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Information technology — General video coding —

Part 4: Conformance and reference software for essential video coding

AMENDMENT 1: Green metadata supplemental enhancement information

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Information technology — General video coding —

Part 4: Conformance and reference software for essential video coding

AMENDMENT 1: Green metadata supplemental enhancement information

6.1, 6.5.2, 6.6.1 and 7.2

Replace https://standards.iso.org/iso-iec/23094/-4/ed-1/en/ with https://standards.iso.org/iso-iec/23094/-4/ed-1/en/amd/1/

6.6.2.43

Add “only” before “ADMVP” in the last sentence.

6.6.2.74 and 6.6.2.75

Replace “CM_init” with “CM_INIT”

6.6.2.95

Remove “only” before “ADDB” in the last sentence.

6.6.2.96

Remove “only” before “ALF” in the last sentence.

6.6.2.97

Remove “only” before “ALF” in the first sentence.

6.6.2.99 and 6.6.2.101

Remove “only” before “HTDF” in the first sentence.

6.6.2.114

Remove “only” before “RPL” in the first sentence.

6.6.2.116

Remove “only” before “POCS” in the first sentence.

6.6.2.125 to 6.6.2.129

Add the following new subclauses 6.6.2.125 to 6.6.2.129 after subclause 6.6.2.124:

6.6.2.125 Test bitstream BP_SET_C

Specification: Streams with sets of coding tools in Baseline profile.

Functional stage: Test the decoding process of Baseline profile, low delay configuration.

Purpose: Check that the decoder can properly decode bitstreams in which the full set of coding tools is enabled in Baseline profile, low delay configuration.

6.6.2.126 Test bitstream BP_SET_D

Specification: Streams with sets of coding tools in Baseline profile.

Functional stage: Test the decoding process of Baseline profile, low delay configuration with P slice.

Purpose: Check that the decoder can properly decode bitstreams in which the full set of coding tools is enabled in Baseline profile, low delay configuration with P slice.

6.6.2.127 Test bitstream ADMVP_I

Specification: Streams with ADMVP is enabled and its dependent tools disabled in Main profile.

Functional stage: Test the decoding process of the inter prediction in Main profile.

Purpose: Check that the decoder can properly decode bitstreams in which ADMVP is enabled and its dependent tools are disabled in Main profile.

6.6.2.128 Test bitstream ADMVP_J

Specification: Streams with only ADMVP tool enabled in Main profile.

Functional stage: Test the decoding process of the inter prediction in Main profile, low delay configuration with P slice.

Purpose: Check that the decoder can properly decode bitstreams in which only ADMVP tool is enabled in Main profile, low delay configuration with P slice.

6.6.2.129 Test bitstream ADMVP_K

Specification: Streams with only ADMVP and its dependent tools enabled in Main profile.

Functional stage: Test the decoding process of the inter prediction in Main profile, low delay configuration with P slice.

Purpose: Check that the decoder can properly decode bitstreams in which only ADMVP and its dependent tools are enabled in Main profile, low delay configuration with P slice.

6.7

Replace Table 1 with the following:

Table 1 — Bitstreams for Baseline and Main profiles

Categories	Sub category	Description	Bitstream	Baseline	Main	Base Still Picture	Main Still Picture	Level	Frame rate (Frame/sec)
Tool set	Baseline profile tool set	Tool set of Baseline profile	BP_SET_A	X				5.1	60
	Baseline Still Picture profile tool set	Tool set of Baseline Still Picture profile	BP_SET_B			X		NA	NA
	Baseline profile tools set	Tool set of Baseline profile , low delay	BP_SET_C	X				5.1	60
	Baseline profile tools set	Tool set of Baseline profile , low delay with P slice	BP_SET_D	X				5.1	60
	Main profile mini-mum tool set	Minimum tool set of Main profile	MP_MIN_A		X			5.1	60
	Main Still Picture profile minimum tool set	Minimum tool set of Main Still Picture profile	MP_MIN_B				X	NA	NA
	Main profile tool set	All tools in Main profile enabled	MP_SET_A		X			5.1	60
	Main Still Picture profile tool set	All tools in Main Still Picture profile enabled	MP_SET_B				X	NA	NA
Block structure	CTU,CU	CTU = 64 (cb_max: 6, cb_min: 2, cu14_max: 6, tris_max: 6, tris_min: 4)	CTU_A		X			5.1	60
		CTU = 32 (cb_max: 5, cb_min: 2, cu14_max: 5, tris_max: 5, tris_min: 4, suco_max: 5)	CTU_B		X			5.1	60
		CTU = 128, minCU = 8 (cb_max: 7, cb_min: 3, cu14_max: 6, tris_max: 6, tris_min: 5)	CTU_C		X			5.1	60
		CTU = 32, minCU = 32 (cb_max: 5, cb_min: 5, cu14_max: 5, tris_max: 5, tris_min: 7)	CTU_D		X			5.1	60
		CTU = 64 (cb_max: 6, cb_min: 2, cu14_max: 6, tris_max: 6, tris_min: 4)	CTU_E				X	NA	NA
		CTU = 32 (cb_max: 5, cb_min: 2, cu14_max: 5, tris_max: 5, tris_min: 4, suco_max: 5)	CTU_F				X	NA	NA
		CTU = 128, minCU = 8 (cb_max: 7, cb_min: 3, cu14_max: 6, tris_max: 6, tris_min: 5)	CTU_G				X	NA	NA
		CTU = 32, minCU = 32 (cb_max: 5, cb_min: 5, cu14_max: 5, tris_max: 5, tris_min: 7)	CTU_H				X	NA	NA
	BTT (Binary and ternary split)	BTT structure Off test	BTT_A		X			5.1	60
		BTT structure On test based on MP_MIN (cb_max: 7, cb_min: 2, cu14_max: 6, tris_max: 6, tris_min: 4)	BTT_B		X			5.1	60
X Bitstream is for static and dynamic tests									

Table 1 *(continued)*

Categories	Sub category	Description	Bitstream	Baseline	Main	Base Still Picture	Main Still Picture	Level	Frame rate (Frame/sec)
		Binary split on, ternary off (cb_max: 7, cb_min: 2, cu14_max: 6, tris_max: 2, tris_min: 4)	BTT_C		X			5.1	60
		Binary split on, ternary off, only1:1/1:2/2:1 ratio CUs allowed (cb_max: 7, cb_min: 2, cu14_max: 2, tris_max: 2, tris_min: 4)	BTT_D		X			5.1	60
		Binary split on, ternary on, only1:1/1:2/2:1 ratio CUs allowed (cb_max: 7, cb_min: 2, cu14_max: 2, tris_max: 6, tris_min: 4)	BTT_E		X			5.1	60
		BTT structure Off test	BTT_F				X	NA	NA
		BTT structure On test based on MP_MIN (cb_max: 7, cb_min: 2, cu14_max: 6, tris_max: 6, tris_min: 4)	BTT_G				X	NA	NA
		Binary split on, ternary off (cb_max: 7, cb_min: 2, cu14_max: 6, tris_max: 2, tris_min: 4)	BTT_H				X	NA	NA
		Binary split on, ternary off, only1:1/1:2/2:1 ratio CUs allowed (cb_max: 7, cb_min: 2, cu14_max: 2, tris_max: 2, tris_min: 4)	BTT_I				X	NA	NA
		Binary split on, ternary on, only1:1/1:2/2:1 ratio CUs allowed (cb_max: 7, cb_min: 2, cu14_max: 2, tris_max: 6, tris_min: 4)	BTT_J				X	NA	NA
	BOUNDARY (Boundary partition)	width=128*N+8, height=128*M+112	BOUNDARY_A		X			5.1	60
		width=128*N+24, height=128*M+96	BOUNDARY_B		X			5.1	60
		width=128*N+40, height=128*M+80	BOUNDARY_C		X			5.1	60
		width=128*N+56, height=128*M+64	BOUNDARY_D		X			5.1	60
		width=128*N+8, height=128*M+112	BOUNDARY_E				X	NA	NA
		width=128*N+24, height=128*M+96	BOUNDARY_F				X	NA	NA
		width=128*N+40, height=128*M+80	BOUNDARY_G				X	NA	NA
		width=128*N+56, height=128*M+64	BOUNDARY_H				X	NA	NA
	SUCO (Split unit coding ordering)	SUCO Off test	SUCO_A		X			5.1	60
		SUCO On test based on MP_MIN (default setting == (suco_max: 6, suco_min: 4))	SUCO_B		X			5.1	60
		suco_max: 5, suco_min: 4	SUCO_C					5.1	60
		suco_max: 6, suco_min: 5	SUCO_D					5.1	60
		SUCO Off test	SUCO_E				X	NA	NA
		SUCO On test based on MP_MIN (default setting == (suco_max: 6, suco_min: 4))	SUCO_F				X	NA	NA
		suco_max: 5, suco_min: 4	SUCO_G				X	NA	NA
		suco_max: 6, suco_min: 5	SUCO_H				X	NA	NA
X Bitstream is for static and dynamic tests									

Table 1 *(continued)*

Categories	Sub category	Description	Bitstream	Baseline	Main	Base Still Picture	Main Still Picture	Level	Frame rate (Frame/sec)
Inter	ADMVP (Advanced motion vector prediction)	ADMVP Off test (dependent tools = off)	ADMVP_A		X			5.1	60
		ADMVP On test based on MP_MIN and ADMVP On (dependent tools = off)	ADMVP_B		X			5.1	60
		ADMVP On test based on MP_MIN and ADMVP On (dependent tools = off)	ADMVP_C		X			5.1	60
		ADMVP On test based on MP_MIN and ADMVP On (dependent tools = off), Low delay	ADMVP_D		X			5.1	60
		ADMVP Off test (dependent tools=off)	ADMVP_E		X			5.1	60
		ADMVP Off test (dependent tools=off), Low delay	ADMVP_F		X			5.1	60
		ADMVP On test based on MP_MIN and ADMVP On (dependent tools = off, temporal_mvp_assigned_flag = 0)	ADMVP_G		X			5.1	60
		ADMVP On test based on MP_MIN and ADMVP On (dependent tools=on)	ADMVP_H		X			5.1	60
		ADMVP On test based on MP_SET and ADMVP On (dependent tools=off)	ADMVP_I		X			5.1	60
		ADMVP On test based on MP_MIN and ADMVP On (dependent tools = off), Low delay with P slice	ADMVP_J		X			5.1	60
		ADMVP On test based on MP_MIN and ADMVP On (dependent tools = on), Low delay with P slice	ADMVP_K		X			5.1	60
	AFF (Affine model based motion compensation)	AFF Off test	AFF_A		X			3.1	50
		Only regular affine prediction (EIF affine is never used)	AFF_B		X			3.0	60
		Only EIF affine is used for affine motion compensation	AFF_C		X			2.0	50
		Both EIF affine and regular affine are used for motion compensation	AFF_D		X			3.0	60
		AFF On test based on MP_MIN and ADMVP On	AFF_E		X			3.1	50
	AMVR (Adaptive motion vector resolution)	AMVR Off test	AMVR_A		X			5.1	60
		AMVR On test based on MP_MIN and ADMVP On	AMVR_B		X			5.1	60
	DMVR (Decoder side motion vector refinement)	DMVR Off test	DMVR_A		X			3.1	50
		DMVR On test based on MP_MIN and ADMVP On	DMVR_B		X			3.1	50
X Bitstream is for static and dynamic tests									

Table 1 *(continued)*

Categories	Sub category	Description	Bitstream	Baseline	Main	Base Still Picture	Main Still Picture	Level	Frame rate (Frame/sec)
	MMVD (Merge with motion vector difference)	MMVD Off test	MMVD_A		X			5.1	60
		MMVD On test based on MP_MIN and ADMVP On (mmvd_group_enable_flag==1)	MMVD_B		X			5.1	60
		MMVD On test based on MP_MIN and ADMVP On (mmvd_group_enable_flag==0)	MMVD_C		X			5.1	60
	HMVP (History based motion vector prediction)	HMVP On test based on MP_MIN and ADMVP On	HMVP_A		X			5.1	60
		HMVP On test based on MP_MIN and ADMVP On, Low delay	HMVP_B		X			5.1	50
		HMVP Off test	HMVP_C		X			5.1	60
		HMVP Off test, Low delay	HMVP_D		X			5.1	50
Intra	EIPD (Extended intra prediction modes)	EIPD Off test	EIPD_A		X			5.1	60
		EIPD On test based on MP_MIN	EIPD_B		X			5.1	60
		Constrained intra prediction (on based on MP_SET)	EIPD_C		X			5.1	60
		Constrained intra prediction (on based on MP_MIN)	EIPD_D		X			5.1	60
		EIPD Off test	EIPD_E				X	NA	NA
		EIPD On test based on MP_MIN	EIPD_F				X	NA	NA
	IBC (Intra block copy)	IBC Off test	IBC_A		X			5.1	30
		IBC On test based on MP_MIN and EIPD On	IBC_B		X			5.1	30
		Exercise range of IBC sizes	IBC_C		X			5.1	30
Entropy	CM (Context initialization)	CM Off test	CM_INIT_A		X			5.1	60
		CM On test based on MP_MIN	CM_INIT_B		X			5.1	60
	ADCC (Advanced residual coding)	ADCC On test based on MP_MIN and CM On	ADCC_A		X			5.1	60
		ADCC Off test	ADCC_B		X			5.1	60
		ADCC On with MP_SET	ADCC_C		X			5.1	50
Transform & Quantization	IQT (Improved quantization and transform)	IQT Off test	IQT_A		X			3.1	50
		IQT On test based on MP_MIN	IQT_B		X			3.1	50
		Exercise range of Chroma QP offset (positive values)	IQT_C		X			3.1	50
		Exercise range of Chroma QP offset (negative values)	IQT_D		X			3.1	50
		IQT Off test	IQT_E				X	NA	NA
		IQT On test based on MP_MIN	IQT_F				X	NA	NA
		Exercise range of Chroma QP offset (positive values)	IQT_G				X	NA	NA
		Exercise range of Chroma QP offset (negative values)	IQT_H				X	NA	NA
		Exercise on Chroma QP mapping table, MP_SET	IQT_I		X			5.1	25
	ATS (Adaptive transform selection)	ATS Off test	ATS_A		X			3.1	50
		ATS On test based on MP_MIN and IQT On	ATS_B		X			3.1	50
X Bitstream is for static and dynamic tests									

Table 1 *(continued)*

Categories	Sub category	Description	Bitstream	Baseline	Main	Base Still Picture	Main Still Picture	Level	Frame rate (Frame/sec)
	DQP (Delta QP signalling)	DQP on using BP_SET	DQP_A	X				5.1	60
		DQP on using MP_MIN	DQP_B		X			5.1	60
		DQP on using MP_SET	DQP_C		X			5.1	60
		Exercise range of DQP sizes and DQP values (log2_cu_qp_delta_area: 10)	DQP_D		X			5.1	60
Loop-filter	ADDB (Advanced deblocking filter)	ADDB On test on MP_MIN	ADDB_A		X			5.1	20
		ADDB On test based on MP_SET	ADDB_B		X			5.1	50
	ALF (Adaptive loop filter)	ALF On test based on MP_SET	ALF_A		X			5.1	60
		ALF Off test	ALF_B		X			5.1	50
		ALF On test based on MP_MIN	ALF_C		X			5.1	60
	HTDF (Hadamard transform domain filter)	HTDF Off test	HTDF_A		X			3.1	50
		HTDF On test based on MP_MIN	HTDF_B		X			3.1	50
		HTDF Off test	HTDF_C				X	NA	NA
		HTDF On test based on MP_MIN	HTDF_D				X	NA	NA
Post-filter	DRA (Dynamical range adjustment)	DRA On test	DRA_A		X			5.1	24
		DRA On test based on MP_MIN	DRA_B		X			5.1	24
High level syntax	PIC_SLICE_TILE(Picture/Slices/Tile)	Pictures partitions in tiles and slices (4x4 uniform tiles and 2 rectangular slices)	PIC_SLICE_TILE_A		X			5.1	60
		Exercise tile combinations (5x3 non-uniform tiles and 1 slice)	PIC_SLICE_TILE_B		X			5.1	60
		Exercise on Arbitrary slices (4x4 uniform tiles and 2 arbitrary slices)	PIC_SLICE_TILE_C		X			5.1	60
		Exercise on picture size (4x4 uniform tiles and 2 arbitrary slices)	PIC_SLICE_TILE_D		X			5.1	60
		Pictures partitions in tiles and slices (4x4 uniform tiles and 2 rectangular slices)	PIC_SLICE_TILE_E				X	NA	NA
		Exercise tile combinations (5x3 non-uniform tiles and 1 slice)	PIC_SLICE_TILE_F				X	NA	NA
		Exercise on Arbitrary slices (4x4 uniform tiles and 2 arbitrary slices)	PIC_SLICE_TILE_G				X	NA	NA
		Exercise on picture size (4x4 uniform tiles and 2 arbitrary slices)	PIC_SLICE_TILE_H				X	NA	NA
	RPL (Reference picture lists)	RPL on test based on MP_MIN	RPL_A		X			3.1	50
		RPL off with other features	RPL_B		X			3.1	50
		Exercise RPL combinations using related syntaxes	RPL_C		X			3.1	50
	POCS	POCs Off test	POCS_A		X			3.1	50
		POCs On test based on MP_MIN	POCS_B		X			3.1	50
	APS (Adaptation parameter set)	Multiple APSs of each type (ALF)	APS_A		X			5.1	60
		Multiple APSs of each type (DRA)	APS_B		X			5.1	30
X Bitstream is for static and dynamic tests									