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

Ye-Kui Wang, Nokia
ye-kui.wang@nokia.com

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.

AVT IETF71 - draft-wang-avt-rfc3984bis-00
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 to 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