

RTP Payload Format for MPEG2-TS Preamble

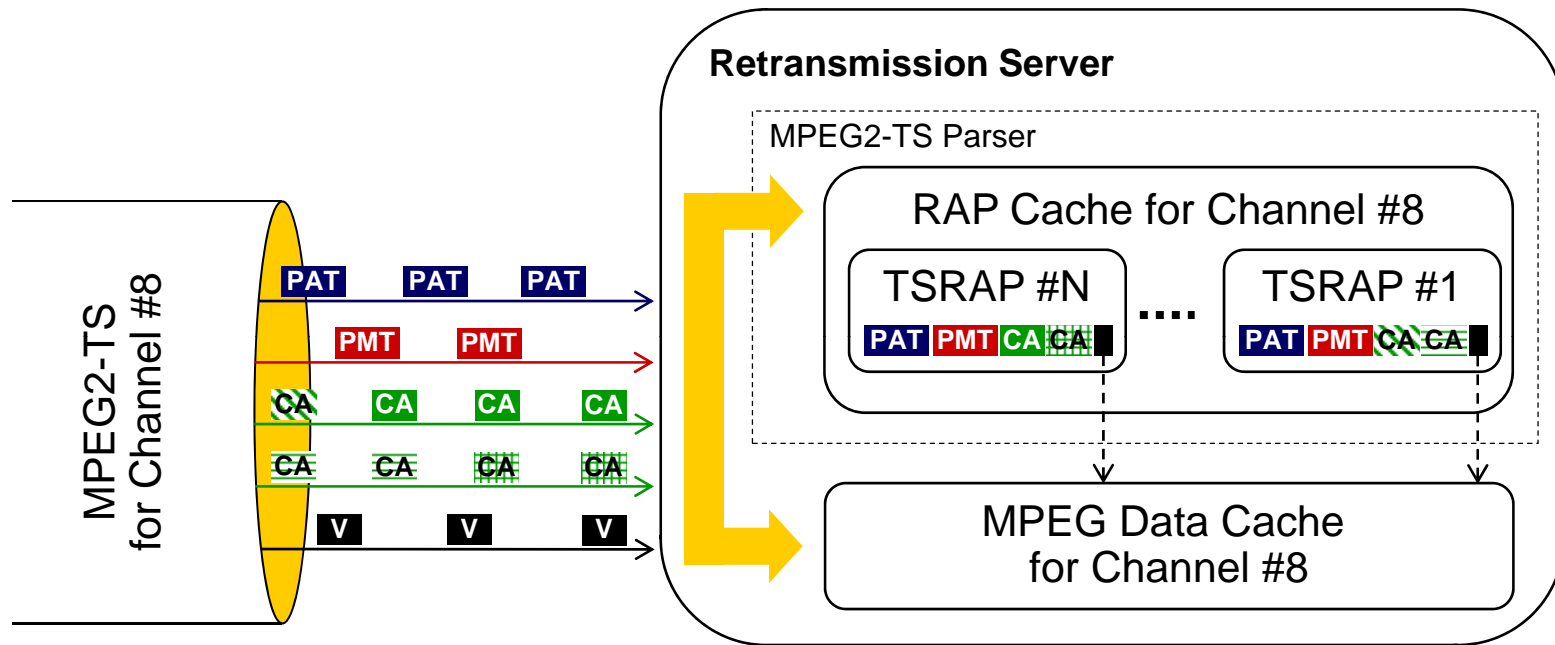
draft-begen-avt-rtp-mpeg2ts-preamble-03

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Ali C. Begen and Eric Friedrich

{abegen, efriedri}@cisco.com

Recap

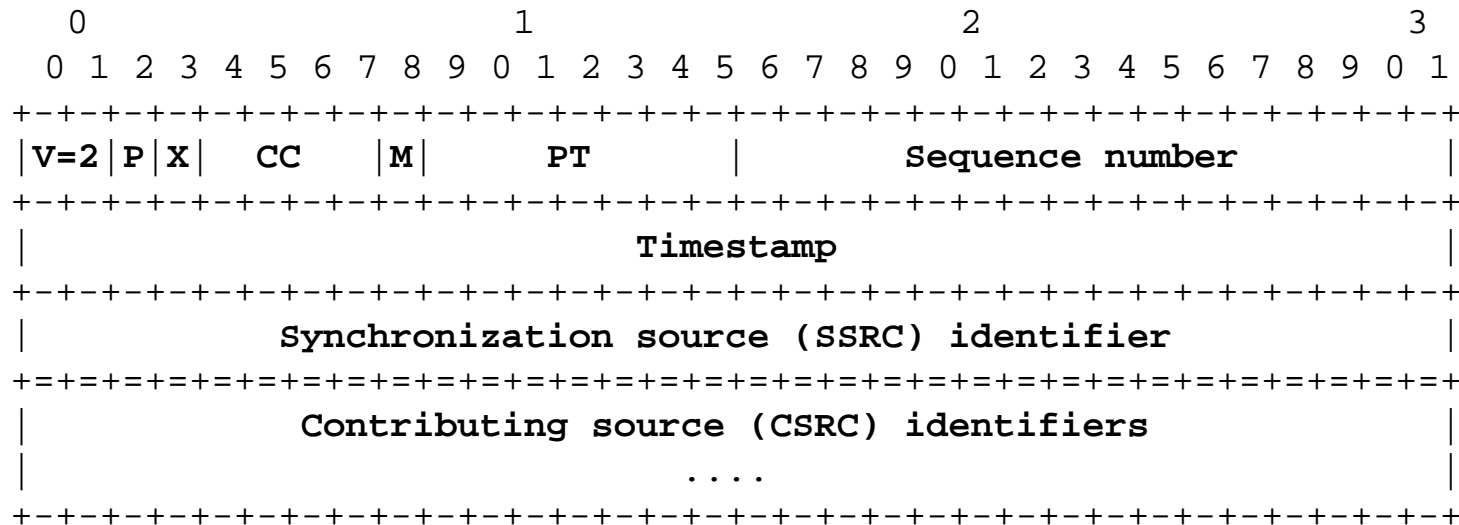


- A decoder needs “MPEG2-TS Preamble” to process and decode an incoming MPEG2-TS
 - This information resides in the transport stream but it is here and there, and not readily available
- This document defines a new RTP payload format to carry the MPEG2-TS Preamble

Major Changes since Version -01

- TLV elements are now TLOV elements
- Type values for TLOV elements have been assigned
- RAMS-specific reqs:
 - Preamble packets are PT-muxed with the retransmission (burst) packets
 - Preamble packets and retransmission (burst) packets share
 - The same SSRC
 - The same sequence number and timestamp space
- SDP example has been added
- Security considerations section has been completed

RTP Header



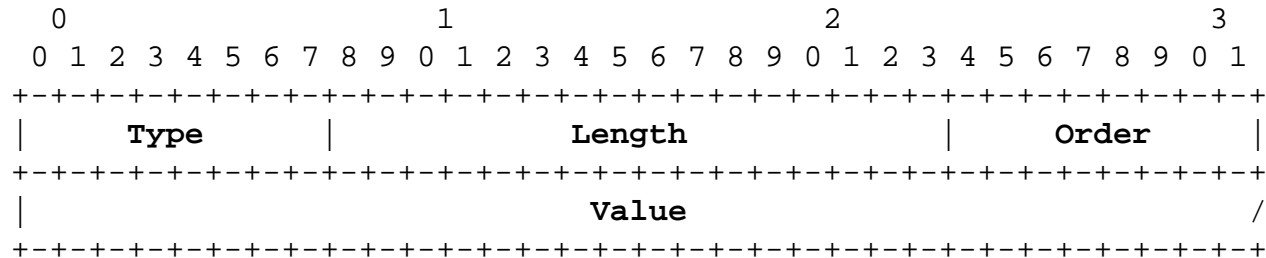
- M bit: When set, it indicates the last packet carrying the Preamble information
- PT: Dynamic
- Sequence number: One higher for each subsequent packet
- Timestamp: Set to the time corresponding to the transmission time (TBD)
- SSRC: Must be equal to the SSRC of the retransmission session in RAMS. Ow, it is randomly assigned per RFC 3550

RTP Payload

- Vendor-Neutral Extensions

These extend the report block in a vendor-neutral manner

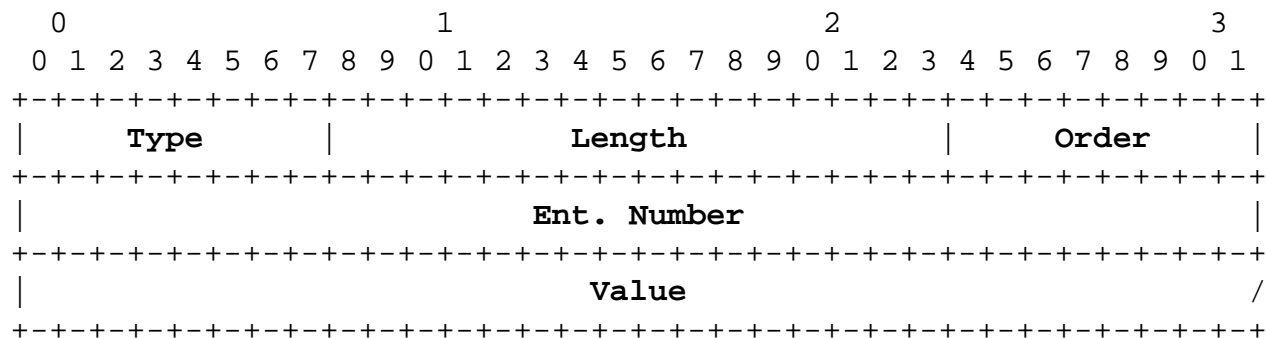
Registry will be maintained by IANA (Specification Required)



- Private Extensions

These MUST NOT collide with each other

A certain range of TLOV Types ([128-255]) is reserved for private extensions



Vendor-Neutral Extensions

- We have defined the following TLOVs so far:
 - PAT TLOV
 - PMT TLOV
 - PCR TLOV
 - PID_LIST TLOV
 - SEQ TLOV
 - SPS TLOV
 - PPS TLOV
 - SEI TLOV
 - ECM TLOV
 - EMM TLOV
 - CAT TLOV
 - PTS TLOV
- Some of these TLOVs contain variable-length data
- Some of these TLOVs 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 TLOVs 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}

Why Use TLOVs and Post-Processing?

- This provides many benefits over sending raw MPEG2-TS packets or the RTP packets containing them
- Different receivers require different Preamble structures
 - Receivers can easily change the order and quantity during post-processing
 - Servers cannot and should not be dealing with individual requirements
- TLOV encoding packs everything often into a single RTP packet
 - This keeps the chances of failure minimal
- TLOV encoding is more bandwidth efficient
 - Most bytes in TS packets are padding
 - Not every TS packet in an RTP packet carries Preamble data
- Receivers may benefit from raw access to Preamble data
 - E.g., direct access to PCR (among others) can result in improved RAMS performance

Next Steps

- The draft is complete
- WG adoption and last call?