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Information technology — JPEG XS low-latency lightweight image coding system —

Part 2:
Profiles and buffer models

AMENDMENT 1: Profile and sublevel for 4:2:0 content

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology* Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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Information technology — JPEG XS low-latency lightweight image coding system —

Part 2:
Profiles and buffer models

AMENDMENT 1: Profile and sublevel for 4:2:0 content

A.2.1, Table A.3

Replace the table with the following table:

Table A.3 — JPEG XS High profiles

Profile	**High 420.12**	**High 444.12**	**High 4444.12**
Number N_{sbu} of smoothing buffer units of the decoder model	16	16	16
Smoothing buffer offset S_{sbo} in bits	1 024	1 024	1 024
Component bit precision (*B*[*i*])	8, 10, 12	8, 10, 12	8, 10, 12
Internal precision (*Bw*)	20	20	20
# fractional bits for DWT coefficients (*Fq*)	8	8	8
Non-linear transform	Disallowed	Disallowed	Disallowed
Raw-mode selection per packet flag (*Rl*)	0	0	0
Chroma sampling formats	4:2:0	4:0:0 4:2:2 4:4:4	4:0:0 4:2:2 4:4:4 4:2:2:4 4:4:4:4
Colour transformation	0 (None)	0 (None) for any sampling format, or optionally 1 (RCT) for 4:4:4	0 (None) for any sampling format, or optionally 1 (RCT) for 4:4:4 and 4:4:4:4
Number of vertical decompositions	1, 2	0, 1, 2	0, 1, 2
Number of horizontal decompositions	[1-5]	[1-5]	[1-5]
Number components with suppressed decomposition (*Sd*)	0	0	0
Quantizer type (*Qpih*)	0 (DZQ) 1 (Uniform)	0 (DZQ) 1 (Uniform)	0 (DZQ) 1 (Uniform)

[a] One column of full width if number of vertical decompositions larger than 0, otherwise any column width conforming with ISO/IEC 21122-1 is allowed.

Table A.3 *(continued)*

Profile	High 420.12	High 444.12	High 4444.12
Column mode (*Cw*)	One column of full width	One column except when the number of vertical decomposition levels is zero [a]	One column except when the number of vertical decomposition levels is zero [a]
Slice height in number of image rows	16	16	16
Buffer model (*Tbmd*)	1, 2	1, 2	1, 2
Long precinct header enforcement flag (*Lh*)	0	0	0

[a] One column of full width if number of vertical decompositions larger than 0, otherwise any column width conforming with ISO/IEC 21122-1 is allowed.

A.2.1, Figure A.2

Replace the figure with the following figure:

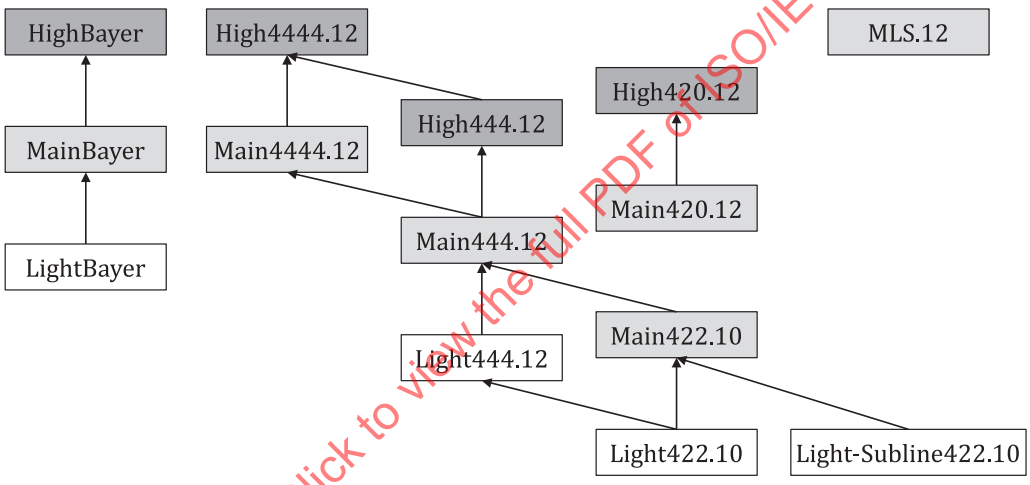

Figure A.2 — Inclusivity relation for the JPEG XS profiles

A.2.1, Table A.6

Replace the table with the following table:

Table A.6 — Maximum decoded bpp for each profile defined in this document

Profile	Component bit precision	Chroma sampling formats	Maximum decoded bpp
Light 422.10	8, 10	4:0:0, 4:2:2	20
Light 444.12	8, 10, 12	4:0:0, 4:2:2, 4:4:4	36
Light-Subline 422.10	8, 10	4:0:0, 4:2:2	20
Main 420.12	8, 10, 12	4:2:0	18
Main 422.10	8, 10	4:0:0, 4:2:2	20
Main 444.12	8, 10, 12	4:0:0, 4:2:2, 4:4:4	36

Table A.6 *(continued)*

Profile	Component bit precision	Chroma sampling formats	Maximum decoded bpp
Main 4444.12	8, 10, 12	4:0:0, 4:2:2, 4:4:4, 4:2:2:4, 4:4:4:4	48
High 420.12	8, 10, 12	4:2:0	18
High 444.12	8, 10, 12	4:0:0, 4:2:2, 4:4:4	36
High 4444.12	8, 10, 12	4:0:0, 4:2:2, 4:4:4, 4:2:2:4, 4:4:4:4	48
MLS.12	8, 10, 12	4:0:0, 4:2:0, 4:2:2, 4:4:4, 4:2:2:4, 4:4:4:4	48
LightBayer	10, 12, 14, 16	Bayer pattern interpreted as 4-dimensional vectors	64
MainBayer	10, 12, 14, 16	Bayer pattern interpreted as 4-dimensional vectors	64
HighBayer	10, 12, 14, 16	Bayer pattern interpreted as 4-dimensional vectors	64

A.2.2, Table A.7

Replace the table with the following table:

Table A.7 — Mapping of profiles to values of the *Ppih* field in the picture header

Profile	*Ppih*	
	Binary	Hex
Unrestricted	0000 0000 0000 0000	0x0000
Light 422.10	0001 0101 0000 0000	0x1500
Light 444.12	0001 1010 0000 0000	0x1A00
Light-Subline 422.10	0010 0101 0000 0000	0x2500
Main 420.12	0011 0010 0100 0000	0x3240
Main 422.10	0011 0101 0100 0000	0x3540
Main 444.12	0011 1010 0100 0000	0x3A40
Main 4444.12	0011 1110 0100 0000	0x3E40
High 420.12	0100 0010 0100 0000	0x4240
High 444.12	0100 1010 0100 0000	0x4A40
High 4444.12	0100 1110 0100 0000	0x4E40
MLS.12	0110 1110 1100 0000	0x6EC0
LightBayer	1001 0011 0000 0000	0x9300
MainBayer	1011 0011 0100 0000	0xB340
HighBayer	1100 0011 0100 0000	0xC340
Reserved for ISO/IEC purposes	all other values	

A.4.2, Table A.9

Replace the table with the following table:

Table A.9 — List of sublevels

Sublevel	Nominal bpp, N_{bpp}
Full	Maximum decoded bpp (See Table A.6).
Sublev12bpp	12

Table A.9 *(continued)*

Sublevel	Nominal bpp, N_{bpp}
Sublev9bpp	9
Sublev6bpp	6
Sublev4bpp	4
Sublev3bpp	3
Sublev2bpp	2

Add the following table after Table A.9:

Table A.17 — Codestream constraints for sublevel Sublev4bpp

Level	Size of a smoothing buffer unit S_{sbu} [bits]	Max codestream size $S_{sl,max}$ [bytes]	Max encoded rate $R_{t,max}$ [Mbits/s]
1k-1	5 120	1 310 720	334
2k-1	8 192	2 097 152	534
4k-1	16 384	4 456 448	1 069
4k-2	16 384	8 388 608	2 139
4k-3	16 384	8 388 608	4 278
8k-1	32 768	17 825 792	4 278
8k-2	32 768	33 554 432	8 556
8k-3	32 768	33 554 432	17 112
10k-1	40 960	52 428 800	13 369

Replace "and Table A.14" with "Table A.14 and Table A.17" at the end of NOTE 4.

A.5, Table A.16

Replace the table with the following table:

Table A.16 — Signalling of the sublevels of a codestream in the *Plev* field

Sublevel	Binary value of *Plev* field
Unrestricted	XXXX XXXX 0000 0000
Full	XXXX XXXX 1000 0000
Sublev12bpp	XXXX XXXX 0001 0000
Sublev9bpp	XXXX XXXX 0000 1100
Sublev6bpp	XXXX XXXX 0000 1000
Sublev4bpp	XXXX XXXX 0000 0110
Sublev3bpp	XXXX XXXX 0000 0100
Sublev2bpp	XXXX XXXX 0000 0011
Reserved for ISO/IEC purposes	all other values
An X indicates either a 0 or a 1.	

C.8.2

In subclause C.8.2, relabel Formula (C.9) to (C.10) and relabel Formula (C.10) to (C.11).