Multicast Acquisition – RTCP XR

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Introduction

- RTP receivers joining a multicast session experience
  Varying join delays
  Pretty random acquisition delays

- For quality reporting, monitoring and diagnostics purposes, it is useful to gather their “acquisition” experiences

- This document
  Defines a new RTCP XR block type for multicast acquisition
  Defines SDP signaling and registers the new block type with IANA

→ This report block can be used by all RTP receivers doing a simple multicast join, using RAMS or any other method
MA Report Block – Base Report (Mandatory)

- Block type (BT): 8 bits (TBD)
- Status: 8 bits (Codes will be registered with IANA)
  
  Editor’s note: Should we use a TLV element to signal more status codes?
- Block length: 16 bits
- SSRC of the Primary Multicast Stream: 32 bits
MA Report Block – Extensions (Optional)

- Vendor-Neutral Extensions
  
  These extend the report block in a vendor-neutral manner
  
  Registry will be maintained by IANA (Specification Required)

  [Diagram of byte structure]

- Private Extensions

  These MUST NOT collide with each other
  
  A certain range of TLV Types ([128-254]) is reserved for private extensions

  [Diagram of byte structure]
Vendor-Neutral Extensions

- These apply to any RTP-based multicast application:
  - Extended RTP Seqnum of First Multicast Packet
  - Source Filtering Group Management Protocol (SFGMP) Join Time
  - Application Request-to-Multicast Delta Time
  - Application Request-to-Presentation Delta Time

- These apply to RAMS:
  - Application Request-to-RAMS Request Delta Time
  - RAMS Request-to-RAMS-I Delta Time (to be added)
  - RAMS Request-to-Burst Delta Time
  - RAMS Request-to-Multicast Delta Time
  - RAMS Request-to-Burst-Completion Delta Time
  - Number of Duplicate Packets
  - Size of Burst-to-Multicast Gap
SDP Signaling

- The “rtcp-xr” attribute is defined in RFC 3611

rtcp-xr-attrib = "a=rtcp-xr:"
    [xr-format *(SP xr-format)] CRLF

xr-format = "multicast-acq"
Discussion on the List

- A field to identify which acquisition method was used (e.g., simple join vs. RAMS vs. others?)
  These values should be kept in a list maintained by IANA

- A field to specify success/failure cases
  Success/failure interpretations are usually not objective, so, we will not have such a field
  (Private) extensions can be used for this purpose if needed

- Extending the base report
  If join was successful (at least one multicast packet was received), the following two fields MUST exist, ow they SHALL NOT exist at all
  - Extended RTP Seqnum of First Multicast Packet
  - SFGMP Join Time
Next Steps

- WG adoption?