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 Macroblock addressing 129
B.2 Macroblock type 130
B.3 Macroblock 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