

Low Overhead Container (LOC) MOQ Media Format

draft-ietf-moq-loc

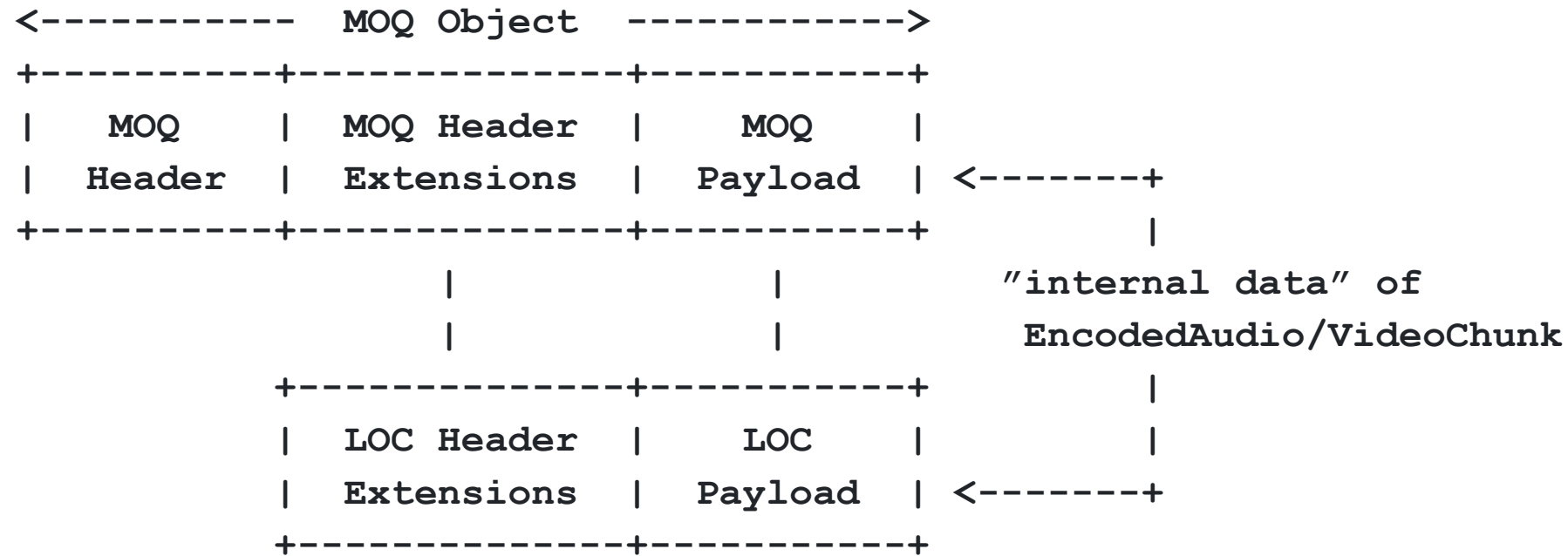
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Changes in -02

- Align with MOQT changes
 - Rename “extensions” to “properties”
 - Replace varint with new vi64
- Moved metadata location
 - LOC Private Properties in MOQT Payload
 - LOC Public Properties in MOQT Properties
- Added Timescale property for timestamps
- Removed “capture” semantics from timestamps
- Retained support for start code format (WebCodecs “annexb”)
- Added Secure Objects integration and Security Considerations

Metadata in LOC version -01

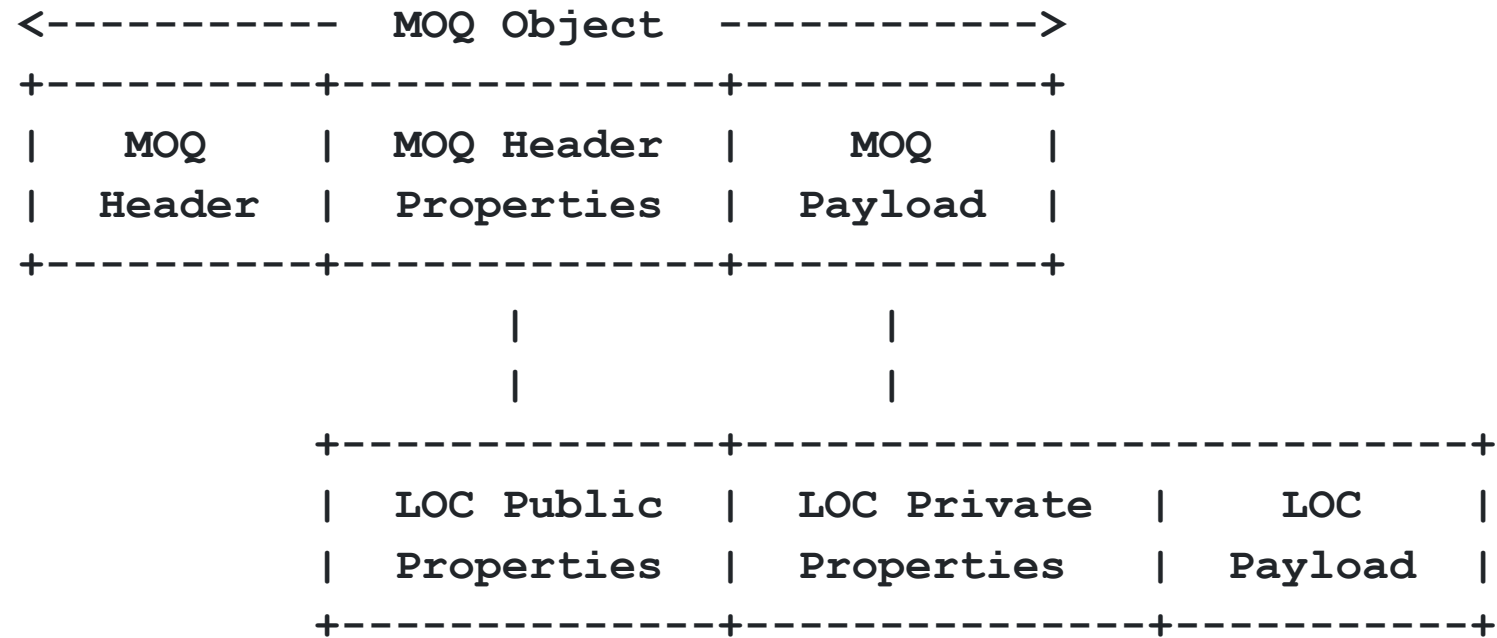


LOC Header Extensions = some MOQ Object Header Extensions

LOC Payload = all MOQ Object Payload

LOC Payload = "internal data" of EncodedAudio/VideoChunk

Metadata in LOC version -02



LOC Public Properties = some MOQ Object Properties

LOC Private Properties + LOC Payload = all MOQ Object Payload

LOC Payload = "internal data" of EncodedAudio/VideoChunk

Add Timescale for Timestamps

- Timescale defines frequency/units for Timestamp
 - $\text{Time} = \text{Timestamp} / \text{Timescale}$
 - 48,000 for 48 kHz audio
 - 90,000 for 90 kHz video
- If undefined, it defaults to:
 - 1,000,000 (microseconds since Unix epoch)
- Can be a Track Property or Object Property

Open Issues

- #9 Track Properties can't be authenticated or encrypted
 - Key ID needs to be authenticated / immutable
 - Video Config may need to be encrypted / private
 - Secure Objects probably needs to solve this
- #10/13 Property Registry collision with MOQT -17
- #11 LOC without MOQ
- #12 Register properties (dynamic types) in catalog
- #14 WebCodecs issue: fix new avc3/hev1 formats
- #15 Ambiguity in Video Frame Marking vi64 encoding

WebCodecs Issue

- WebCodecs video format options “avc” (was “avcc”) and “hevc” versus “annexb”. This really means “mp4” versus “annexb”.
- Old MP4 codec strings (“avc1”, “hvc1”) define 2 separate aspects:
 1. Parameter sets out of band (“extradata”) versus in band.
 2. Length prefix versus start code prefix before each NAL unit.
- New MP4 codec strings (“avc3”, “hev1”) change 1 but not 2.
 1. Parameter sets in band or out of band (“extradata”).
 2. Length prefix versus start code prefix before each NAL unit.
- **Need to fix WebCodecs support for new MP4 avc3/hev1.**
 - Properly support new “avc3” / “hev1” formats with length prefixes and in band parameter sets, while still allowing out of band (“extradata”).