

# RTP Payload Format for MPEG2-TS Preamble

draft-begen-avt-rtp-mpeg2ts-preamble-01

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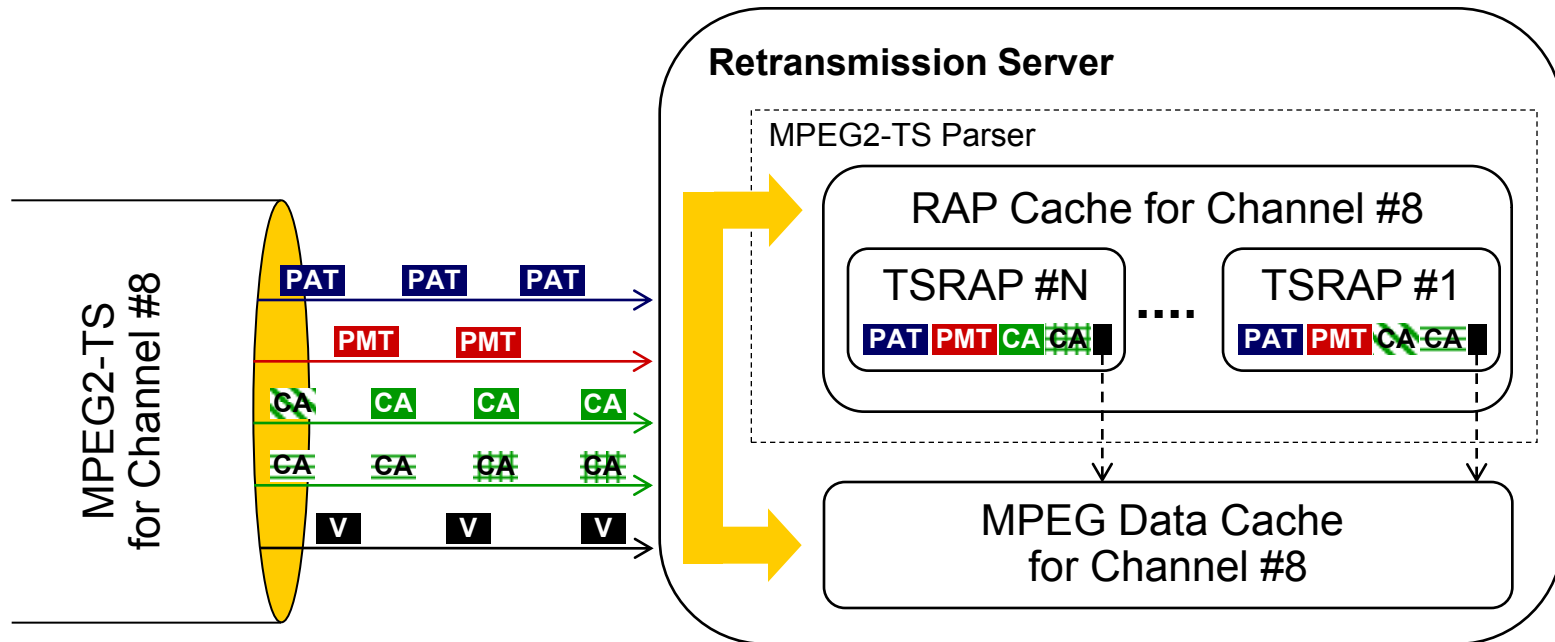
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# Introduction

- MPEG2 Transport Stream (MPEG2-TS)
  - Encapsulates digital video and audio content together with metadata
  - Produces a synchronized multiplexed stream for transport
- A decoder needs “MPEG2-TS Preamble” to process and decode an incoming MPEG2-TS
  - This information resides in the transport stream but it is here and there, and not readily available
- This document defines a new RTP payload format to carry the MPEG2-TS Preamble
  - This is NOT something RFC 2250 did
- In the RAMS context, the Preamble information allows the RTP receiver to start processing/decoding the MPEG2-TS faster

# Preamble Information – RAMS Example



- Transport Stream Random Access Points (TSRAP) may include
  - PAT: Program Association Table
  - PMT: Program Map Table
  - PCR: Program Clock Reference used to initialize the decoder and STB clocks
  - SEQ: Sequence Header (MPEG2 stream)
  - SPS: Sequence Parameter Set (H.264 stream)
  - PPS: Picture Parameter Set (H.264 Stream)
  - ECM: Entitlement Control Messages

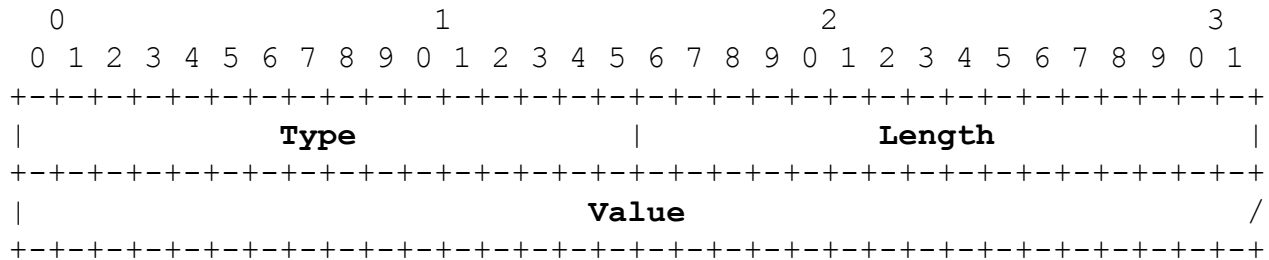


# RTP Payload

- Vendor-Neutral Extensions

These extend the report block in a vendor-neutral manner

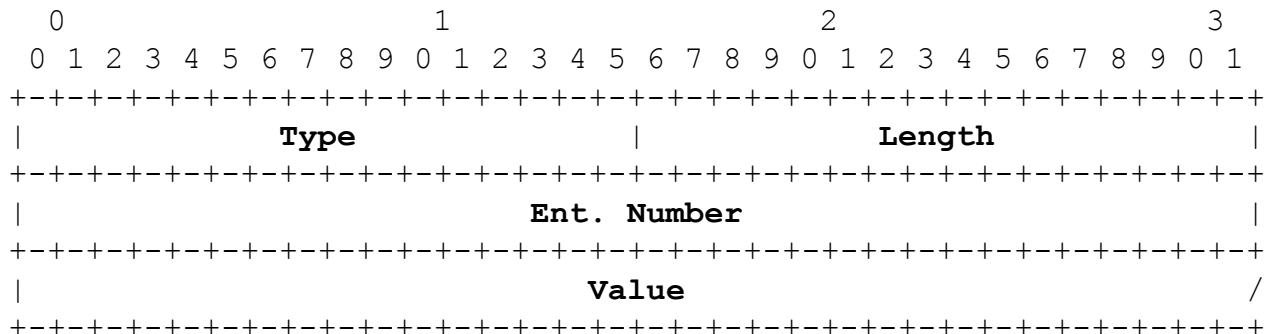
Registry will be maintained by IANA (Specification Required)



- Private Extensions

These MUST NOT collide with each other

A certain range of TLV Types ([32768-65535]) is reserved for private extensions



# Vendor-Neutral Extensions

- We have defined the following TLVs so far:
  - PAT TLV
  - PMT TLV
  - PCR TLV
  - PID\_LIST TLV
  - SEQ TLV
  - SPS TLV
  - PPS TLV
  - SEI TLV
  - ECM TLV
  - EMM TLV
  - CAT TLV
  - PTS TLV
- Some of these TLVs may contain variable-length data
- Some of these TLVs apply to only MPEG2 video, while some apply to only AVC (H.264) video

# Post-Processing of the Preamble

- RTP packet(s) carrying the Preamble cannot be fed directly to the MPEG transport demux and decoder
- The TLVs need to be transformed into TS packets, and these need to form a demux/decoder-friendly stream
- The stream **MUST** pass the TS packets to the demux in this order:
  - PAT
  - PMT
  - PCR
  - EMM
  - ECM
  - {Elementary Stream Data}

# Open Issues

- Should we also define an RTCP message that can carry the TLVs defined in this draft?

This way, the Preamble information can be sent as part of the RAMS-I message



# Next Steps

- WG adoption?