

metric Reporting

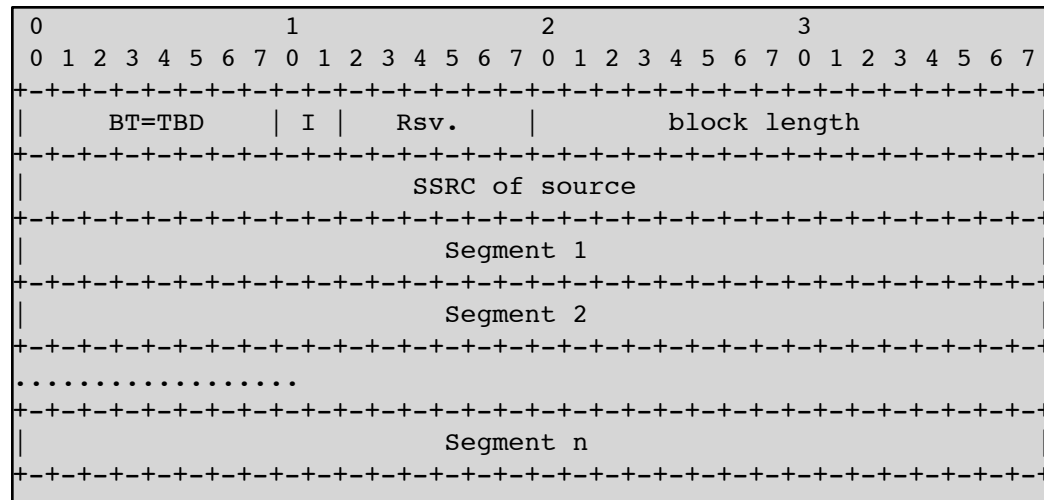
draft-ietf-xrblock-rtcp-xr-qoe-00

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Document Status

- 00 version WG draft approved on January before Paris meeting
- Merged from draft-wu-xrblock-rtcp-xr-quality-monitoring and draft-clark-xrblock-rtcp-xr-qoe.
- This draft deals with three use cases
 - each media sent in separate RTP stream
 - Multiple channels of audio sent in the same RTP stream
 - Multiple layers of video sent in the same RTP stream
- Many thanks to the reviewers
 - Hendrik Scholz, Varun Singh, Colin Perkin, Charles Eckel, Yanxia Zhang,
 - Jing Zhao, Albrecht Schwarz, Alan Clark, Roni Even, Paul Coverdale
 - Shida Schubert, Dan Romascanu
- Two open issues remains.

draft-ietf-xrblock-rtcp-xr-qoe-00



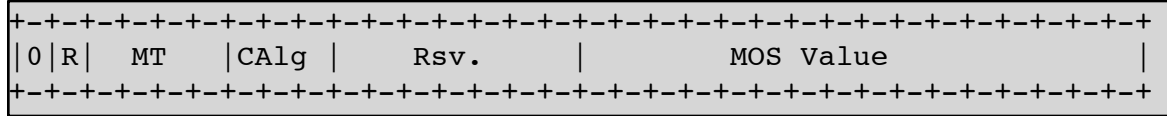
QoE Metric Block

- Block Type (tbd)
- I = Interval Metric Flag
 - 01 = interval duration
 - 00 = cumulative duration
 - 10 = sampled value
- Rsv:: reserved for future definition
- block length: report block length in 32 bit words
- SSRC:
 - Identifies synchronisation source in RTP

- 3 segment types
 - single stream per SSRC segment (each media in a separate stream)
 - multi-channel audio per SSRC segment (same RTP stream)
 - multi-layer per SSRC segment (same RTP stream)
- Reporting of multiple MOS values and calculation algorithms per block possible

defined Segment Types

Single Stream per SSRC Segment

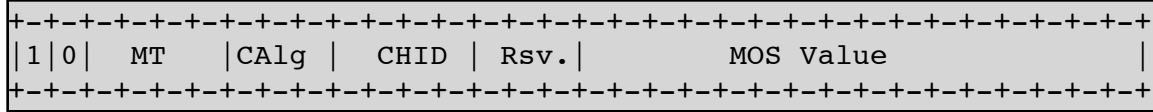


Single Stream per SSRC Segment

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Segment Type (=0) <ul style="list-style-type: none"> – identified as single stream segment – one media stream in one RTP stream • Reserved Bit (=0) • MT: MOS Type (=4 bit) <ul style="list-style-type: none"> – 0000 MOS-LQ - Listening Quality MoS. – 0001 MOS-CQ - Conversation Quality MoS. – 0010 MOS-A - Audio Quality MOS. – 0010 MOS-V - Video Quality MOS. – 0011 MOS-AV - Audio-Video Quality MOS. – 0100~1111 - Reserved for future definitions. | <ul style="list-style-type: none"> • CAlg: Calculation Algorithm <ul style="list-style-type: none"> – 000 - ITU-T P.564 Compliant Algorithm [P.564] (Voice) – 001 - G.107 [G.107] (Voice) – 010 - ETSI TS 101 329-5 Annex E [ETSI] (Voice) – 011 - ITU-T P.NAMS [P.NAMS] (Multimedia) – 100 - ITU-T P.NBAMS [P.NBAMS] (Multimedia) – 101~111 - Reserved for future extension. • Rsv.: reserved for future use • Calculated MOS Value |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

defined Segment Types

Multi-Channel per SSRC Segment



Single Stream per SSRC Segment

- Segment type (= 1)
 - identifies multi-channel or multi-layer segment
- Media type (=0)
 - identifies multi-channel audio segment per SSRC
- MT: MOS type
 - analogous to single stream SSRC

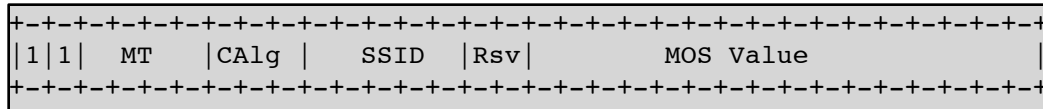
- CAlg: Calculation Algorithm
 - 000 - ITU-T P.564 Compliant Algorithm [P.564] (Voice)
 - 001 - G.107 [G.107] (Voice)
 - 010 - ETSI TS 101 329-5 Annex E, [ETSI] (Voice)
 - 011~100 - Reserved.
 - 101~111 - Reserved for future extension.
- CHID: sub-stream identifier
 - Used for substitution of different audio streams e.g. stereo or surround within the RTP stream
- Rsv.: reserved for future use
- Calculated MOS Value

Issue # channel mapping in multi-channel audio case

- Channel Identifier definition
 - Channel Identifier (CHID): 4 bits This field is used to identify each channel that is carried in the same media stream. If multiple channels of audio are carried in one RTP stream, each channel of audio will be viewed as a independent channel (e.g., left channel audio, right channel audio). Channel mapping follows static ordering rule described in the [section 4.1 of \[RFC3551\]](#).
- Colin noted that it is not clear that the channel mapping in [RFC 3551 Section 4.1](#) is the only one in use.
- Proposal:
 - We are not aware any other better way to do channel identifying and we can use additional reserved bit in this report format to support any new scheme or further extension.
 - Remove the editor note “(Editor’s Note: It is not clear that the channel mapping in RFC 3551 Section 4.1 is the only one in use)” related to multi-channel audio case if there is no objection to this static mapping described in RFC3551.

defined Segment Types

Multi-Layer per SSRC Segment



Single Stream per SSRC Segment

- Segment type (= 1)
 - identifies multi-channel or multi-layer segment
- Media type (=1)
 - identifies multi-layer video segment
- MT: MOS Type
 - analogous to single stream SSRC

- CAlg: Calculation Algorithm
 - 000~010 - Reserved.
 - 011 - ITU-T P.NAMS [P.NAMS] (Multimedia).
 - 100 - ITU-T P.NBAMS [P.NBAMS] (Multimedia).
 - 101~111 - Reserved for future extension.
- Sub Stream Identifier (SSID):
 - Used for substitution of different video stream within one RTP stream
- Rsv.: reserved for future use
- MOS Value

Issue# identify each layer of video

- Definition of Sub Stream Identifier (SSID)
 - If multiple layers of video are carried in the same RTP stream, each layer will be viewed as a sub stream. Specially, if multiple views of video are carried in the same RTP stream, each view will be viewed as a sub stream. This field is used to identify each layer of video that is carried in the same media stream. NAL unit type is one example of such SSID.
- Colin noted that it's not sufficient to simply say that a "NAL unit type is one example", the draft needs to give normative rules for the use of this field
- Proposal:
 - SVC uses either session multiplexing or SSRC multiplexing in order to facilitate easy de-multiplexing.
 - Recommend that we separate it out of this document and drop multi layer video case since there is no known usage of video multilayer in a single RTP stream.

Follow Up

- Address these comments and submit -01
- Your contribution and inputs are welcome!