Audio/Video Transport Working Group

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Wednesday Agenda

- Introduction and status   15
  - » Drafts in process; drafts to act upon
- Status of RTP & H.Multimedia MIB   5
- RTP multiplexing proposals   45
  - » Rosenberg, Hoshi, Subbiah
  - » Discussion   30
- DMIF for RTP/MPEG4   10
  - » Discussion   15

Thursday Agenda

- RTP spec and profile issues   30
  - » Registering encodings as MIME types
  - » Improvement to SSRC scaling   10
- Update on RTP redundancy mech.   10
- FEC payload format   15
- AVT revised charter bashing   15

Status of RTP

- RFC1889, 1890 published as Proposed Standards in January 1996

- Internet-Draft revisions for Draft Std.
  - » Spec is draft-ietf-avt-rtp-new-01.ps,txt
  - » Profile is draft-ietf-avt-profile-new-03.ps,txt

- Spec mostly done, Profile needs more

- Plan: Complete revisions, then Last Call for Draft Standard

If you haven't read it yet...

Please see <u>draft-ietf-avt-rtp-new-01.txt</u> sections:

- Sec 0: Resolution of open issues
- Sec 6.2: RTCP Transmission Interval
- Sec 6.3: RTCP packet send and receive rules
- Appendix B: Changes from RFC1889
- Extra credit: check code in Appendix A

RTP Drafts in Process

- RFCs recently published:
  - » 2343: Bundled MPEG payload (Exp.)
  - » 2354: Options for Repair (Info.)
- Drafts submitted for publication:
  - » IP/UDP/RTP header compression: at IESG
  - » JPEG payload format revision: IESG ballot
  - » BT656 payload format: in Last Call
  - » H.263+ payload format: in AD's queue

Drafts to act upon

- Guidelines for RTP payload formats
  - draft-ietf-avt-rtp-format-guidelines-00.txt,.ps
    - » Part of a framework to facilitate continuing long-term development of payload formats
- PureVoice (QCELP) payload format
  - draft-mckay-qcelp-01.txt
    - » Ready for Last Call?
- Generic payload formats to be merged

Multiplexing: Key Question

Who gets to do the multiplexing?

- » why: common handling, reduce overhead
- » when: separate or bundled?
- » where: what protocol level?
- » how: application specific or general

Points to consider in this discussion:

- Can/should we generalize current proposals?
- Philosophy: keep muxing at one level if possible

RTP Multiplexing

When is mux useful, and how many bits?

» Is multiplexing format a payload type?

» Inband length field or fixed length?

» How many bits of ID per multiplexed user?

» Payloads time aligned, close, or arbitrary?

» CSRC list and extension per user?

» RTCP per user or per multiplexed stream?

» How many users per multiplexed stream?

Recent Changes to RTP Spec

- Added fudge factor (e - 3/2) in timer reconsideration
- Added fix for underestimate with sampled SSRC algorithm when size decreases
- RTCP sender & receiver BW may be parameters
- RTCP min interval may scale smaller for high BW sessions, and zero initial delay for unicast sessions
- Specified P-bit padding for RTCP only on last packet
- Specified "relative" NTP uses "best" platform clock
- Formal ref to IPSEC; spec "codifies existing practice"
- Partial conversion to MUST, SHOULD, MAY
- Last paragraph of introduction deleted

Changes <u>not</u> made

- Ignore problem of group size dropping to zero in "reverse reconsideration"

- No scaling of min RTCP interval larger (could cause timeouts, and not that big a benefit)

- No change to jitter algorithm for multi-packet video frames

- Additional SDES items deferred to IANA registration (e.g.PHOTO URL, Nick-name, Organization)

- No change to definition of RR "loss fraction"

- Nothing about translators adding random offsets

Changes Still Needed

- IANA Considerations section

- Collect more constants into Sec. 11

- Complete MUST, SHOULD, MAY

- Make sure code in appendix is correct

Open Issues for RTP Spec

- Does new wording provide right motivation for sending RTCP?

- Should we have both conditional and unconditional reconsideration?

- Is new Section 6.3 clear and correct requirement level?

- Lucent patent filed on "binning" algorithm for SSRC sampling

Recent Changes to RTP Profile

- PureVoice (QCELP) added as PT=12

- New policy stated: No additional static payload types will be added.

- RED, MP1S, MP2P added to encoding table as "dyn" payload types (RED is no longer PT=77)

- RFC references updated

Changes Still Needed

- Better explain new policy for static payloads

- Allow default 5% RTCP bandwidth to be overridden, and define SDP BW modifiers to specify explicit RTCP sender and receiver BW *(here or RTP?)*

- May need changes for generic formats, but can we proceed without them?

- IANA considerations section

- Complete use of MUST, SHOULD, MAY

Encodings as MIME Subtypes

- MIME major type on m= (audio, video)
- What about audio+video types?
- Encoding (subtype) in a=rtpmap
- Registration via profile doc itself?
- What new info is bound to the name for RTP purposes? Just payload format?
- What to do for conflicts with existing types, such as PCMU=audio/basic?

New AVT Charter

- Old charter is way out of date:
  - » Last existing milestone is 1993
  - » Says only define experimental protocols
- New charter proposed
  - » Reflect current state of RTP
  - » Set milestones for remaining work
  - » Lay out expectations for future work

AVT Work Items [1]

- Revise RTP & profile for advancement to draft std.
  - » WG last call in November and submission to the IESG immediately after the December IETF.
  - » Register encoding names as MIME subtypes
- Complete the MIB -- "finished" by December
- Finish "guidelines for payload format authors" draft
  - » Can probably be ready for last call by December?
- Generic payload format?
  - » Proposals to be merged and submitted as draft
  - » Discussion in December, revised draft in February

AVT Work Items [2]

- Other payload formats
  - » BT656, H.263+, JPEG are done
  - » PureVoice audio: last call September 1998
  - » Generic FEC: split into parity FEC to last call soon and separate R-S different draft to last call after December meeting.
  - » DMIF/MPEG-4: tied in with the generic payload?
  - » X protocol streams: off topic?
- Multiplexing protocol
  - » Decide course of action at this meeting