draft-ietf-avt-rtp-h264-01.txt

RTP Payload for JVT Video

Stephan Wenger
stewe@cs.tu-berlin.de

Status

- **JVT finalized FDIS last week**
  - **Standard frozen, awaiting ballot in ISO/IEC**
  - **Recommendation due for “Consent”**
- **Remaining “political issues” resolved**
- **WG Last Call needed soon**
  - **Expect -02 version shortly (we’ll try to submit it before this meeting wraps up).**
  - **One more turn-around?**

Changes

- **Editorial**
- **Fragmentation added**
  - **Needs at least one good usage example, and better description**
- **DON added**
  - **Needs better description w/ examples**
- **MIME and SDP codepoints added**
  - **May need some fine-tuning**

MPEG-4 Interop 1/4

- **H.264 == ISO/IEC 14496-10 (aka AVC)**
  - **Hence interoperability desirable**
- **Common operation points**
  - **“Simple Payload” == AU fragments (now)**
  - **“new form of STAP” == AU (agreed to add)**

`draft-ietf-avt-rtp-h264-MP4simple-interop.txt`

MPEG-4 Interop 2/4

- **New STAP for MP4-simple compatibility**
  - **Looks like the old STAP from the -00 version**
  - **Length of NALU, followed by NALU**
  - **Length either 8 bit or 16 bit, hence two packet types**
    - **This to align ourselves with 14496-xx**
  - **Skip the 32 bit length version of the file format? Yes**
    - **Would make sense only for IPv6 jumbograms**

MPEG-4 Interop 3/4

Re-model the Interleaving of MP4-Simple?

- + **This draft would be superset of MP4-simple**
- – **Doesn't add much value**
  - **interleaves full AUs (pictures) only, not Slices**
  - **Functionality can be achieved with MTAPs as well**
- – **Adds significant text, and some implementation complexity**
- – **No implementation commitment from initiators of H.264 packetization**

MPEG-4 Interop 3/4

Three Options:

- **Leave everything as is**
- **Add Interop points as discussed**
- **Change STAP/MTAP syntax to be aligned w/ MP4simple**
  - **Then people would have (mentally) to replace AU with NALU…**
  - **… and could re-use code**
  - **Syntax alignment, but HUGE semantic difference**

Fragmentation

- Allows media-unaware fragmentation
- One Fragment lost -> other fragments useless
- Why not rely on transport layer?
  - No way to transport NALUs bigger than 64k
  - Pre-recorded content
    - Can use the wealth of RTP error resilience tools on fragments
    - Doesn’t make sense to use them on packets bigger than MTU size

Security Section

- **Add language on asymmetric processing demands? Yes**
- **Add language on vulnerability of Parameter Sets (w/ in-band transmission)? No (non-issue)**
- **Add language on user data? Yes**

Please contact me in private if you have additional input.

Video Conferencing Support

- **MIME Codepoints for out-of-level operation**
  - **H.264 can signal 352x288@30fps**
  - **They want MIME codepoints for 704x576@7.5 fps**
  - **Same processing power demands, more memory**
  - **Put this into payload spec? Yes**
- **Defined reaction of FIR on signaling channel**
  - **Should send IDR (plus any in-band ParSets)**
  - **Similar issue was discussed before in context of RTCP-re-transmission profile**
  - **Put this into payload spec? No, wrong place**

Other open Issues

- **Do we have an Interlace-Problem**
  - **When using Field-mode, we need two timestamps**
  - **Needs to be discussed amongst those who really know H.264**
  - **Defer**
- **Any input re MIME-SDP?**
  - **Mailing-List or private Email, please**

Questions, Comments?

- **Thank you,**

- **See you all in Wien**