

Rapid Acquisition for Multicast RTP Sessions

`draft-ietf-avt-rapid-acquisition-for-rtp-01`

IETF 75 – July 2009

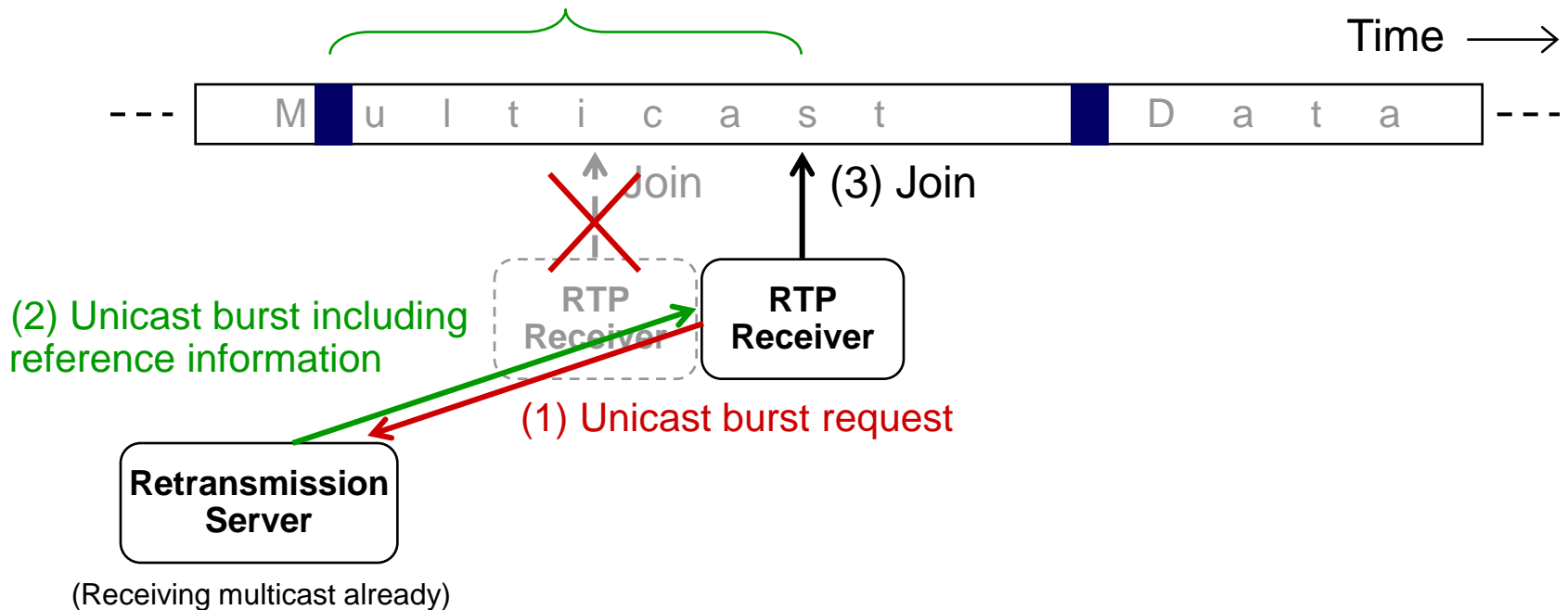
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Recap: Proposed Approach

- Prior to join, receiver requests a unicast burst from a server caching the recent data

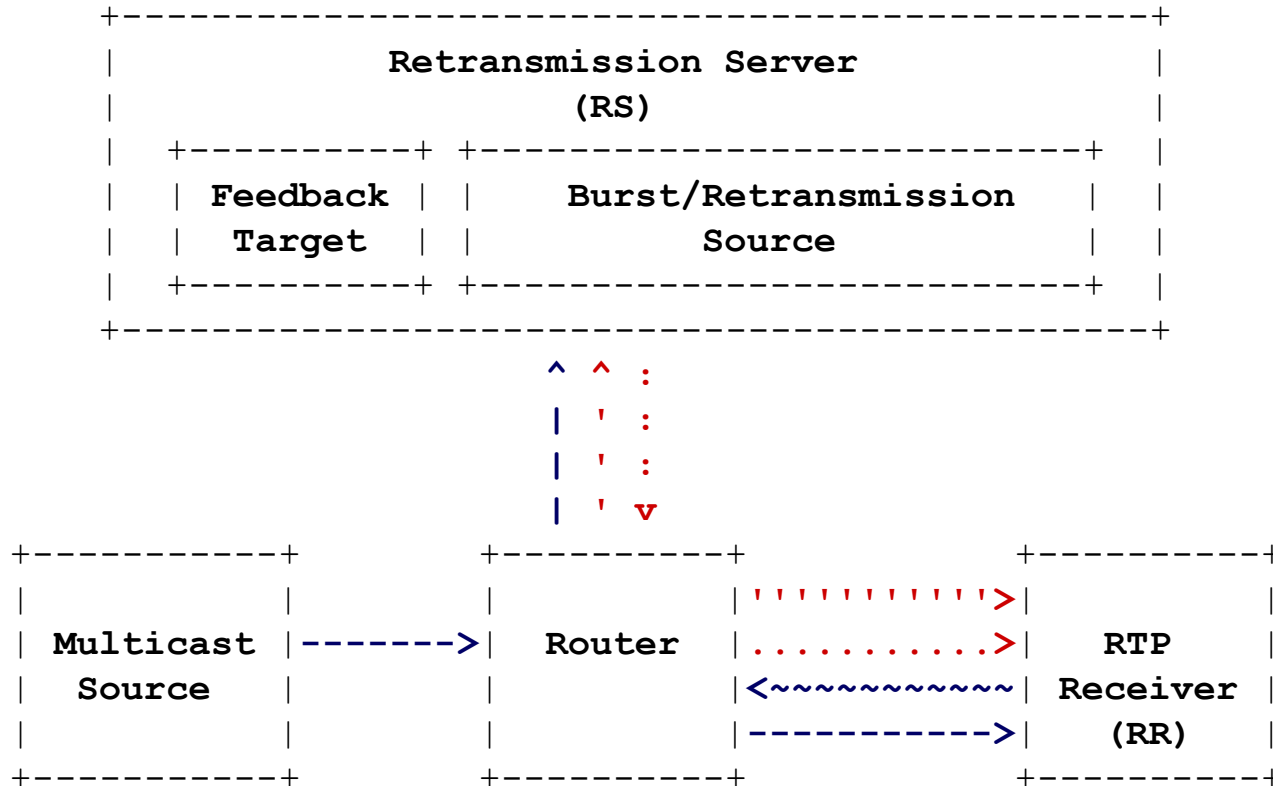
Data the RTP receiver needs to get from the retransmission server



Major Changes since Individual Version -03

- The draft is a WG item now
- Rename: Rapid Synchronization → Rapid Acquisition
- Burst Source + Ret. Source + FT → Retransmission Server
- Added capability of sending updated requests and responses
- Updated the message formats (Sub FMT fields and TLV structures)
- Added a mechanism for vendor-neutral and private extensions
- Updated the NAT Considerations section
 - Considered signaling of port mappings, but decided to remove this from the next version of the draft
- Updated the SDP Examples section

Rapid Acquisition



' '> Unicast RTCP Messages

~~~> IGMP Messages

...> Unicast RTP Flow

---> Multicast RTP Flow

# Control Plane

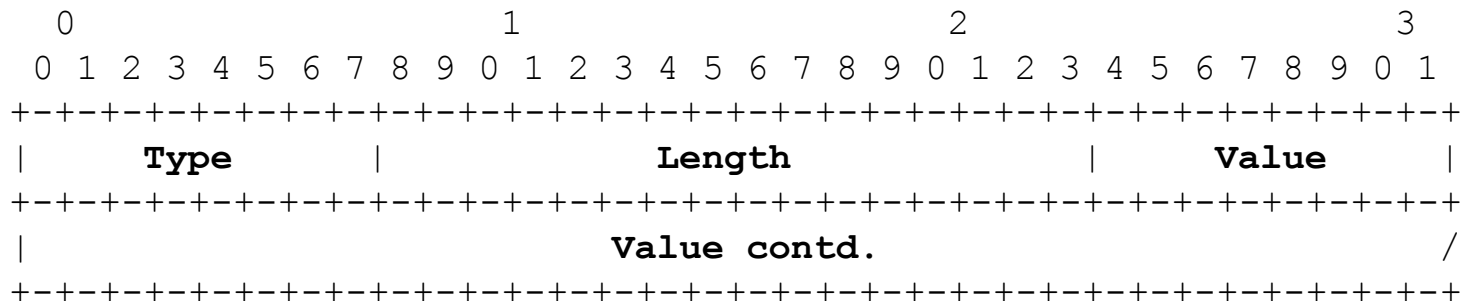
- FMT = 6 (RAMS)

Individual RAMS messages are identified by a sub-field called Sub Feedback Message Type (SFMT)

- Almost all fields in RAMS messages are optional

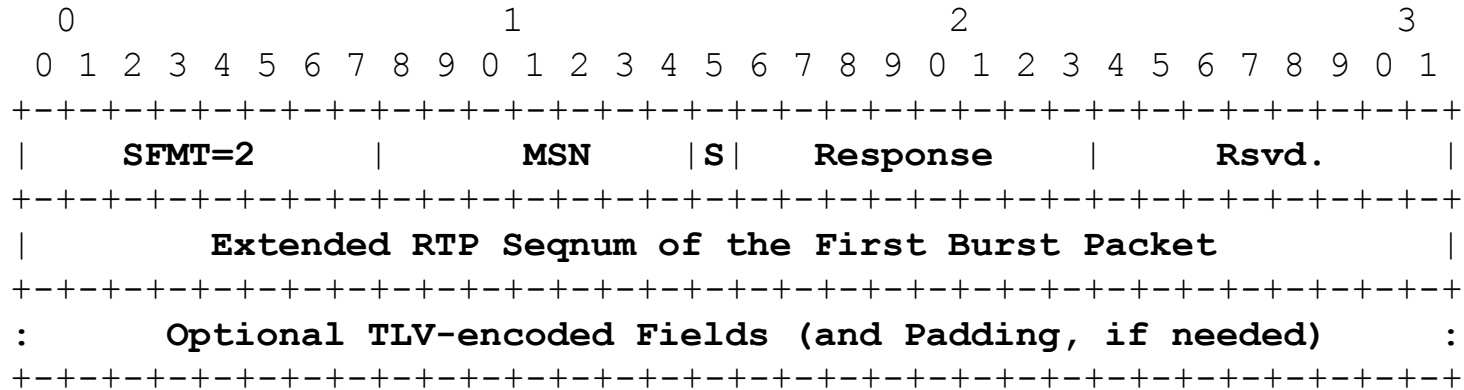
Not every implementation needs every field

We use TLV elements for optional fields



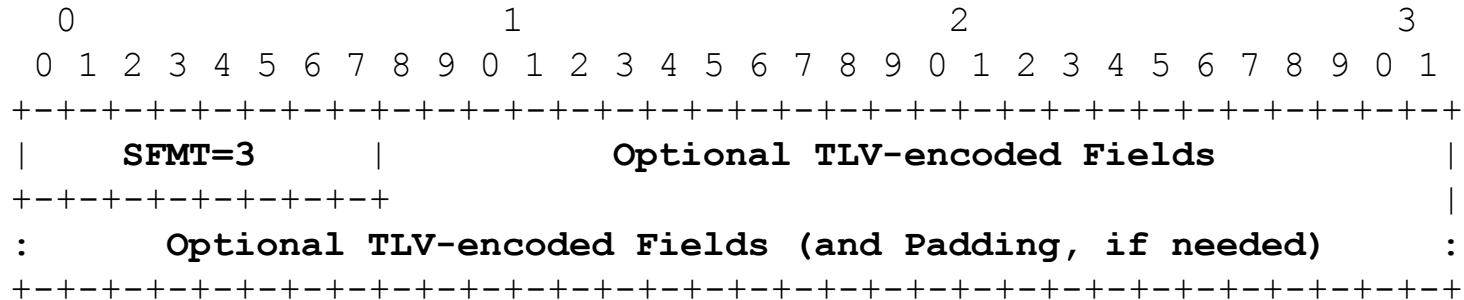


# RAMS Information (RS → RR – SFMT=2)



- Message Sequence Number: Mandatory (Starts from 0)
- S: Mandatory (Indicates support for Updated Requests)
  - Editor's note: This can be specified statically in the SDP (This saves the S bit)
- Response: Mandatory (Indicates RS' response)
  - Editor's note: Should we use SIP/HTTP-like response codes/ranges maintained by IANA?
  - Editor's note: Should we use Rsvd. bits to allow space for vendor/app-specific codes as well?
- Current Optional TLVs:
  - Earliest Multicast Join Time
  - Burst Duration
  - Max Burst Bitrate
- Editor's note: Should we recommend a Sender Report when sending RAMS-I?

# RAMS Termination (RR → RS – SFMT=3)



- Although RS may end the burst proactively, sending RAMS-T at least once is required
- If RR has not joined the multicast session or started receiving multicast packets
  - RR sends an empty RAMS-T message (w/o an RTP seqnum)
  - RS must stop the burst upon receipt
- If RR has started receiving multicast packets
  - RR sends an RAMS-T message with the RTP seqnum of the first multicast packet
  - RS should continue bursting until the reported seqnum
- If RR needs to cancel an active/pending unicast session, RR sends a BYE
- Current Optional TLVs:
  - Extended RTP Seqnum of First Multicast Packet

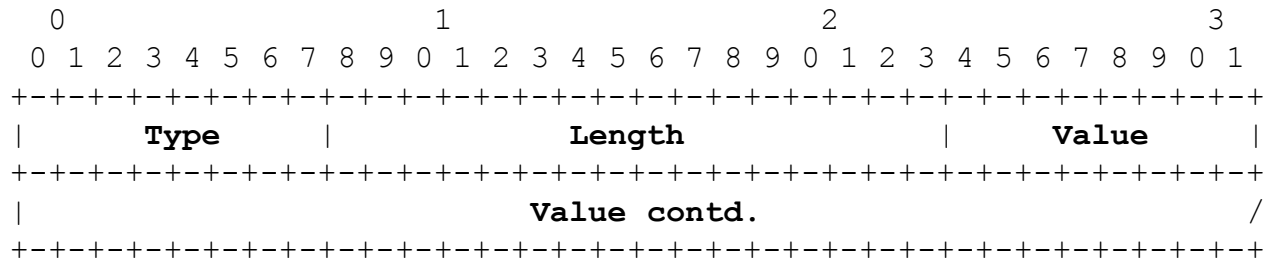


# Control Plane – Extensions (Optional)

- Vendor-Neutral Extensions

These extend the protocol in a vendor-neutral manner

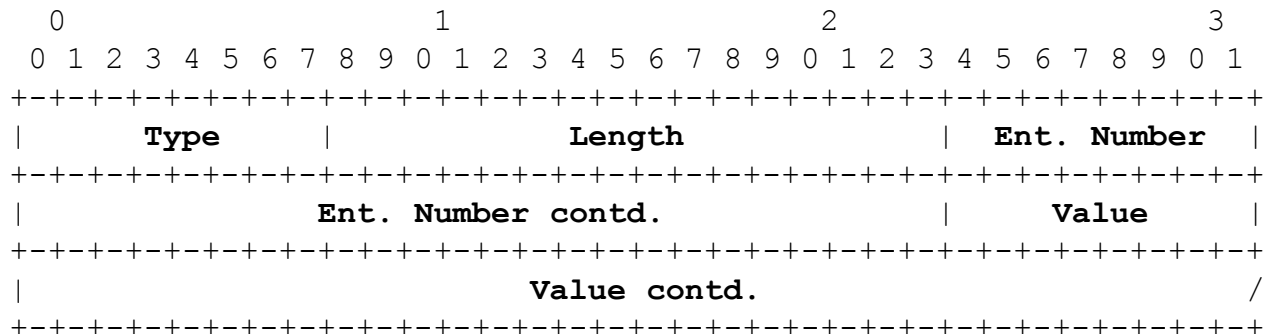
Registry will be maintained by IANA (Specification Required)



- Private Extensions

These MUST NOT collide with each other

A certain range of TLV Types ([128-254]) is reserved for private extensions



# Open Issues

- Remove port mapping and NAT discussion from the draft and look to AVT for guidance on resolving these issues in a general manner
- Discussion of acquisition for the individual RTP streams vs. the whole RTP session
- Discussion of burst shaping and security issues
- Consider support for reduced-size RTCP messages (RFC 5506)
- Consider support for RTP/RTCP muxing