JPEG XS Interoperability Technical Recommendation Activity Group TR-07

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Presentation Outline

JPEG XS Activity Group

1. First Effort: JPEG XS over MPEG2TS/SMPTE 2022-2
2. Second Effort: JPEG XS over SMPTE ST 2110 22

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1. JPEG XS over MPEG2TS/SMPTE 2022-2

JPEG XS is ISO/IEC standard, 21122, (JPEG XS), designed for latency-critical real time applications and offering near lossless and visually lossless quality with low complexity

The VSF TR-07 work includes:

- WAN 2022-2 Encapsulation
- JPEG XS 444.12 Profile
- Range of Coding efficiency approximately 1.5Bpp to 4Bpp
- Interoperable capability sets with groups of interoperability points
- 2K, 4K & 8K television format/frame rate capability sets including HDR and WCG
- Audio and ANC support
- Expected completion October 2020

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1. JPEG XS over MPEG2TS/SMPTE 2022-2

Capability Sets

Interop Points	Capability Set	Format & Frame Rate*	Pixels per Frame	Max Coding Efficiency Mbps	Max Coding Efficiency Bpp	Min Coding Efficiency Mbps	Min Coding Efficiency Bpp	Bit Depth	Color Sampling	Color Space	Audio Bit Depth Sampling	# Audio PIDs AES per PID	JPEG XS Profile		
				12		5							Profile	Level	Sublevel**
1	A	720px1280/59	55,240,759	92	1.67	221	4.00	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
2	A	720px1280/50	46,080,000	77	1.67	184	3.99	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
3	A	1080ix1920/29	62,145,854	104	1.67	249	4.01	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
4	A	1080ix1920/25	51,840,000	86	1.66	207	3.99	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
5a	A	1080px1920/59	124,291,708	207	1.67	497	4.00	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
5b	A	1080px1920/59	124,291,708	207	1.67	497	4.00	10bit	4:2:2	Rec. ITU-R BT.2100-0 (PQ)	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
5c	A	1080px1920/59	124,291,708	207	1.67	497	4.00	10bit	4:2:2	Rec. ITU-R BT.2100-2 (HLG)	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
6a	A	1080px1920/50	103,680,000	173	1.67	415	4.00	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
6b	A	1080px1920/50	103,680,000	173	1.67	415	4.00	10bit	4:2:2	Rec. ITU-R BT.2100-0 (PQ)	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
6c	A	1080px1920/50	103,680,000	173	1.67	415	4.00	10bit	4:2:2	Rec. ITU-R BT.2100-2 (HLG)	24- bit x 48K	2 PIDs 4 AES per	High 444.12	2K-1	Sublev6bpp
7a	B	2160px3840/59	497,166,833	829	1.67	1989	4.00	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	4 PIDs 4 AES per	High 444.12	4K-2	Sublev6bpp
7b	B	2160px3840/59	497,166,833	829	1.67	1989	4.00	10bit	4:2:2	Rec. ITU-R BT.2100-0 (PQ)	24- bit x 48K	4 PIDs 4 AES per	High 444.12	4K-2	Sublev6bpp
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8a	B	2160px3840/50	414,720,000	691	1.67	1659	4.00	10bit	4:2:2	Rec. ITU-R BT.709-6	24- bit x 48K	4 PIDs 4 AES per	High 444.12	4K-2	Sublev6bpp
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2. JPEG XS over SMPTE ST 2110 22

Next work effort JPEG XS over SMPTE ST 2110 22 to start shortly – October/November

- Will likely use JPEG XS profile/level/sublevel and other material forom from the prior WAN work
- Will include capability sets for interoperability and capability description also from the WAN work
- Completion target first calendar quarter 2021

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Thank You

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