Reference Picture Verification Information (RPVI)

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IPR Disclosure

- For referred draft-samuelsson-avtext-rpvi-00
  - https://datatracker.ietf.org/ipr/2521/ (Qualcomm)
  - https://datatracker.ietf.org/ipr/2504/ (Core Wireless Licensing)
  - https://datatracker.ietf.org/ipr/2549/ (Ericsson)

Motivation

- Modern video codecs such as H.265/HEVC supports flexible use of multiple reference pictures which can be used for improved compression efficiency or to recover decoding errors.
- HEVC includes the ability to include Decoded Picture Hash information in order to verify correctness of decoded pictures.

- The Reference Picture Verification Information (RPVI) feedback message is introduced in order to enable use of these features on request from the media receiver.

Description

- RPVI is a new RTCP feedback message with the following features:
  - Indicate multiple decoded pictures to be used for reference by future pictures
  - Indicate that a specific picture was not decodable (e.g. due to loss of data)
  - Indicate that a specific picture was decoded but with incorrect result (mismatch in Decoded Picture Hash)
  - Include Decoded Picture Hash in the RPVI message for encoder to check correctness of decoding

Relation to similar feedback messages

- With RPSI (RFC 4585) only a single picture is identified to be used for reference.
- PLI (RFC 4585) conveys the information that one or more pictures have been lost but does not identify which picture(s).

- There is no mechanism for indicating incorrect decoding result.

Way Forward

- WG adoption?