RTP Payload Format for H.264Video – draft-wang-avt-rfc3984bis-00

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11 March 2008, Philadelphia

Outline

- Changes to RFC 3984
- Open issues
- Request and question to WG

Changes to RFC 3984

- 6 technical changes (including small technical bug fixes)
- 24 purely editorial changes

Technical change #1

In subsection 6.2, paragraph 1, corrected the first sentence from

This mode is in use when the value of the OPTIONAL packetization-mode MIME parameter is equal to 0, the packetization-mode is not present, **or** no other packetization mode is signaled by external means. All receivers MUST support this mode.

to

This mode is in use when the following two conditions hold: 1) the value of the OPTIONAL packetization-mode MIME parameter is equal to 0 or the packetization-mode is not present; **and** 2) no other packetization mode is signaled by external means.

Technical change #2

In subsection 7.2.2, changed the sentence

There are N VCL NAL units in the deinterleaving buffer.

to

There are N **or more** VCL NAL units in the deinterleaving buffer.

Technical change #3

In subsection 7.2.2, changed the sentence

Herein, n corresponds to the NAL unit having the greatest value of AbsDON **among the received NAL units**.

to

Herein, n corresponds to the NAL unit having the greatest value of AbsDON **among the NAL units in the deinterleaving buffer**.

Technical change #4

In subsection 8.1, the semantics of sprop-init-buf-time, paragraph 2, changed the sentence

The parameter is the maximum value of **(transmission time of a NAL unit - decoding time of the NAL unit)**, assuming reliable and instantaneous transmission, the same timeline for transmission and decoding, and that decoding starts when the first packet arrives.

to

The parameter is the maximum value of **(decoding time of the NAL unit - transmission time of a NAL unit)**, assuming reliable and instantaneous transmission, the same timeline for transmission and decoding, and that decoding starts when the first packet arrives.

Technical change #5

In subsection 8.2.2, bullet item 1, **changed the media format configuration parameters** from ("profile-level-id", "packetization-mode", and, if required by "packetization-mode", "sprop-deint-buf-req") to (the profile part of "profile-level-id", "packetization-mode", and, if required by "packetization-mode", "sprop-deint-buf-req"), **such that in the SDP offer/answer model, the use of the level part of "profile-level-id" does not need to be symmetric**, i.e. the value of the level part in the answer does not have not be the same as in the offer. Other sentences have been changed accordingly.

Technical change #6

In subsection 8.2.2, the bullet item starting with "In an offer or answer for which the direction attribute "a=sendonly" is included for the media stream, the following interpretation of the parameters MUST be used:", **removed the following, because, the direction attribute is sendonly, the sender will not receive streams**.

Declaring the capabilities of the sender when it receives a stream:
- max-mbps
    - max-fs
    - max-cpb
    - max-dpb
    - max-br
    - redundant-pic-cap
    - deint-buf-cap
    - max-rcmd-nalu-size

Open issues

- 1# On the use of packetization mode - if an external means and packetization-mode indicates different packetization mode, e.g. packetization-mode is not present AND the interleaved mode is signaled by the external means, **which has higher priority, packetization-mode or the external means?**

- 2# In subsection 7.2.2, the following is one of the conditions when the deinterleaving operation starts: There are N or more VCL NAL units in the deinterleaving buffer. **Why non-VCL NAL units are excluded?** Wouldn't it be more straightforward if all types of NAL units are counted, as all are anyway in the buffer and need to be handled? Excluding non-VCL NAL units unnecessarily requires the depacketizer to check the NAL unit type when counting the number of NAL units in the deinterleaving buffer.

Open issues

- 3# The first sentence of the semantics of packetization-mode says, "This parameter signals the properties of an RTP payload type or the capabilities of a receiver implementation." **Should "the properties of an RTP payload type" be "the properties of an RTP packet stream"?**

- 4# Section 7 is informative, but the process there is referenced in the definition of the normative parameter sprop-deint-buf-req. **Wouldn't it be problematic for normative text to rely on informative text, because removing informative text should not affect the integrity of a standard specification?** If yes, the informative mark of Section 7 should be removed.

Open issues

- 5# In subsection 8.1, the following brief introduction to AVC file format is present between Encoding considerations and Security considerations, and seems irrelevant. **What is the purpose to have this?**

  A file format of H.264/AVC video is defined in [29]. This definition is utilized by other file formats, such as the 3GPP multimedia file format (MIME type video/3gpp) [30] or the MP4 file format (MIME type video/mp4).

- 6# In subsection 8.2.2, bullet item 3, it is said that, for the capability parameters ("max-mbps", "max-fs", "max-cpb", "max-dpb", "max-br", ,"redundant-pic-cap", "max-rcmd-nalu-size"), when the direction attribute is sendonly, the parameters describe the limits of the RTP packets and the NAL unit stream that the sender is capable of producing. However, this is **inconsistent with the original semantics** of these fields, which said that these parameters MUST only be used to indicate receiver capabilities but not any other purpose.

Open issues

- 7# (sent to the AVT mailing list on March 5th by Randell Jesup)
  - Related to technical change 5# **on level downgrading of the profile-level-id, but for parameter sets**.
  - The solution to this issue would be apply the same rule as in technical change 5# to sequence parameter set, which contains profile_idc, compatibility flags and level_idc

Request and question to WG

- Request
  - Please review the changes and think about the open issues

- Question
  - Take this work as an WG item?
    - It has been discussed earlier to integrate draft-ietf-avt-rtp-h264-params-01