VVC/H.266 RTP Payload Format Update

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IETF 106/107/108 Recap

• H.266/VVC FDIS on 07/06/2020 and has been consented and published by ITU; the approval and publication processes in ISO are ongoing

• H.266/VVC RTP payload format design approach: (Agreed on IETF 106):
  • Only support SRST due to limited or nonexistent implementation for MRST/MRMT mode
  • Removed payload content information (PACI) packets
  • Removed DOND-based signaling, which supports interleaved packetization of NAL units within an access unit
  • Added FM section both short and long header extension
Update summary since IETF 108

• Add co-authorship: Ye-Kui Wang [Welcome!]
• VVC overview updates
• Added specification of SDP parameters
• Received Comments w.r.t:
  • GDR and CRA allowed as responses to FIR
  • GDR support in FM
VVC overview update

• Mostly on format and terminology update *(Thanks Ye-Kui for those detailed comments)*

• Substantial update on Sec 1.1.3:
  • Change from “Parallel processing support” to “High-level Picture Partitioning”)
    • Tiles and WPP
    • Slices
    • Subpictures
SDP optional parameters (review needed!)

- draft-ietf-avtcore-rtp-vvc-05#section-7.2.1 now includes 15 pages of SDP payload parameters (many copy-pasted from the HEVC payload format)
- The draft also contains many editors notes suggesting/requesting review on whether certain parameters are acceptable.
- No detailed review has taken place so far. We need to get active here and come to conclusions!

Proposed way forward once draft submission is open again:
- Authors propose, on mailing list, our suggested way forward for each parameter or group of related parameters
- Two-week comment period for each topic.
- If no comments are received, the suggestions will be implemented, and a new draft will be submitted with changes implemented and editor’s notes removed.
- Review of all parameters to be through by the end of the year.
- (Comments are obviously welcome any time, but particularly welcome during above comment periods).

- Is this agreeable?
SDP Offer/Answer section, and IANA Considerations

• The offer/answer and IANA consideration sections are currently placeholders.

• Authors propose to start with the relevant sections from the HEVC payload, with an initial alignment with the VVC spec based on author’s understanding.

• Then follow the same “forced review” process as suggested for the payload parameters.

• Is that agreeable?
Is there any interest in GDR in an RTP payload format?

• FIR Discussion:
  • GDR allowed as an additional FIR response.
    • Martin suggested that a new request message may be added for GDR, if it is not going to be add in the FIR
  • Do we have an agreement not allowing CRA as response to FIR?

• Clarification needed for FrameMarking draft w.r.t GDR signaling:
  • The ‘I’ bit: is it for pictures that are intra-coded (as in the current semantics), which includes IRAP (IDR/CAR/BLA) and non-IRAP intra pictures, or is it intended for indicating a random access point (i.e., a refresh point)? (Please see Ye-Kui’s text suggestion)
    • Note that the current specifications of the ‘I’ bit in the two drafts are contradicting with each other.
    • This question needs to be clarified before trying to answer the following question.
  • Do we really want FM in VVC draft? (we know that we have already made an agreement back in 106)
    • If Yes:
      • Option 1) We explicitly saying that the ‘I’=0 when it is a GDR (that basically said GDR is NOT supported in FM) No changes for FM.
      • Option 2) FM needs to clarify (as Mo suggested):
        • i) adding addition bit(s) to support GDR signaling with specific recovery_poc_cnt = 0 in mind
        • ii) a more general approach, which may require a substantial efforts
    • If No: (a way out for us) we could completely remove the FM section, but still need to address if allowing GDR is necessary as response to FIR
Questions still need response from WG

• Do we need to support all the FB messages for VVC/H.266?
  • Our preference: remove SLI and RPSI, due to limited/nonexistent implementation.
  • Will implement unless we hear otherwise

• Fragmentation Unit Header:
  • Suggestion for a good use of the “Reserved” ‘R’ bit?
    Possible options:
    • Ex: use it for assisting picture boundary detection
    • Others…?
Thanks