TR-07 & TR-08 Update/Revision Effort

February 27, 2025

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Revision Activity Group

34 VSF Members have joined the activity Group

One Meeting has been held, with 21 members attending

Goals for this Activity Group Effort

Address and add JPEG XS Temporal Differential Coding

Provide clarifications for better understanding and consistent implementations

JPEG XS Temporal Differential Coding

Capability Set or Sets for Temporal Differential Coding (TDC)

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Explanation

- The TDC profile makes use of a new coding tool that allows the wavelet coefficients to be predicted from a frame buffer. The frame buffer is a compressed memory buffer that always keeps track of the last version of the wavelet coefficients. So, it is continuously updated with each new frame that is being processed.

- XS TDC comes with a "frame buffer level" which is essentially a number that can set an upper limit to the size and bandwidth of the frame buffer memory (to control mostly the extra hardware complexity regarding memory).

- Allowed FBB levels are 3 bpp, 4.5 bpp, and 12 bpp (higher FBB level gives better TDC improvements, but also leads to bigger needed frame buffer memory).

- TDC can optimize quality at a given rate or allow reduced bit rates

Capability Set or Sets for Temporal Differential Coding (TDC)

Goals

- Section 10 of TR-08 Provides Capability Sets and Interoperability Points, one suggestion is to add TDC capability to this section
- The TDC capability set could be a single table and include Sync, Async, IPMX, FHD, 4K, 8K Capabilities
- The TDC capability set could be broken down into multiple subsets and organized similar to the existing capability sets
- Liaise with IntoPix and Fraunhofer to update IETF RFC 9134 to reflect the changes needed to include the TDC Capability Sets. Noting that this will obsolete RFC 9134 and create a new RFC. VSF team members are also welcome to join IETF to drive this change.

Overall Document Improvements

Specific clarifications to allow more consistent understanding and implementations with better interoperability

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Overall Document Improvements

Specific clarifications to allow more consistent understanding and implementations with better interoperability, some examples below

- Rec. ITU-T H.222.0 (2021) | ISO/IEC 13818-1:2021: "Information Technology - Generic Coding of moving pictures and associated audio information - Part 1: Systems has been updated and current version should be referenced (some corrections made)
- Adding MPEG2TS/JXS examples of interlace handling as it seems to be an area of confusion
- Suggest to include Elementary Stream Buffer Model as this is another area of concern
- Consider concept of Narrow, Narrow Linear or Wide Sending modes
- SCHAR being set to 0 for TR-07 but TR-08 it is set to a specific value, (TR-08 Section 8.1.1 Table 1) this should be consistent for both documents

Schedule for Revision

Activity Group Meeting every two weeks

- Capture specific individual goals
- Review and clarify goals
- Determine and agree to specific document changes
- Publish revised or new documents

Time frame for completion has not yet been determined by the team

Questions
Comments

Thank you

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