="NetworkMOS" type="tns:NetworkAudioMOSType" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

NETWORK AUDIO MOS FACTOR TYPE

  -->

<xs:complexType name="NetworkAudioMOSType">

<xs:sequence>

  <xs:element name="OverallAvg" type="xs:float" minOccurs="0" />

  <xs:element name="OverallMin" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationAvg" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationMax" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationJitterAvg" type="xs:float" minOccurs="0" />

  <xs:element name="DegradationPacketLossAvg" type="xs:float" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

VIDEO QUALITY ESTIMATES TYPE

  -->

<xs:complexType name="VideoQualityEstimatesType">

<xs:sequence>

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

TRANSPORT TYPE

  -->

<xs:simpleType name="TransportType">

<xs:restriction base="xs:string">

  <xs:enumeration value="UDP" />

  <xs:enumeration value="TCP" />

  </xs:restriction>

  </xs:simpleType>

<!--

NETWORK CONNECTIVITY TYPE

  -->

<xs:complexType name="NetworkConnectivityInfoType">

<xs:sequence>

  <xs:element name="NetworkConnection" type="tns:NetworkConnectionType" minOccurs="0" />

  <xs:element name="VPN" type="xs:boolean" minOccurs="0" />

  <xs:element name="LinkSpeed" type="xs:float" minOccurs="0" />

  <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded" />

  </xs:sequence>

  <xs:anyAttribute namespace="##other" processContents="lax" />

  </xs:complexType>

<!--

ETHERNET CONNECTION TYPE

  -->

<xs:simpleType name="NetworkConnectionType">

<xs:restriction base="xs:string">

  <xs:enumeration value="wired" />

  <xs:enumeration value="wifi" />

  </xs:restriction>

  </xs:simpleType>

<!--

DIALOG CATEGORY

  -->

<xs:simpleType name="DialogCategoryType">

<xs:restriction base="xs:string">

  <xs:enumeration value="OCS" />

  <xs:enumeration value="TRUNK" />

  </xs:restriction>

  </xs:simpleType>

  </xs:schema>

## Microsoft Lync Server 2010 Schema

This section follows the product behavior described in footnote [<309>](#Appendix_A_309" \o "Product behavior note 309). The schema has been split into three related schema definition files:

* ms-rtcp-metrics.xsd
* ms-rtcp-metrics.medialine.xsd
* ms-rtcp-metrics.v2.xsd

The schema for **ms-rtcp-metrics.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v2"></xs:import>
4. <xs:include schemaLocation="ms-rtcp-metrics.medialine.xsd"></xs:include>
5. <!--
6. RTCP METRICS STATEMENT
7. -->
8. <xs:element name="VQReportEvent" type="tns:VQReportEventType"/>
9. <!--
10. RTCP REPORT TYPE
11. -->
12. <xs:complexType name="VQReportEventType">
13. <xs:choice>
14. <xs:element name="VQSessionReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
15. <xs:element name="VQSessionIntervalReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
16. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
17. </xs:choice>
18. <xs:attribute name="Version" type="xs:string" use="optional"/>
19. <xs:attribute ref="v2:SchemaVersion" use="optional"/>
20. <xs:anyAttribute namespace="##other" processContents="lax"/>
21. </xs:complexType>
22. <!--
23. VQ SESSION REPORT TYPE
24. -->
25. <xs:complexType name="SessionReportType">
26. <xs:sequence>
27. <xs:element name="LocationProfile" type="xs:string" minOccurs="0"/>
28. <xs:element name="Pool" type="xs:string" minOccurs="0"/>
29. <xs:element name="Endpoint" type="tns:EndpointType"/>
30. <xs:element name="DialogInfo" type="tns:DialogInfoType"/>
31. <xs:element name="MediaLine" type="tns:MediaLineType" maxOccurs="unbounded"/>
32. <xs:element ref="v2:OpaqueClientPlatformData" minOccurs="0" />
33. <xs:element ref="v2:OpaqueServerPlatformData" minOccurs="0" />
34. <xs:element ref="v2:OpaqueConferenceData" minOccurs="0" />
35. <xs:sequence minOccurs="0">
36. <xs:element ref="v2:Separator" />
37. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
38. </xs:sequence>
39. </xs:sequence>
40. <xs:attribute name="SessionId" type="xs:string" use="required"/>
41. <xs:anyAttribute namespace="##other" processContents="lax"/>
42. <!---SessionId = DialogID -->
43. </xs:complexType>
44. <!--
45. DIALOG INFO TYPE
46. -->
47. <xs:complexType name="DialogInfoType">
48. <xs:sequence>
49. <xs:element name="DialogCategory" type="tns:DialogCategoryType" minOccurs="0"/>
50. <xs:element name="CorrelationID" type="xs:string" minOccurs="0"/>
51. <xs:element name="FromURI" type="xs:anyURI"/>
52. <xs:element name="ToURI" type="xs:anyURI"/>
53. <xs:element name="Caller" type="xs:boolean"/>
54. <xs:element name="LocalContactURI" type="xs:anyURI"/>
55. <xs:element name="RemoteContactURI" type="xs:anyURI"/>
56. <xs:element name="LocalUserAgent" type="xs:string"/>
57. <xs:element name="RemoteUserAgent" type="xs:string"/>
58. <!-- PAI = P-Asserted-Identity -->
59. <xs:element name="LocalPAI" type="xs:anyURI" minOccurs="0"/>
60. <xs:element name="RemotePAI" type="xs:anyURI" minOccurs="0"/>
61. <xs:element name="ConfURI" type="xs:anyURI" minOccurs="0"/>
62. <xs:element ref="v2:CallPriority" minOccurs="0"/>
63. <xs:element ref="v2:MediationServerBypassFlag" minOccurs="0"/>
64. <xs:element ref="v2:TrunkingPeer" minOccurs="0"/>
65. <xs:element ref="v2:MediaBypassWarningFlag" minOccurs="0"/>
66. <xs:sequence minOccurs="0">
67. <xs:element ref="v2:Separator" />
68. <xs:element ref="v2:RegisteredInside" minOccurs="0"/>
69. <xs:sequence minOccurs="0">
70. <xs:element ref="v2:Separator" />
71. <xs:any namespace="##other" processContents="lax"
72. minOccurs="0" maxOccurs="unbounded"/>
73. </xs:sequence>
74. </xs:sequence>
75. </xs:sequence>
76. <xs:attribute name="CallId" type="xs:string" use="required"/>
77. <xs:attribute name="FromTag" type="xs:string" use="required"/>
78. <xs:attribute name="ToTag" type="xs:string" use="required"/>
79. <xs:attribute name="Start" type="xs:dateTime" use="required"/>
80. <xs:attribute name="End" type="xs:dateTime" use="required"/>
81. <xs:anyAttribute namespace="##other" processContents="lax"/>
82. </xs:complexType>
84. <!--
85. DIALOG CATEGORY
86. -->
87. <xs:simpleType name ="DialogCategoryType">
88. <xs:restriction base="xs:string">
89. <xs:enumeration value="OCS"/>
90. <xs:enumeration value="TRUNK"/>
91. </xs:restriction>
92. </xs:simpleType>
93. </xs:schema>

The schema for **ms-rtcp-metrics.medialine.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" version="2.0" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v2"></xs:import>
4. <!--
5. MEDIA LINE REPORT TYPE
6. -->
7. <xs:complexType name="MediaLineType">
8. <xs:sequence>
9. <xs:element name="Description" type="tns:MediaLineDescriptionType"/>
10. <xs:element name="InboundStream" type="tns:StreamType" minOccurs="0"/>
11. <xs:element name="OutboundStream" type="tns:StreamType" minOccurs="0"/>
12. <xs:element name="LocalConversationalMOS" type="xs:float" minOccurs="0"/>
13. <xs:element name="RemoteConversationalMOS" type="xs:float" minOccurs="0"/>
14. <xs:element name="LocalConversationalMOSAlg" type="xs:string" minOccurs="0"/>
15. <xs:element name="RemoteConversationalMOSAlg" type="xs:string" minOccurs="0"/>
16. <xs:element ref="v2:AppliedBandwidthLimit" minOccurs="0" />
17. <xs:element ref="v2:AppliedBandwidthSource" minOccurs="0" />
18. <xs:element ref="v2:LocalClientEvent" minOccurs="0"/>
19. <xs:element ref="v2:RemoteClientEvent" minOccurs="0"/>
20. <xs:element ref="v2:OpaqueCoreEndpointData" minOccurs="0" />
21. <xs:element ref="v2:OpaqueChannelData" minOccurs="0" />
22. <xs:sequence minOccurs="0">
23. <xs:element ref="v2:Separator" />
24. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
25. </xs:sequence>
26. </xs:sequence>
27. <!-- Label values : "main-audio", "main-video","panoramic-video" -->
28. <xs:attribute name="Label" type="xs:string" use="required"/>
29. <xs:anyAttribute namespace="##other" processContents="lax"/>
30. </xs:complexType>
31. <!--
32. MEDIA LINE TYPE
33. -->
34. <xs:complexType name="MediaLineDescriptionType">
35. <xs:sequence>
36. <xs:element name="Connectivity" type="tns:ConnectivityType" minOccurs="0"/>
37. <!-- Security values : "None", "SRTP","V1" -->
38. <xs:element name="Security" type="xs:string" minOccurs="0"/>
39. <xs:element name="Offerer" type="xs:boolean" minOccurs="0"/>
40. <xs:element name="Transport" type="tns:TransportType" minOccurs="0"/>
41. <xs:element name="NetworkConnectivityInfo" type ="tns:NetworkConnectivityInfoType" minOccurs="0"/>
42. <xs:element name="LocalAddr" type="tns:AddrType"/>
43. <xs:element name="RemoteAddr" type="tns:AddrType"/>
44. <!-- Microphone or USB Phone or Camera device name -->
45. <xs:element name="CaptureDev" type="tns:DeviceType" minOccurs="0"/>
46. <!-- Speakers or USB Phone device name -->
47. <xs:element name="RenderDev" type="tns:DeviceType" minOccurs="0"/>
48. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
49. </xs:sequence>
50. <xs:anyAttribute namespace="##other" processContents="lax"/>
51. </xs:complexType>
52. <!--
53. Device TYPE
54. -->
55. <xs:complexType name="DeviceType">
56. <xs:sequence>
57. <xs:element name="Name" type="xs:string" minOccurs="0"/>
58. <xs:element name="Driver" type="xs:string" minOccurs="0"/>
59. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
60. </xs:sequence>
61. <xs:anyAttribute namespace="##other" processContents="lax"/>
62. </xs:complexType>
63. <!--
64. STREAM DIRECTIONAL METRICS TYPE
65. -->
66. <xs:complexType name="StreamType">
67. <xs:sequence>
68. <xs:element name="Network" type="tns:NetworkMetricsType" minOccurs="0"/>
69. <xs:element name="Payload" type="tns:PayloadMetricsType"/>
70. <xs:element name="QualityEstimates" type="tns:QualityEstimatesType" minOccurs="0"/>
71. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
72. </xs:sequence>
73. <xs:attribute name="Id" type="xs:unsignedInt" use="required"/>
74. <xs:attribute name="Start" type="xs:dateTime"/>
75. <xs:attribute name="End" type="xs:dateTime"/>
76. <xs:anyAttribute namespace="##other" processContents="lax"/>
77. <!---Id = SSRC -->
78. </xs:complexType>
80. <xs:complexType name="NetworkMetricsType">
81. <xs:sequence>
82. <!-- DiffServ CodePoint -->
83. <xs:element name="DSCP" type="xs:byte" minOccurs="0"/>
84. <!-- VLAN is described via 12 bits -->
85. <xs:element name="VLAN" type="xs:int" minOccurs="0"/>
86. <xs:element name="Jitter" type="tns:JitterType" minOccurs="0"/>
87. <xs:element name="PacketLoss" type="tns:PacketLossType" minOccurs="0"/>
88. <xs:element name="BurstGapLoss" type="tns:BurstGapLossType" minOccurs="0"/>
89. <xs:element name="Delay" type="tns:DelayType" minOccurs="0"/>
90. <xs:element name="Utilization" type="tns:NetworkUtilizationType" minOccurs="0"/>
91. <xs:element ref="v2:RatioConcealedSamplesAvg" minOccurs="0"/>
92. <xs:element ref="v2:RatioStretchedSamplesAvg" minOccurs="0"/>
93. <xs:element ref="v2:RatioCompressedSamplesAvg" minOccurs="0"/>
94. <xs:sequence minOccurs="0">
95. <xs:element ref="v2:Separator" />
96. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
97. </xs:sequence>
98. </xs:sequence>
99. <xs:anyAttribute namespace="##other" processContents="lax"/>
100. </xs:complexType>
101. <!--
102. ICE TYPE
103. -->
104. <xs:complexType name="ConnectivityType">
105. <xs:sequence>
106. <xs:element name="Ice" type="tns:IceStatusType" minOccurs="0"/>
107. <xs:element name="IceWarningFlags" type="xs:unsignedInt" minOccurs="0"/>
108. <xs:element name="RelayAddress" type="tns:AddrType" minOccurs="0" maxOccurs="unbounded"/>
109. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
110. </xs:sequence>
111. <xs:anyAttribute namespace="##other" processContents="lax"/>
112. </xs:complexType>
113. <!--
114. ICE CONECTIVITY TYPE
115. -->
116. <xs:simpleType name="IceStatusType">
117. <xs:restriction base="xs:string">
118. <xs:enumeration value="FAILED"/>
119. <xs:enumeration value="DIRECT"/>
120. <xs:enumeration value="RELAY"/>
121. <xs:enumeration value="HTTP-PROXY"/>
122. </xs:restriction>
123. </xs:simpleType>
124. <!--
125. NETWORK UTILIZATION TYPE
126. -->
127. <xs:complexType name="NetworkUtilizationType">
128. <xs:sequence>
129. <xs:element name="Packets" type="xs:int" minOccurs="0"/>
130. <xs:element name="BandwidthEst" type="xs:int" minOccurs="0"/>
131. <xs:element name="BandwidthAlloc" type="xs:int" minOccurs="0"/>
132. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
133. </xs:sequence>
134. <xs:anyAttribute namespace="##other" processContents="lax"/>
135. </xs:complexType>
136. <!--
137. PAYLOAD METRICS TYPE
138. -->
139. <xs:complexType name="PayloadMetricsType">
140. <xs:choice>
141. <xs:element name="Audio" type="tns:AudioPayloadMetricsType"/>
142. <xs:element name="Video" type="tns:VideoPayloadMetricsType"/>
143. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
144. </xs:choice>
145. <xs:anyAttribute namespace="##other" processContents="lax"/>
146. </xs:complexType>
147. <!--
148. AUDIO METRICS TYPE
149. -->
150. <xs:complexType name="AudioPayloadMetricsType">
151. <xs:sequence>
152. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
153. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
154. <xs:element name="SampleRate" type="xs:int" minOccurs="0"/>
155. <xs:element name="FrameDuration" type="xs:int" minOccurs="0"/>
156. <xs:element name="FrameOctets" type="xs:int" minOccurs="0"/>
157. <xs:element name="FramesPerPacket" type="xs:int" minOccurs="0"/>
158. <xs:element name="PacketsPerSecond" type="xs:int" minOccurs="0"/>
159. <xs:element name="FMTP" type="xs:string" minOccurs="0"/>
160. <xs:element name="Signal" type="tns:SignalType" minOccurs="0"/>
161. <xs:element name="JitterBuffer" type="tns:JitterBufferType" minOccurs="0"/>
162. <xs:element name="SilenceSupress" type="tns:SilenceSuppressionStateType" minOccurs="0"/>
163. <xs:element ref="v2:AudioFECUsed" minOccurs="0"/>
164. <!--OpaqueAudioData will be removed once everyone move to OpaqueChannelData-->
165. <xs:element ref="v2:OpaqueAudioData" minOccurs="0" />
166. <xs:sequence minOccurs="0">
167. <xs:element ref="v2:Separator" />
168. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
169. </xs:sequence>
170. </xs:sequence>
171. </xs:complexType>
172. <!--
173. VIDEO METRICS TYPE
174. -->
175. <xs:complexType name="VideoPayloadMetricsType">
176. <xs:sequence>
177. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
178. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
179. <xs:element name="Resolution" type="xs:string" minOccurs="0"/>
180. <xs:element name="VideoBitRateAvg" type="xs:int" minOccurs="0"/>
181. <xs:element name="VideoBitRateMax" type="xs:int" minOccurs="0"/>
182. <xs:element name="VideoFrameRateAvg" type="xs:float" minOccurs="0"/>
183. <xs:element name="VideoPacketLossRate" type="xs:float" minOccurs="0"/>
184. <xs:element name="VideoFrameLossRate" type="xs:float" minOccurs="0"/>
185. <xs:element name="VideoFrameEncodingTime" type="xs:float" minOccurs="0"/>
186. <xs:element name="VideoFrameDecodingTime" type="xs:float" minOccurs="0"/>
187. <xs:element name="VideoFEC" type="xs:boolean" minOccurs="0"/>
188. <xs:element name="FrozenVideoFreq" type="xs:float" minOccurs="0"/>
189. <xs:element name="FrozenPeriodPercentAvg" type="xs:float" minOccurs="0"/>
190. <xs:element name="ConsecutivePacketLossAvg" type="xs:float" minOccurs="0"/>
191. <xs:element name="RateMatchLevel" type="xs:float" minOccurs="0"/>
192. <xs:element ref="v2:VideoAllocateBWAvg" minOccurs="0"/>
193. <xs:element ref="v2:VideoLocalFrameLossPercentageAvg" minOccurs="0"/>
194. <xs:sequence minOccurs="0">
195. <xs:element ref="v2:Separator" />
196. <xs:element ref="v2:VideoResolutionDistribution" minOccurs="0" />
197. <xs:element ref="v2:VideoRateMatchingLevelDistribution" minOccurs="0" />
198. <xs:sequence minOccurs="0">
199. <xs:element ref="v2:Separator" />
200. <xs:any namespace="##other" processContents="lax" minOccurs="0"
201. maxOccurs="unbounded"/>
202. </xs:sequence>
203. </xs:sequence>
204. </xs:sequence>
205. </xs:complexType>
206. <!--
207. SILENCE SUPPRESSION STATE TYPE
208. -->
209. <xs:simpleType name="SilenceSuppressionStateType">
210. <xs:restriction base="xs:string">
211. <xs:enumeration value="ON"/>
212. <xs:enumeration value="OFF"/>
213. </xs:restriction>
214. </xs:simpleType>
215. <!--
216. ADDR TYPE
217. -->
218. <xs:complexType name="AddrType">
219. <xs:sequence>
220. <xs:element name="IPAddr" type="xs:string"/>
221. <xs:element name="Port" type="xs:unsignedShort" minOccurs="0"/>
222. <xs:element name="Inside" type="xs:boolean" minOccurs="0"/>
223. <xs:element name="SubnetMask" type="xs:string" minOccurs="0"/>
224. <xs:element ref="v2:MACAddr" minOccurs="0"></xs:element>
225. <xs:sequence minOccurs="0">
226. <xs:element ref="v2:Separator"></xs:element>
227. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
228. </xs:sequence>
229. </xs:sequence>
230. <xs:anyAttribute namespace="##other" processContents="lax"/>
231. </xs:complexType>
232. <!--
233. JITTER BUFFER TYPE
234. -->
235. <xs:complexType name="JitterBufferType">
236. <xs:sequence>
237. <xs:element name="Type" type="tns:JitterBufferAdaptiveType" minOccurs="0"/>
238. <xs:element name="Rate" type="xs:int" minOccurs="0"/>
239. <xs:element name="Nominal" type="xs:int" minOccurs="0"/>
240. <xs:element name="Max" type="xs:int" minOccurs="0"/>
241. <xs:element name="AbsMax" type="xs:int" minOccurs="0"/>
242. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
243. </xs:sequence>
244. <xs:anyAttribute namespace="##other" processContents="lax"/>
245. </xs:complexType>
246. <!--
247. JITTER BUFFER ADAPTIVE TYPE
248. -->
249. <xs:simpleType name="JitterBufferAdaptiveType">
250. <xs:restriction base="xs:string">
251. <xs:enumeration value="UNKNOWN"/>
252. <xs:enumeration value="RESERVED"/>
253. <xs:enumeration value="NON-ADAPTIVE"/>
254. <xs:enumeration value="ADAPTIVE"/>
255. </xs:restriction>
256. </xs:simpleType>
257. <!--
258. PACKET LOSS TYPE
259. -->
260. <xs:complexType name="PacketLossType">
261. <xs:sequence>
262. <xs:element name="LossRate" type="xs:float" minOccurs="0"/>
263. <xs:element name="LossRateMax" type="xs:float" minOccurs="0"/>
264. <xs:element name="DiscardRate" type="xs:float" minOccurs="0"/>
265. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
266. </xs:sequence>
267. <xs:anyAttribute namespace="##other" processContents="lax"/>
268. </xs:complexType>
269. <!--
270. BURST GAP LOSS TYPE
271. -->
272. <xs:complexType name="BurstGapLossType">
273. <xs:sequence>
274. <xs:element name="BurstDensity" type="xs:float" minOccurs="0"/>
275. <xs:element name="BurstDuration" type="xs:int" minOccurs="0"/>
276. <xs:element name="GapDensity" type="xs:float" minOccurs="0"/>
277. <xs:element name="GapDuration" type="xs:int" minOccurs="0"/>
278. <xs:element name="MinGapThreshold" type="xs:int" minOccurs="0"/>
279. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
280. </xs:sequence>
281. <xs:anyAttribute namespace="##other" processContents="lax"/>
282. </xs:complexType>
283. <!--
284. DELAY TYPE
285. -->
286. <xs:complexType name="DelayType">
287. <xs:sequence>
288. <xs:element name="RoundTrip" type="xs:int" minOccurs="0"/>
289. <xs:element name="RoundTripMax" type="xs:int" minOccurs="0"/>
290. <xs:element name="EndSystem" type="xs:int" minOccurs="0"/>
291. <xs:element name="OneWay" type="xs:int" minOccurs="0"/>
292. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
293. </xs:sequence>
294. <xs:anyAttribute namespace="##other" processContents="lax"/>
295. </xs:complexType>
296. <!--
297. JITTER TYPE
298. -->
299. <xs:complexType name="JitterType">
300. <xs:sequence>
301. <xs:element name="InterArrival" type="xs:int" minOccurs="0"/>
302. <xs:element name="InterArrivalMax" type="xs:int" minOccurs="0"/>
303. <xs:element name="MeanAbs" type="xs:int" minOccurs="0"/>
304. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
305. </xs:sequence>
306. <xs:anyAttribute namespace="##other" processContents="lax"/>
307. </xs:complexType>
308. <!--
309. SIGNAL TYPE
310. -->
311. <xs:complexType name="SignalType">
312. <xs:sequence>
313. <xs:element name="SignalLevel" type="xs:int" minOccurs="0" />
314. <xs:element name="NoiseLevel" type="xs:int" minOccurs="0" />
315. <xs:element name="EchoReturn" type="xs:int" minOccurs="0" />
316. <xs:element name="SpeakerFeedbackMicIn" type="xs:int" minOccurs="0"/>
317. <xs:element name="SpeechLevelMicIn" type="xs:int" minOccurs="0"/>
318. <xs:element name="SpeechLevelPostProcess" type="xs:int" minOccurs="0"/>
319. <xs:element name="SignalLevelLoudSpeaker" type="xs:int" minOccurs="0"/>
320. <xs:element name="BackGroundNoiseMicIn" type="xs:int" minOccurs="0"/>
321. <xs:element name="BackGroundNoiseSent" type="xs:int" minOccurs="0"/>
322. <xs:element name="LocalSpeechToEcho" type="xs:int" minOccurs="0"/>
323. <xs:element name="SpeakerGlitchRate" type="xs:int" minOccurs="0"/>
324. <xs:element name="MicGlitchRate" type="xs:int" minOccurs="0"/>
325. <xs:element name="SpeakerClipRate" type="xs:int" minOccurs="0"/>
326. <xs:element name="MicClipRate" type="xs:int" minOccurs="0"/>
327. <xs:element name="RxAGCSignalLevel" type="xs:int" minOccurs="0"/>
328. <xs:element name="RxAGCNoiseLevel" type="xs:int" minOccurs="0"/>
329. <xs:element ref="v2:InitialSignalLevelRMS" minOccurs="0"/>
330. <xs:element ref="v2:AudioTimestampDriftRateMic" minOccurs="0"/>
331. <xs:element ref="v2:AudioTimestampDriftRateSpk" minOccurs="0"/>
332. <xs:element ref="v2:AudioTimestampErrorMicMs" minOccurs="0"/>
333. <xs:element ref="v2:AudioTimestampErrorSpkMs" minOccurs="0"/>
334. <xs:element ref="v2:VsEntryCauses" minOccurs="0"/>
335. <xs:element ref="v2:EchoEventCauses" minOccurs="0"/>
336. <xs:element ref="v2:EchoPercentMicIn" minOccurs="0"/>
337. <xs:element ref="v2:EchoPercentSend" minOccurs="0"/>
338. <xs:element ref="v2:RxAvgAGCGain" minOccurs="0"/>
339. <xs:sequence minOccurs="0">
340. <xs:element ref="v2:Separator"></xs:element>
341. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
342. </xs:sequence>
343. </xs:sequence>
344. <xs:anyAttribute namespace="##other" processContents="lax"/>
345. </xs:complexType>
346. <!--
347. QUALITY ESTIMATES TYPE
348. -->
349. <xs:complexType name="QualityEstimatesType">
350. <xs:choice>
351. <xs:element name="Audio" type="tns:AudioQualityEstimatesType"/>
352. <xs:element name="Video" type="tns:VideoQualityEstimatesType"/>
353. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
354. </xs:choice>
355. </xs:complexType>
356. <!--
357. AUDIO QUALITY ESTIMATES TYPE
358. -->
359. <xs:complexType name="AudioQualityEstimatesType">
360. <xs:sequence>
361. <xs:element name="RecvListenMOS" type="xs:float" minOccurs="0"/>
362. <xs:element name="RecvListenMOSMin" type="xs:float" minOccurs="0"/>
363. <xs:element name="RecvListenMOSAlg" type="xs:string" minOccurs="0"/>
364. <xs:element name="SendListenMOS" type="xs:float" minOccurs="0"/>
365. <xs:element name="SendListenMOSMin" type="xs:float" minOccurs="0"/>
366. <xs:element name="SendListenMOSAlg" type="xs:string" minOccurs="0"/>
367. <xs:element name="NetworkMOS" type="tns:NetworkAudioMOSType" minOccurs="0"/>
368. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
369. </xs:sequence>
370. <xs:anyAttribute namespace="##other" processContents="lax"/>
371. </xs:complexType>
372. <!--
373. NETWORK AUDIO MOS FACTOR TYPE
374. -->
375. <xs:complexType name="NetworkAudioMOSType">
376. <xs:sequence>
377. <xs:element name="OverallAvg" type="xs:float" minOccurs="0"/>
378. <xs:element name="OverallMin" type="xs:float" minOccurs="0"/>
379. <xs:element name="DegradationAvg" type="xs:float" minOccurs="0"/>
380. <xs:element name="DegradationMax" type="xs:float" minOccurs="0"/>
381. <xs:element name="DegradationJitterAvg" type="xs:float" minOccurs="0"/>
382. <xs:element name="DegradationPacketLossAvg" type="xs:float" minOccurs="0"/>
383. <xs:element ref="v2:NetworkMOSAlg" minOccurs="0"/>
384. <xs:sequence minOccurs="0">
385. <xs:element ref="v2:Separator" />
386. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
387. </xs:sequence>
388. </xs:sequence>
389. <xs:anyAttribute namespace="##other" processContents="lax"/>
390. </xs:complexType>
391. <!--
392. VIDEO QUALITY ESTIMATES TYPE
393. -->
394. <xs:complexType name="VideoQualityEstimatesType">
395. <xs:sequence>
396. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
397. </xs:sequence>
398. <xs:anyAttribute namespace="##other" processContents="lax"/>
399. </xs:complexType>
400. <!--
401. TRANSPORT TYPE
402. -->
403. <xs:simpleType name="TransportType">
404. <xs:restriction base="xs:string">
405. <xs:enumeration value="UDP"/>
406. <xs:enumeration value="TCP"/>
407. </xs:restriction>
408. </xs:simpleType>
410. <!--
411. NETWORK CONNECTIVITY TYPE
412. -->
413. <xs:complexType name="NetworkConnectivityInfoType">
414. <xs:sequence>
415. <xs:element name="NetworkConnection" type="tns:NetworkConnectionType" minOccurs="0"/>
416. <xs:element name="VPN" type="xs:boolean" minOccurs="0"/>
417. <xs:element name="LinkSpeed" type="xs:float" minOccurs="0"/>
418. <xs:element ref="v2:BSSID" minOccurs="0"/>
419. <xs:sequence minOccurs="0">
420. <xs:element ref="v2:Separator"></xs:element>
421. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
422. </xs:sequence>
423. </xs:sequence>
424. <xs:anyAttribute namespace="##other" processContents="lax"/>
425. </xs:complexType>

428. <!--
429. ETHERNET CONNECTION TYPE
430. -->
431. <xs:simpleType name="NetworkConnectionType">
432. <xs:restriction base="xs:string">
433. <xs:enumeration value="wired"/>
434. <xs:enumeration value="wifi"/>
435. </xs:restriction>
436. </xs:simpleType>
438. <!--
439. ENDPOINT TYPE
440. -->
441. <xs:complexType name="EndpointType">
442. <xs:sequence>
443. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
444. </xs:sequence>
445. <xs:attribute name="Name" type="xs:string" use="required"/>
446. <xs:attribute name="ProfileId" type="xs:string" use="optional"/>
447. <xs:attribute ref="v2:OS" use="optional"/>
448. <xs:attribute ref="v2:CPUName" use="optional"/>
449. <xs:attribute ref="v2:CPUNumberOfCores" use="optional"/>
450. <xs:attribute ref="v2:CPUProcessorSpeed" use="optional"/>
451. <xs:attribute ref="v2:VirtualizationFlag" use="optional"/>
452. <xs:anyAttribute namespace="##other" processContents="lax"/>
453. <!-- Name = Computer Name-->
454. <!-- ProfileId = Endpoint Report GUID - Note: this attribute is optional-->
455. </xs:complexType>
456. </xs:schema>

The schema for **ms-rtcp-metrics.v2.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics.v2" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics.v2" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
4. <!--Schema version-->
5. <xs:attribute name="SchemaVersion" type="xs:string"/>
7. <!--The following are part of dialog info-->
9. <xs:element name="CallPriority" type="xs:short"/>
10. <xs:element name="MediationServerBypassFlag" type="xs:boolean"/>
11. <xs:element name="TrunkingPeer" type="xs:string"/>
12. <xs:element name="BSSID" type="xs:string"/>
13. <xs:element name="MediaBypassWarningFlag" type="xs:int"/>
14. <xs:element name="RegisteredInside" type="xs:boolean"/>
16. <!--The following are media metrics-->
18. <xs:element name="AppliedBandwidthLimit" type="xs:int"/>
19. <xs:element name="AppliedBandwidthSource" type="xs:string"/>
20. <xs:element name="InitialSignalLevelRMS" type="xs:float"/>
21. <xs:element name="AudioFECUsed" type="xs:boolean"/>
22. <xs:element name="VideoAllocateBWAvg" type="xs:int"/>
23. <xs:element name="VideoLocalFrameLossPercentageAvg" type="xs:float"/>
25. <!--The following are AEC metrics-->
26. <xs:element name="AudioTimestampDriftRateMic" type="xs:float"/>
27. <xs:element name="AudioTimestampDriftRateSpk" type="xs:float"/>
28. <xs:element name="AudioTimestampErrorMicMs" type="xs:float"/>
29. <xs:element name="AudioTimestampErrorSpkMs" type="xs:float"/>
30. <xs:element name="VsEntryCauses" type="xs:unsignedByte"/>
31. <xs:element name="EchoEventCauses" type="xs:unsignedByte"/>
32. <xs:element name="EchoPercentMicIn" type="xs:float"/>
33. <xs:element name="EchoPercentSend" type="xs:float"/>
34. <xs:element name="RxAvgAGCGain" type="xs:int"/>
36. <!--The following are healer metrics-->
37. <xs:element name="RatioConcealedSamplesAvg" type="xs:float"/>
38. <xs:element name="RatioStretchedSamplesAvg" type="xs:float"/>
39. <xs:element name="RatioCompressedSamplesAvg" type="xs:float"/>
41. <!--The following are Network MOS related-->
42. <xs:element name="NetworkMOSAlg" type="xs:string"/>

45. <!--The following are endpoint information-->
46. <xs:attribute name="OS" type="xs:string"/>
47. <!--
48. Bit flag indicate if the system is running in a virtualized environment:
49. 0x00: None
50. 0x01: HyperV
51. 0x02: VMWare
52. 0x04: Virtual PC
53. 0x08: Xen PC
54. -->
55. <xs:attribute name="VirtualizationFlag" type="xs:byte"/>
56. <xs:attribute name="CPUNumberOfCores" type="xs:short"/>
57. <xs:attribute name="CPUProcessorSpeed" type="xs:int"/>
58. <xs:attribute name="CPUName" type="xs:string"/>
59. <xs:element name="MACAddr" type="xs:string"/>

62. <!--The following are client event count-->
63. <xs:element name="LocalClientEvent" type="tns:ClientEventType"/>
64. <xs:element name="RemoteClientEvent" type="tns:ClientEventType"/>
65. <xs:complexType name="ClientEventType">
66. <xs:sequence>
67. <xs:element name="NetworkSendQualityEventRatio"
68. type="xs:float" minOccurs="0"/>
69. <xs:element name="NetworkReceiveQualityEventRatio"
70. type="xs:float" minOccurs="0"/>
71. <xs:element name="NetworkDelayEventRatio" type="xs:float" minOccurs="0"/>
72. <xs:element name="NetworkBandwidthLowEventRatio"
73. type="xs:float" minOccurs="0"/>
74. <xs:element name="CPUInsufficientEventRatio"
75. type="xs:float" minOccurs="0"/>
76. <xs:element name="DeviceHalfDuplexAECEventRatio"
77. type="xs:float" minOccurs="0"/>
78. <xs:element name="DeviceRenderNotFunctioningEventRatio"
79. type="xs:float" minOccurs="0"/>
80. <xs:element name="DeviceCaptureNotFunctioningEventRatio"
81. type="xs:float" minOccurs="0"/>
82. <xs:element name="DeviceGlitchesEventRatio"
83. type="xs:float" minOccurs="0"/>
84. <xs:element name="DeviceLowSNREventRatio" type="xs:float" minOccurs="0"/>
85. <xs:element name="DeviceLowSpeechLevelEventRatio"
86. type="xs:float" minOccurs="0"/>
87. <xs:element name="DeviceClippingEventRatio"
88. type="xs:float" minOccurs="0"/>
89. <xs:element name="DeviceEchoEventRatio" type="xs:float" minOccurs="0"/>
90. <xs:element name="DeviceNearEndToEchoRatioEventRatio"
91. type="xs:float" minOccurs="0"/>
92. <xs:element name="DeviceMultipleEndpointsEventCount"
93. type="xs:short" minOccurs="0"/>
94. <xs:element name="DeviceHowlingEventCount"
95. type="xs:short" minOccurs="0"/>
96. <xs:sequence minOccurs="0">
97. <xs:element ref="tns:Separator"/>
98. <xs:any namespace="##any" processContents="lax" minOccurs="0"
99. maxOccurs="unbounded"/>
100. </xs:sequence>
101. </xs:sequence>
102. <xs:anyAttribute namespace="##any" processContents="lax" />
103. </xs:complexType>
104. <xs:element name="VideoResolutionDistribution"
105. type="tns:VideoResolutionDistributionType"/>
107. <xs:complexType name="VideoResolutionDistributionType">
108. <xs:sequence>
109. <xs:element name="CIFQuality" type="xs:unsignedByte" />
110. <xs:element name="VGAQuality" type="xs:unsignedByte" />
111. <xs:element name="HD720Quality" type="xs:unsignedByte" />
112. <xs:sequence minOccurs="0">
113. <xs:element ref="tns:Separator"/>
114. <xs:any namespace="##any" processContents="lax" minOccurs="0"
115. maxOccurs="unbounded"/>
116. </xs:sequence>
117. </xs:sequence>
118. <xs:anyAttribute namespace="##any" processContents="lax"/>
119. </xs:complexType>
120. <xs:element name="VideoRateMatchingLevelDistribution"
121. type="tns:VideoRateMatchingLevelDistributionType"/>
123. <xs:complexType name="VideoRateMatchingLevelDistributionType">
124. <xs:sequence>
125. <xs:element name="None\_Drop" type="xs:unsignedByte" />
126. <xs:element name="B\_Drop" type="xs:unsignedByte" />
127. <xs:element name="BP\_Drop" type="xs:unsignedByte" />
128. <xs:element name="BPSP\_Drop" type="xs:unsignedByte" />
129. <xs:element name="BPSPI\_Drop" type="xs:unsignedByte" />
130. <xs:sequence minOccurs="0">
131. <xs:element ref="tns:Separator"/>
132. <xs:any namespace="##any" processContents="lax" minOccurs="0"
133. maxOccurs="unbounded"/>
134. </xs:sequence>
135. </xs:sequence>
136. <xs:anyAttribute namespace="##any" processContents="lax"/>
137. </xs:complexType>
139. <xs:element name="OpaqueClientPlatformData"
140. type="tns:OpaqueClientPlatformDataType" />
141. <xs:element name="OpaqueServerPlatformData"
142. type="tns:OpaqueServerPlatformDataType" />
143. <xs:element name="OpaqueCoreEndpointData"
144. type="tns:OpaqueCoreEndpointDataType" />
145. <xs:element name="OpaqueConferenceData"
146. type="tns:OpaqueConferenceDataType" />
147. <xs:element name="OpaqueChannelData" type="tns:OpaqueChannelDataType" />
149. <xs:element name="OpaqueAudioData" type="v2:OpaqueAudioDataType" />
151. <!--OPAQUE MEDIALINE DATA TYPE-->
152. <xs:complexType name="OpaqueCoreEndpointDataType">
153. <xs:sequence>
154. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
155. </xs:sequence>
156. <xs:anyAttribute namespace="##any" processContents="lax" />
157. </xs:complexType>
159. <!--OPAQUE CHANNEL DATA TYPE-->
160. <xs:complexType name="OpaqueChannelDataType" >
161. <xs:sequence>
162. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
163. </xs:sequence>
164. <xs:anyAttribute namespace="##any" processContents="lax" />
165. </xs:complexType>
167. <!--OPAQUE CLIENT PLATFORM DATA TYPE-->
168. <xs:complexType name="OpaqueClientPlatformDataType">
169. <xs:sequence>
170. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
171. </xs:sequence>
172. <xs:anyAttribute namespace="##any" processContents="lax" />
173. </xs:complexType>
175. <!--OPAQUE SERVER PLATFORM DATA TYPE-->
176. <xs:complexType name="OpaqueServerPlatformDataType">
177. <xs:sequence>
178. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
179. </xs:sequence>
180. <xs:anyAttribute namespace="##any" processContents="lax" />
181. </xs:complexType>
183. <!--OPAQUE CONFERENCE DATA TYPE-->
184. <xs:complexType name="OpaqueConferenceDataType">
185. <xs:sequence>
186. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
187. </xs:sequence>
188. <xs:anyAttribute namespace="##any" processContents="lax" />
189. </xs:complexType>
191. <!--OPAQUE AUDIO DATA TYPE (this should be removed once nobody refer to it)-->
192. <xs:complexType name="OpaqueAudioDataType">
193. <xs:sequence>
194. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
195. </xs:sequence>
196. <xs:anyAttribute namespace="##any" processContents="lax" />
197. </xs:complexType>
199. <!--Separator is used for forward/backward compatiblity-->
200. <xs:element name="Separator">
201. <xs:complexType></xs:complexType>
202. </xs:element>
203. </xs:schema>

## Microsoft Lync Server 2013 Schema

This section follows the product behavior described in footnote[<310>](#Appendix_A_310" \o "Product behavior note 310).The schema has been split into four related schema definition files:

* ms-rtcp-metrics.xsd
* ms-rtcp-metrics.medialine.xsd
* ms-rtcp-metrics.v2.xsd
* ms-rtcp-metrics.v3.xsd

The schema for **ms-rtcp-metrics.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v2"></xs:import>
4. <xs:import namespace="ms-rtcp-metrics.v3"></xs:import>
5. <xs:include schemaLocation="ms-rtcp-metrics.medialine.xsd"></xs:include>
6. <!--
7. RTCP METRICS STATEMENT
8. -->
9. <xs:element name="VQReportEvent" type="tns:VQReportEventType"/>
10. <!--
11. RTCP REPORT TYPE
12. -->
13. <xs:complexType name="VQReportEventType">
14. <xs:choice>
15. <xs:element name="VQSessionReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
16. <xs:element name="VQSessionIntervalReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
17. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
18. </xs:choice>
19. <xs:attribute name="Version" type="xs:string" use="optional"/>
20. <xs:attribute ref="v2:SchemaVersion" use="optional"/>
21. <xs:anyAttribute namespace="##other" processContents="lax"/>
22. </xs:complexType>
23. <!--
24. VQ SESSION REPORT TYPE
25. -->
26. <xs:complexType name="SessionReportType">
27. <xs:sequence>
28. <xs:element name="LocationProfile" type="xs:string" minOccurs="0"/>
29. <xs:element name="Pool" type="xs:string" minOccurs="0"/>
30. <xs:element name="Endpoint" type="tns:EndpointType"/>
31. <xs:element name="DialogInfo" type="tns:DialogInfoType"/>
32. <xs:element name="MediaLine" type="tns:MediaLineType" maxOccurs="unbounded"/>
33. <xs:element ref="v2:OpaqueClientPlatformData" minOccurs="0" />
34. <xs:element ref="v2:OpaqueServerPlatformData" minOccurs="0" />
35. <xs:element ref="v2:OpaqueConferenceData" minOccurs="0" />
36. <xs:sequence minOccurs="0">
37. <xs:element ref="v2:Separator" />
38. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
39. </xs:sequence>
40. </xs:sequence>
41. <xs:attribute name="SessionId" type="xs:string" use="required"/>
42. <xs:anyAttribute namespace="##other" processContents="lax"/>
43. <!-- SessionId = DialogID -->
44. </xs:complexType>
45. <!--
46. DIALOG INFO TYPE
47. -->
48. <xs:complexType name="DialogInfoType">
49. <xs:sequence>
50. <xs:element name="DialogCategory" type="tns:DialogCategoryType" minOccurs="0"/>
51. <xs:element name="CorrelationID" type="xs:string" minOccurs="0"/>
52. <xs:element name="FromURI" type="xs:anyURI"/>
53. <xs:element name="ToURI" type="xs:anyURI"/>
54. <xs:element name="Caller" type="xs:boolean"/>
55. <xs:element name="LocalContactURI" type="xs:anyURI"/>
56. <xs:element name="RemoteContactURI" type="xs:anyURI"/>
57. <xs:element name="LocalUserAgent" type="xs:string"/>
58. <xs:element name="RemoteUserAgent" type="xs:string"/>
59. <!-- PAI = P-Asserted-Identity -->
60. <xs:element name="LocalPAI" type="xs:anyURI" minOccurs="0"/>
61. <xs:element name="RemotePAI" type="xs:anyURI" minOccurs="0"/>
62. <xs:element name="ConfURI" type="xs:anyURI" minOccurs="0"/>
63. <xs:element ref="v2:CallPriority" minOccurs="0"/>
64. <xs:element ref="v2:MediationServerBypassFlag" minOccurs="0"/>
65. <xs:element ref="v2:TrunkingPeer" minOccurs="0"/>
66. <xs:element ref="v2:MediaBypassWarningFlag" minOccurs="0"/>
67. <xs:sequence minOccurs="0">
68. <xs:element ref="v2:Separator" />
69. <xs:element ref="v2:RegisteredInside" minOccurs="0"/>
70. <xs:sequence minOccurs="0">
71. <xs:element ref="v2:Separator" />
72. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
73. </xs:sequence>
74. </xs:sequence>
75. </xs:sequence>
76. <xs:attribute name="CallId" type="xs:string" use="required"/>
77. <xs:attribute name="FromTag" type="xs:string" use="required"/>
78. <xs:attribute name="ToTag" type="xs:string" use="required"/>
79. <xs:attribute name="Start" type="xs:dateTime" use="required"/>
80. <xs:attribute name="End" type="xs:dateTime" use="required"/>
81. <xs:anyAttribute namespace="##other" processContents="lax"/>
82. </xs:complexType>
83. <!--
84. DIALOG CATEGORY
85. -->
86. <xs:simpleType name ="DialogCategoryType">
87. <xs:restriction base="xs:string">
88. <xs:enumeration value="OCS"/>
89. <xs:enumeration value="TRUNK"/>
90. </xs:restriction>
91. </xs:simpleType>
92. </xs:schema>

The schema for **ms-rtcp-metrics.medialine.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" version="2.0" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v2"></xs:import>
4. <xs:import namespace="ms-rtcp-metrics.v3"></xs:import>
5. <!--
6. MEDIA LINE REPORT TYPE
7. -->
8. <xs:complexType name="MediaLineType">
9. <xs:sequence>
10. <xs:element name="Description" type="tns:MediaLineDescriptionType"/>
11. <xs:element name="InboundStream" type="tns:StreamType" minOccurs="0"/>
12. <xs:element name="OutboundStream" type="tns:StreamType" minOccurs="0"/>
13. <xs:element name="LocalConversationalMOS" type="xs:float" minOccurs="0"/>
14. <xs:element name="RemoteConversationalMOS" type="xs:float" minOccurs="0"/>
15. <xs:element name="LocalConversationalMOSAlg" type="xs:string" minOccurs="0"/>
16. <xs:element name="RemoteConversationalMOSAlg" type="xs:string" minOccurs="0"/>
17. <xs:element ref="v2:AppliedBandwidthLimit" minOccurs="0" />
18. <xs:element ref="v2:AppliedBandwidthSource" minOccurs="0" />
19. <xs:element ref="v2:LocalClientEvent" minOccurs="0"/>
20. <xs:element ref="v2:RemoteClientEvent" minOccurs="0"/>
21. <xs:element ref="v2:OpaqueCoreEndpointData" minOccurs="0" />
22. <xs:element ref="v2:OpaqueChannelData" minOccurs="0" />
23. <xs:sequence minOccurs="0">
24. <xs:element ref="v2:Separator" />
25. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
26. </xs:sequence>
27. </xs:sequence>
28. <!-- Label values : "main-audio", "main-video","panoramic-video", "data", -->
29. <!-- Additional Label values in v3 : "main-video1", "main-video2", "main-video3","main-video4","main-video5", "main-video6",-->
30. <xs:attribute name="Label" type="xs:string" use="required"/>
31. <xs:anyAttribute namespace="##other" processContents="lax"/>
32. </xs:complexType>
33. <!--
34. MEDIA LINE TYPE
35. -->
36. <xs:complexType name="MediaLineDescriptionType">
37. <xs:sequence>
38. <xs:element name="Connectivity" type="tns:ConnectivityType" minOccurs="0"/>
39. <!-- Security values : "None", "SRTP","V1" -->
40. <xs:element name="Security" type="xs:string" minOccurs="0"/>
41. <xs:element name="Offerer" type="xs:boolean" minOccurs="0"/>
42. <xs:element name="Transport" type="tns:TransportType" minOccurs="0"/>
43. <xs:element name="NetworkConnectivityInfo" type ="tns:NetworkConnectivityInfoType" minOccurs="0"/>
44. <xs:element name="LocalAddr" type="tns:AddrType"/>
45. <xs:element name="RemoteAddr" type="tns:AddrType"/>
46. <!-- Microphone or USB Phone or Camera device name -->
47. <xs:element name="CaptureDev" type="tns:DeviceType" minOccurs="0"/>
48. <!-- Speakers or USB Phone device name -->
49. <xs:element name="RenderDev" type="tns:DeviceType" minOccurs="0"/>
50. <xs:element ref="v3:ReflexiveLocalIPAddress" minOccurs="0"/>
51. <xs:element ref="v3:MidCallReport" minOccurs="0"/>
52. <xs:sequence minOccurs="0">
53. <xs:element ref="v3:Separator" />
54. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
55. </xs:sequence>
56. </xs:sequence>
57. <xs:anyAttribute namespace="##other" processContents="lax"/>
58. </xs:complexType>
59. <!--
60. Device TYPE
61. -->
62. <xs:complexType name="DeviceType">
63. <xs:sequence>
64. <xs:element name="Name" type="xs:string" minOccurs="0"/>
65. <xs:element name="Driver" type="xs:string" minOccurs="0"/>
66. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
67. </xs:sequence>
68. <xs:anyAttribute namespace="##other" processContents="lax"/>
69. </xs:complexType>
70. <!--
71. STREAM DIRECTIONAL METRICS TYPE
72. -->
73. <xs:complexType name="StreamType">
74. <xs:sequence>
75. <xs:element name="Network" type="tns:NetworkMetricsType" minOccurs="0"/>
76. <xs:element name="Payload" type="tns:PayloadMetricsType" />
77. <xs:element name="QualityEstimates" type="tns:QualityEstimatesType" minOccurs="0"/>
78. <!-- Support reporting multiple payloads per stream-->
79. <xs:element ref="v3:AdditionalPayload" minOccurs="0" maxOccurs="unbounded"/>
80. <xs:sequence minOccurs="0">
81. <xs:element ref="v3:Separator3"></xs:element>
82. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
83. </xs:sequence>
84. </xs:sequence>
85. <xs:attribute name="Id" type="xs:unsignedInt" use="required"/>
86. <xs:attribute name="Start" type="xs:dateTime"/>
87. <xs:attribute name="End" type="xs:dateTime"/>
88. <xs:anyAttribute namespace="##other" processContents="lax"/>
89. <!-- Id = SSRC -->
90. </xs:complexType>
91. <xs:complexType name="NetworkMetricsType">
92. <xs:sequence>
93. <!-- DiffServ CodePoint -->
94. <xs:element name="DSCP" type="xs:byte" minOccurs="0"/>
95. <!-- VLAN is described via 12 bits -->
96. <xs:element name="VLAN" type="xs:int" minOccurs="0"/>
97. <xs:element name="Jitter" type="tns:JitterType" minOccurs="0"/>
98. <xs:element name="PacketLoss" type="tns:PacketLossType" minOccurs="0"/>
99. <xs:element name="BurstGapLoss" type="tns:BurstGapLossType" minOccurs="0"/>
100. <xs:element name="Delay" type="tns:DelayType" minOccurs="0"/>
101. <xs:element name="Utilization" type="tns:NetworkUtilizationType" minOccurs="0"/>
102. <xs:element ref="v2:RatioConcealedSamplesAvg" minOccurs="0"/>
103. <xs:element ref="v2:RatioStretchedSamplesAvg" minOccurs="0"/>
104. <xs:element ref="v2:RatioCompressedSamplesAvg" minOccurs="0"/>
105. <xs:sequence minOccurs="0">
106. <xs:element ref="v2:Separator" />
107. <xs:element ref="v3:ConcealRatioMax" minOccurs="0"/>
108. <xs:element ref="v3:ConcealRatioSd" minOccurs="0"/>
109. <xs:element ref="v3:HealerPacketDropRatio" minOccurs="0"/>
110. <xs:element ref="v3:HealerFECPacketUsedRatio" minOccurs="0"/>
111. <xs:element ref="v3:MaxCompressedSamples" minOccurs="0"/>
112. <xs:element name="LossCongestionPercent" type="xs:float" minOccurs="0"/>
113. <xs:element name="DelayCongestionPercent" type="xs:float" minOccurs="0"/>
114. <xs:element name="ContentionDetectedPercent" type="xs:float" minOccurs="0"/>
115. <xs:sequence minOccurs="0">
116. <xs:element ref="v3:Separator3" />
117. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
118. </xs:sequence>
119. </xs:sequence>
120. </xs:sequence>
121. <xs:anyAttribute namespace="##other" processContents="lax"/>
122. </xs:complexType>
123. <!--
124. ICE TYPE
125. -->
126. <xs:complexType name="ConnectivityType">
127. <xs:sequence>
128. <xs:element name="Ice" type="tns:IceStatusType" minOccurs="0"/>
129. <xs:element name="IceWarningFlags" type="xs:unsignedInt" minOccurs="0"/>
130. <xs:element name="RelayAddress" type="tns:AddrType" minOccurs="0" maxOccurs="unbounded"/>
131. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
132. </xs:sequence>
133. <xs:attribute ref="v2:RtpLatched" use="optional"/>
134. <xs:anyAttribute namespace="##other" processContents="lax"/>
135. </xs:complexType>
136. <!--
137. ICE CONECTIVITY TYPE
138. -->
139. <xs:simpleType name="IceStatusType">
140. <xs:restriction base="xs:string">
141. <xs:enumeration value="FAILED"/>
142. <xs:enumeration value="DIRECT"/>
143. <xs:enumeration value="RELAY"/>
144. <xs:enumeration value="HTTP-PROXY"/>
145. </xs:restriction>
146. </xs:simpleType>
147. <!--
148. NETWORK UTILIZATION TYPE
149. -->
150. <xs:complexType name="NetworkUtilizationType">
151. <xs:sequence>
152. <xs:element name="Packets" type="xs:int" minOccurs="0"/>
153. <xs:element name="BandwidthEst" type="xs:int" minOccurs="0"/>
154. <xs:element name="BandwidthAlloc" type="xs:int" minOccurs="0"/>
155. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
156. </xs:sequence>
157. <xs:anyAttribute namespace="##other" processContents="lax"/>
158. </xs:complexType>
159. <!--
160. PAYLOAD METRICS TYPE
161. -->
162. <xs:complexType name="PayloadMetricsType">
163. <xs:choice>
164. <xs:element name="Audio" type="tns:AudioPayloadMetricsType"/>
165. <xs:element name="Video" type="tns:VideoPayloadMetricsType"/>
166. <xs:element name="ApplicationSharing" type="v3:ApplicationSharingPayloadMetricsType" />
167. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
168. </xs:choice>
169. <xs:anyAttribute namespace="##other" processContents="lax"/>
170. </xs:complexType>
171. <!--
172. AUDIO METRICS TYPE
173. -->
174. <xs:complexType name="AudioPayloadMetricsType">
175. <xs:sequence>
176. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
177. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
178. <xs:element name="SampleRate" type="xs:int" minOccurs="0"/>
179. <xs:element name="FrameDuration" type="xs:int" minOccurs="0"/>
180. <xs:element name="FrameOctets" type="xs:int" minOccurs="0"/>
181. <xs:element name="FramesPerPacket" type="xs:int" minOccurs="0"/>
182. <xs:element name="PacketsPerSecond" type="xs:int" minOccurs="0"/>
183. <!-- <xs:element name="RatioHealedSamplesAvg" type="xs:float" minOccurs="0"/> -->
184. <xs:element name="FMTP" type="xs:string" minOccurs="0"/>
185. <xs:element name="Signal" type="tns:SignalType" minOccurs="0"/>
186. <xs:element name="JitterBuffer" type="tns:JitterBufferType" minOccurs="0"/>
187. <xs:element name="SilenceSupress" type="tns:SilenceSuppressionStateType" minOccurs="0"/>
188. <xs:element ref="v2:AudioFECUsed" minOccurs="0"/>
189. <!--OpaqueAudioData will be removed once everyone move to OpaqueChannelData-->
190. <xs:element ref="v2:OpaqueAudioData" minOccurs="0" />
191. <xs:sequence minOccurs="0">
192. <xs:element ref="v2:Separator" />
193. <xs:element ref="v3:DecodeStereoPercent" minOccurs="0"/>
194. <xs:element ref="v3:AecRenderStereoPercent" minOccurs="0"/>
195. <xs:element ref="v3:AudioPostFECPLR" minOccurs="0"/>
196. <xs:element ref="v3:EncodeStereoPercent" minOccurs="0"/>
197. <xs:element ref="v3:AecCaptureStereoPercent" minOccurs="0"/>
198. <xs:sequence minOccurs="0">
199. <xs:element ref="v3:Separator3" />
200. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
201. </xs:sequence>
202. </xs:sequence>
203. </xs:sequence>
204. </xs:complexType>
205. <!--
206. VIDEO METRICS TYPE
207. -->
208. <xs:complexType name="VideoPayloadMetricsType">
209. <xs:sequence>
210. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
211. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
212. <xs:element name="Resolution" type="xs:string" minOccurs="0"/>
213. <xs:element name="VideoBitRateAvg" type="xs:int" minOccurs="0"/>
214. <xs:element name="VideoBitRateMax" type="xs:int" minOccurs="0"/>
215. <xs:element name="VideoFrameRateAvg" type="xs:float" minOccurs="0"/>
216. <xs:element name="VideoPacketLossRate" type="xs:float" minOccurs="0"/>
217. <xs:element name="VideoFrameLossRate" type="xs:float" minOccurs="0"/>
218. <!--This is obsolete in w14-->
219. <xs:element name="VideoFrameEncodingTime" type="xs:float" minOccurs="0"/>
220. <!--This is obsolete in w14-->
221. <xs:element name="VideoFrameDecodingTime" type="xs:float" minOccurs="0"/>
222. <xs:element name="VideoFEC" type="xs:boolean" minOccurs="0"/>
223. <!--This is obsolete in w14-->
224. <xs:element name="FrozenVideoFreq" type="xs:float" minOccurs="0"/>
225. <!--This is obsolete in w14-->
226. <xs:element name="FrozenPeriodPercentAvg" type="xs:float" minOccurs="0"/>
227. <!--This is obsolete in w14-->
228. <xs:element name="ConsecutivePacketLossAvg" type="xs:float" minOccurs="0"/>
229. <!--This is obsolete in w14-->
230. <xs:element name="RateMatchLevel" type="xs:float" minOccurs="0"/>
231. <xs:element ref="v2:VideoAllocateBWAvg" minOccurs="0"/>
232. <xs:element ref="v2:VideoLocalFrameLossPercentageAvg" minOccurs="0"/>
233. <!--OpaqueVideoData will be removed once everyone move to OpaqueChannelData-->
234. <xs:element ref="v2:OpaqueVideoData" minOccurs="0" />
235. <xs:sequence minOccurs="0">
236. <xs:element ref="v2:Separator" />
237. <!-- The following two metrics should really be labelled v3 -->
238. <xs:element ref="v2:VideoResolutionDistribution" minOccurs="0" />
239. <xs:element ref="v2:VideoRateMatchingLevelDistribution" minOccurs="0" />
240. <xs:sequence minOccurs="0">
241. <!-- New v3 Video Receive Metrics go here -->
242. <xs:element ref="v2:Separator" />
243. <xs:element ref="v3:SendCodecTypes" minOccurs="0"/>
244. <xs:element ref="v3:SendFrameRateAverage" minOccurs="0"/>
245. <xs:element ref="v3:SendBitRateMaximum" minOccurs="0"/>
246. <xs:element ref="v3:SendBitRateAverage" minOccurs="0"/>
247. <xs:element ref="v3:SendVideoStreamsMax" minOccurs="0"/>
248. <xs:element ref="v3:SendResolutionWidth" minOccurs="0"/>
249. <xs:element ref="v3:SendResolutionHeight" minOccurs="0"/>
251. <xs:element ref="v3:RecvCodecTypes" minOccurs="0"/>
252. <xs:element ref="v3:RecvResolutionWidth" minOccurs="0"/>
253. <xs:element ref="v3:RecvResolutionHeight" minOccurs="0"/>
254. <xs:element ref="v3:RecvFrameRateAverage" minOccurs="0"/>
255. <xs:element ref="v3:RecvBitRateMaximum" minOccurs="0"/>
256. <xs:element ref="v3:RecvBitRateAverage" minOccurs="0"/>
257. <xs:element ref="v3:RecvVideoStreamsMax" minOccurs="0"/>
258. <xs:element ref="v3:RecvVideoStreamsMin" minOccurs="0"/>
259. <xs:element ref="v3:RecvVideoStreamsMode" minOccurs="0"/>
260. <xs:element ref="v3:VideoPostFECPLR" minOccurs="0"/>
261. <xs:element ref="v3:DynamicCapabilityPercent" minOccurs="0"/>
262. <xs:element ref="v3:ResolutionMin" minOccurs="0"/>
263. <xs:element ref="v3:LowBitRateCallPercent" minOccurs="0"/>
264. <xs:element ref="v3:LowFrameRateCallPercent" minOccurs="0"/>
265. <xs:element ref="v3:LowResolutionCallPercent" minOccurs="0"/>
266. <!-- Added to support multiple video payloads in single stream-->
267. <xs:element ref="v3:DurationSeconds" minOccurs="0"/>
268. <xs:element ref="v3:IsAggregatedData" minOccurs="0"/>
269. <xs:element ref="v3:UseForCallClassification" minOccurs="0"/>
270. <xs:sequence minOccurs="0">
271. <xs:element ref="v3:Separator3" />
272. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
273. </xs:sequence>
274. </xs:sequence>
275. </xs:sequence>
276. </xs:sequence>
277. </xs:complexType>
278. <!--
279. SILENCE SUPPRESSION STATE TYPE
280. -->
281. <xs:simpleType name="SilenceSuppressionStateType">
282. <xs:restriction base="xs:string">
283. <xs:enumeration value="ON"/>
284. <xs:enumeration value="OFF"/>
285. </xs:restriction>
286. </xs:simpleType>
287. <!--
288. ADDR TYPE
289. -->
290. <xs:complexType name="AddrType">
291. <xs:sequence>
292. <xs:element name="IPAddr" type="xs:string"/>
293. <xs:element name="Port" type="xs:unsignedShort" minOccurs="0"/>
294. <xs:element name="Inside" type="xs:boolean" minOccurs="0"/>
295. <xs:element name="SubnetMask" type="xs:string" minOccurs="0"/>
296. <xs:element ref="v2:MACAddr" minOccurs="0"></xs:element>
297. <xs:sequence minOccurs="0">
298. <xs:element ref="v2:Separator"></xs:element>
299. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
300. </xs:sequence>
301. </xs:sequence>
302. <xs:anyAttribute namespace="##other" processContents="lax"/>
303. </xs:complexType>
304. <!--
305. JITTER BUFFER TYPE
306. -->
307. <xs:complexType name="JitterBufferType">
308. <xs:sequence>
309. <xs:element name="Type" type="tns:JitterBufferAdaptiveType" minOccurs="0"/>
310. <xs:element name="Rate" type="xs:int" minOccurs="0"/>
311. <xs:element name="Nominal" type="xs:int" minOccurs="0"/>
312. <xs:element name="Max" type="xs:int" minOccurs="0"/>
313. <xs:element name="AbsMax" type="xs:int" minOccurs="0"/>
314. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
315. </xs:sequence>
316. <xs:anyAttribute namespace="##other" processContents="lax"/>
317. </xs:complexType>
318. <!--
319. JITTER BUFFER ADAPTIVE TYPE
320. -->
321. <xs:simpleType name="JitterBufferAdaptiveType">
322. <xs:restriction base="xs:string">
323. <xs:enumeration value="UNKNOWN"/>
324. <xs:enumeration value="RESERVED"/>
325. <xs:enumeration value="NON-ADAPTIVE"/>
326. <xs:enumeration value="ADAPTIVE"/>
327. </xs:restriction>
328. </xs:simpleType>
329. <!--
330. PACKET LOSS TYPE
331. -->
332. <xs:complexType name="PacketLossType">
333. <xs:sequence>
334. <xs:element name="LossRate" type="xs:float" minOccurs="0"/>
335. <xs:element name="LossRateMax" type="xs:float" minOccurs="0"/>
336. <xs:element name="DiscardRate" type="xs:float" minOccurs="0"/>
337. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
338. </xs:sequence>
339. <xs:anyAttribute namespace="##other" processContents="lax"/>
340. </xs:complexType>
341. <!--
342. BURST GAP LOSS TYPE
343. -->
344. <xs:complexType name="BurstGapLossType">
345. <xs:sequence>
346. <xs:element name="BurstDensity" type="xs:float" minOccurs="0"/>
347. <xs:element name="BurstDuration" type="xs:int" minOccurs="0"/>
348. <xs:element name="GapDensity" type="xs:float" minOccurs="0"/>
349. <xs:element name="GapDuration" type="xs:int" minOccurs="0"/>
350. <xs:element name="MinGapThreshold" type="xs:int" minOccurs="0"/>
351. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
352. </xs:sequence>
353. <xs:anyAttribute namespace="##other" processContents="lax"/>
354. </xs:complexType>
355. <!--
356. DELAY TYPE
357. -->
358. <xs:complexType name="DelayType">
359. <xs:sequence>
360. <xs:element name="RoundTrip" type="xs:int" minOccurs="0"/>
361. <xs:element name="RoundTripMax" type="xs:int" minOccurs="0"/>
362. <xs:element name="EndSystem" type="xs:int" minOccurs="0"/>
363. <xs:element name="OneWay" type="xs:int" minOccurs="0"/>
364. <xs:element ref="v3:RelativeOneWay" minOccurs="0"/>
365. <xs:sequence minOccurs="0">
366. <xs:element ref="v3:Separator3" />
367. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
368. </xs:sequence>
369. </xs:sequence>
370. <xs:anyAttribute namespace="##other" processContents="lax"/>
371. </xs:complexType>
372. <!--
373. JITTER TYPE
374. -->
375. <xs:complexType name="JitterType">
376. <xs:sequence>
377. <xs:element name="InterArrival" type="xs:int" minOccurs="0"/>
378. <xs:element name="InterArrivalMax" type="xs:int" minOccurs="0"/>
379. <xs:element name="MeanAbs" type="xs:int" minOccurs="0"/>
380. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
381. </xs:sequence>
382. <xs:anyAttribute namespace="##other" processContents="lax"/>
383. </xs:complexType>
384. <!--
385. SIGNAL TYPE
386. -->
387. <xs:complexType name="SignalType">
388. <xs:sequence>
389. <xs:element name="SignalLevel" type="xs:int" minOccurs="0" />
390. <xs:element name="NoiseLevel" type="xs:int" minOccurs="0" />
391. <xs:element name="EchoReturn" type="xs:int" minOccurs="0" />
392. <!-- <xs:element name="RxAvgGain" type="xs:int" minOccurs="0"/> -->
393. <!--This is obsolete in w14-->
394. <xs:element name="SpeakerFeedbackMicIn" type="xs:int" minOccurs="0"/>
395. <!--This is obsolete in w14-->
396. <xs:element name="SpeechLevelMicIn" type="xs:int" minOccurs="0"/>
397. <!--This is obsolete in w14-->
398. <xs:element name="SpeechLevelPostProcess" type="xs:int" minOccurs="0"/>
399. <!--This is obsolete in w14-->
400. <xs:element name="SignalLevelLoudSpeaker" type="xs:int" minOccurs="0"/>
401. <!--This is obsolete in w14-->
402. <xs:element name="BackGroundNoiseMicIn" type="xs:int" minOccurs="0"/>
403. <!--This is obsolete in w14-->
404. <xs:element name="BackGroundNoiseSent" type="xs:int" minOccurs="0"/>
405. <!--This is obsolete in w14-->
406. <xs:element name="LocalSpeechToEcho" type="xs:int" minOccurs="0"/>
407. <xs:element name="SpeakerGlitchRate" type="xs:int" minOccurs="0"/>
408. <xs:element name="MicGlitchRate" type="xs:int" minOccurs="0"/>
409. <!--This is obsolete in w14-->
410. <xs:element name="SpeakerClipRate" type="xs:int" minOccurs="0"/>
411. <!--This is obsolete in w14-->
412. <xs:element name="MicClipRate" type="xs:int" minOccurs="0"/>
413. <xs:element name="RxAGCSignalLevel" type="xs:int" minOccurs="0"/>
414. <xs:element name="RxAGCNoiseLevel" type="xs:int" minOccurs="0"/>
415. <xs:element ref="v2:InitialSignalLevelRMS" minOccurs="0"></xs:element>
416. <xs:element ref="v2:AudioTimestampDriftRateMic" minOccurs="0"></xs:element>
417. <xs:element ref="v2:AudioTimestampDriftRateSpk" minOccurs="0"></xs:element>
418. <xs:element ref="v2:AudioTimestampErrorMicMs" minOccurs="0"></xs:element>
419. <xs:element ref="v2:AudioTimestampErrorSpkMs" minOccurs="0"></xs:element>
420. <xs:element ref="v2:VsEntryCauses" minOccurs="0"></xs:element>
421. <xs:element ref="v2:EchoEventCauses" minOccurs="0"></xs:element>
422. <xs:element ref="v2:EchoPercentMicIn" minOccurs="0"></xs:element>
423. <xs:element ref="v2:EchoPercentSend" minOccurs="0"></xs:element>
424. <xs:element ref="v2:RxAvgAGCGain" minOccurs="0"></xs:element>
425. <xs:sequence minOccurs="0">
426. <xs:element ref="v2:Separator"/>
427. <xs:element ref="v3:RecvSignalLevelCh1" minOccurs="0"/>
428. <xs:element ref="v3:RecvSignalLevelCh2" minOccurs="0"/>
429. <xs:element ref="v3:RecvNoiseLevelCh1" minOccurs="0"/>
430. <xs:element ref="v3:RecvNoiseLevelCh2" minOccurs="0"/>
431. <xs:element ref="v3:SendSignalLevelCh1" minOccurs="0"/>
432. <xs:element ref="v3:SendSignalLevelCh2" minOccurs="0"/>
433. <xs:element ref="v3:SendNoiseLevelCh1" minOccurs="0"/>
434. <xs:element ref="v3:SendNoiseLevelCh2" minOccurs="0"/>
435. <xs:sequence minOccurs="0">
436. <xs:element ref="v3:Separator3"/>
437. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
438. </xs:sequence>
439. </xs:sequence>
440. </xs:sequence>
441. <xs:anyAttribute namespace="##other" processContents="lax"/>
442. </xs:complexType>
443. <!--
444. QUALITY ESTIMATES TYPE
445. -->
446. <xs:complexType name="QualityEstimatesType">
447. <xs:choice>
448. <xs:element name="Audio" type="tns:AudioQualityEstimatesType"/>
449. <xs:element name="Video" type="tns:VideoQualityEstimatesType"/>
450. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
451. </xs:choice>
452. </xs:complexType>
453. <!--
454. AUDIO QUALITY ESTIMATES TYPE
455. -->
456. <xs:complexType name="AudioQualityEstimatesType">
457. <xs:sequence>
458. <xs:element name="RecvListenMOS" type="xs:float" minOccurs="0"/>
459. <xs:element name="RecvListenMOSMin" type="xs:float" minOccurs="0"/>
460. <xs:element name="RecvListenMOSAlg" type="xs:string" minOccurs="0"/>
461. <xs:element name="SendListenMOS" type="xs:float" minOccurs="0"/>
462. <xs:element name="SendListenMOSMin" type="xs:float" minOccurs="0"/>
463. <xs:element name="SendListenMOSAlg" type="xs:string" minOccurs="0"/>
464. <xs:element name="NetworkMOS" type="tns:NetworkAudioMOSType" minOccurs="0"/>
465. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
466. </xs:sequence>
467. <xs:anyAttribute namespace="##other" processContents="lax"/>
468. </xs:complexType>
469. <!--
470. NETWORK AUDIO MOS FACTOR TYPE
471. -->
472. <xs:complexType name="NetworkAudioMOSType">
473. <xs:sequence>
474. <xs:element name="OverallAvg" type="xs:float" minOccurs="0"/>
475. <xs:element name="OverallMin" type="xs:float" minOccurs="0"/>
476. <xs:element name="DegradationAvg" type="xs:float" minOccurs="0"/>
477. <xs:element name="DegradationMax" type="xs:float" minOccurs="0"/>
478. <xs:element name="DegradationJitterAvg" type="xs:float" minOccurs="0"/>
479. <xs:element name="DegradationPacketLossAvg" type="xs:float" minOccurs="0"/>
480. <xs:element ref="v2:NetworkMOSAlg" minOccurs="0"/>
481. <xs:sequence minOccurs="0">
482. <xs:element ref="v2:Separator" />
483. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
484. </xs:sequence>
485. </xs:sequence>
486. <xs:anyAttribute namespace="##other" processContents="lax"/>
487. </xs:complexType>
488. <!--
489. VIDEO QUALITY ESTIMATES TYPE
490. -->
491. <xs:complexType name="VideoQualityEstimatesType">
492. <xs:sequence>
493. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
494. </xs:sequence>
495. <xs:anyAttribute namespace="##other" processContents="lax"/>
496. </xs:complexType>
497. <!--
498. TRANSPORT TYPE
499. -->
500. <xs:simpleType name="TransportType">
501. <xs:restriction base="xs:string">
502. <xs:enumeration value="UDP"/>
503. <xs:enumeration value="TCP"/>
504. </xs:restriction>
505. </xs:simpleType>
506. <!--
507. NETWORK CONNECTIVITY TYPE
508. -->
509. <xs:complexType name="NetworkConnectivityInfoType">
510. <xs:sequence>
511. <xs:element name="NetworkConnection" type="tns:NetworkConnectionType" minOccurs="0"/>
512. <xs:element name="VPN" type="xs:boolean" minOccurs="0"/>
513. <xs:element name="LinkSpeed" type="xs:float" minOccurs="0"/>
514. <xs:element ref="v2:BSSID" minOccurs="0"></xs:element>
515. <xs:sequence minOccurs="0">
516. <xs:element ref="v2:Separator"></xs:element>
517. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
518. </xs:sequence>
519. </xs:sequence>
520. <xs:anyAttribute namespace="##other" processContents="lax"/>
521. </xs:complexType>
522. <!--
523. ETHERNET CONNECTION TYPE
524. -->
525. <xs:simpleType name="NetworkConnectionType">
526. <xs:restriction base="xs:string">
527. <xs:enumeration value="wired"/>
528. <xs:enumeration value="wifi"/>
529. </xs:restriction>
530. </xs:simpleType>
531. <!--
532. ENDPOINT TYPE
533. -->
534. <xs:complexType name="EndpointType">
535. <xs:sequence>
536. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
537. </xs:sequence>
538. <xs:attribute name="Name" type="xs:string" use="required"/>
539. <xs:attribute name="ProfileId" type="xs:string" use="optional"/>
540. <xs:attribute ref="v2:OS" use="optional"/>
541. <xs:attribute ref="v2:CPUName" use="optional"/>
542. <xs:attribute ref="v2:CPUNumberOfCores" use="optional"/>
543. <xs:attribute ref="v2:CPUProcessorSpeed" use="optional"/>
544. <xs:attribute ref="v2:VirtualizationFlag" use="optional"/>
545. <xs:anyAttribute namespace="##other" processContents="lax"/>
546. <!-- Name = Computer Name-->
547. <!-- ProfileId = Endpoint Report GUID - Note: this attribute is optional-->
548. </xs:complexType>
549. </xs:schema>

The schema for **ms-rtcp-metrics.v2.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics.v2" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v3"></xs:import>
4. <!--Schema version-->
5. <xs:attribute name="SchemaVersion" type="xs:string"/>
6. <!--The following are part of dialog info-->
8. <xs:element name="CallPriority" type="xs:short"/>
9. <xs:element name="RegisteredInside" type="xs:boolean"/>
10. <xs:element name="MediationServerBypassFlag" type="xs:boolean"/>
11. <xs:element name="TrunkingPeer" type="xs:string"/>
12. <xs:element name="BSSID" type="xs:string"/>
13. <xs:element name="MediaBypassWarningFlag" type="xs:int"/>
14. <!--The following are ICE metrics-->
15. <xs:attribute name="RtpLatched" type="xs:boolean"/>

18. <!--The following are media metrics-->
20. <xs:element name="AppliedBandwidthLimit" type="xs:int"/>
21. <xs:element name="AppliedBandwidthSource" type="xs:string"/>
22. <xs:element name="InitialSignalLevelRMS" type="xs:float"/>
23. <xs:element name="AudioFECUsed" type="xs:boolean"/>
24. <xs:element name="VideoAllocateBWAvg" type="xs:int"/>
25. <xs:element name="VideoLocalFrameLossPercentageAvg" type="xs:float"/>
26. <!--The following are AEC metrics-->
27. <xs:element name="AudioTimestampDriftRateMic" type="xs:float"/>
28. <xs:element name="AudioTimestampDriftRateSpk" type="xs:float"/>
29. <xs:element name="AudioTimestampErrorMicMs" type="xs:float"/>
30. <xs:element name="AudioTimestampErrorSpkMs" type="xs:float"/>
31. <xs:element name="VsEntryCauses" type="xs:unsignedByte"/>
32. <xs:element name="EchoEventCauses" type="xs:unsignedByte"/>
33. <xs:element name="EchoPercentMicIn" type="xs:float"/>
34. <xs:element name="EchoPercentSend" type="xs:float"/>
35. <xs:element name="RxAvgAGCGain" type="xs:int"/>
36. <!--The following are healer metrics-->
37. <xs:element name="RatioConcealedSamplesAvg" type="xs:float"/>
38. <xs:element name="RatioStretchedSamplesAvg" type="xs:float"/>
39. <xs:element name="RatioCompressedSamplesAvg" type="xs:float"/>
40. <!--The following are Network MOS related-->
41. <xs:element name="NetworkMOSAlg" type="xs:string"/>


45. <!--The following are endpoint information-->
46. <xs:attribute name="OS" type="xs:string"/>
47. <!--
48. Bit flag indicate if the system is running in a virtualized environment:
49. 0x00: None
50. 0x01: HyperV
51. 0x02: VMWare
52. 0x04: Virtual PC
53. 0x08: Xen PC
54. -->
55. <xs:attribute name="VirtualizationFlag" type="xs:byte"/>
56. <xs:attribute name="CPUNumberOfCores" type="xs:short"/>
57. <xs:attribute name="CPUProcessorSpeed" type="xs:int"/>
58. <xs:attribute name="CPUName" type="xs:string"/>
59. <xs:element name="MACAddr" type="xs:string"/>
60. <!--The following are client event count-->
61. <xs:element name="LocalClientEvent" type="v2:ClientEventType"/>
62. <xs:element name="RemoteClientEvent" type="v2:ClientEventType"/>
63. <xs:complexType name="ClientEventType">
64. <xs:sequence>
65. <xs:element name="NetworkSendQualityEventRatio" type="xs:float" minOccurs="0"/>
66. <xs:element name="NetworkReceiveQualityEventRatio" type="xs:float" minOccurs="0"/>
67. <xs:element name="NetworkDelayEventRatio" type="xs:float" minOccurs="0"/>
68. <xs:element name="NetworkBandwidthLowEventRatio" type="xs:float" minOccurs="0"/>
69. <xs:element name="CPUInsufficientEventRatio" type="xs:float" minOccurs="0"/>
70. <xs:element name="DeviceHalfDuplexAECEventRatio" type="xs:float" minOccurs="0"/>
71. <xs:element name="DeviceRenderNotFunctioningEventRatio" type="xs:float" minOccurs="0"/>
72. <xs:element name="DeviceCaptureNotFunctioningEventRatio" type="xs:float" minOccurs="0"/>
73. <xs:element name="DeviceGlitchesEventRatio" type="xs:float" minOccurs="0"/>
74. <xs:element name="DeviceLowSNREventRatio" type="xs:float" minOccurs="0"/>
75. <xs:element name="DeviceLowSpeechLevelEventRatio" type="xs:float" minOccurs="0"/>
76. <xs:element name="DeviceClippingEventRatio" type="xs:float" minOccurs="0"/>
77. <xs:element name="DeviceEchoEventRatio" type="xs:float" minOccurs="0"/>
78. <xs:element name="DeviceNearEndToEchoRatioEventRatio" type="xs:float" minOccurs="0"/>
79. <xs:element name="DeviceMultipleEndpointsEventCount" type="xs:short" minOccurs="0"/>
80. <xs:element name="DeviceHowlingEventCount" type="xs:short" minOccurs="0"/>
81. <xs:sequence minOccurs="0">
82. <xs:element ref="v2:Separator"/>
83. <xs:element ref="v3:DeviceRenderZeroVolumeEventRatio" type="xs:float" minOccurs="0"/>
84. <xs:element ref="v3:DeviceRenderMuteEventRatio" type="xs:float" minOccurs="0"/>
85. <xs:sequence minOccurs="0">
86. <xs:element ref="v3:Separator3"/>
87. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
88. </xs:sequence>
89. </xs:sequence>
90. </xs:sequence>
91. <xs:anyAttribute namespace="##any" processContents="lax" />
92. </xs:complexType>
93. <!--The following are video metrics-->
94. <xs:element name="VideoResolutionDistribution" type="v2:VideoResolutionDistributionType"/>
95. <xs:complexType name="VideoResolutionDistributionType">
96. <xs:sequence>
97. <xs:element name="CIFQuality" type="xs:unsignedByte" />
98. <xs:element name="VGAQuality" type="xs:unsignedByte" />
99. <xs:element name="HD720Quality" type="xs:unsignedByte" />
100. <xs:sequence minOccurs="0">
101. <xs:element ref="v2:Separator"/>
102. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
103. </xs:sequence>
104. </xs:sequence>
105. <xs:anyAttribute namespace="##any" processContents="lax"/>
106. </xs:complexType>
107. <xs:element name="VideoRateMatchingLevelDistribution" type="v2:VideoRateMatchingLevelDistributionType"/>
108. <xs:complexType name="VideoRateMatchingLevelDistributionType">
109. <xs:sequence>
110. <xs:element name="None\_Drop" type="xs:unsignedByte" />
111. <xs:element name="B\_Drop" type="xs:unsignedByte" />
112. <xs:element name="BP\_Drop" type="xs:unsignedByte" />
113. <xs:element name="BPSP\_Drop" type="xs:unsignedByte" />
114. <xs:element name="BPSPI\_Drop" type="xs:unsignedByte" />
115. <xs:sequence minOccurs="0">
116. <xs:element ref="v2:Separator"/>
117. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
118. </xs:sequence>
119. </xs:sequence>
120. <xs:anyAttribute namespace="##any" processContents="lax"/>
121. </xs:complexType>
122. <!--The following are debugging blob, it's for internal use only-->
124. <xs:element name="OpaqueClientPlatformData" type="v2:OpaqueClientPlatformDataType" />
125. <xs:element name="OpaqueServerPlatformData" type="v2:OpaqueServerPlatformDataType" />
126. <xs:element name="OpaqueCoreEndpointData" type="v2:OpaqueCoreEndpointDataType" />
127. <xs:element name="OpaqueConferenceData" type="v2:OpaqueConferenceDataType" />
128. <xs:element name="OpaqueChannelData" type="v2:OpaqueChannelDataType" />
130. <!--These two elements should be removed once nobody refer to it. (Instead, everyone should use OpaqueChannelData)-->
131. <xs:element name="OpaqueAudioData" type="v2:OpaqueAudioDataType" />
132. <xs:element name="OpaqueVideoData" type="v2:OpaqueVideoDataType" />
133. <!--OPAQUE MEDIALINE DATA TYPE-->
134. <xs:complexType name="OpaqueCoreEndpointDataType">
135. <xs:sequence>
136. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
137. </xs:sequence>
138. <xs:anyAttribute namespace="##any" processContents="lax" />
139. </xs:complexType>
140. <!--OPAQUE CHANNEL DATA TYPE-->
141. <xs:complexType name="OpaqueChannelDataType" >
142. <xs:sequence>
143. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
144. </xs:sequence>
145. <xs:anyAttribute namespace="##any" processContents="lax" />
146. </xs:complexType>
147. <!--OPAQUE CLIENT PLATFORM DATA TYPE-->
148. <xs:complexType name="OpaqueClientPlatformDataType">
149. <xs:sequence>
150. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
151. </xs:sequence>
152. <xs:anyAttribute namespace="##any" processContents="lax" />
153. </xs:complexType>
154. <!--OPAQUE SERVER PLATFORM DATA TYPE-->
155. <xs:complexType name="OpaqueServerPlatformDataType">
156. <xs:sequence>
157. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
158. </xs:sequence>
159. <xs:anyAttribute namespace="##any" processContents="lax" />
160. </xs:complexType>
161. <!--OPAQUE CONFERENCE DATA TYPE-->
162. <xs:complexType name="OpaqueConferenceDataType">
163. <xs:sequence>
164. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
165. </xs:sequence>
166. <xs:anyAttribute namespace="##any" processContents="lax" />
167. </xs:complexType>
168. <!--OPAQUE VIDEO DATA TYPE (this should be removed once nobody refer to it)-->
169. <xs:complexType name="OpaqueVideoDataType">
170. <xs:sequence>
171. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
172. </xs:sequence>
173. <xs:anyAttribute namespace="##any" processContents="lax" />
174. </xs:complexType>
175. <!--OPAQUE AUDIO DATA TYPE (this should be removed once nobody refer to it)-->
176. <xs:complexType name="OpaqueAudioDataType">
177. <xs:sequence>
178. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
179. </xs:sequence>
180. <xs:anyAttribute namespace="##any" processContents="lax" />
181. </xs:complexType>
182. <!--Separator is used for forward/backward compatiblity-->
183. <xs:element name="Separator">
184. <xs:complexType></xs:complexType>
185. </xs:element>
186. </xs:schema>

The schema for **ms-rtcp-metrics.v3.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics.v3" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <!--Core Metrics-->
4. <xs:element name="WifiDriverDeviceDesc" type="xs:string"/>
5. <xs:element name="WifiDriverVersion" type="xs:string"/>
7. <!--ClientEvent Metrics-->
8. <xs:element name="NetworkConnectionDetails" type="xs:string"/>
9. <xs:element name="DeviceRenderZeroVolumeEventRatio" type="xs:float"/>
10. <xs:element name="DeviceRenderMuteEventRatio" type="xs:float"/>
11. <!--Platform Metrics-->
13. <!--Audio Metrics-->
14. <xs:element name="DecodeStereoPercent" type="xs:float"/>
15. <xs:element name="AecRenderStereoPercent" type="xs:float"/>
16. <xs:element name="AudioPostFECPLR" type="xs:float"/>
17. <xs:element name="EncodeStereoPercent" type="xs:float"/>
18. <xs:element name="AecCaptureStereoPercent" type="xs:float"/>
19. <xs:element name="RecvSignalLevelCh1" type="xs:int"/>
20. <xs:element name="RecvSignalLevelCh2" type="xs:int"/>
21. <xs:element name="RecvNoiseLevelCh1" type="xs:int"/>
22. <xs:element name="RecvNoiseLevelCh2" type="xs:int"/>
23. <xs:element name="SendSignalLevelCh1" type="xs:int"/>
24. <xs:element name="SendSignalLevelCh2" type="xs:int"/>
25. <xs:element name="SendNoiseLevelCh1" type="xs:int"/>
26. <xs:element name="SendNoiseLevelCh2" type="xs:int"/>
27. <xs:element name="ConcealRatioMax" type="xs:float"/>
28. <xs:element name="ConcealRatioSd" type="xs:float"/>
29. <xs:element name="HealerPacketDropRatio" type="xs:float"/>
30. <xs:element name="HealerFECPacketUsedRatio" type="xs:float"/>
31. <xs:element name="MaxCompressedSamples" type="xs:float"/>
32. <!--Jitter Metrics-->
33. <xs:element name="InterArrivalSD" type="xs:float"/>
34. <!--Video Metrics-->
35. <xs:element name="SendCodecTypes" type="xs:string"/>
36. <xs:element name="SendResolutionWidth" type="xs:int"/>
37. <xs:element name="SendResolutionHeight" type="xs:int"/>
38. <xs:element name="SendFrameRateAverage" type="xs:float"/>
39. <xs:element name="SendBitRateMaximum" type="xs:int"/>
40. <xs:element name="SendBitRateAverage" type="xs:int"/>
41. <xs:element name="SendVideoStreamsMax" type="xs:int"/>
43. <xs:element name="RecvCodecTypes" type="xs:string"/>
44. <xs:element name="RecvResolutionWidth" type="xs:int"/>
45. <xs:element name="RecvResolutionHeight" type="xs:int"/>
46. <xs:element name="RecvFrameRateAverage" type="xs:float"/>
47. <xs:element name="RecvBitRateMaximum" type="xs:int"/>
48. <xs:element name="RecvBitRateAverage" type="xs:int"/>
49. <xs:element name="RecvVideoStreamsMax" type="xs:int"/>
50. <xs:element name="RecvVideoStreamsMin" type="xs:int"/>
51. <xs:element name="RecvVideoStreamsMode" type="xs:int"/>
52. <xs:element name="VideoPostFECPLR" type="xs:float"/>
54. <xs:element name="RelativeOneWay" type="v3:MetricAggregationType"/>
55. <xs:element name="BandwidthEstMin" type="xs:int"/>
56. <xs:element name="BandwidthEstMax" type="xs:int"/>
57. <xs:element name="BandwidthEstStdDev" type="xs:int"/>
58. <xs:element name="BandwidthEstAvge" type="xs:int"/>
59. <xs:element name="LowBandwidthForMultiview" type="xs:float"/>
60. <xs:element name="LossCongestionPercent" type="xs:float"/>
61. <xs:element name="DelayCongestionPercent" type="xs:float"/>
62. <xs:element name="ContentionDetectedPercent" type="xs:float"/>
63. <!-- New VDSP in M4 -->
64. <xs:element name="DynamicCapabilityPercent" type="xs:float"/>
65. <xs:element name="ResolutionMin" type="xs:string"/>
66. <xs:element name="LowBitRateCallPercent" type="xs:float"/>
67. <xs:element name="LowFrameRateCallPercent" type="xs:float"/>
68. <xs:element name="LowResolutionCallPercent" type="xs:float"/>
69. <!-- Support multiple video payloads in single stream -->
70. <xs:element name="AdditionalPayload" type="tns:PayloadMetricsType" />
71. <xs:element name="DurationSeconds" type="xs:float"/>
72. <xs:element name="IsAggregatedData" type="xs:boolean" default="true"/>
73. <xs:element name="UseForCallClassification" type="xs:boolean" default="true" />
74. <!-- New Description elements -->
75. <xs:element name="ReflexiveLocalIPAddress" type="tns:AddrType"/>
76. <xs:element name="MidCallReport" type="xs:boolean" default="false" />
77. <xs:complexType name="ApplicationSharingPayloadMetricsType">
78. <xs:sequence>
79. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
80. <xs:element name="AverageRectangleHeight" type="xs:int" minOccurs="0"/>
81. <xs:element name="AverageRectangleWidth" type="xs:int" minOccurs="0"/>
82. <xs:element name="ApplicationShared" type="xs:string" minOccurs="0"/>
83. <xs:element name="RDPTileProcessingLatency" type="v3:MetricAggregationType" minOccurs="0"/>
84. <xs:element name="CaptureTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
85. <xs:element name="SpoiledTilePercent" type="v3:MetricAggregationType" minOccurs="0"/>
86. <xs:element name="ScrapingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
87. <xs:element name="IncomingTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
88. <xs:element name="IncomingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
89. <xs:element name="OutgoingTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
90. <xs:element name="OutgoingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
91. <xs:element name="OpaqueAppSharingData" type="v2:OpaqueChannelDataType" minOccurs="0"/>
92. <xs:sequence minOccurs="0">
93. <xs:element ref="v3:Separator3"/>
94. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
95. </xs:sequence>
96. </xs:sequence>
97. <xs:anyAttribute namespace="##any" processContents="lax"/>
98. </xs:complexType>
99. <xs:complexType name="MetricAggregationType">
100. <xs:sequence>
101. <xs:element name="Total" type="xs:float" minOccurs="0"/>
102. <xs:element name="Average" type="xs:float" minOccurs="0"/>
103. <xs:element name="Max" type="xs:float" minOccurs="0"/>
104. <xs:element name="Burst" type="v3:MetricBurstGapType" minOccurs="0"/>
105. <xs:element name="Gap" type="v3:MetricBurstGapType" minOccurs="0"/>
106. <xs:sequence minOccurs="0">
107. <xs:element ref="v3:Separator3"/>
108. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
109. </xs:sequence>
110. </xs:sequence>
111. <xs:anyAttribute namespace="##any" processContents="lax"/>
112. </xs:complexType>
113. <!--Metrics Burst and Gap Type calculation-->
114. <xs:complexType name="MetricBurstGapType">
115. <xs:sequence>
116. <xs:element name="Occurrences" type="xs:int" minOccurs="0"/>
117. <xs:element name="Density" type="xs:float" minOccurs="0"/>
118. <xs:element name="Duration" type="xs:float" minOccurs="0"/>
119. <xs:sequence minOccurs="0">
120. <xs:element ref="v3:Separator3"/>
121. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
122. </xs:sequence>
123. </xs:sequence>
124. <xs:anyAttribute namespace="##any" processContents="lax"/>
125. </xs:complexType>
126. <xs:element name="TraceRoute" type="v3:TraceRouteType"/>
127. <xs:complexType name="TraceRouteType">
128. <xs:sequence>
129. <xs:element name="Hop" type="xs:int" minOccurs="1"/>
130. <xs:element name="IPAddress" type="xs:string" minOccurs="0"/>
131. <xs:element name="RTT" type="xs:int" minOccurs="0"/>
132. <xs:sequence minOccurs="0">
133. <xs:element ref="v3:Separator3"/>
134. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
135. </xs:sequence>
136. </xs:sequence>
137. <xs:anyAttribute namespace="##any" processContents="lax"/>
138. </xs:complexType>
139. <!--Separator is used for forward/backward compatibility-->
140. <xs:element name="Separator3">
141. <xs:complexType></xs:complexType>
142. </xs:element>
143. </xs:schema>

## Microsoft Skype for Business Server Schema

This section follows the product behavior described in footnote [<311>](#Appendix_A_311" \o "Product behavior note 311). The schema has been split into four related schema definition files:

* ms-rtcp-metrics.xsd
* ms-rtcp-metrics.medialine.xsd
* ms-rtcp-metrics.v2.xsd
* ms-rtcp-metrics.v3.xsd
* ms-rtcp-metrics.v4.xsd

Additionally, a new schema has been introduced:

* ms-cqf.xsd

The schema for **ms-rtcp-metrics.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:v4="ms-rtcp-metrics.v4" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v2"></xs:import>
4. <xs:import namespace="ms-rtcp-metrics.v3"></xs:import>
5. <xs:import namespace="ms-rtcp-metrics.v4"></xs:import>
6. <xs:include schemaLocation="ms-rtcp-metrics.medialine.xsd"></xs:include>
7. <!--
8. RTCP METRICS STATEMENT
9. -->
10. <xs:element name="VQReportEvent" type="tns:VQReportEventType"/>
11. <!--
12. RTCP REPORT TYPE
13. -->
14. <xs:complexType name="VQReportEventType">
15. <xs:choice>
16. <xs:element name="VQSessionReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
17. <xs:element name="VQSessionIntervalReport" type="tns:SessionReportType" maxOccurs="unbounded"/>
18. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
19. </xs:choice>
20. <xs:attribute name="Version" type="xs:string" use="optional"/>
21. <xs:attribute ref="v2:SchemaVersion" use="optional"/>
22. <xs:anyAttribute namespace="##other" processContents="lax"/>
23. </xs:complexType>
24. <!--
25. VQ SESSION REPORT TYPE
26. -->
27. <xs:complexType name="SessionReportType">
28. <xs:sequence>
29. <xs:element name="LocationProfile" type="xs:string" minOccurs="0"/>
30. <xs:element name="Pool" type="xs:string" minOccurs="0"/>
31. <xs:element name="Endpoint" type="tns:EndpointType"/>
32. <xs:element name="DialogInfo" type="tns:DialogInfoType"/>
33. <xs:element name="MediaLine" type="tns:MediaLineType" minOccurs="1" maxOccurs="unbounded"/>
34. <xs:element ref="v2:OpaqueClientPlatformData" minOccurs="0" />
35. <xs:element ref="v2:OpaqueServerPlatformData" minOccurs="0" />
36. <xs:element ref="v2:OpaqueConferenceData" minOccurs="0" />
37. <xs:sequence minOccurs="0">
38. <xs:element ref="v2:Separator" />
39. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
40. </xs:sequence>
41. </xs:sequence>
42. <xs:attribute name="SessionId" type="xs:string" use="required"/>
43. <xs:anyAttribute namespace="##other" processContents="lax"/>
44. <!-- SessionId = DialogID -->
45. </xs:complexType>
46. <!--
47. DIALOG INFO TYPE
48. -->
49. <xs:complexType name="DialogInfoType">
50. <xs:sequence>
51. <xs:element name="DialogCategory" type="tns:DialogCategoryType" minOccurs="0"/>
52. <xs:element name="CorrelationID" type="xs:string" minOccurs="0"/>
53. <xs:element name="FromURI" type="xs:anyURI"/>
54. <xs:element name="ToURI" type="xs:anyURI"/>
55. <xs:element name="Caller" type="xs:boolean"/>
56. <xs:element name="LocalContactURI" type="xs:anyURI"/>
57. <xs:element name="RemoteContactURI" type="xs:anyURI"/>
58. <xs:element name="LocalUserAgent" type="xs:string"/>
59. <xs:element name="RemoteUserAgent" type="xs:string"/>
60. <!-- PAI = P-Asserted-Identity -->
61. <xs:element name="LocalPAI" type="xs:anyURI" minOccurs="0"/>
62. <xs:element name="RemotePAI" type="xs:anyURI" minOccurs="0"/>
63. <xs:element name="ConfURI" type="xs:anyURI" minOccurs="0"/>
64. <xs:element ref="v2:CallPriority" minOccurs="0"/>
65. <xs:element ref="v2:MediationServerBypassFlag" minOccurs="0"/>
66. <xs:element ref="v2:TrunkingPeer" minOccurs="0"/>
67. <xs:element ref="v2:MediaBypassWarningFlag" minOccurs="0"/>
68. <xs:sequence minOccurs="0">
69. <xs:element ref="v2:Separator" />
70. <xs:element ref="v2:RegisteredInside" minOccurs="0"/>
71. <xs:sequence minOccurs="0">
72. <xs:element ref="v2:Separator" />
73. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
74. </xs:sequence>
75. </xs:sequence>
76. </xs:sequence>
77. <xs:attribute name="CallId" type="xs:string" use="required"/>
78. <xs:attribute name="FromTag" type="xs:string" use="required"/>
79. <xs:attribute name="ToTag" type="xs:string" use="required"/>
80. <xs:attribute name="Start" type="xs:dateTime" use="required"/>
81. <xs:attribute name="End" type="xs:dateTime" use="required"/>
82. <xs:anyAttribute namespace="##other" processContents="lax"/>
83. </xs:complexType>
84. <!--
85. DIALOG CATEGORY
86. -->
87. <xs:simpleType name ="DialogCategoryType">
88. <xs:restriction base="xs:string">
89. <xs:enumeration value="OCS"/>
90. <xs:enumeration value="TRUNK"/>
91. </xs:restriction>
92. </xs:simpleType>
93. </xs:schema>

The schema for **ms-rtcp-metrics.medialine.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:v4="ms-rtcp-metrics.v4" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics" elementFormDefault="qualified" version="2.0" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v2"></xs:import>
4. <xs:import namespace="ms-rtcp-metrics.v3"></xs:import>
5. <xs:import namespace="ms-rtcp-metrics.v4"></xs:import>
6. <!--
7. MEDIA LINE REPORT TYPE
8. -->
9. <xs:complexType name="MediaLineType">
10. <xs:sequence>
11. <xs:element name="Description" type="tns:MediaLineDescriptionType"/>
12. <xs:element name="InboundStream" type="tns:StreamType" minOccurs="0"/>
13. <xs:element name="OutboundStream" type="tns:StreamType" minOccurs="0"/>
14. <xs:element name="LocalConversationalMOS" type="xs:float" minOccurs="0"/>
15. <xs:element name="RemoteConversationalMOS" type="xs:float" minOccurs="0"/>
16. <xs:element name="LocalConversationalMOSAlg" type="xs:string" minOccurs="0"/>
17. <xs:element name="RemoteConversationalMOSAlg" type="xs:string" minOccurs="0"/>
18. <xs:element ref="v2:AppliedBandwidthLimit" minOccurs="0" />
19. <xs:element ref="v2:AppliedBandwidthSource" minOccurs="0" />
20. <xs:element ref="v2:LocalClientEvent" minOccurs="0"/>
21. <xs:element ref="v2:RemoteClientEvent" minOccurs="0"/>
22. <xs:element ref="v2:OpaqueCoreEndpointData" minOccurs="0" />
23. <xs:element ref="v2:OpaqueChannelData" minOccurs="0" />
24. <xs:sequence minOccurs="0">
25. <xs:element ref="v2:Separator" />
26. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
27. </xs:sequence>
28. </xs:sequence>
29. <!-- Label values : "main-audio", "main-video","panoramic-video", "data", -->
30. <!-- Additional Label values in v3 : "main-video1", "main-video2", "main-video3","main-video4","main-video5", "main-video6",-->
31. <xs:attribute name="Label" type="xs:string" use="required"/>
32. <xs:anyAttribute namespace="##other" processContents="lax"/>
33. </xs:complexType>
34. <!--
35. MEDIA LINE TYPE
36. -->
37. <xs:complexType name="MediaLineDescriptionType">
38. <xs:sequence>
39. <xs:element name="Connectivity" type="tns:ConnectivityType" minOccurs="0"/>
40. <!-- Security values : "None", "SRTP","V1" -->
41. <xs:element name="Security" type="xs:string" minOccurs="0"/>
42. <xs:element name="Offerer" type="xs:boolean" minOccurs="0"/>
43. <xs:element name="Transport" type="tns:TransportType" minOccurs="0"/>
44. <xs:element name="NetworkConnectivityInfo" type ="tns:NetworkConnectivityInfoType" minOccurs="0"/>
45. <xs:element name="LocalAddr" type="tns:AddrType"/>
46. <xs:element name="RemoteAddr" type="tns:AddrType"/>
47. <!-- Microphone or USB Phone or Camera device name -->
48. <xs:element name="CaptureDev" type="tns:DeviceType" minOccurs="0"/>
49. <!-- Speakers or USB Phone device name -->
50. <xs:element name="RenderDev" type="tns:DeviceType" minOccurs="0"/>
51. <xs:element ref="v3:ReflexiveLocalIPAddress" minOccurs="0"/>
52. <xs:element ref="v3:MidCallReport" minOccurs="0"/>
53. <xs:sequence minOccurs="0">
54. <xs:element ref="v3:Separator3"></xs:element>
55. <xs:element ref="v4:WifiRadioType" minOccurs="0"/>
56. <xs:element ref="v4:WifiRSSI" minOccurs="0"/>
57. <xs:element ref="v4:SSID" minOccurs="0"/>
58. <xs:element ref="v4:WifiChannel" minOccurs="0"/>
59. <xs:element ref="v4:ActivePowerProfile" minOccurs="0"/>
60. <xs:element ref="v4:WifiHandovers" minOccurs="0"/>
61. <xs:element ref="v4:WifiChannelSwitches" minOccurs="0"/>
62. <xs:element ref="v4:WifiChannelReassociations" minOccurs="0"/>
63. <xs:element ref="v4:RecvQoSMarking" minOccurs="0"/>
64. <xs:element ref="v4:SendQoSMarking" minOccurs="0"/>
65. <xs:element ref="v4:WifiRadioFrequency" minOccurs="0"/>
66. <xs:element ref="v4:WifiMTU" minOccurs="0"/>
67. <xs:element ref="v4:WifiSupportFlags" minOccurs="0"/>
68. <xs:element ref="v4:WifiStatusFlags" minOccurs="0"/>
69. <xs:element ref="v4:WifiTunnelType" minOccurs="0"/>
70. <xs:element ref="v4:WifiSignalStrength" minOccurs="0"/>
71. <xs:element ref="v4:WifiBatteryCharge" minOccurs="0"/>
72. <xs:element ref="v4:ConnectionName" minOccurs="0"/>
73. <xs:element ref="v4:DNSSuffix" minOccurs="0"/>
74. <xs:element ref="v4:LastRTPSendTime" minOccurs="0"/>
75. <xs:element ref="v4:LastRTCPSendTime" minOccurs="0"/>
76. <xs:element ref="v4:LastRTPReceiveTime" minOccurs="0"/>
77. <xs:element ref="v4:LastRTCPReceiveTime" minOccurs="0"/>
78. <xs:sequence minOccurs="0">
79. <xs:element ref="v4:Separator4"></xs:element>
80. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
81. </xs:sequence>
82. </xs:sequence>
83. </xs:sequence>
84. <xs:anyAttribute namespace="##other" processContents="lax"/>
85. </xs:complexType>
86. <!--
87. Device TYPE
88. -->
89. <xs:complexType name="DeviceType">
90. <xs:sequence>
91. <xs:element name="Name" type="xs:string" minOccurs="0"/>
92. <xs:element name="Driver" type="xs:string" minOccurs="0"/>
93. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
94. </xs:sequence>
95. <xs:anyAttribute namespace="##other" processContents="lax"/>
96. </xs:complexType>
97. <!--
98. STREAM DIRECTIONAL METRICS TYPE
99. -->
100. <xs:complexType name="StreamType">
101. <xs:sequence>
102. <xs:element name="Network" type="tns:NetworkMetricsType" minOccurs="0"/>
103. <xs:element name="Payload" type="tns:PayloadMetricsType" />
104. <xs:element name="QualityEstimates" type="tns:QualityEstimatesType" minOccurs="0"/>
105. <!-- Support reporting multiple payloads per stream-->
106. <xs:element ref="v3:AdditionalPayload" minOccurs="0" maxOccurs="unbounded"/>
107. <xs:sequence minOccurs="0">
108. <xs:element ref="v3:Separator3"></xs:element>
109. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
110. </xs:sequence>
111. </xs:sequence>
112. <xs:attribute name="Id" type="xs:unsignedInt" use="required"/>
113. <xs:attribute name="Start" type="xs:dateTime"/>
114. <xs:attribute name="End" type="xs:dateTime"/>
115. <xs:anyAttribute namespace="##other" processContents="lax"/>
116. <!-- Id = SSRC -->
117. </xs:complexType>
118. <xs:complexType name="NetworkMetricsType">
119. <xs:sequence>
120. <!-- DiffServ CodePoint -->
121. <xs:element name="DSCP" type="xs:byte" minOccurs="0"/>
122. <!-- VLAN is described via 12 bits -->
123. <xs:element name="VLAN" type="xs:int" minOccurs="0"/>
124. <xs:element name="Jitter" type="tns:JitterType" minOccurs="0"/>
125. <xs:element name="PacketLoss" type="tns:PacketLossType" minOccurs="0"/>
126. <xs:element name="BurstGapLoss" type="tns:BurstGapLossType" minOccurs="0"/>
127. <xs:element name="Delay" type="tns:DelayType" minOccurs="0"/>
128. <xs:element name="Utilization" type="tns:NetworkUtilizationType" minOccurs="0"/>
129. <xs:element ref="v2:RatioConcealedSamplesAvg" minOccurs="0"/>
130. <xs:element ref="v2:RatioStretchedSamplesAvg" minOccurs="0"/>
131. <xs:element ref="v2:RatioCompressedSamplesAvg" minOccurs="0"/>
132. <xs:sequence minOccurs="0">
133. <xs:element ref="v2:Separator" />
134. <xs:element ref="v3:ConcealRatioMax" minOccurs="0"/>
135. <xs:element ref="v3:ConcealRatioSd" minOccurs="0"/>
136. <xs:element ref="v3:HealerPacketDropRatio" minOccurs="0"/>
137. <xs:element ref="v3:HealerFECPacketUsedRatio" minOccurs="0"/>
138. <xs:element ref="v3:MaxCompressedSamples" minOccurs="0"/>
139. <xs:element ref="v3:LossCongestionPercent" minOccurs="0"/>
140. <xs:element ref="v3:DelayCongestionPercent" minOccurs="0"/>
141. <xs:element ref="v3:ContentionDetectedPercent" minOccurs="0"/>
142. <xs:sequence minOccurs="0">
143. <xs:element ref="v3:Separator3" />
144. <xs:element ref="v4:WifiRetransmissionRate" minOccurs="0"/>
145. <xs:element ref="v4:WifiSendRate" minOccurs="0"/>
146. <xs:element ref="v4:WifiReceiveRate" minOccurs="0"/>
147. <xs:element ref="v4:WifiRetryCount" minOccurs="0"/>
148. <xs:element ref="v4:WifiTransmittedFrameCount" minOccurs="0"/>
149. <xs:element ref="v4:WifiMaxSendSpeed" minOccurs="0"/>
150. <xs:element ref="v4:WifiMaxReceiveSpeed" minOccurs="0"/>
151. <xs:element ref="v4:QoSMarkedRate" minOccurs="0"/>
152. <xs:sequence minOccurs="0">
153. <xs:element ref="v4:Separator4" />
154. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
155. </xs:sequence>
156. </xs:sequence>
157. </xs:sequence>
158. </xs:sequence>
159. <xs:anyAttribute namespace="##other" processContents="lax"/>
160. </xs:complexType>
161. <!--
162. ICE TYPE
163. -->
164. <xs:complexType name="ConnectivityType">
165. <xs:sequence>
166. <xs:element name="Ice" type="tns:IceStatusType" minOccurs="0"/>
167. <xs:element name="IceWarningFlags" type="xs:unsignedInt" minOccurs="0"/>
168. <xs:element name="RelayAddress" type="tns:AddrType" minOccurs="0" maxOccurs="unbounded"/>
169. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
170. </xs:sequence>
171. <xs:attribute ref="v2:RtpLatched" use="optional"/>
172. <xs:anyAttribute namespace="##other" processContents="lax"/>
173. </xs:complexType>
174. <!--
175. ICE CONECTIVITY TYPE
176. -->
177. <xs:simpleType name="IceStatusType">
178. <xs:restriction base="xs:string">
179. <xs:enumeration value="FAILED"/>
180. <xs:enumeration value="DIRECT"/>
181. <xs:enumeration value="RELAY"/>
182. <xs:enumeration value="HTTP-PROXY"/>
183. </xs:restriction>
184. </xs:simpleType>
185. <!--
186. NETWORK UTILIZATION TYPE
187. -->
188. <xs:complexType name="NetworkUtilizationType">
189. <xs:sequence>
190. <xs:element name="Packets" type="xs:int" minOccurs="0"/>
191. <xs:element name="BandwidthEst" type="xs:int" minOccurs="0"/>
192. <xs:element name="BandwidthAlloc" type="xs:int" minOccurs="0"/>
193. <xs:element ref="v3:BandwidthEstMin" minOccurs="0"/>
194. <xs:element ref="v3:BandwidthEstMax" minOccurs="0"/>
195. <xs:element ref="v3:BandwidthEstStdDev" minOccurs="0"/>
196. <xs:element ref="v3:BandwidthEstAvge" minOccurs="0"/>
197. <xs:element ref="v3:LowBandwidthForMultiview" minOccurs="0"/>
198. <xs:sequence minOccurs="0">
199. <xs:element ref="v3:Separator3" />
200. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
201. </xs:sequence>
202. </xs:sequence>
203. <xs:anyAttribute namespace="##other" processContents="lax"/>
204. </xs:complexType>
205. <!--
206. PAYLOAD METRICS TYPE
207. -->
208. <xs:complexType name="PayloadMetricsType">
209. <xs:choice>
210. <xs:element name="Audio" type="tns:AudioPayloadMetricsType"/>
211. <xs:element name="Video" type="tns:VideoPayloadMetricsType"/>
212. <xs:element name="ApplicationSharing" type="v3:ApplicationSharingPayloadMetricsType" />
213. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
214. </xs:choice>
215. <xs:anyAttribute namespace="##other" processContents="lax"/>
216. </xs:complexType>
217. <!--
218. AUDIO METRICS TYPE
219. -->
220. <xs:complexType name="AudioPayloadMetricsType">
221. <xs:sequence>
222. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
223. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
224. <xs:element name="SampleRate" type="xs:int" minOccurs="0"/>
225. <xs:element name="FrameDuration" type="xs:int" minOccurs="0"/>
226. <xs:element name="FrameOctets" type="xs:int" minOccurs="0"/>
227. <xs:element name="FramesPerPacket" type="xs:int" minOccurs="0"/>
228. <xs:element name="PacketsPerSecond" type="xs:int" minOccurs="0"/>
229. <!-- <xs:element name="RatioHealedSamplesAvg" type="xs:float" minOccurs="0"/> -->
230. <xs:element name="FMTP" type="xs:string" minOccurs="0"/>
231. <xs:element name="Signal" type="tns:SignalType" minOccurs="0"/>
232. <xs:element name="JitterBuffer" type="tns:JitterBufferType" minOccurs="0"/>
233. <xs:element name="SilenceSupress" type="tns:SilenceSuppressionStateType" minOccurs="0"/>
234. <xs:element ref="v2:AudioFECUsed" minOccurs="0"/>
235. <!--OpaqueAudioData will be removed once everyone move to OpaqueChannelData-->
236. <xs:element ref="v2:OpaqueAudioData" minOccurs="0" />
237. <xs:sequence minOccurs="0">
238. <xs:element ref="v2:Separator" />
239. <xs:element ref="v3:DecodeStereoPercent" minOccurs="0"/>
240. <xs:element ref="v3:AecRenderStereoPercent" minOccurs="0"/>
241. <xs:element ref="v3:AudioPostFECPLR" minOccurs="0"/>
242. <xs:element ref="v3:EncodeStereoPercent" minOccurs="0"/>
243. <xs:element ref="v3:AecCaptureStereoPercent" minOccurs="0"/>
244. <xs:sequence minOccurs="0">
245. <xs:element ref="v3:Separator3" />
246. <xs:element ref="v4:JitterBufferSizeAvg" minOccurs="0"/>
247. <xs:element ref="v4:JitterBufferSizeMax" minOccurs="0"/>
248. <xs:element ref="v4:JitterBufferSizeMin" minOccurs="0"/>
249. <xs:element ref="v4:JitterBufferSizeSD" minOccurs="0"/>
250. <xs:element ref="v4:NetworkJitterAvg" minOccurs="0"/>
251. <xs:element ref="v4:NetworkJitterMax" minOccurs="0"/>
252. <xs:element ref="v4:NetworkJitterMin" minOccurs="0"/>
253. <xs:element ref="v4:NetworkJitterSD" minOccurs="0"/>
254. <xs:element ref="v4:PacketReorderRatio" minOccurs="0"/>
255. <xs:element ref="v4:PacketReorderDepthAvg" minOccurs="0"/>
256. <xs:element ref="v4:PacketReorderDepthMax" minOccurs="0"/>
257. <xs:element ref="v4:BurstLossLength1" minOccurs="0"/>
258. <xs:element ref="v4:BurstLossLength2" minOccurs="0"/>
259. <xs:element ref="v4:BurstLossLength3" minOccurs="0"/>
260. <xs:element ref="v4:BurstLossLength4" minOccurs="0"/>
261. <xs:element ref="v4:BurstLossLength5" minOccurs="0"/>
262. <xs:element ref="v4:BurstLossLength6" minOccurs="0"/>
263. <xs:element ref="v4:BurstLossLength7" minOccurs="0"/>
264. <xs:element ref="v4:BurstLossLength8OrHigher" minOccurs="0"/>
265. <xs:element ref="v4:FECRecvOnPercent" minOccurs="0"/>
266. <xs:element ref="v4:FECRecvDistance1" minOccurs="0"/>
267. <xs:element ref="v4:FECRecvDistance2" minOccurs="0"/>
268. <xs:element ref="v4:FECRecvDistance3" minOccurs="0"/>
269. <xs:element ref="v4:FECRecvDistance4" minOccurs="0"/>
270. <xs:element ref="v4:FECRecvDistance5" minOccurs="0"/>
271. <xs:element ref="v4:FECRecvDistance6" minOccurs="0"/>
272. <xs:element ref="v4:FECRecvDistance7" minOccurs="0"/>
273. <xs:element ref="v4:FECRecvDistance8OrHigher" minOccurs="0"/>
274. <xs:element ref="v4:FECRecvScheme" minOccurs="0"/>
275. <xs:element ref="v4:FECRecvRedundancy" minOccurs="0"/>
276. <xs:element ref="v4:HealerPushCount" minOccurs="0"/>
277. <xs:element ref="v4:HealerPullCount" minOccurs="0"/>
278. <xs:element ref="v4:SendMutePercent" minOccurs="0"/>
279. <xs:element ref="v4:CaptureOffloadedEffectsAudio" minOccurs="0"/>
280. <xs:element ref="v4:RenderOffloadedEffectsAudio" minOccurs="0"/>
281. <xs:sequence minOccurs="0">
282. <xs:element ref="v4:Separator4" />
283. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
284. </xs:sequence>
285. </xs:sequence>
286. </xs:sequence>
287. </xs:sequence>
288. </xs:complexType>
289. <!--
290. VIDEO METRICS TYPE
291. -->
292. <xs:complexType name="VideoPayloadMetricsType">
293. <xs:sequence>
294. <xs:element name="PayloadType" type="xs:int" minOccurs="0"/>
295. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
296. <xs:element name="Resolution" type="xs:string" minOccurs="0"/>
297. <xs:element name="VideoBitRateAvg" type="xs:int" minOccurs="0"/>
298. <xs:element name="VideoBitRateMax" type="xs:int" minOccurs="0"/>
299. <xs:element name="VideoFrameRateAvg" type="xs:float" minOccurs="0"/>
300. <xs:element name="VideoPacketLossRate" type="xs:float" minOccurs="0"/>
301. <xs:element name="VideoFrameLossRate" type="xs:float" minOccurs="0"/>
302. <!--This is obsolete in w14-->
303. <xs:element name="VideoFrameEncodingTime" type="xs:float" minOccurs="0"/>
304. <!--This is obsolete in w14-->
305. <xs:element name="VideoFrameDecodingTime" type="xs:float" minOccurs="0"/>
306. <xs:element name="VideoFEC" type="xs:boolean" minOccurs="0"/>
307. <!--This is obsolete in w14-->
308. <xs:element name="FrozenVideoFreq" type="xs:float" minOccurs="0"/>
309. <!--This is obsolete in w14-->
310. <xs:element name="FrozenPeriodPercentAvg" type="xs:float" minOccurs="0"/>
311. <!--This is obsolete in w14-->
312. <xs:element name="ConsecutivePacketLossAvg" type="xs:float" minOccurs="0"/>
313. <!--This is obsolete in w14-->
314. <xs:element name="RateMatchLevel" type="xs:float" minOccurs="0"/>
315. <xs:element ref="v2:VideoAllocateBWAvg" minOccurs="0"/>
316. <xs:element ref="v2:VideoLocalFrameLossPercentageAvg" minOccurs="0"/>
317. <!--OpaqueVideoData will be removed once everyone move to OpaqueChannelData-->
318. <xs:element ref="v2:OpaqueVideoData" minOccurs="0" />
319. <xs:sequence minOccurs="0">
320. <xs:element ref="v2:Separator" />
321. <!-- The following two metrics should really be labelled v3 -->
322. <xs:element ref="v2:VideoResolutionDistribution" minOccurs="0" />
323. <xs:element ref="v2:VideoRateMatchingLevelDistribution" minOccurs="0" />
324. <xs:sequence minOccurs="0">
325. <!-- New v3 Video Receive Metrics go here -->
326. <xs:element ref="v2:Separator" />
327. <xs:element ref="v3:SendCodecTypes" minOccurs="0"/>
328. <xs:element ref="v3:SendFrameRateAverage" minOccurs="0"/>
329. <xs:element ref="v3:SendBitRateMaximum" minOccurs="0"/>
330. <xs:element ref="v3:SendBitRateAverage" minOccurs="0"/>
331. <xs:element ref="v3:SendVideoStreamsMax" minOccurs="0"/>
332. <xs:element ref="v3:SendResolutionWidth" minOccurs="0"/>
333. <xs:element ref="v3:SendResolutionHeight" minOccurs="0"/>
335. <xs:element ref="v3:RecvCodecTypes" minOccurs="0"/>
336. <xs:element ref="v3:RecvResolutionWidth" minOccurs="0"/>
337. <xs:element ref="v3:RecvResolutionHeight" minOccurs="0"/>
338. <xs:element ref="v3:RecvFrameRateAverage" minOccurs="0"/>
339. <xs:element ref="v3:RecvBitRateMaximum" minOccurs="0"/>
340. <xs:element ref="v3:RecvBitRateAverage" minOccurs="0"/>
341. <xs:element ref="v3:RecvVideoStreamsMax" minOccurs="0"/>
342. <xs:element ref="v3:RecvVideoStreamsMin" minOccurs="0"/>
343. <xs:element ref="v3:RecvVideoStreamsMode" minOccurs="0"/>
344. <xs:element ref="v3:VideoPostFECPLR" minOccurs="0"/>
345. <xs:element ref="v3:DynamicCapabilityPercent" minOccurs="0"/>
346. <xs:element ref="v3:ResolutionMin" minOccurs="0"/>
347. <xs:element ref="v3:LowBitRateCallPercent" minOccurs="0"/>
348. <xs:element ref="v3:LowFrameRateCallPercent" minOccurs="0"/>
349. <xs:element ref="v3:LowResolutionCallPercent" minOccurs="0"/>
350. <!-- Added to support multiple video payloads in single stream-->
351. <xs:element ref="v3:DurationSeconds" minOccurs="0"/>
352. <xs:element ref="v3:IsAggregatedData" minOccurs="0"/>
353. <xs:element ref="v3:UseForCallClassification" minOccurs="0"/>
354. <xs:sequence minOccurs="0">
355. <xs:element ref="v3:Separator3" />
356. <xs:element ref="v4:RecvReorderBufferTotalPackets" minOccurs="0" />
357. <xs:element ref="v4:RecvReorderBufferReorderedPackets" minOccurs="0" />
358. <xs:element ref="v4:RecvReorderBufferReorderedPacketsSuccessfullyOrdered" minOccurs="0" />
359. <xs:element ref="v4:RecvReorderBufferPacketsDroppedDueToBufferExhaustion" minOccurs="0" />
360. <xs:element ref="v4:RecvReorderBufferMaxSuccessfullyOrderedExtent" minOccurs="0" />
361. <xs:element ref="v4:RecvReorderBufferMaxSuccessfullyOrderedLateTime" minOccurs="0" />
362. <xs:element ref="v4:RecvReorderBufferPacketsDroppedDueToTimeout" minOccurs="0" />
363. <xs:sequence minOccurs="0">
364. <xs:element ref="v4:Separator4" />
365. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
366. </xs:sequence>
367. </xs:sequence>
368. </xs:sequence>
369. </xs:sequence>
370. </xs:sequence>
371. </xs:complexType>
372. <!--
373. SILENCE SUPPRESSION STATE TYPE
374. -->
375. <xs:simpleType name="SilenceSuppressionStateType">
376. <xs:restriction base="xs:string">
377. <xs:enumeration value="ON"/>
378. <xs:enumeration value="OFF"/>
379. </xs:restriction>
380. </xs:simpleType>
381. <!--
382. ADDR TYPE
383. -->
384. <xs:complexType name="AddrType">
385. <xs:sequence>
386. <xs:element name="IPAddr" type="xs:string"/>
387. <xs:element name="Port" type="xs:unsignedShort" minOccurs="0"/>
388. <xs:element name="Inside" type="xs:boolean" minOccurs="0"/>
389. <xs:element name="SubnetMask" type="xs:string" minOccurs="0"/>
390. <xs:element ref="v2:MACAddr" minOccurs="0"></xs:element>
391. <xs:sequence minOccurs="0">
392. <xs:element ref="v2:Separator"></xs:element>
393. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
394. </xs:sequence>
395. </xs:sequence>
396. <xs:anyAttribute namespace="##other" processContents="lax"/>
397. </xs:complexType>
398. <!--
399. JITTER BUFFER TYPE
400. -->
401. <xs:complexType name="JitterBufferType">
402. <xs:sequence>
403. <xs:element name="Type" type="tns:JitterBufferAdaptiveType" minOccurs="0"/>
404. <xs:element name="Rate" type="xs:int" minOccurs="0"/>
405. <xs:element name="Nominal" type="xs:int" minOccurs="0"/>
406. <xs:element name="Max" type="xs:int" minOccurs="0"/>
407. <xs:element name="AbsMax" type="xs:int" minOccurs="0"/>
408. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
409. </xs:sequence>
410. <xs:anyAttribute namespace="##other" processContents="lax"/>
411. </xs:complexType>
412. <!--
413. JITTER BUFFER ADAPTIVE TYPE
414. -->
415. <xs:simpleType name="JitterBufferAdaptiveType">
416. <xs:restriction base="xs:string">
417. <xs:enumeration value="UNKNOWN"/>
418. <xs:enumeration value="RESERVED"/>
419. <xs:enumeration value="NON-ADAPTIVE"/>
420. <xs:enumeration value="ADAPTIVE"/>
421. </xs:restriction>
422. </xs:simpleType>
423. <!--
424. PACKET LOSS TYPE
425. -->
426. <xs:complexType name="PacketLossType">
427. <xs:sequence>
428. <xs:element name="LossRate" type="xs:float" minOccurs="0"/>
429. <xs:element name="LossRateMax" type="xs:float" minOccurs="0"/>
430. <xs:element name="DiscardRate" type="xs:float" minOccurs="0"/>
431. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
432. </xs:sequence>
433. <xs:anyAttribute namespace="##other" processContents="lax"/>
434. </xs:complexType>
435. <!--
436. BURST GAP LOSS TYPE
437. -->
438. <xs:complexType name="BurstGapLossType">
439. <xs:sequence>
440. <xs:element name="BurstDensity" type="xs:float" minOccurs="0"/>
441. <xs:element name="BurstDuration" type="xs:int" minOccurs="0"/>
442. <xs:element name="GapDensity" type="xs:float" minOccurs="0"/>
443. <xs:element name="GapDuration" type="xs:int" minOccurs="0"/>
444. <xs:element name="MinGapThreshold" type="xs:int" minOccurs="0"/>
445. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
446. </xs:sequence>
447. <xs:anyAttribute namespace="##other" processContents="lax"/>
448. </xs:complexType>
449. <!--
450. DELAY TYPE
451. -->
452. <xs:complexType name="DelayType">
453. <xs:sequence>
454. <xs:element name="RoundTrip" type="xs:int" minOccurs="0"/>
455. <xs:element name="RoundTripMax" type="xs:int" minOccurs="0"/>
456. <xs:element name="EndSystem" type="xs:int" minOccurs="0"/>
457. <xs:element name="OneWay" type="xs:int" minOccurs="0"/>
458. <xs:element ref="v3:RelativeOneWay" minOccurs="0"/>
459. <xs:sequence minOccurs="0">
460. <xs:element ref="v3:Separator3" />
461. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
462. </xs:sequence>
463. </xs:sequence>
464. <xs:anyAttribute namespace="##other" processContents="lax"/>
465. </xs:complexType>
466. <!--
467. JITTER TYPE
468. -->
469. <xs:complexType name="JitterType">
470. <xs:sequence>
471. <xs:element name="InterArrival" type="xs:int" minOccurs="0"/>
472. <xs:element name="InterArrivalMax" type="xs:int" minOccurs="0"/>
473. <xs:element name="MeanAbs" type="xs:int" minOccurs="0"/>
474. <xs:element ref="v3:InterArrivalSD" minOccurs="0"/>
475. <xs:sequence minOccurs="0">
476. <xs:element ref="v3:Separator3" />
477. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
478. </xs:sequence>
479. </xs:sequence>
480. <xs:anyAttribute namespace="##other" processContents="lax"/>
481. </xs:complexType>
482. <!--
483. SIGNAL TYPE
484. -->
485. <xs:complexType name="SignalType">
486. <xs:sequence>
487. <xs:element name="SignalLevel" type="xs:int" minOccurs="0" />
488. <xs:element name="NoiseLevel" type="xs:int" minOccurs="0" />
489. <xs:element name="EchoReturn" type="xs:int" minOccurs="0" />
490. <!-- <xs:element name="RxAvgGain" type="xs:int" minOccurs="0"/> -->
491. <!--This is obsolete in w14-->
492. <xs:element name="SpeakerFeedbackMicIn" type="xs:int" minOccurs="0"/>
493. <!--This is obsolete in w14-->
494. <xs:element name="SpeechLevelMicIn" type="xs:int" minOccurs="0"/>
495. <!--This is obsolete in w14-->
496. <xs:element name="SpeechLevelPostProcess" type="xs:int" minOccurs="0"/>
497. <!--This is obsolete in w14-->
498. <xs:element name="SignalLevelLoudSpeaker" type="xs:int" minOccurs="0"/>
499. <!--This is obsolete in w14-->
500. <xs:element name="BackGroundNoiseMicIn" type="xs:int" minOccurs="0"/>
501. <!--This is obsolete in w14-->
502. <xs:element name="BackGroundNoiseSent" type="xs:int" minOccurs="0"/>
503. <!--This is obsolete in w14-->
504. <xs:element name="LocalSpeechToEcho" type="xs:int" minOccurs="0"/>
505. <xs:element name="SpeakerGlitchRate" type="xs:int" minOccurs="0"/>
506. <xs:element name="MicGlitchRate" type="xs:int" minOccurs="0"/>
507. <!--This is obsolete in w14-->
508. <xs:element name="SpeakerClipRate" type="xs:int" minOccurs="0"/>
509. <!--This is obsolete in w14-->
510. <xs:element name="MicClipRate" type="xs:int" minOccurs="0"/>
511. <xs:element name="RxAGCSignalLevel" type="xs:int" minOccurs="0"/>
512. <xs:element name="RxAGCNoiseLevel" type="xs:int" minOccurs="0"/>
513. <xs:element ref="v2:InitialSignalLevelRMS" minOccurs="0"></xs:element>
514. <xs:element ref="v2:AudioTimestampDriftRateMic" minOccurs="0"></xs:element>
515. <xs:element ref="v2:AudioTimestampDriftRateSpk" minOccurs="0"></xs:element>
516. <xs:element ref="v2:AudioTimestampErrorMicMs" minOccurs="0"></xs:element>
517. <xs:element ref="v2:AudioTimestampErrorSpkMs" minOccurs="0"></xs:element>
518. <xs:element ref="v2:VsEntryCauses" minOccurs="0"></xs:element>
519. <xs:element ref="v2:EchoEventCauses" minOccurs="0"></xs:element>
520. <xs:element ref="v2:EchoPercentMicIn" minOccurs="0"></xs:element>
521. <xs:element ref="v2:EchoPercentSend" minOccurs="0"></xs:element>
522. <xs:element ref="v2:RxAvgAGCGain" minOccurs="0"></xs:element>
523. <xs:sequence minOccurs="0">
524. <xs:element ref="v2:Separator"/>
525. <xs:element ref="v3:RecvSignalLevelCh1" minOccurs="0"/>
526. <xs:element ref="v3:RecvSignalLevelCh2" minOccurs="0"/>
527. <xs:element ref="v3:RecvNoiseLevelCh1" minOccurs="0"/>
528. <xs:element ref="v3:RecvNoiseLevelCh2" minOccurs="0"/>
529. <xs:element ref="v3:SendSignalLevelCh1" minOccurs="0"/>
530. <xs:element ref="v3:SendSignalLevelCh2" minOccurs="0"/>
531. <xs:element ref="v3:SendNoiseLevelCh1" minOccurs="0"/>
532. <xs:element ref="v3:SendNoiseLevelCh2" minOccurs="0"/>
533. <xs:sequence minOccurs="0">
534. <xs:element ref="v3:Separator3"/>
535. <xs:element ref="v4:RenderSignalLevel" minOccurs="0"/>
536. <xs:element ref="v4:RenderNoiseLevel" minOccurs="0"/>
537. <xs:element ref="v4:RenderLoopbackSignalLevel" minOccurs="0"/>
538. <xs:sequence minOccurs="0">
539. <xs:element ref="v4:Separator4" />
540. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
541. </xs:sequence>
542. </xs:sequence>
543. </xs:sequence>
544. </xs:sequence>
545. <xs:anyAttribute namespace="##other" processContents="lax"/>
546. </xs:complexType>
547. <!--
548. QUALITY ESTIMATES TYPE
549. -->
550. <xs:complexType name="QualityEstimatesType">
551. <xs:choice>
552. <xs:element name="Audio" type="tns:AudioQualityEstimatesType"/>
553. <xs:element name="Video" type="tns:VideoQualityEstimatesType"/>
554. <xs:any namespace="##other" processContents="lax" maxOccurs="unbounded"/>
555. </xs:choice>
556. </xs:complexType>
557. <!--
558. AUDIO QUALITY ESTIMATES TYPE
559. -->
560. <xs:complexType name="AudioQualityEstimatesType">
561. <xs:sequence>
562. <xs:element name="RecvListenMOS" type="xs:float" minOccurs="0"/>
563. <xs:element name="RecvListenMOSMin" type="xs:float" minOccurs="0"/>
564. <xs:element name="RecvListenMOSAlg" type="xs:string" minOccurs="0"/>
565. <xs:element name="SendListenMOS" type="xs:float" minOccurs="0"/>
566. <xs:element name="SendListenMOSMin" type="xs:float" minOccurs="0"/>
567. <xs:element name="SendListenMOSAlg" type="xs:string" minOccurs="0"/>
568. <xs:element name="NetworkMOS" type="tns:NetworkAudioMOSType" minOccurs="0"/>
569. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
570. </xs:sequence>
571. <xs:anyAttribute namespace="##other" processContents="lax"/>
572. </xs:complexType>
573. <!--
574. NETWORK AUDIO MOS FACTOR TYPE
575. -->
576. <xs:complexType name="NetworkAudioMOSType">
577. <xs:sequence>
578. <xs:element name="OverallAvg" type="xs:float" minOccurs="0"/>
579. <xs:element name="OverallMin" type="xs:float" minOccurs="0"/>
580. <xs:element name="DegradationAvg" type="xs:float" minOccurs="0"/>
581. <xs:element name="DegradationMax" type="xs:float" minOccurs="0"/>
582. <xs:element name="DegradationJitterAvg" type="xs:float" minOccurs="0"/>
583. <xs:element name="DegradationPacketLossAvg" type="xs:float" minOccurs="0"/>
584. <xs:element ref="v2:NetworkMOSAlg" minOccurs="0"/>
585. <xs:sequence minOccurs="0">
586. <xs:element ref="v2:Separator" />
587. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
588. </xs:sequence>
589. </xs:sequence>
590. <xs:anyAttribute namespace="##other" processContents="lax"/>
591. </xs:complexType>
592. <!--
593. VIDEO QUALITY ESTIMATES TYPE
594. -->
595. <xs:complexType name="VideoQualityEstimatesType">
596. <xs:sequence>
597. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
598. </xs:sequence>
599. <xs:anyAttribute namespace="##other" processContents="lax"/>
600. </xs:complexType>
601. <!--
602. TRANSPORT TYPE
603. -->
604. <xs:simpleType name="TransportType">
605. <xs:restriction base="xs:string">
606. <xs:enumeration value="UDP"/>
607. <xs:enumeration value="TCP"/>
608. </xs:restriction>
609. </xs:simpleType>
610. <!--
611. NETWORK CONNECTIVITY TYPE
612. -->
613. <xs:complexType name="NetworkConnectivityInfoType">
614. <xs:sequence>
615. <xs:element name="NetworkConnection" type="tns:NetworkConnectionType" minOccurs="0"/>
616. <xs:element name="VPN" type="xs:boolean" minOccurs="0"/>
617. <xs:element name="LinkSpeed" type="xs:float" minOccurs="0"/>
618. <xs:element ref="v2:BSSID" minOccurs="0"></xs:element>
619. <xs:sequence minOccurs="0">
620. <xs:element ref="v2:Separator"></xs:element>
621. <xs:element ref="v3:NetworkConnectionDetails" minOccurs="0"/>
622. <xs:element ref="v3:WifiDriverDeviceDesc" minOccurs="0"/>
623. <xs:element ref="v3:WifiDriverVersion" minOccurs="0"/>
624. <xs:element ref="v3:TraceRoute" minOccurs="0" maxOccurs="unbounded"/>
625. <xs:sequence minOccurs="0">
626. <xs:element ref="v3:Separator3"/>
627. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
628. </xs:sequence>
629. </xs:sequence>
630. </xs:sequence>
631. <xs:anyAttribute namespace="##other" processContents="lax"/>
632. </xs:complexType>
633. <!--
634. ETHERNET CONNECTION TYPE
635. -->
636. <xs:simpleType name="NetworkConnectionType">
637. <xs:restriction base="xs:string">
638. <xs:enumeration value="wired"/>
639. <xs:enumeration value="wifi"/>
640. </xs:restriction>
641. </xs:simpleType>
642. <!--
643. ENDPOINT TYPE
644. -->
645. <xs:complexType name="EndpointType">
646. <xs:sequence>
647. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
648. </xs:sequence>
649. <xs:attribute name="Name" type="xs:string" use="required"/>
650. <xs:attribute name="ProfileId" type="xs:string" use="optional"/>
651. <xs:attribute ref="v2:OS" use="optional"/>
652. <xs:attribute ref="v2:CPUName" use="optional"/>
653. <xs:attribute ref="v2:CPUNumberOfCores" use="optional"/>
654. <xs:attribute ref="v2:CPUProcessorSpeed" use="optional"/>
655. <xs:attribute ref="v2:VirtualizationFlag" use="optional"/>
656. <xs:anyAttribute namespace="##other" processContents="lax"/>
657. <!-- Name = Computer Name-->
658. <!-- ProfileId = Endpoint Report GUID - Note: this attribute is optional-->
659. </xs:complexType>
660. </xs:schema>

The schema for **ms-rtcp-metrics.v2.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:v4="ms-rtcp-metrics.v4" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics.v2" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v3"></xs:import>
4. <xs:import namespace="ms-rtcp-metrics.v4"></xs:import>
5. <!--Schema version-->
6. <xs:attribute name="SchemaVersion" type="xs:string"/>
7. <!--The following are part of dialog info-->
9. <xs:element name="CallPriority" type="xs:short"/>
10. <xs:element name="RegisteredInside" type="xs:boolean"/>
11. <xs:element name="MediationServerBypassFlag" type="xs:boolean"/>
12. <xs:element name="TrunkingPeer" type="xs:string"/>
13. <xs:element name="BSSID" type="xs:string"/>
14. <xs:element name="MediaBypassWarningFlag" type="xs:int"/>
15. <!--The following are ICE metrics-->
16. <xs:attribute name="RtpLatched" type="xs:boolean"/>

19. <!--The following are media metrics-->
21. <xs:element name="AppliedBandwidthLimit" type="xs:int"/>
22. <xs:element name="AppliedBandwidthSource" type="xs:string"/>
23. <xs:element name="InitialSignalLevelRMS" type="xs:float"/>
24. <xs:element name="AudioFECUsed" type="xs:boolean"/>
25. <xs:element name="VideoAllocateBWAvg" type="xs:int"/>
26. <xs:element name="VideoLocalFrameLossPercentageAvg" type="xs:float"/>
27. <!--The following are AEC metrics-->
28. <xs:element name="AudioTimestampDriftRateMic" type="xs:float"/>
29. <xs:element name="AudioTimestampDriftRateSpk" type="xs:float"/>
30. <xs:element name="AudioTimestampErrorMicMs" type="xs:float"/>
31. <xs:element name="AudioTimestampErrorSpkMs" type="xs:float"/>
32. <xs:element name="VsEntryCauses" type="xs:short"/>
33. <xs:element name="EchoEventCauses" type="xs:unsignedByte"/>
34. <xs:element name="EchoPercentMicIn" type="xs:float"/>
35. <xs:element name="EchoPercentSend" type="xs:float"/>
36. <xs:element name="RxAvgAGCGain" type="xs:int"/>
37. <!--The following are healer metrics-->
38. <xs:element name="RatioConcealedSamplesAvg" type="xs:float"/>
39. <xs:element name="RatioStretchedSamplesAvg" type="xs:float"/>
40. <xs:element name="RatioCompressedSamplesAvg" type="xs:float"/>
41. <!--The following are Network MOS related-->
42. <xs:element name="NetworkMOSAlg" type="xs:string"/>


46. <!--The following are endpoint information-->
47. <xs:attribute name="OS" type="xs:string"/>
48. <!--
49. Bit flag indicate if the system is running in a virtualized environment:
50. 0x00: None
51. 0x01: HyperV
52. 0x02: VMWare
53. 0x04: Virtual PC
54. 0x08: Xen PC
55. -->
56. <xs:attribute name="VirtualizationFlag" type="xs:byte"/>
57. <xs:attribute name="CPUNumberOfCores" type="xs:short"/>
58. <xs:attribute name="CPUProcessorSpeed" type="xs:int"/>
59. <xs:attribute name="CPUName" type="xs:string"/>
60. <xs:element name="MACAddr" type="xs:string"/>
61. <!--The following are client event count-->
62. <xs:element name="LocalClientEvent" type="v2:ClientEventType"/>
63. <xs:element name="RemoteClientEvent" type="v2:ClientEventType"/>
64. <xs:complexType name="ClientEventType">
65. <xs:sequence>
66. <xs:element name="NetworkSendQualityEventRatio" type="xs:float" minOccurs="0"/>
67. <xs:element name="NetworkReceiveQualityEventRatio" type="xs:float" minOccurs="0"/>
68. <xs:element name="NetworkDelayEventRatio" type="xs:float" minOccurs="0"/>
69. <xs:element name="NetworkBandwidthLowEventRatio" type="xs:float" minOccurs="0"/>
70. <xs:element name="CPUInsufficientEventRatio" type="xs:float" minOccurs="0"/>
71. <xs:element name="DeviceHalfDuplexAECEventRatio" type="xs:float" minOccurs="0"/>
72. <xs:element name="DeviceRenderNotFunctioningEventRatio" type="xs:float" minOccurs="0"/>
73. <xs:element name="DeviceCaptureNotFunctioningEventRatio" type="xs:float" minOccurs="0"/>
74. <xs:element name="DeviceGlitchesEventRatio" type="xs:float" minOccurs="0"/>
75. <xs:element name="DeviceLowSNREventRatio" type="xs:float" minOccurs="0"/>
76. <xs:element name="DeviceLowSpeechLevelEventRatio" type="xs:float" minOccurs="0"/>
77. <xs:element name="DeviceClippingEventRatio" type="xs:float" minOccurs="0"/>
78. <xs:element name="DeviceEchoEventRatio" type="xs:float" minOccurs="0"/>
79. <xs:element name="DeviceNearEndToEchoRatioEventRatio" type="xs:float" minOccurs="0"/>
80. <xs:element name="DeviceMultipleEndpointsEventCount" type="xs:short" minOccurs="0"/>
81. <xs:element name="DeviceHowlingEventCount" type="xs:short" minOccurs="0"/>
82. <xs:sequence minOccurs="0">
83. <xs:element ref="v2:Separator"/>
84. <xs:element ref="v3:DeviceRenderZeroVolumeEventRatio" minOccurs="0"/>
85. <xs:element ref="v3:DeviceRenderMuteEventRatio" minOccurs="0"/>
86. <xs:sequence minOccurs="0">
87. <xs:element ref="v3:Separator3" />
88. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
89. </xs:sequence>
90. </xs:sequence>
91. </xs:sequence>
92. <xs:anyAttribute namespace="##any" processContents="lax" />
93. </xs:complexType>
94. <!--The following are video metrics-->
95. <xs:element name="VideoResolutionDistribution" type="v2:VideoResolutionDistributionType"/>
96. <xs:complexType name="VideoResolutionDistributionType">
97. <xs:sequence>
98. <xs:element name="CIFQuality" type="xs:unsignedByte" />
99. <xs:element name="VGAQuality" type="xs:unsignedByte" />
100. <xs:element name="HD720Quality" type="xs:unsignedByte" />
101. <xs:sequence minOccurs="0">
102. <xs:element ref="v2:Separator"/>
103. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
104. </xs:sequence>
105. </xs:sequence>
106. <xs:anyAttribute namespace="##any" processContents="lax"/>
107. </xs:complexType>
108. <xs:element name="VideoRateMatchingLevelDistribution" type="v2:VideoRateMatchingLevelDistributionType"/>
109. <xs:complexType name="VideoRateMatchingLevelDistributionType">
110. <xs:sequence>
111. <xs:element name="None\_Drop" type="xs:unsignedByte" />
112. <xs:element name="B\_Drop" type="xs:unsignedByte" />
113. <xs:element name="BP\_Drop" type="xs:unsignedByte" />
114. <xs:element name="BPSP\_Drop" type="xs:unsignedByte" />
115. <xs:element name="BPSPI\_Drop" type="xs:unsignedByte" />
116. <xs:sequence minOccurs="0">
117. <xs:element ref="v2:Separator"/>
118. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
119. </xs:sequence>
120. </xs:sequence>
121. <xs:anyAttribute namespace="##any" processContents="lax"/>
122. </xs:complexType>
123. <!--The following are debugging blob, it's for internal use only-->
125. <xs:element name="OpaqueClientPlatformData" type="v2:OpaqueClientPlatformDataType" />
126. <xs:element name="OpaqueServerPlatformData" type="v2:OpaqueServerPlatformDataType" />
127. <xs:element name="OpaqueCoreEndpointData" type="v2:OpaqueCoreEndpointDataType" />
128. <xs:element name="OpaqueConferenceData" type="v2:OpaqueConferenceDataType" />
129. <xs:element name="OpaqueChannelData" type="v2:OpaqueChannelDataType" />
131. <!--These two elements should be removed once nobody refer to it. (Instead, everyone should use OpaqueChannelData)-->
132. <xs:element name="OpaqueAudioData" type="v2:OpaqueAudioDataType" />
133. <xs:element name="OpaqueVideoData" type="v2:OpaqueVideoDataType" />
134. <!--OPAQUE MEDIALINE DATA TYPE-->
135. <xs:complexType name="OpaqueCoreEndpointDataType">
136. <xs:sequence>
137. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
138. </xs:sequence>
139. <xs:anyAttribute namespace="##any" processContents="lax" />
140. </xs:complexType>
141. <!--OPAQUE CHANNEL DATA TYPE-->
142. <xs:complexType name="OpaqueChannelDataType" >
143. <xs:sequence>
144. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
145. </xs:sequence>
146. <xs:anyAttribute namespace="##any" processContents="lax" />
147. </xs:complexType>
148. <!--OPAQUE CLIENT PLATFORM DATA TYPE-->
149. <xs:complexType name="OpaqueClientPlatformDataType">
150. <xs:sequence>
151. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
152. </xs:sequence>
153. <xs:anyAttribute namespace="##any" processContents="lax" />
154. </xs:complexType>
155. <!--OPAQUE SERVER PLATFORM DATA TYPE-->
156. <xs:complexType name="OpaqueServerPlatformDataType">
157. <xs:sequence>
158. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
159. </xs:sequence>
160. <xs:anyAttribute namespace="##any" processContents="lax" />
161. </xs:complexType>
162. <!--OPAQUE CONFERENCE DATA TYPE-->
163. <xs:complexType name="OpaqueConferenceDataType">
164. <xs:sequence>
165. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
166. </xs:sequence>
167. <xs:anyAttribute namespace="##any" processContents="lax" />
168. </xs:complexType>
169. <!--OPAQUE VIDEO DATA TYPE (this should be removed once nobody refer to it)-->
170. <xs:complexType name="OpaqueVideoDataType">
171. <xs:sequence>
172. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
173. </xs:sequence>
174. <xs:anyAttribute namespace="##any" processContents="lax" />
175. </xs:complexType>
176. <!--OPAQUE AUDIO DATA TYPE (this should be removed once nobody refer to it)-->
177. <xs:complexType name="OpaqueAudioDataType">
178. <xs:sequence>
179. <xs:element name="OpaqueData" type="xs:string" minOccurs="0" />
180. </xs:sequence>
181. <xs:anyAttribute namespace="##any" processContents="lax" />
182. </xs:complexType>
183. <!--Separator is used for forward/backward compatiblity-->
184. <xs:element name="Separator">
185. <xs:complexType></xs:complexType>
186. </xs:element>
187. </xs:schema>

The schema for **ms-rtcp-metrics.v3.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:v4="ms-rtcp-metrics.v4" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics.v3" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <xs:import namespace="ms-rtcp-metrics.v4"></xs:import>
4. <!--Core Metrics-->
5. <xs:element name="WifiDriverDeviceDesc" type="xs:string"/>
6. <xs:element name="WifiDriverVersion" type="xs:string"/>
8. <!--ClientEvent Metrics-->
9. <xs:element name="NetworkConnectionDetails" type="xs:string"/>
10. <xs:element name="DeviceRenderZeroVolumeEventRatio" type="xs:float"/>
11. <xs:element name="DeviceRenderMuteEventRatio" type="xs:float"/>
12. <!--Platform Metrics-->
14. <!--Audio Metrics-->
15. <xs:element name="DecodeStereoPercent" type="xs:float"/>
16. <xs:element name="AecRenderStereoPercent" type="xs:float"/>
17. <xs:element name="AudioPostFECPLR" type="xs:float"/>
18. <xs:element name="EncodeStereoPercent" type="xs:float"/>
19. <xs:element name="AecCaptureStereoPercent" type="xs:float"/>
20. <xs:element name="RecvSignalLevelCh1" type="xs:int"/>
21. <xs:element name="RecvSignalLevelCh2" type="xs:int"/>
22. <xs:element name="RecvNoiseLevelCh1" type="xs:int"/>
23. <xs:element name="RecvNoiseLevelCh2" type="xs:int"/>
24. <xs:element name="SendSignalLevelCh1" type="xs:int"/>
25. <xs:element name="SendSignalLevelCh2" type="xs:int"/>
26. <xs:element name="SendNoiseLevelCh1" type="xs:int"/>
27. <xs:element name="SendNoiseLevelCh2" type="xs:int"/>
28. <xs:element name="ConcealRatioMax" type="xs:float"/>
29. <xs:element name="ConcealRatioSd" type="xs:float"/>
30. <xs:element name="HealerPacketDropRatio" type="xs:float"/>
31. <xs:element name="HealerFECPacketUsedRatio" type="xs:float"/>
32. <xs:element name="MaxCompressedSamples" type="xs:float"/>
33. <!--Jitter Metrics-->
34. <xs:element name="InterArrivalSD" type="xs:float"/>
35. <!--Video Metrics-->
36. <xs:element name="SendCodecTypes" type="xs:string"/>
37. <xs:element name="SendResolutionWidth" type="xs:int"/>
38. <xs:element name="SendResolutionHeight" type="xs:int"/>
39. <xs:element name="SendFrameRateAverage" type="xs:float"/>
40. <xs:element name="SendBitRateMaximum" type="xs:int"/>
41. <xs:element name="SendBitRateAverage" type="xs:int"/>
42. <xs:element name="SendVideoStreamsMax" type="xs:int"/>
44. <xs:element name="RecvCodecTypes" type="xs:string"/>
45. <xs:element name="RecvResolutionWidth" type="xs:int"/>
46. <xs:element name="RecvResolutionHeight" type="xs:int"/>
47. <xs:element name="RecvFrameRateAverage" type="xs:float"/>
48. <xs:element name="RecvBitRateMaximum" type="xs:int"/>
49. <xs:element name="RecvBitRateAverage" type="xs:int"/>
50. <xs:element name="RecvVideoStreamsMax" type="xs:int"/>
51. <xs:element name="RecvVideoStreamsMin" type="xs:int"/>
52. <xs:element name="RecvVideoStreamsMode" type="xs:int"/>
53. <xs:element name="VideoPostFECPLR" type="xs:float"/>
55. <xs:element name="RelativeOneWay" type="v3:MetricAggregationType"/>
56. <xs:element name="BandwidthEstMin" type="xs:int"/>
57. <xs:element name="BandwidthEstMax" type="xs:int"/>
58. <xs:element name="BandwidthEstStdDev" type="xs:int"/>
59. <xs:element name="BandwidthEstAvge" type="xs:int"/>
60. <xs:element name="LowBandwidthForMultiview" type="xs:float"/>
61. <xs:element name="LossCongestionPercent" type="xs:float"/>
62. <xs:element name="DelayCongestionPercent" type="xs:float"/>
63. <xs:element name="ContentionDetectedPercent" type="xs:float"/>
64. <xs:element name="DynamicCapabilityPercent" type="xs:float"/>
65. <xs:element name="ResolutionMin" type="xs:string"/>
66. <xs:element name="LowBitRateCallPercent" type="xs:float"/>
67. <xs:element name="LowFrameRateCallPercent" type="xs:float"/>
68. <xs:element name="LowResolutionCallPercent" type="xs:float"/>
69. <!-- Support multiple video payloads in single stream -->
70. <xs:element name="AdditionalPayload" type="tns:PayloadMetricsType" />
71. <xs:element name="DurationSeconds" type="xs:float"/>
72. <xs:element name="IsAggregatedData" type="xs:boolean" default="true"/>
73. <xs:element name="UseForCallClassification" type="xs:boolean" default="true" />
74. <!-- New Description elements -->
75. <xs:element name="ReflexiveLocalIPAddress" type="tns:AddrType"/>
76. <xs:element name="MidCallReport" type="xs:boolean" default="false" />
77. <xs:complexType name="ApplicationSharingPayloadMetricsType">
78. <xs:sequence>
79. <xs:element name="PayloadDescription" type="xs:string" minOccurs="0"/>
80. <xs:element name="AverageRectangleHeight" type="xs:int" minOccurs="0"/>
81. <xs:element name="AverageRectangleWidth" type="xs:int" minOccurs="0"/>
82. <xs:element name="ApplicationShared" type="xs:string" minOccurs="0"/>
83. <xs:element name="RDPTileProcessingLatency" type="v3:MetricAggregationType" minOccurs="0"/>
84. <xs:element name="CaptureTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
85. <xs:element name="SpoiledTilePercent" type="v3:MetricAggregationType" minOccurs="0"/>
86. <xs:element name="ScrapingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
87. <xs:element name="IncomingTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
88. <xs:element name="IncomingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
89. <xs:element name="OutgoingTileRate" type="v3:MetricAggregationType" minOccurs="0"/>
90. <xs:element name="OutgoingFrameRate" type="v3:MetricAggregationType" minOccurs="0"/>
91. <xs:element name="OpaqueAppSharingData" type="v2:OpaqueChannelDataType" minOccurs="0"/>
92. <xs:sequence minOccurs="0">
93. <xs:element ref="v3:Separator3"/>
94. <xs:element ref="v4:InitialFrameReceivedTime" minOccurs="0"/>
95. <xs:element ref="v4:InitialFrameSentSize" minOccurs="0"/>
96. <xs:element ref="v4:NumSharingStarted" minOccurs="0"/>
97. <xs:element ref="v4:NumRemoteControlChanges" minOccurs="0"/>
98. <xs:element name="SharerAppSharingEstablishTime" type="v4:AppSharingEstablishTime" minOccurs="0"/>
99. <xs:element name="ViewerAppSharingEstablishTime" type="v4:AppSharingEstablishTime" minOccurs="0"/>
100. <xs:sequence minOccurs="0">
101. <xs:element ref="v4:Separator4" />
102. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
103. </xs:sequence>
104. </xs:sequence>
105. </xs:sequence>
106. <xs:anyAttribute namespace="##any" processContents="lax"/>
107. </xs:complexType>
108. <xs:complexType name="MetricAggregationType">
109. <xs:sequence>
110. <xs:element name="Total" type="xs:float" minOccurs="0"/>
111. <xs:element name="Average" type="xs:float" minOccurs="0"/>
112. <xs:element name="Max" type="xs:float" minOccurs="0"/>
113. <xs:element name="Burst" type="v3:MetricBurstGapType" minOccurs="0"/>
114. <xs:element name="Gap" type="v3:MetricBurstGapType" minOccurs="0"/>
115. <xs:sequence minOccurs="0">
116. <xs:element ref="v3:Separator3"/>
117. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
118. </xs:sequence>
119. </xs:sequence>
120. <xs:anyAttribute namespace="##any" processContents="lax"/>
121. </xs:complexType>
122. <!--Metrics Burst and Gap Type calculation-->
123. <xs:complexType name="MetricBurstGapType">
124. <xs:sequence>
125. <xs:element name="Occurrences" type="xs:int" minOccurs="0"/>
126. <xs:element name="Density" type="xs:float" minOccurs="0"/>
127. <xs:element name="Duration" type="xs:float" minOccurs="0"/>
128. <xs:sequence minOccurs="0">
129. <xs:element ref="v3:Separator3"/>
130. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
131. </xs:sequence>
132. </xs:sequence>
133. <xs:anyAttribute namespace="##any" processContents="lax"/>
134. </xs:complexType>
135. <xs:element name="TraceRoute" type="v3:TraceRouteType"/>
136. <xs:complexType name="TraceRouteType">
137. <xs:sequence>
138. <xs:element name="Hop" type="xs:int" minOccurs="1"/>
139. <xs:element name="IPAddress" type="xs:string" minOccurs="0"/>
140. <xs:element name="RTT" type="xs:int" minOccurs="0"/>
141. <xs:sequence minOccurs="0">
142. <xs:element ref="v3:Separator3"/>
143. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
144. </xs:sequence>
145. </xs:sequence>
146. <xs:anyAttribute namespace="##any" processContents="lax"/>
147. </xs:complexType>
148. <!--Separator is used for forward/backward compatiblity-->
149. <xs:element name="Separator3">
150. <xs:complexType></xs:complexType>
151. </xs:element>
152. </xs:schema>

The schema for **ms-rtcp-metrics.v4.xsd** is as follows:

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema xmlns:tns="ms-rtcp-metrics" xmlns:v2="ms-rtcp-metrics.v2" xmlns:v3="ms-rtcp-metrics.v3" xmlns:v4="ms-rtcp-metrics.v4" xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="ms-rtcp-metrics.v4" elementFormDefault="qualified" version="1.2" attributeFormDefault="unqualified">
3. <xs:element name="InitialFrameReceivedTime" type="xs:int"/>
4. <xs:element name="InitialFrameSentSize" type="xs:int"/>
5. <xs:element name="NumSharingStarted" type="xs:int"/>
6. <xs:element name="NumRemoteControlChanges" type="xs:int"/>
7. <xs:complexType name="AppSharingEstablishTime">
8. <xs:sequence>
9. <xs:element name="SignalingTime" type="xs:int"/>
10. <xs:element name="MediaSetupTime" type="xs:int"/>
11. <xs:element name="ProtocolConnectTime" type="xs:int"/>
12. </xs:sequence>
13. <xs:anyAttribute namespace="##any" processContents="lax"/>
14. </xs:complexType>
15. <xs:element name="RecvReorderBufferTotalPackets" type="xs:int" />
16. <xs:element name="RecvReorderBufferReorderedPackets" type="xs:int" />
17. <xs:element name="RecvReorderBufferReorderedPacketsSuccessfullyOrdered" type="xs:int" />
18. <xs:element name="RecvReorderBufferPacketsDroppedDueToBufferExhaustion" type="xs:int" />
19. <xs:element name="RecvReorderBufferMaxSuccessfullyOrderedExtent" type="xs:int" />
20. <xs:element name="RecvReorderBufferMaxSuccessfullyOrderedLateTime" type="xs:int" />
21. <xs:element name="RecvReorderBufferPacketsDroppedDueToTimeout" type="xs:int" />
22. <xs:element name="RenderSignalLevel" type="xs:float"/>
23. <xs:element name="RenderNoiseLevel" type="xs:float"/>
24. <xs:element name="RenderLoopbackSignalLevel" type="xs:float"/>
25. <xs:element name="JitterBufferSizeAvg" type="xs:int"/>
26. <xs:element name="JitterBufferSizeMax" type="xs:int"/>
27. <xs:element name="JitterBufferSizeMin" type="xs:int"/>
28. <xs:element name="JitterBufferSizeSD" type="xs:int"/>
29. <xs:element name="NetworkJitterAvg" type="xs:float"/>
30. <xs:element name="NetworkJitterMax" type="xs:float"/>
31. <xs:element name="NetworkJitterMin" type="xs:float"/>
32. <xs:element name="NetworkJitterSD" type="xs:float"/>
33. <xs:element name="PacketReorderRatio" type="xs:float"/>
34. <xs:element name="PacketReorderDepthAvg" type="xs:int"/>
35. <xs:element name="PacketReorderDepthMax" type="xs:int"/>
36. <xs:element name="BurstLossLength1" type="xs:float"/>
37. <xs:element name="BurstLossLength2" type="xs:float"/>
38. <xs:element name="BurstLossLength3" type="xs:float"/>
39. <xs:element name="BurstLossLength4" type="xs:float"/>
40. <xs:element name="BurstLossLength5" type="xs:float"/>
41. <xs:element name="BurstLossLength6" type="xs:float"/>
42. <xs:element name="BurstLossLength7" type="xs:float"/>
43. <xs:element name="BurstLossLength8OrHigher" type="xs:float"/>
44. <xs:element name="FECRecvOnPercent" type="xs:float"/>
45. <xs:element name="FECRecvDistance1" type="xs:float"/>
46. <xs:element name="FECRecvDistance2" type="xs:float"/>
47. <xs:element name="FECRecvDistance3" type="xs:float"/>
48. <xs:element name="FECRecvDistance4" type="xs:float"/>
49. <xs:element name="FECRecvDistance5" type="xs:float"/>
50. <xs:element name="FECRecvDistance6" type="xs:float"/>
51. <xs:element name="FECRecvDistance7" type="xs:float"/>
52. <xs:element name="FECRecvDistance8OrHigher" type="xs:float"/>
53. <xs:element name="FECRecvScheme" type="xs:int"/>
54. <xs:element name="FECRecvRedundancy" type="xs:float"/>
55. <xs:element name="HealerPushCount" type="xs:int"/>
56. <xs:element name="HealerPullCount" type="xs:int"/>
57. <xs:element name="SendMutePercent" type="xs:float"/>
58. <xs:element name="CaptureOffloadedEffectsAudio" type="xs:int"/>
59. <xs:element name="RenderOffloadedEffectsAudio" type="xs:int"/>
61. <xs:element name="WifiRadioType" type="xs:unsignedByte"/>
62. <xs:element name="WifiRSSI" type="xs:int"/>
63. <xs:element name="SSID" type="xs:string"/>
64. <xs:element name="WifiChannel" type="xs:int"/>
65. <xs:element name="ActivePowerProfile" type="xs:int"/>
66. <xs:element name="WifiHandovers" type="xs:int"/>
67. <xs:element name="WifiChannelSwitches" type="xs:int"/>
68. <xs:element name="WifiChannelReassociations" type="xs:int"/>
69. <xs:element name="RecvQoSMarking" type="xs:unsignedByte"/>
70. <xs:element name="SendQoSMarking" type="xs:unsignedByte"/>  
     <xs:element name="WifiRadioFrequency" type="xs:int"/>  
     <xs:element name="WifiSendRate" type="xs:int"/>
71. <xs:element name="WifiReceiveRate" type="xs:int"/>
72. <xs:element name="WifiRetryCount" type="xs:long"/>
73. <xs:element name="WifiTransmittedFrameCount" type="xs:long"/>
74. <xs:element name="WifiMaxSendSpeed" type="xs:int"/>
75. <xs:element name="WifiMaxReceiveSpeed" type="xs:int"/>
76. <xs:element name="WifiMTU" type="xs:int"/>
77. <xs:element name="WifiSupportFlags" type="xs:int"/>
78. <xs:element name="WifiStatusFlags" type="xs:int"/>
79. <xs:element name="WifiTunnelType" type="xs:int"/>
80. <xs:element name="WifiSignalStrength" type="xs:int"/>
81. <xs:element name="WifiBatteryCharge" type="xs:int"/>
82. <xs:element name="ConnectionName" type="xs:string"/>
83. <xs:element name="DNSSuffix" type="xs:string"/>
85. <xs:element name="WifiRetransmissionRate" type="xs:float"/>
86. <xs:element name="QoSMarkedRate" type="xs:float"/>
87. <xs:element name="LastRTPSendTime" type="xs:dateTime"/>
88. <xs:element name="LastRTCPSendTime" type="xs:dateTime"/>
89. <xs:element name="LastRTPReceiveTime" type="xs:dateTime"/>
90. <xs:element name="LastRTCPReceiveTime" type="xs:dateTime"/>
91. <!-- Separator is used for forward/backward compatiblity -->
92. <xs:element name="Separator4">
93. <xs:complexType></xs:complexType>
94. </xs:element>
95. </xs:schema>

The schema for **ms-cqf.xsd** is as follows:

1. <?xml version="1.0" encoding="utf-8"?>  
   <xs:schema targetNamespace="ms-cqf" elementFormDefault="qualified" xmlns:mstns="ms-cqf" xmlns:xs="http://www.w3.org/2001/XMLSchema">
2. <xs:element name ="CallQualityFeedbackReport" type="mstns:CallQualityFeedbackReportType"/>
3. <xs:complexType name ="CallQualityFeedbackReportType">  
    <xs:sequence>  
    <xs:element name="ReportingUserURI" type="xs:anyURI" minOccurs="1" maxOccurs="1"/>  
    <xs:element name ="Rating" type="xs:int" minOccurs="1" maxOccurs="1"/>  
    <xs:element name= "Feedback" type="mstns:TextFeedbackType" minOccurs="0" maxOccurs="1"/>  
    <xs:element name ="Tokens" type ="mstns:TokenCollectionType" minOccurs="0" maxOccurs="1"/>  
    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>  
    </xs:sequence>  
    <xs:attribute name="CallId" type="xs:string" use="required"/>  
    <xs:attribute name="FromTag" type="xs:string" use="required"/>  
    <xs:attribute name="ToTag" type="xs:string" use="required"/>  
    <xs:attribute name="Start" type="xs:dateTime"/>  
    <xs:attribute name="End" type="xs:dateTime"/>  
    <xs:anyAttribute namespace="##other" processContents="lax"/>  
    </xs:complexType>
4. <xs:complexType name="TextFeedbackType">  
    <xs:sequence>  
    <xs:element name="Text" type="xs:string"/>  
    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>  
    </xs:sequence>  
    <!--LanguageTag values from LanguageTag value defined within MS-LCID http://msdn.microsoft.com/en-us/library/cc233965.aspx -->  
    <xs:attribute name="LanguageTag" type="xs:string"/>  
    <xs:anyAttribute namespace="##other" processContents="lax"/>  
    </xs:complexType>
5. <xs:complexType name ="TokenCollectionType">  
    <xs:sequence>  
    <xs:element name="Token" type="mstns:TokenValueType" minOccurs="1" maxOccurs="unbounded"/>  
    </xs:sequence>  
    </xs:complexType>
6. <xs:complexType name ="TokenValueType">  
    <xs:sequence>  
    <xs:element name ="Id" type="xs:int" minOccurs="1" maxOccurs="1"/>  
    <xs:element name ="Value" type="xs:int" minOccurs="1" maxOccurs="1"/>  
    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>  
    </xs:sequence>  
    <xs:anyAttribute namespace="##other" processContents="lax"/>  
    </xs:complexType>  
   </xs:schema>

# Appendix B: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

* Microsoft Office Communications Server 2007
* Microsoft Office Communicator 2007
* Microsoft Office Communications Server 2007 R2
* Microsoft Office Communicator 2007 R2
* Microsoft Lync Server 2010
* Microsoft Lync 2010
* Microsoft Lync Server 2013
* Microsoft Lync Client 2013/Skype for Business
* Microsoft Skype for Business 2016
* Microsoft Skype for Business Server 2015
* Microsoft Skype for Business 2019
* Microsoft Skype for Business Server 2019
* Microsoft Skype for Business 2021
* Microsoft Skype for Business LTSC 2024

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

[<1> Section 2.2](#Appendix_A_Target_1): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<2> Section 2.2.1](#Appendix_A_Target_2): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This namespace is not supported.

[<3> Section 2.2.1](#Appendix_A_Target_3): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This namespace is not supported.

[<4> Section 2.2.1.1](#Appendix_A_Target_4): Office Communications Server 2007, Office Communicator 2007: The Version attribute and the v2:SchemaVersion attribute are not supported. Office Communications Server 2007 R2, Office Communicator 2007 R2: The v2:SchemaVersion attribute is not supported.

[<5> Section 2.2.1.1.2](#Appendix_A_Target_5): Office Communications Server 2007, Office Communicator 2007: This attribute is not supported.

[<6> Section 2.2.1.1.2](#Appendix_A_Target_6): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This attribute is not supported.

[<7> Section 2.2.1.2](#Appendix_A_Target_7): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2:OpaqueClientPlatformData**, **v2:OpaqueServerPlatformData**, **v2:OpaqueConferenceData**, and **v2:Separator** elements are not supported.

[<8> Section 2.2.1.2.1](#Appendix_A_Target_8): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<9> Section 2.2.1.2.1](#Appendix_A_Target_9): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<10> Section 2.2.1.2.1](#Appendix_A_Target_10): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<11> Section 2.2.1.2.1](#Appendix_A_Target_11): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<12> Section 2.2.1.3](#Appendix_A_Target_12): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2:OS**, **v2:CPUName**, **v2:CUNumberofCores**, **v2:CPUProcessorSpeed**, **v2:VirtualizationFlag**, and **namespace**="##other" attributes are not supported.

[<13> Section 2.2.1.3.2](#Appendix_A_Target_13): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This attribute is not supported.

[<14> Section 2.2.1.3.2](#Appendix_A_Target_14): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This attribute is not supported.

[<15> Section 2.2.1.3.2](#Appendix_A_Target_15): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This attribute is not supported.

[<16> Section 2.2.1.3.2](#Appendix_A_Target_16): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This attribute is not supported.

[<17> Section 2.2.1.3.2](#Appendix_A_Target_17): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This attribute is not supported.

[<18> Section 2.2.1.4](#Appendix_A_Target_18): Office Communications Server 2007, Office Communicator 2007: The DialogCategory, CorrelationID, v2:CallPriority, v2:MediationServerBypassFlag, v2:TrunkingPeer, and v2:MediaBypassWarningFlag elements are not supported. The DialogCategoryType is also not supported. Office Communications Server 2007 R2, Office Communicator 2007 R2: The v2:CallPriority, v2:MediationServerBypassFlag, v2:TrunkingPeer, and v2:MediaBypassWarningFlag elements are not supported.

[<19> Section 2.2.1.4.1](#Appendix_A_Target_19): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<20> Section 2.2.1.4.1](#Appendix_A_Target_20): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<21> Section 2.2.1.4.1](#Appendix_A_Target_21): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<22> Section 2.2.1.4.1](#Appendix_A_Target_22): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<23> Section 2.2.1.4.1](#Appendix_A_Target_23): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<24> Section 2.2.1.4.1](#Appendix_A_Target_24): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<25> Section 2.2.1.4.1](#Appendix_A_Target_25): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<26> Section 2.2.1.4.1](#Appendix_A_Target_26): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<27> Section 2.2.1.5](#Appendix_A_Target_27): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2:AppliedBandwidthLimit**, **v2:AppliedBandwidthSource**, **v2:LocalClientEvent**, **v2:RemoteClientEvent**, **v2:OpaqueCoreEndpointData**, **v2:OpaqueChannelData**, and **v2:Separator** elements are not supported.

[<28> Section 2.2.1.5.1](#Appendix_A_Target_28): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<29> Section 2.2.1.5.1](#Appendix_A_Target_29): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<30> Section 2.2.1.5.1](#Appendix_A_Target_30): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<31> Section 2.2.1.5.1](#Appendix_A_Target_31): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<32> Section 2.2.1.5.1](#Appendix_A_Target_32): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<33> Section 2.2.1.5.1](#Appendix_A_Target_33): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<34> Section 2.2.1.5.1](#Appendix_A_Target_34): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<35> Section 2.2.1.5.2](#Appendix_A_Target_35): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This value is not supported.

[<36> Section 2.2.1.6](#Appendix_A_Target_36): Office Communications Server 2007, Office Communicator 2007: The **NetworkConnectivityInfo** element is not supported.

[<37> Section 2.2.1.6.1](#Appendix_A_Target_37): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<38> Section 2.2.1.6.1](#Appendix_A_Target_38): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<39> Section 2.2.1.6.1](#Appendix_A_Target_39): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<40> Section 2.2.1.6.1](#Appendix_A_Target_40): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<41> Section 2.2.1.6.1](#Appendix_A_Target_41): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<42> Section 2.2.1.6.1](#Appendix_A_Target_42): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<43> Section 2.2.1.6.1](#Appendix_A_Target_43): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<44> Section 2.2.1.6.1](#Appendix_A_Target_44): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<45> Section 2.2.1.6.1](#Appendix_A_Target_45): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<46> Section 2.2.1.6.1](#Appendix_A_Target_46): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<47> Section 2.2.1.6.1](#Appendix_A_Target_47): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<48> Section 2.2.1.6.1](#Appendix_A_Target_48): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<49> Section 2.2.1.6.1](#Appendix_A_Target_49): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<50> Section 2.2.1.6.1](#Appendix_A_Target_50): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<51> Section 2.2.1.6.1](#Appendix_A_Target_51): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<52> Section 2.2.1.6.1](#Appendix_A_Target_52): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<53> Section 2.2.1.6.1](#Appendix_A_Target_53): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<54> Section 2.2.1.6.1](#Appendix_A_Target_54): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<55> Section 2.2.1.6.1](#Appendix_A_Target_55): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<56> Section 2.2.1.6.1](#Appendix_A_Target_56): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<57> Section 2.2.1.7.1](#Appendix_A_Target_57): The values in this table are supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, and Office Communicator 2007 R2 only.

[<58> Section 2.2.1.7.1](#Appendix_A_Target_58): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The values in this table are not used.

[<59> Section 2.2.1.8](#Appendix_A_Target_59): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2:BSSID** and **v2:Separator** elements are not supported.

[<60> Section 2.2.1.8.1](#Appendix_A_Target_60): Office Communications Server 2007, Office Communicator 2007: The **NetworkConnectivityInfoType** type is not supported.

[<61> Section 2.2.1.8.1](#Appendix_A_Target_61): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<62> Section 2.2.1.8.1](#Appendix_A_Target_62): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<63> Section 2.2.1.8.1](#Appendix_A_Target_63): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<64> Section 2.2.1.8.1](#Appendix_A_Target_64): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<65> Section 2.2.1.8.1](#Appendix_A_Target_65): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<66> Section 2.2.1.8.1](#Appendix_A_Target_66): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<67> Section 2.2.1.8.1.1](#Appendix_A_Target_67): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<68> Section 2.2.1.8.1.1](#Appendix_A_Target_68): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<69> Section 2.2.1.9](#Appendix_A_Target_69): Office Communications Server 2007,Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The v2:MACAddr and v2:Separator elements are not supported.

[<70> Section 2.2.1.9.1](#Appendix_A_Target_70): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<71> Section 2.2.1.9.1](#Appendix_A_Target_71): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<72> Section 2.2.1.9.1](#Appendix_A_Target_72): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<73> Section 2.2.1.10](#Appendix_A_Target_73): On Windows Vista operating system, the device name is the 'PKEY\_DeviceInterface\_FriendlyName' for the device. On all other versions of Windows, the device name is the value of the Description field of the 'DSPROPERTY\_DIRECTSOUNDDEVICE\_DESCRIPTION.

[<74> Section 2.2.1.10.1](#Appendix_A_Target_74): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<75> Section 2.2.1.11.1](#Appendix_A_Target_75): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<76> Section 2.2.1.12](#Appendix_A_Target_76): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The v2:RatioConcealedSamplesAvg, v2:RatioStretchedSamplesAvg, v2:RatioCompressSamplesAvg, and v2:Separator elements are not supported.

[<77> Section 2.2.1.12.1](#Appendix_A_Target_77): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: Available for **OutboundStream** only.

[<78> Section 2.2.1.12.1](#Appendix_A_Target_78): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<79> Section 2.2.1.12.1](#Appendix_A_Target_79): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<80> Section 2.2.1.12.1](#Appendix_A_Target_80): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<81> Section 2.2.1.12.1](#Appendix_A_Target_81): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<82> Section 2.2.1.12.1](#Appendix_A_Target_82): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<83> Section 2.2.1.12.1](#Appendix_A_Target_83): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<84> Section 2.2.1.12.1](#Appendix_A_Target_84): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<85> Section 2.2.1.12.1](#Appendix_A_Target_85): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<86> Section 2.2.1.12.1](#Appendix_A_Target_86): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<87> Section 2.2.1.12.1](#Appendix_A_Target_87): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<88> Section 2.2.1.12.1](#Appendix_A_Target_88): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<89> Section 2.2.1.12.1](#Appendix_A_Target_89): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<90> Section 2.2.1.12.1](#Appendix_A_Target_90): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<91> Section 2.2.1.12.1](#Appendix_A_Target_91): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<92> Section 2.2.1.12.1](#Appendix_A_Target_92): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<93> Section 2.2.1.12.1](#Appendix_A_Target_93): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<94> Section 2.2.1.12.1](#Appendix_A_Target_94): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<95> Section 2.2.1.12.1](#Appendix_A_Target_95): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<96> Section 2.2.1.12.1](#Appendix_A_Target_96): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<97> Section 2.2.1.12.1](#Appendix_A_Target_97): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<98> Section 2.2.1.12.1](#Appendix_A_Target_98): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<99> Section 2.2.1.13.1](#Appendix_A_Target_99): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<100> Section 2.2.1.14](#Appendix_A_Target_100): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2:AudioFECUsed** and **v2:Separator** elements are not supported.

[<101> Section 2.2.1.14.1](#Appendix_A_Target_101): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<102> Section 2.2.1.14.1](#Appendix_A_Target_102): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<103> Section 2.2.1.14.1](#Appendix_A_Target_103): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<104> Section 2.2.1.14.1](#Appendix_A_Target_104): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<105> Section 2.2.1.14.1](#Appendix_A_Target_105): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<106> Section 2.2.1.14.1](#Appendix_A_Target_106): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<107> Section 2.2.1.14.1](#Appendix_A_Target_107): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<108> Section 2.2.1.14.1](#Appendix_A_Target_108): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<109> Section 2.2.1.14.1](#Appendix_A_Target_109): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<110> Section 2.2.1.14.1](#Appendix_A_Target_110): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<111> Section 2.2.1.14.1](#Appendix_A_Target_111): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<112> Section 2.2.1.14.1](#Appendix_A_Target_112): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<113> Section 2.2.1.14.1](#Appendix_A_Target_113): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<114> Section 2.2.1.14.1](#Appendix_A_Target_114): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<115> Section 2.2.1.14.1](#Appendix_A_Target_115): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<116> Section 2.2.1.14.1](#Appendix_A_Target_116): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<117> Section 2.2.1.14.1](#Appendix_A_Target_117): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<118> Section 2.2.1.14.1](#Appendix_A_Target_118): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<119> Section 2.2.1.14.1](#Appendix_A_Target_119): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<120> Section 2.2.1.14.1](#Appendix_A_Target_120): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<121> Section 2.2.1.14.1](#Appendix_A_Target_121): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<122> Section 2.2.1.14.1](#Appendix_A_Target_122): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<123> Section 2.2.1.14.1](#Appendix_A_Target_123): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<124> Section 2.2.1.14.1](#Appendix_A_Target_124): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<125> Section 2.2.1.14.1](#Appendix_A_Target_125): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<126> Section 2.2.1.14.1](#Appendix_A_Target_126): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<127> Section 2.2.1.14.1](#Appendix_A_Target_127): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<128> Section 2.2.1.14.1](#Appendix_A_Target_128): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<129> Section 2.2.1.14.1](#Appendix_A_Target_129): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<130> Section 2.2.1.14.1](#Appendix_A_Target_130): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<131> Section 2.2.1.14.1](#Appendix_A_Target_131): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<132> Section 2.2.1.14.1](#Appendix_A_Target_132): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<133> Section 2.2.1.14.1](#Appendix_A_Target_133): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<134> Section 2.2.1.14.1](#Appendix_A_Target_134): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<135> Section 2.2.1.14.1](#Appendix_A_Target_135): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<136> Section 2.2.1.14.1](#Appendix_A_Target_136): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<137> Section 2.2.1.14.1](#Appendix_A_Target_137): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<138> Section 2.2.1.14.1](#Appendix_A_Target_138): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<139> Section 2.2.1.14.1](#Appendix_A_Target_139): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<140> Section 2.2.1.14.1](#Appendix_A_Target_140): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<141> Section 2.2.1.14.1](#Appendix_A_Target_141): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<142> Section 2.2.1.14.1](#Appendix_A_Target_142): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<143> Section 2.2.1.14.1](#Appendix_A_Target_143): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<144> Section 2.2.1.14.1](#Appendix_A_Target_144): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<145> Section 2.2.1.14.1](#Appendix_A_Target_145): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<146> Section 2.2.1.14.1](#Appendix_A_Target_146): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<147> Section 2.2.1.15](#Appendix_A_Target_147): Office Communications Server 2007, Office Communicator 2007: The **FrozenPeriodPercentAvg**, **ConsecutivePacketLossAvg**, **RateMatchLevel**, **v2:VideoAllocateBWAvg**, and **v2:VideoLocalFrameLossPercentageAvg** elements are not supported. Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2VideoAllocateBWAvg** and **v2:VideoLocalFrameLossPercentageAvg** elements are not supported.

[<148> Section 2.2.1.15.1](#Appendix_A_Target_148): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<149> Section 2.2.1.15.1](#Appendix_A_Target_149): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<150> Section 2.2.1.15.1](#Appendix_A_Target_150): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<151> Section 2.2.1.15.1](#Appendix_A_Target_151): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<152> Section 2.2.1.15.1](#Appendix_A_Target_152): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<153> Section 2.2.1.15.1](#Appendix_A_Target_153): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<154> Section 2.2.1.15.1](#Appendix_A_Target_154): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<155> Section 2.2.1.15.1](#Appendix_A_Target_155): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<156> Section 2.2.1.15.1](#Appendix_A_Target_156): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<157> Section 2.2.1.15.1](#Appendix_A_Target_157): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<158> Section 2.2.1.15.1](#Appendix_A_Target_158): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<159> Section 2.2.1.15.1](#Appendix_A_Target_159): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<160> Section 2.2.1.15.1](#Appendix_A_Target_160): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<161> Section 2.2.1.15.1](#Appendix_A_Target_161): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<162> Section 2.2.1.15.1](#Appendix_A_Target_162): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<163> Section 2.2.1.15.1](#Appendix_A_Target_163): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<164> Section 2.2.1.15.1](#Appendix_A_Target_164): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<165> Section 2.2.1.15.1](#Appendix_A_Target_165): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<166> Section 2.2.1.15.1](#Appendix_A_Target_166): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<167> Section 2.2.1.15.1](#Appendix_A_Target_167): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<168> Section 2.2.1.15.1](#Appendix_A_Target_168): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<169> Section 2.2.1.15.1](#Appendix_A_Target_169): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<170> Section 2.2.1.15.1](#Appendix_A_Target_170): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<171> Section 2.2.1.15.1](#Appendix_A_Target_171): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<172> Section 2.2.1.15.1](#Appendix_A_Target_172): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<173> Section 2.2.1.15.1](#Appendix_A_Target_173): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<174> Section 2.2.1.15.1](#Appendix_A_Target_174): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<175> Section 2.2.1.15.1](#Appendix_A_Target_175): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<176> Section 2.2.1.15.1](#Appendix_A_Target_176): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<177> Section 2.2.1.15.1](#Appendix_A_Target_177): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<178> Section 2.2.1.15.1](#Appendix_A_Target_178): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<179> Section 2.2.1.15.1](#Appendix_A_Target_179): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<180> Section 2.2.1.15.1](#Appendix_A_Target_180): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<181> Section 2.2.1.15.1](#Appendix_A_Target_181): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<182> Section 2.2.1.15.1](#Appendix_A_Target_182): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<183> Section 2.2.1.15.1](#Appendix_A_Target_183): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<184> Section 2.2.1.15.1](#Appendix_A_Target_184): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<185> Section 2.2.1.15.1](#Appendix_A_Target_185): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<186> Section 2.2.1.15.1](#Appendix_A_Target_186): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<187> Section 2.2.1.15.1](#Appendix_A_Target_187): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<188> Section 2.2.1.15.1](#Appendix_A_Target_188): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<189> Section 2.2.1.15.1.1](#Appendix_A_Target_189): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<190> Section 2.2.1.15.1.2](#Appendix_A_Target_190): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<191> Section 2.2.1.16](#Appendix_A_Target_191): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<192> Section 2.2.1.17](#Appendix_A_Target_192): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **VideoResolutionDistribution** element is not supported.

[<193> Section 2.2.1.17.1](#Appendix_A_Target_193): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **VideoResolutionDistribution** element is not supported.

[<194> Section 2.2.1.17.1](#Appendix_A_Target_194): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<195> Section 2.2.1.17.1](#Appendix_A_Target_195): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<196> Section 2.2.1.17.1](#Appendix_A_Target_196): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<197> Section 2.2.1.17.1](#Appendix_A_Target_197): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<198> Section 2.2.1.18](#Appendix_A_Target_198): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The VideoRateMatchingLevelDistribution element is not supported.

[<199> Section 2.2.1.18.1](#Appendix_A_Target_199): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **VideoRateMatchingLevelDistribution** element is not supported.

[<200> Section 2.2.1.18.1](#Appendix_A_Target_200): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<201> Section 2.2.1.18.1](#Appendix_A_Target_201): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<202> Section 2.2.1.18.1](#Appendix_A_Target_202): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<203> Section 2.2.1.18.1](#Appendix_A_Target_203): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<204> Section 2.2.1.18.1](#Appendix_A_Target_204): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<205> Section 2.2.1.18.1](#Appendix_A_Target_205): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<206> Section 2.2.1.19](#Appendix_A_Target_206): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element and all its subelements are not supported.

[<207> Section 2.2.1.19.1](#Appendix_A_Target_207): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<208> Section 2.2.1.19.1](#Appendix_A_Target_208): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<209> Section 2.2.1.19.1](#Appendix_A_Target_209): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<210> Section 2.2.1.19.1](#Appendix_A_Target_210): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<211> Section 2.2.1.19.1](#Appendix_A_Target_211): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<212> Section 2.2.1.19.1](#Appendix_A_Target_212): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<213> Section 2.2.1.19.1](#Appendix_A_Target_213): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<214> Section 2.2.1.19.1](#Appendix_A_Target_214): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<215> Section 2.2.1.19.1](#Appendix_A_Target_215): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<216> Section 2.2.1.19.1](#Appendix_A_Target_216): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<217> Section 2.2.1.19.1](#Appendix_A_Target_217): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<218> Section 2.2.1.19.1](#Appendix_A_Target_218): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<219> Section 2.2.1.19.1](#Appendix_A_Target_219): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<220> Section 2.2.1.19.1](#Appendix_A_Target_220): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<221> Section 2.2.1.19.1](#Appendix_A_Target_221): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<222> Section 2.2.1.19.1](#Appendix_A_Target_222): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<223> Section 2.2.1.19.1](#Appendix_A_Target_223): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<224> Section 2.2.1.19.1](#Appendix_A_Target_224): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<225> Section 2.2.1.19.1](#Appendix_A_Target_225): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<226> Section 2.2.1.19.1](#Appendix_A_Target_226): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<227> Section 2.2.1.19.1.2.1](#Appendix_A_Target_227): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<228> Section 2.2.1.19.1.2.1](#Appendix_A_Target_228): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<229> Section 2.2.1.19.1.2.1](#Appendix_A_Target_229): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<230> Section 2.2.1.19.1.2.1](#Appendix_A_Target_230): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<231> Section 2.2.1.19.1.3.1](#Appendix_A_Target_231): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<232> Section 2.2.1.19.1.3.1](#Appendix_A_Target_232): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<233> Section 2.2.1.19.1.3.1](#Appendix_A_Target_233): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<234> Section 2.2.1.22](#Appendix_A_Target_234): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2:NetworkMOSA1g** and **v2:Separator** elements are not supported.

[<235> Section 2.2.1.22.1](#Appendix_A_Target_235): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<236> Section 2.2.1.22.1](#Appendix_A_Target_236): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<237> Section 2.2.1.23.1](#Appendix_A_Target_237): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<238> Section 2.2.1.23.1](#Appendix_A_Target_238): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<239> Section 2.2.1.23.1](#Appendix_A_Target_239): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<240> Section 2.2.1.23.1](#Appendix_A_Target_240): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<241> Section 2.2.1.26.1](#Appendix_A_Target_241): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<242> Section 2.2.1.26.1](#Appendix_A_Target_242): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<243> Section 2.2.1.27.1](#Appendix_A_Target_243): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<244> Section 2.2.1.28](#Appendix_A_Target_244): Office Communications Server 2007, Office Communicator 2007: The **SpeakerFeedbackMicIn**, **SpeechLevelMicIn**, **SpeechLevelPostProcess**, **SignalLevelLoudSpeaker**, **BackGroundNoiseMicIn**, **BackGroundNoiseSent**, **LocalSpeechToEcho**, **SpeakerGlitchRate**, **MicGlitchRate**, **SpeakerClipRate**, **MicGlitchRate**, **SpeakerClipRate**, **MicClipRate**, **RxAGCSignalLevel**, and RxAGCNoiseLevel elements are not supported.

Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **v2:InitialSignalLevelRMS**, **v2:AudioTimestampDriftRateMic**, **v2:AudioTimestampDriftRateSpk**, **v2:AudioTimestampErrorMicMs**, **v2:AudioTimestampErrorMicMs**, **v2:AudioTimestampErrorSpkMs**, **v2:VsEntryCauses**, **v2:EchoEventCauses**, **v2:EchoPercentMicIn**, **v2:EchoPercentSend**, **v2:RxAvgAGCGain**, and **v2:Separator** elements are not supported.

[<245> Section 2.2.1.28.1](#Appendix_A_Target_245): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<246> Section 2.2.1.28.1](#Appendix_A_Target_246): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<247> Section 2.2.1.28.1](#Appendix_A_Target_247): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<248> Section 2.2.1.28.1](#Appendix_A_Target_248): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<249> Section 2.2.1.28.1](#Appendix_A_Target_249): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<250> Section 2.2.1.28.1](#Appendix_A_Target_250): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<251> Section 2.2.1.28.1](#Appendix_A_Target_251): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<252> Section 2.2.1.28.1](#Appendix_A_Target_252): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<253> Section 2.2.1.28.1](#Appendix_A_Target_253):

[<254> Section 2.2.1.28.1](#Appendix_A_Target_254): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<255> Section 2.2.1.28.1](#Appendix_A_Target_255): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<256> Section 2.2.1.28.1](#Appendix_A_Target_256): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<257> Section 2.2.1.28.1](#Appendix_A_Target_257): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<258> Section 2.2.1.28.1](#Appendix_A_Target_258): Office Communications Server 2007, Office Communicator 2007: This element is not supported.

[<259> Section 2.2.1.28.1](#Appendix_A_Target_259): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<260> Section 2.2.1.28.1](#Appendix_A_Target_260): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<261> Section 2.2.1.28.1](#Appendix_A_Target_261): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<262> Section 2.2.1.28.1](#Appendix_A_Target_262): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<263> Section 2.2.1.28.1](#Appendix_A_Target_263): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<264> Section 2.2.1.28.1](#Appendix_A_Target_264): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<265> Section 2.2.1.28.1](#Appendix_A_Target_265): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<266> Section 2.2.1.28.1](#Appendix_A_Target_266): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<267> Section 2.2.1.28.1](#Appendix_A_Target_267): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<268> Section 2.2.1.28.1](#Appendix_A_Target_268): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<269> Section 2.2.1.28.1](#Appendix_A_Target_269): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<270> Section 2.2.1.28.1](#Appendix_A_Target_270): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<271> Section 2.2.1.28.1](#Appendix_A_Target_271): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<272> Section 2.2.1.28.1](#Appendix_A_Target_272): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<273> Section 2.2.1.28.1](#Appendix_A_Target_273): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<274> Section 2.2.1.28.1](#Appendix_A_Target_274): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<275> Section 2.2.1.28.1](#Appendix_A_Target_275): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<276> Section 2.2.1.28.1](#Appendix_A_Target_276): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<277> Section 2.2.1.28.1](#Appendix_A_Target_277): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<278> Section 2.2.1.28.1](#Appendix_A_Target_278): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<279> Section 2.2.1.28.1](#Appendix_A_Target_279): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<280> Section 2.2.1.28.1](#Appendix_A_Target_280): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<281> Section 2.2.1.28.1](#Appendix_A_Target_281): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<282> Section 2.2.1.29](#Appendix_A_Target_282): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: The **LocalClientEvent** and **RemoteClientEvent** elements are not supported.

[<283> Section 2.2.1.29.1](#Appendix_A_Target_283): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<284> Section 2.2.1.29.1](#Appendix_A_Target_284): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<285> Section 2.2.1.29.1](#Appendix_A_Target_285): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<286> Section 2.2.1.29.1](#Appendix_A_Target_286): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<287> Section 2.2.1.29.1](#Appendix_A_Target_287): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<288> Section 2.2.1.29.1](#Appendix_A_Target_288): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<289> Section 2.2.1.29.1](#Appendix_A_Target_289): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<290> Section 2.2.1.29.1](#Appendix_A_Target_290): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<291> Section 2.2.1.29.1](#Appendix_A_Target_291): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<292> Section 2.2.1.29.1](#Appendix_A_Target_292): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<293> Section 2.2.1.29.1](#Appendix_A_Target_293): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<294> Section 2.2.1.29.1](#Appendix_A_Target_294): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<295> Section 2.2.1.29.1](#Appendix_A_Target_295): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<296> Section 2.2.1.29.1](#Appendix_A_Target_296): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<297> Section 2.2.1.29.1](#Appendix_A_Target_297): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<298> Section 2.2.1.29.1](#Appendix_A_Target_298): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<299> Section 2.2.1.29.1](#Appendix_A_Target_299): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This element is not supported.

[<300> Section 2.2.1.29.1](#Appendix_A_Target_300): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<301> Section 2.2.1.29.1](#Appendix_A_Target_301): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<302> Section 2.2.1.29.1](#Appendix_A_Target_302): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This element is not supported.

[<303> Section 2.2.2.1](#Appendix_A_Target_303): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<304> Section 2.2.2.2](#Appendix_A_Target_304): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<305> Section 2.2.2.3](#Appendix_A_Target_305): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<306> Section 2.2.2.4](#Appendix_A_Target_306): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This element is not supported.

[<307> Section 6.1](#Appendix_A_Target_307): This schema is supported in Office Communications Server 2007 and Office Communicator 2007 only.

[<308> Section 6.2](#Appendix_A_Target_308): This schema is supported in Office Communications Server 2007 R2 and Office Communicator 2007 R2 only.

[<309> Section 6.3](#Appendix_A_Target_309): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This schema is not supported.

[<310> Section 6.4](#Appendix_A_Target_310): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This schema is not supported.

[<311> Section 6.5](#Appendix_A_Target_311): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010, Lync Server 2013, Lync Client 2013/Skype for Business: This schema is not supported.

# Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

* A document revision that incorporates changes to interoperability requirements.
* A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

| Section | Description | Revision class |
| --- | --- | --- |
| [7](#Section_637f259bad5e49d6bf7e26244e7682cf) Appendix B: Product Behavior | Updated list of supported products. | Major |

# Index

A

Abstract data model

[client](#section_a77cac4793944224a4232c5da5479bd5) 80

[proxy](#section_929546e6fb5a48b28ee0de5928c4862c) 81

[server](#section_5d4601b4e568460ca47532eff63bd29a) 81

[Applicability](#section_ca9c4ef1a8d14cd1afbec983fdb6132c) 12

[application/ms-cqf+xml message](#section_c56b3b89a8c3478d809efec4be05e6b3) 75

[CallQualityFeedbackReport element](#section_f250d319590242c48ee3932acb3d19e3) 75

[Feedback element](#section_f514cab1b74440b0b34cb56649fda10b) 77

[Token element](#section_b79255d2f46a412c949edf857e2f58a4) 78

[Tokens element](#section_6006f00f58634448a5abb8b2ad178e66) 78

[application/vq-rtcpxr+xml message](#section_0dd08b34bdaa4eacb57ae73628d33078) 13

[BurstGapLoss element](#section_3338117b18a94051babd4f271ea69228) 64

[CaptureDev element](#section_7e326e1328ca43efa43f70ca45bb6c12) 32

[ClientEventType element](#section_6dcf5b425a3c4c3a82d1bafef583dd68) 72

[connectivity element](#section_82b0f63414874f34b375cb542a69ef44) 26

[delay element](#section_2c74d5c24e1e48feb6c7966f15a61e7b) 65

[DialogInfo element](#section_3a04febbf0aa465d8278901a0893e8d8) 17

[endpoint element](#section_42ff402a2f4e4d2795e51893944755d8) 16

[InboundStream element](#section_b21cbc493d644aa183d87d2ab1f8ed08) 33

[jitter element](#section_7c0f76d568f84be39cc343232b4589ac) 66

[LocalAddr element](#section_1d43eec8dc584c53b57cb5405731c3bb) 31

[MediaLine element](#section_2c2fe70187d94eae931c91053ac63d22) 20

[MediaLineDescription element](#section_4afdf5cf65194bcb8a0873fab00461bd) 23

[network element](#section_dba93221b2514bea82beeff0e799ce22) 34

[NetworkAudioMOS element](#section_940107d3287b40acbe7cf868c75c07e3) 62

[NetworkConnectivityInfo element](#section_b9daa559be0c4015a0c37c31a8e48240) 29

[OutboundStream element](#section_b21cbc493d644aa183d87d2ab1f8ed08) 33

[PacketLoss element](#section_5c86c0e7069a42318111a2d7d55c1fa6) 64

[payload element](#section_b525e94f21d54709bdcc6a7a1c3c720c) 37

[Payload.ApplicationSharing element](#section_36c43482218d4a5586393ce2363533f5) 56

[Payload.Audio element](#section_6b3fcae1b324401180d6f492caaf89a3) 38

[Payload.Video element](#section_ff080d43ed1543a7a69ff872957e70a2) 46

[QualityEstimates element](#section_9a9666d6884546fa9c73d65f51771d27) 60

[QualityEstimates.Audio element](#section_c8e7399326124bd1b114a6a76bed28cb) 60

[RelayAddr element](#section_1d43eec8dc584c53b57cb5405731c3bb) 31

[RemoteAddr element](#section_1d43eec8dc584c53b57cb5405731c3bb) 31

[RenderDev element](#section_7e326e1328ca43efa43f70ca45bb6c12) 32

[signal element](#section_4ee67b554ef84c3b80885145a353d211) 67

[TraceRoute element](#section_31a3c6a821384863ab6e1322e10ae245) 30

[utilization element](#section_03139d4367b04b65b48b6e116d45e2be) 63

[v3:AdditionalPayload element](#section_4ebefea0308644b6996483f97d65391e) 54

[VideoRateMatchingLevelDistribution element](#section_020c0f271c2e4ba8b893251776862dbb) 55

[VideoResolutionDistribution element](#section_727f46e355a94b168797c56e21353f49) 54

[VQReportEvent element](#section_03bebaa1080c487c8c00f9ace1695890) 14

[VQSessionReport element](#section_189a59d378a84c629b3791cac301ad68) 14

C

[Capability negotiation](#section_9e9d256606a240a4bfac7b9bd349bb6a) 12

[Change tracking](#section_1b241e88428449798b63b07861241764) 172

Client

[abstract data model](#section_a77cac4793944224a4232c5da5479bd5) 80

[higher-layer triggered events](#section_63e8c7ef4b8648458304f8d7b77ab312) 80

[initialization](#section_4d64be34df9d49d3a5fe92629f020037) 80

[local events](#section_7e60fc63de40490dbcdb237dd1e1425a) 80

[message processing](#section_8ac784f07d684d1b8e91572b01f77720) 80

[overview](#section_6b088c37588b4da8be6a3e4a58befeba) 80

[sequencing rules](#section_8ac784f07d684d1b8e91572b01f77720) 80

[timer events](#section_4cb0a44a37b34b0f9d8ebcf8bbee3c1d) 80

[timers](#section_7a74291a70ed4a8f91a8417aa75137e0) 80

D

Data model - abstract

[client](#section_a77cac4793944224a4232c5da5479bd5) 80

[proxy](#section_929546e6fb5a48b28ee0de5928c4862c) 81

[server](#section_5d4601b4e568460ca47532eff63bd29a) 81

E

Example

[metrics message payload](#section_89f2a40feea2444bb141d8a848c9aae5) 83

[Examples](#section_89f2a40feea2444bb141d8a848c9aae5) 83

F

[Fields - vendor-extensible](#section_32adb0fffccc474c84ec1181a9dfd530) 12

[Full XML schema](#section_e500001fb57c4ee597da457ec7b5736c) 88

G

[Glossary](#section_29a115acba114cccb0af8b772c581516) 7

H

Higher-layer triggered events

[client](#section_63e8c7ef4b8648458304f8d7b77ab312) 80

[proxy](#section_e8385bf48919457e8142a6e185cb8f93) 82

[server](#section_c84dd4cc61bc44b2b165091252164f98) 81

I

[Implementer - security considerations](#section_22077da3a88f4fa19ddab1f0c5e8afa3) 87

[Index of security parameters](#section_a77d3316da9f4850a88985564efc88d3) 87

[Informative references](#section_beba9d02e0db4999ad71408119cb04c4) 11

Initialization

[client](#section_4d64be34df9d49d3a5fe92629f020037) 80

[proxy](#section_db8de80f91a74feebc3a88ff5bde8282) 82

[server](#section_8d330f12c46549afae90fa8c7e9ddea0) 81

[Introduction](#section_acea327a34674b1c969b947df5c4b0fa) 7

L

Local events

[client](#section_7e60fc63de40490dbcdb237dd1e1425a) 80

[server](#section_a9f3e030f10943ef9dda52f0f0473247) 81

M

Message processing

[proxy](#section_c76490d2b2eb416e987d64b418d7add0) 82

[server](#section_56fe3c8958804beb850ca24ab8870272) 81

[Messages](#section_f0eb47db14444efcb0f7ea993800880c) 13

[application/ms-cqf+xml](#section_c56b3b89a8c3478d809efec4be05e6b3) 75

[CallQualityFeedbackReport element](#section_f250d319590242c48ee3932acb3d19e3) 75

[Feedback element](#section_f514cab1b74440b0b34cb56649fda10b) 77

[Token element](#section_b79255d2f46a412c949edf857e2f58a4) 78

[Tokens element](#section_6006f00f58634448a5abb8b2ad178e66) 78

[application/vq-rtcpxr+xml](#section_0dd08b34bdaa4eacb57ae73628d33078) 13

[BurstGapLoss element](#section_3338117b18a94051babd4f271ea69228) 64

[CaptureDev element](#section_7e326e1328ca43efa43f70ca45bb6c12) 32

[ClientEventType element](#section_6dcf5b425a3c4c3a82d1bafef583dd68) 72

[connectivity element](#section_82b0f63414874f34b375cb542a69ef44) 26

[delay element](#section_2c74d5c24e1e48feb6c7966f15a61e7b) 65

[DialogInfo element](#section_3a04febbf0aa465d8278901a0893e8d8) 17

[endpoint element](#section_42ff402a2f4e4d2795e51893944755d8) 16

[InboundStream element](#section_b21cbc493d644aa183d87d2ab1f8ed08) 33

[jitter element](#section_7c0f76d568f84be39cc343232b4589ac) 66

[LocalAddr element](#section_1d43eec8dc584c53b57cb5405731c3bb) 31

[MediaLine element](#section_2c2fe70187d94eae931c91053ac63d22) 20

[MediaLineDescription element](#section_4afdf5cf65194bcb8a0873fab00461bd) 23

[network element](#section_dba93221b2514bea82beeff0e799ce22) 34

[NetworkAudioMOS element](#section_940107d3287b40acbe7cf868c75c07e3) 62

[NetworkConnectivityInfo element](#section_b9daa559be0c4015a0c37c31a8e48240) 29

[OutboundStream element](#section_b21cbc493d644aa183d87d2ab1f8ed08) 33

[PacketLoss element](#section_5c86c0e7069a42318111a2d7d55c1fa6) 64

[payload element](#section_b525e94f21d54709bdcc6a7a1c3c720c) 37

[Payload.ApplicationSharing element](#section_36c43482218d4a5586393ce2363533f5) 56

[Payload.Audio element](#section_6b3fcae1b324401180d6f492caaf89a3) 38

[Payload.Video element](#section_ff080d43ed1543a7a69ff872957e70a2) 46

[QualityEstimates element](#section_9a9666d6884546fa9c73d65f51771d27) 60

[QualityEstimates.Audio element](#section_c8e7399326124bd1b114a6a76bed28cb) 60

[RelayAddr element](#section_1d43eec8dc584c53b57cb5405731c3bb) 31

[RemoteAddr element](#section_1d43eec8dc584c53b57cb5405731c3bb) 31

[RenderDev element](#section_7e326e1328ca43efa43f70ca45bb6c12) 32

[signal element](#section_4ee67b554ef84c3b80885145a353d211) 67

[TraceRoute element](#section_31a3c6a821384863ab6e1322e10ae245) 30

[utilization element](#section_03139d4367b04b65b48b6e116d45e2be) 63

[v3:AdditionalPayload element](#section_4ebefea0308644b6996483f97d65391e) 54

[VideoRateMatchingLevelDistribution element](#section_020c0f271c2e4ba8b893251776862dbb) 55

[VideoResolutionDistribution element](#section_727f46e355a94b168797c56e21353f49) 54

[VQReportEvent element](#section_03bebaa1080c487c8c00f9ace1695890) 14

[VQSessionReport element](#section_189a59d378a84c629b3791cac301ad68) 14

[transport](#section_3436fb02376d484a98334935f2a9bcc7) 13

[Metrics message payload example](#section_89f2a40feea2444bb141d8a848c9aae5) 83

ms-rtcp-metrics

[schema](#section_e500001fb57c4ee597da457ec7b5736c) 88

Microsoft Lync Server 2010 ([section 6.3](#section_30314baed0424d35a99066d6f6c35df2) 103, [section 6.4](#section_af796fd245364e6ab9c1724552f03b27) 115, [section 6.5](#section_131d95c5f93540a3b166b52b75480369) 131)

[Office Communications Server 2007](#section_8790e6767f18440cb467fc338093ea94) 88

[Office Communications Server 2007 R2](#section_ed4ade7b312445818c842feb3bd191ab) 95

N

[Normative references](#section_42bde00168b748e7afdd97c3556f610a) 10

O

Other local events

[proxy](#section_a9bf8daf9ae84fa6941e30574174b174) 82

[Overview (synopsis)](#section_ad1cdeaf829f48fab8d95a91c47b2c83) 11

P

[Parameters - security index](#section_a77d3316da9f4850a88985564efc88d3) 87

[Preconditions](#section_81519e2316b5451a908397995e79cafb) 12

[Prerequisites](#section_81519e2316b5451a908397995e79cafb) 12

[Product behavior](#section_637f259bad5e49d6bf7e26244e7682cf) 152

Proxy

[abstract data model](#section_929546e6fb5a48b28ee0de5928c4862c) 81

[higher-layer triggered events](#section_e8385bf48919457e8142a6e185cb8f93) 82

[initialization](#section_db8de80f91a74feebc3a88ff5bde8282) 82

[message processing](#section_c76490d2b2eb416e987d64b418d7add0) 82

[other local events](#section_a9bf8daf9ae84fa6941e30574174b174) 82

[overview](#section_55b48da4171b43978bf7cf5e64e60f88) 81

[sequencing rules](#section_c76490d2b2eb416e987d64b418d7add0) 82

[timer events](#section_35f8e425d03845c1bbe4d51443ffb3fd) 82

[timers](#section_d2f42bf554394adfb4b257ad468fe3c2) 81

R

[References](#section_d5c338e513844012b0fb05b1cad8842d) 10

[informative](#section_beba9d02e0db4999ad71408119cb04c4) 11

[normative](#section_42bde00168b748e7afdd97c3556f610a) 10

[Relationship to other protocols](#section_24a7a7ec06a54268886a43680c28326e) 12

S

Schemas

[ms-rtcp-metrics](#section_e500001fb57c4ee597da457ec7b5736c) 88

Microsoft Lync Server 2010 ([section 6.3](#section_30314baed0424d35a99066d6f6c35df2) 103, [section 6.4](#section_af796fd245364e6ab9c1724552f03b27) 115, [section 6.5](#section_131d95c5f93540a3b166b52b75480369) 131)

[Office Communications Server 2007](#section_8790e6767f18440cb467fc338093ea94) 88

[Office Communications Server 2007 R2](#section_ed4ade7b312445818c842feb3bd191ab) 95

Security

[implementer considerations](#section_22077da3a88f4fa19ddab1f0c5e8afa3) 87

[parameter index](#section_a77d3316da9f4850a88985564efc88d3) 87

Sequencing rules

[client](#section_8ac784f07d684d1b8e91572b01f77720) 80

[proxy](#section_c76490d2b2eb416e987d64b418d7add0) 82

[server](#section_56fe3c8958804beb850ca24ab8870272) 81

Server

[abstract data model](#section_5d4601b4e568460ca47532eff63bd29a) 81

[higher-layer triggered events](#section_c84dd4cc61bc44b2b165091252164f98) 81

[initialization](#section_8d330f12c46549afae90fa8c7e9ddea0) 81

[local events](#section_a9f3e030f10943ef9dda52f0f0473247) 81

[message processing](#section_56fe3c8958804beb850ca24ab8870272) 81

[overview](#section_ece847218d2f4928a7b1ba8e23c4de17) 80

[sequencing rules](#section_56fe3c8958804beb850ca24ab8870272) 81

[timer events](#section_f32b5d60e9c345d19509c44670e4d514) 81

[timers](#section_ae4832621dc6420eabef3d3be1d7d80a) 81

[Standards assignments](#section_626eed3289ce4d248111961837c72df5) 12

T

Timer events

[client](#section_4cb0a44a37b34b0f9d8ebcf8bbee3c1d) 80

[proxy](#section_35f8e425d03845c1bbe4d51443ffb3fd) 82

[server](#section_f32b5d60e9c345d19509c44670e4d514) 81

Timers

[client](#section_7a74291a70ed4a8f91a8417aa75137e0) 80

[proxy](#section_d2f42bf554394adfb4b257ad468fe3c2) 81

[server](#section_ae4832621dc6420eabef3d3be1d7d80a) 81

[Tracking changes](#section_1b241e88428449798b63b07861241764) 172

[Transport](#section_3436fb02376d484a98334935f2a9bcc7) 13

Triggered events

[client](#section_63e8c7ef4b8648458304f8d7b77ab312) 80

[server](#section_c84dd4cc61bc44b2b165091252164f98) 81

Triggered events - higher-layer

[proxy](#section_e8385bf48919457e8142a6e185cb8f93) 82

V

[Vendor-extensible fields](#section_32adb0fffccc474c84ec1181a9dfd530) 12

[Versioning](#section_9e9d256606a240a4bfac7b9bd349bb6a) 12

X

[XML schema](#section_e500001fb57c4ee597da457ec7b5736c) 88