

ISO/IEC 13818-2:2013-10 (E)

Information technology - Generic coding of moving pictures and associated audio information - Part 2: Video

Contents		Page
	Introduction	vi
1	Scope	1
2	Normative references	1
3	Definitions	1
4	Abbreviations and symbols	7
4.1	Arithmetic operators	7
4.2	Logical operators	8
4.3	Relational operators	8
4.4	Bitwise operators	8
4.5	Assignment	8
4.6	Mnemonics	8
4.7	Constants	8
5	Conventions	9
5.1	Method of describing bitstream syntax	9
5.2	Definition of functions	9
5.3	Reserved, forbidden and marker_bit	10
5.4	Arithmetic precision	10
6	Video bitstream syntax and semantics	10
6.1	Structure of coded video data	10
6.2	Video bitstream syntax	20
6.3	Video bitstream semantics	38
7	The video decoding process	68
7.1	Higher syntactic structures	69
7.2	Variable length decoding	69
7.3	Inverse scan	72
7.4	Inverse quantization	73
7.5	Inverse DCT	77
7.6	Motion compensation	77
7.7	Spatial scalability	91
7.8	SNR scalability	100
7.9	Temporal scalability	107
7.10	Data partitioning	110
7.11	Hybrid scalability	111
7.12	Output of the decoding process	112
8	Profiles and levels	115
8.1	ISO/IEC 11172-2 compatibility	117
8.2	Relationship between defined profiles	117
8.3	Relationship between defined levels	119
8.4	Scalable layers	119
8.5	Parameter values for defined profiles, levels and layers	122
8.6	Compatibility requirements on decoders	124
9	Registration of copyright identifiers	126
9.1	General	126
9.2	Implementation of a Registration Authority (RA)	126

Annex A	Inverse discrete cosine transform	128	
Annex B	Variable length code tables	129	
	B.1	Macrobblock addressing	129
	B.2	Macrobblock type	130
	B.3	Macrobblock pattern	135
	B.4	Motion vectors	136
	B.5	DCT coefficients	137
Annex C	Video buffering verifier	146	
Annex D	Frame packing arrangement signalling for stereoscopic 3D content	151	
Annex E	Profile and level restrictions	155	
	E.1	Syntax element restrictions in profiles	155
	E.2	Permissible layer combinations	167
Annex F	Features supported by the algorithm	189	
	F.1	Overview	189
	F.2	Video formats	189
	F.3	Picture quality	190
	F.4	Data rate control	190
	F.5	Low delay mode	190
	F.6	Random access/channel hopping	191
	F.7	Scalability	191
	F.8	Compatibility	197
	F.9	Differences between this Specification and ISO/IEC 11172-2	197
	F.10	Complexity	199
	F.11	Editing encoded bitstreams	200
	F.12	Trick modes	200
	F.13	Error resilience	201
	F.14	Concatenated sequences	208
Annex G	Registration procedure	209	
	G.1	Procedure for the request of a Registered Identifier (RID)	209
	G.2	Responsibilities of the Registration Authority	209
	G.3	Responsibilities of parties requesting an RID	209
	G.4	Appeal procedure for denied applications	210
Annex H	Registration application form	211	
	H.1	Contact information of organization requesting a Registered Identifier (RID)	211
	H.2	Statement of an intention to apply the assigned RID	211
	H.3	Date of intended implementation of the RID	211
	H.4	Authorized representative	211
	H.5	For official use only of the Registration Authority	211
Annex I	Registration authority – diagram of administration structure	212	
Annex J	4:2:2 Profile test results	213	
	J.1	Introduction	213
	J.2	Test sequences	213
	J.3	Test procedures	214
	J.4	Subjective assessment	214
	J.5	Test results	215
Annex K	The impact of practices for non-progressive sequence bitstreams in consideration of progressive-scan display	218	
	K.1	Progressive and non-progressive encoding	218
	K.2	Video source timing information syntax	218
	K.3	Content generation practices	218
	K.4	Post-encoding editing of the progressive frame flag in video bitstreams	221
	K.5	Post-processing for systems with progressive scan displays	221
	K.6	Use of capture timecode information	221
Annex L	Bibliography	224	