



**International
Standard**

ISO/IEC 15444-1

**Information technology — JPEG
2000 image coding system —**

**Part 1:
Core coding system**

*Technologies de l'information — Système de codage d'images
JPEG 2000 —*

Partie 1: Système de codage de noyau

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This document was prepared by ITU-T (as ITU-T T.800) and drafted in accordance with its editorial rules, in collaboration with Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This fifth edition cancels and replaces the fourth edition (ISO/IEC 15444-1:2019), which has been technically revised.

The main changes are as follows:

- addition of Annex N, which lists a registration request for media type image/jpeg
- specify that the Mastering Display Metadata Box of Annex M is optional and has no defaults, reflecting industry practice
- remove obsolete and erroneous reference to IETF RFC 2279
- clarify semantics of CEpicⁱ
- update reference to ISO/CIE 11664-1, Rec. ITU-R BT.601 and Rec. ITU-R BT.709
- remove unused JPEG Utilities Registration Authority (JURA) term
- specify the value of Rsiz when extended capabilities are present but no profile is signalled.

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ISO/IEC 15444-1:2024(en)

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INTERNATIONAL STANDARD ISO/IEC 15444-1
RECOMMENDATION ITU-T T.800

Information technology – JPEG 2000 image coding system: Core coding system

Summary

This Recommendation | International Standard defines a set of lossless (bit-preserving) and lossy compression methods for coding bi-level, continuous-tone grey-scale, palletized colour, or continuous-tone colour digital still images.

This Recommendation | International Standard:

- specifies decoding processes for converting compressed image data to reconstructed image data;
- specifies a codestream syntax containing information for interpreting the compressed image data;
- specifies a file format;
- provides guidance on encoding processes for converting source image data to compressed image data;
- provides guidance on how to implement these processes in practice.

This edition includes the following changes relative to the previous edition:

- addition of Annex N, which lists a registration request for media type image/j2c
- specify that the Mastering Display Metadata Box of Annex M is optional and has no defaults, reflecting industry practice
- remove obsolete and erroneous reference to IETF RFC 2279
- clarify semantics of CEpicⁱ
- update reference to ISO/CIE 11664-1, Rec. ITU-R BT.601 and Rec. ITU-R BT.709
- remove unused JPEG Utilities Registration Authority (JURA) term
- specify the value of Rsiz when extended capabilities are present but no profile is signalled

NOTE – As this specification was first published as common text only after ISO/IEC JTC1 had approved the first edition in 2000, edition numbers in the ITU and ISO/IEC versions are offset by one. This is the fourth edition of ITU-T T.800 and the fifth edition of ISO/IEC 15444-1.

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CONTENTS

	<i>Page</i>
1	Scope 1
2	References 1
2.1	Identical Recommendations International Standards 1
2.2	Additional references 1
3	Definitions 2
4	Abbreviations and symbols 6
4.1	Abbreviations 6
4.2	Symbols 7
5	General description 8
5.1	Purpose 8
5.2	Codestream 8
5.3	Coding principles 8
6	Encoder requirements 10
7	Decoder requirements 10
7.1	Codestream syntax requirements 10
7.2	Optional file format requirements 11
8	Implementation requirements 11
Annex A	Codestream syntax 12
A.1	Markers, marker segments and headers 12
A.1.1	Types of markers and marker segments 12
A.1.2	Syntax similarity with Rec. ITU-T T.81 ISO/IEC 10918-1 12
A.1.3	Marker and marker segment and codestream rules 13
A.1.4	Key to graphical descriptions (informative) 13
A.2	Information in the marker segments 14
A.3	Construction of the codestream 15
A.4	Delimiting markers and marker segments 19
A.4.1	Start of codestream (SOC) 19
A.4.2	Start of tile-part (SOT) 19
A.4.3	Start of data (SOD) 20
A.4.4	End of codestream (EOC) 20
A.5	Fixed information marker segment 20
A.5.1	Image and tile size (SIZ) 21
A.5.2	Extended Capabilities (CAP) 24
A.5.3	Profile (PRF) 25
A.6	Functional marker segments 26
A.6.1	Coding style default (COD) 26
A.6.2	Coding style component (COC) 29
A.6.3	Region of interest (RGN) 31
A.6.4	Quantization default (QCD) 32
A.6.5	Quantization component (QCC) 33
A.6.6	Progression order change (POC) 34
A.7	Pointer marker segments 36
A.7.1	Tile-part lengths (TLM) 36
A.7.2	Packet length, main header (PLM) 37
A.7.3	Packet length, tile-part header (PLT) 38
A.7.4	Packed packet headers, main header (PPM) 39
A.7.5	Packed packet headers, tile-part header (PPT) 40
A.8	In-bit-stream marker and marker segments 40
A.8.1	Start of packet (SOP) 40
A.8.2	End of packet header (EPH) 41
A.9	Informational marker segments 41
A.9.1	Component registration (CRG) 42
A.9.2	Comment (COM) 42
A.10	Codestream restrictions conforming to this Recommendation International Standard 43
A.10.1	Codestream restrictions for digital cinema applications including archiving 44

	<i>Page</i>
Annex B Image and compressed image data ordering.....	59
B.1 Introduction to image data structure concepts.....	59
B.2 Component mapping to the reference grid.....	59
B.3 Image area division into tiles and tile-components.....	61
B.4 Example of the mapping of components to the reference grid (informative).....	62
B.5 Transformed tile-component division into resolution levels and sub-bands.....	65
B.6 Division of resolution levels into precincts.....	66
B.7 Division of the sub-bands into code-blocks.....	67
B.8 Layers.....	68
B.9 Packets.....	69
B.10 Packet header information coding.....	70
B.10.1 Bit-stuffing routine.....	71
B.10.2 Tag trees.....	71
B.10.3 Zero length packet.....	72
B.10.4 Code-block inclusion.....	72
B.10.5 Zero bit-plane information.....	72
B.10.6 Number of coding passes.....	72
B.10.7 Length of the compressed image data from a given code-block.....	73
B.10.8 Order of information within packet header.....	73
B.11 Tile and tile-parts.....	75
B.12 Progression order.....	76
B.12.1 Progression order determination.....	76
B.12.2 Progression order volumes.....	78
B.12.3 Progression order change signalling.....	79
Annex C Arithmetic entropy coding.....	80
C.1 Binary encoding (informative).....	80
C.1.1 Recursive interval subdivision (informative).....	80
C.1.2 Coding conventions and approximations (informative).....	80
C.2 Description of the arithmetic encoder (informative).....	81
C.2.1 Encoder code register conventions (informative).....	82
C.2.2 Encoding a decision (ENCODE) (informative).....	83
C.2.3 Encoding a 1 or a 0 (CODE1 and CODE0) (informative).....	83
C.2.4 Encoding an MPS or LPS (CODEMPS and CODELPS) (informative).....	84
C.2.5 Probability estimation.....	86
C.2.6 Renormalization in the encoder (RENORME) (informative).....	87
C.2.7 Compressed image data output (BYTEOUT) (informative).....	88
C.2.8 Initialization of the encoder (INITENC) (informative).....	89
C.2.9 Termination of coding (FLUSH) (informative).....	90
C.3 Arithmetic decoding procedure.....	92
C.3.1 Decoder code register conventions.....	93
C.3.2 Decoding a decision (DECODE).....	93
C.3.3 Renormalization in the decoder (RENORMD).....	96
C.3.4 Compressed image data input (BYTEIN).....	97
C.3.5 Initialization of the decoder (INITDEC).....	98
C.3.6 Resetting arithmetic coding statistics.....	98
C.3.7 Saving arithmetic coding statistics.....	98
Annex D Coefficient bit modelling.....	99
D.1 Code-block scan pattern within code-blocks.....	99
D.2 Coefficient bits and significance.....	99
D.2.1 General case notations.....	99
D.2.2 Notation in the case with ROI.....	100
D.3 Decoding passes over the bit-planes.....	100
D.3.1 Significance propagation decoding pass.....	100
D.3.2 Sign bit decoding.....	101
D.3.3 Magnitude refinement pass.....	102
D.3.4 Cleanup pass.....	102
D.3.5 Example of coding passes and significance propagation (informative).....	103
D.4 Initializing and terminating.....	104

	<i>Page</i>
D.4.1	Expected codestream termination 104
D.4.2	Arithmetic coder termination 104
D.4.3	Length computation (informative) 105
D.5	Error resilience segmentation symbol 105
D.6	Selective arithmetic coding bypass 105
D.7	Vertically causal context formation 106
D.8	Flow diagram of the code-block coding 107
Annex E	Quantization 109
E.1	Inverse quantization procedure 109
E.1.1	Irreversible transformation 109
E.1.2	Reversible transformation 110
E.2	Scalar coefficient quantization (informative) 110
Annex F	Discrete wavelet transformation of tile-components 112
F.1	Tile-component parameters 112
F.2	Discrete wavelet transformations 112
F.2.1	Low-pass and high-pass filtering (informative) 112
F.2.2	Decomposition levels 112
F.2.3	Discrete wavelet filters (informative) 112
F.3	Inverse discrete wavelet transformation 112
F.3.1	The IDWT procedure 112
F.3.2	The 2D_SR procedure 114
F.3.3	The 2D_INTERLEAVE procedure 115
F.3.4	The HOR_SR procedure 117
F.3.5	The VER_SR procedure 118
F.3.6	The 1D_SR procedure 120
F.3.7	The 1D_EXTR procedure 120
F.3.8	The 1D_FILTR procedure 121
F.4	Forward transformation (informative) 123
F.4.1	The FDWT procedure (informative) 123
F.4.2	The 2D_SD procedure (informative) 125
F.4.3	The VER_SD procedure (informative) 126
F.4.4	The HOR_SD procedure (informative) 127
F.4.5	The 2D_DEINTERLEAVE procedure (informative) 128
F.4.6	The 1D_SD procedure (informative) 130
F.4.7	The 1D_EXTD procedure (informative) 130
F.4.8	The 1D_FILTD procedure (informative) 131
Annex G	DC level shifting and multiple component transformations 133
G.1	DC level shifting of tile-components 133
G.1.1	DC level shifting of tile-components (informative) 133
G.1.2	Inverse DC level shifting of tile-components 133
G.2	Reversible multiple component transformation (RCT) 134
G.2.1	Forward RCT (informative) 134
G.2.2	Inverse RCT 134
G.3	Irreversible multiple component transformation (ICT) 134
G.3.1	Forward ICT (informative) 134
G.3.2	Inverse ICT 135
G.4	Chrominance component sub-sampling and the reference grid 135
Annex H	Coding of images with regions of interest 136
H.1	Decoding of ROI 136
H.2	Description of the Maxshift method 136
H.2.1	Encoding of ROI (informative) 136
H.2.2	Selection of scaling value, s, at encoder side (informative) 137
H.3	Remarks on region of interest coding (informative) 137
H.3.1	Region of interest mask generation (informative) 137
H.3.2	Multi-component remark (informative) 139
H.3.3	Disjoint regions remark (informative) 139
H.3.4	Implementation precision remark (informative) 139
H.3.5	An example of the usage of the Maxshift method (informative) 139

	<i>Page</i>
Annex I JP2 file format syntax	140
I.1 File format scope.....	140
I.2 Introduction to the JP2 file format	140
I.2.1 File identification	140
I.2.2 File organization	140
I.2.3 Greyscale, colour, palette, multi-component specification	141
I.2.4 Inclusion of opacity channels.....	142
I.2.5 Metadata.....	142
I.2.6 Conformance with the file format.....	142
I.3 Greyscale/Colour/Palettized/multi-component specification architecture	142
I.3.1 Enumerated method	142
I.3.2 Restricted ICC profile method	142
I.3.3 Using multiple methods	143
I.3.4 Palettized images	143
I.3.5 Interactions with the decorrelating multiple component transform.....	143
I.3.6 Key to graphical descriptions (informative).....	143
I.4 Box definition	144
I.5 Defined boxes	146
I.5.1 JPEG 2000 Signature box	146
I.5.2 File Type box	146
I.5.3 JP2 Header box (superbox).....	147
I.5.4 Contiguous Codestream box	161
I.6 Adding intellectual property rights information in JP2.....	161
I.7 Adding vendor-specific information to the JP2 file format.....	161
I.7.1 XML boxes	161
I.7.2 UUID boxes	162
I.7.3 UUID Info boxes (superbox)	162
I.8 Dealing with unknown boxes.....	164
Annex J Examples and guidelines	165
J.1 Software conventions adaptive entropy decoder.....	165
J.2 Selection of quantization step sizes for irreversible transformations	166
J.3 Filter impulse responses corresponding to lifting-based irreversible filtering procedures.....	167
J.4 Example of discrete wavelet transformation	168
J.4.1 Example of 9-7 irreversible wavelet transformation.....	168
J.4.2 Example of 5-3 reversible wavelet transformation	170
J.5 Row-based wavelet transform.....	171
J.5.1 The FDWT_ROW procedure.....	171
J.5.2 The INIT procedure	173
J.5.3 The START_VERT procedure	174
J.5.4 OUTPUT_ROW procedure.....	180
J.6 Scan-based coding.....	180
J.7 Error resilience	180
J.8 Implementing the Restricted ICC method outside of a full ICC colour management engine	181
J.8.1 Extracting the colour transformation from an ICC profile.....	181
J.8.2 Colour processing equations for three-component RGB images	182
J.8.3 Converting images to sRGB	183
J.8.4 Converting images to other colourspaces.....	184
J.8.5 Input and output ranges and quantization	184
J.8.6 Taking advantage of multiple colour specifications.....	185
J.9 An example of the interpretation of multiple components	185
J.10 An example of decoding showing intermediate steps	185
J.10.1 Main header	186
J.10.2 Tile-part header	187
J.10.3 Packet headers.....	187
J.10.4 Arithmetic-coded compressed data	188
J.10.5 Wavelet and level shift.....	189
J.11 Visual frequency weighting	189
J.11.1 Modify quantization step size	190
J.11.2 Modify the embedded coding order	190

	<i>Page</i>
J.11.3 Visual progressive coding (VIP).....	190
J.11.4 Recommended frequency weighting tables.....	190
J.12 Encoder sub-sampling of components	191
J.13 Rate control.....	192
J.13.1 Introduction to key concepts for rate control	192
J.13.2 Layered bit-stream abstraction.....	192
J.13.3 Rate-distortion optimization	193
J.13.4 Efficient distortion estimation for R-D optimal truncation.....	194
J.14 Guidelines on handling YCC codestream	196
J.14.1 Use of multiple component transformation.....	196
J.14.2 Using the JP2 format.....	196
J.14.3 Chrominance offset.....	196
J.15 Guidelines for digital cinema applications.....	197
J.15.1 Reliable multicast transmission of JPEG 2000 codestreams.....	198
J.15.2 Implementation guidelines for digital cinema distribution	207
J.15.3 Implementation guidelines for the use of JPEG 2000 in film archive applications	210
Annex K Additional reading.....	213
K.1 General.....	213
K.2 Quantization and entropy coding	213
K.3 Wavelet transformation.....	213
K.4 Region of interest coding	214
K.5 Visual frequency weighting	214
K.6 Error resilience.....	214
K.7 Guidelines for digital cinema applications.....	214
Annex L Patent statement.....	216
Annex M Elementary stream for broadcast applications.....	217
M.1 Introduction.....	217
M.2 Definitions.....	217
M.3 Access unit construction	217
M.4 Elementary stream marker box (superbox)	218
M.4.1 Frame Rate Coding box (required)	218
M.4.2 Maximum Bit Rate box (required).....	219
M.4.3 Field Coding box (optional).....	219
M.4.4 Time Code box (required).....	220
M.4.5 Broadcast Colour Specification box (required).....	220
M.4.6 Mastering Display Metadata Box (optional).....	221
Annex N Media type registrations.....	223
N.1 Introduction.....	223
N.2 References.....	223
N.3 image/j2c.....	223
N.3.1 Semantics.....	223
N.3.2 Registration.....	223
Bibliography.....	225

List of Tables

	<i>Page</i>
Table A.1 – Marker definitions	13
Table A.2 – List of markers and marker segments	14
Table A.3 – Information in the marker segments	15
Table A.4 – Start of codestream parameter values	19
Table A.5 – Start of tile-part parameter values.....	20
Table A.6 – Number of tile-parts, TN _{sot} , parameter value	20
Table A.7 – Start of data parameter values.....	20
Table A.8 – End of codestream parameter values	20
Table A.9 – Image and tile size parameter values	22
Table A.10 – Capability Rsiz parameter.....	23
Table A.11 – Component Ssiz parameter.....	24
Table A.11 ^{bis} – Extended capabilities parameter values	24
Table A.11 ^{ter} – Definition of the value of Pcap ⁱ parameters.....	25
Table A.11 ^{quater} – Profile parameter values.....	26
Table A.12 – Coding style default parameter values.....	27
Table A.13 – Coding style parameter values for the Scod parameter.....	27
Table A.14 – Coding style parameter values of the SGcod parameter	27
Table A.15 – Coding style parameter values of the SPcod and SPcoc parameters.....	28
Table A.16 – Progression order for the SGcod, SPcoc and Ppoc parameters.....	28
Table A.17 – Multiple component transformation for the SGcod parameters.....	28
Table A.18 – Width or height exponent of the code-blocks for the SPcod and SPcoc parameters	29
Table A.19 – Code-block style for the SPcod and SPcoc parameters	29
Table A.20 – Transformation for the SPcod and SPcoc parameters.....	29
Table A.21 – Precinct width and height for the SPcod and SPcoc parameters.....	29
Table A.22 – Coding style component parameter values	31
Table A.23 – Coding style parameter values for the Scoc parameter	31
Table A.24 – Region-of-interest parameter values	31
Table A.25 – Region-of-interest parameter values for the Srgn parameter	32
Table A.26 – Region-of-interest values from SPRgn parameter (Srgn = 0)	32
Table A.27 – Quantization default parameter values.....	33
Table A.28 – Quantization default values for the Sqcd and Sqcc parameters	33
Table A.29 – Reversible step size values for the SPqcd and SPqcc parameters (reversible transform only).....	33
Table A.30 – Quantization values for the SPqcd and SPqcc parameters (irreversible transformation only).....	33
Table A.31 – Quantization component parameter values.....	34
Table A.32 – Progression order change, tile parameter values.....	35
Table A.33 – Tile-part length parameter values	37
Table A.34 – Size parameters for Stlm.....	37
Table A.35 – Packets length, main header parameter values.....	38

	<i>Page</i>
Table A.36 – Iplm, Iplt list of packet lengths	38
Table A.37 – Packet length, tile-part headers parameter values	39
Table A.38 – Packed packet headers, main header parameter values.....	40
Table A.39 – Packet header, tile-part headers parameter values	40
Table A.40 – Start of packet parameter values	41
Table A.41 – End of packet header parameter values	41
Table A.42 – Component registration parameter values	42
Table A.43 – Comment parameter values	43
Table A.44 – Registration values for the Rcom parameter.....	43
Table A.45 – Codestream restrictions.....	43
Table A.46 – Codestream restrictions for digital cinema applications	45
Table A.47 – Example file size limitations for digital cinema applications including archiving	52
Table A.48 – Codestream restrictions for broadcast application profiles	53
Table A.49 – Operating levels for the broadcast contribution single tile and multi-tile profiles.....	54
Table A.50 – Operating levels for broadcast contribution multi-tile reversible profile.....	54
Table A.51 – Codestream restrictions for interoperable master format (IMF) single tile profiles.....	55
Table A.52 – Codestream restrictions for interoperable master format (IMF) single tile/multi-tile reversible profiles ..	56
Table A.53 – Operating levels for IMF profiles	57
Table A.54 – Operating sublevels for IMF profiles.....	58
Table A.55 – Profile PRFnum parameter	58
Table B.1 – Quantities (x_{ob} , y_{ob}) for sub-band b.....	66
Table B.2 – Example of layer formation (only one component shown).....	69
Table B.3 – Example of packet formation.....	70
Table B.4 – Codewords for the number of coding passes for each code-block.....	72
Table B.5 – Example packet header bit stream.....	74
Table C.1 – Encoder register structures.....	82
Table C.2 – Q_e values and probability estimation.....	85
Table C.3 – Decoder register structures.....	93
Table D.1 – Contexts for the significance propagation and cleanup coding passes	100
Table D.2 – Contributions of the vertical (and the horizontal) neighbours to the sign context	101
Table D.3 – Sign contexts from the vertical and horizontal contributions	102
Table D.4 – Contexts for the magnitude refinement coding passes.....	102
Table D.5 – Run-length decoder for cleanup passes.....	103
Table D.6 – Example of sub-bit-plane coding order and significance propagation.....	103
Table D.7 – Initial states for all contexts.....	104
Table D.8 – Arithmetic coder termination patterns	104
Table D.9 – Selective arithmetic coding bypass.....	105
Table D.10 – Decisions in the context model flow chart.....	108
Table D.11 – Decoding in the context model flow chart.....	108

Table E.1 – Sub-band gains.....	109
Table F.1 – Decomposition level n_b for sub-band b	113
Table F.2 – Extension to the left.....	121
Table F.3 – Extension to the right	121
Table F.4 – Definition of lifting parameters for the 9-7 irreversible filter.....	122
Table F.5 – Definition of coefficients g_n	123
Table F.6 – Intermediate expressions (r_0, r_1, s_0, t_0)	123
Table F.7 – Intermediate expressions	123
Table F.8 – Extension to the left.....	130
Table F.9 – Extension to the right	131
Table I.1 – Binary structure of a box.....	145
Table I.2 – Defined boxes.....	145
Table I.3 – Legal Brand values.....	147
Table I.4 – Format of the contents of the File Type box	147
Table I.5 – Format of the contents of the Image Header box	150
Table I.6 – BPC values 150	
Table I.7 – Format of the contents of the Bits Per Component box.....	151
Table I.8 – BPC ⁱ values 151	
Table I.9 – Legal METH values	152
Table I.10 – Legal EnumCS values	153
Table I.11 – Format of the contents of the Colour Specification box.....	153
Table I.12 – Format of the contents of the Palette box.....	154
Table I.13 – B ⁱ values 155	
Table I.14 – MTyp ⁱ field values.....	155
Table I.15 – Format of the contents of the Component Mapping box.....	155
Table I.16 – Typ ⁱ field values	156
Table I.17 – Assoc ⁱ field values	157
Table I.18 – Colours indicated by the Assoc ⁱ field.....	157
Table I.19 – Format of the Channel Definition box.....	158
Table I.20 – Format of the contents of the Capture Resolution box.....	159
Table I.21 – Format of the contents of the Default Display Resolution box	161
Table I.22 – Format of the contents of the Contiguous Codestream box	161
Table I.23 – Format of the contents of a UUID box.....	162
Table I.24 – UUID List box contents data structure values.....	163
Table I.25 – Data Entry URL box contents data structure values.....	163
Table J.1 – Definition of impulse responses for the 9-7 irreversible analysis filter bank.....	167
Table J.2 – Definition of impulse responses for the 9-7 irreversible synthesis filter band.....	167
Table J.3 – Source tile component samples.....	168
Table J.4 – 2LL sub-band coefficients (9-7 irreversible wavelet transformation).....	168

Table J.5 – 2HL sub-band coefficients (9-7 irreversible wavelet transformation)	168
Table J.6 – 2LH sub-band coefficients (9-7 irreversible wavelet transformation)	169
Table J.7 – 2HH sub-band coefficients (9-7 irreversible wavelet transformation)	169
Table J.8 – 1HL sub-band coefficients (9-7 irreversible wavelet transformation)	169
Table J.9 – 1LH sub-band coefficients (9-7 irreversible wavelet transformation)	169
Table J.10 – 1HH sub-band coefficients (9-7 irreversible wavelet transformation)	169
Table J.11 – 2LL sub-band coefficients (5-3 reversible wavelet transformation)	170
Table J.12 – 2HL sub-band coefficients (5-3 reversible wavelet transformation)	170
Table J.13 – 2LH sub-band coefficient (5-3 reversible wavelet transformation)	170
Table J.14 – 2HH sub-band coefficients (5-3 reversible wavelet transformation)	170
Table J.15 – 1HL sub-band coefficients (5-3 reversible wavelet transformation)	170
Table J.16 – 1LH sub-band coefficients (5-3 reversible wavelet transformation)	171
Table J.17 – 1HH sub-band coefficients (5-3 reversible wavelet transformation)	171
Table J.18 – Error resilience tools	180
Table J.19 – Processing tags used by a Restricted ICC profile	181
Table J.20 – Decoding first packet header	187
Table J.21 – Decoding second packet header	188
Table J.22 – Arithmetic decode of first code-block	188
Table J.23 – Arithmetic decode of second code-block	189
Table J.24 – Recommended frequency weighting	191
Table J.25 – Recommended frequency weighting for multiple component (colour) images	191
Table J.26 – CRG (Component registration) values	197
Table J.27 – Quantization steps for 2K visually lossless compression	207
Table J.28 – Recommended frequency weighting for digital cinema environment	210
Table M.1 – Definitions of elementary stream boxes	218
Table M.2 – Code for identifying video specification	220
Table M.3 – Colorimetric parameters and related characteristics	220
Table M.4 – Real-valued intermediate luminance and chrominance equations	221
Table M.5 – Equations for integer luminance and chrominance representation using n bits for D'_L and m bits for D'_u and D'_v (where ε denotes a vanishingly small positive number)	221
Table M.6 – Example values for mastering display parameters for Rec. ITU-R BT.709	222

List of Figures

	<i>Page</i>
Figure 5-1 – Specification block diagram.....	9
Figure A.1 – Example of the marker segment description figures	13
Figure A.2 – Construction of the codestream	16
Figure A.3 – Construction of the main header.....	17
Figure A.4 – Construction of the first tile-part header of a given tile.....	18
Figure A.5 – Construction of a non-first tile-part header	18
Figure A.6 – Start of tile-part syntax	19
Figure A.7 – Image and tile size syntax.....	21
Figure A.7bis – Extended capabilities syntax.....	24
Figure A.7ter – Profile syntax	25
Figure A.8 – Coding style default syntax	26
Figure A.9 – Coding style parameter diagram of the SGcod and SPcod parameters.....	28
Figure A.10 – Coding style component syntax.....	30
Figure A.11 – Coding style parameter diagram of the SPcoc parameters	30
Figure A.12 – Region-of-interest syntax	31
Figure A.13 – Quantization default syntax.....	32
Figure A.14 – Quantization component syntax	34
Figure A.15 – Progression order change tile syntax	35
Figure A.16 – Tile-part lengths	36
Figure A.17 – Tile-part length syntax.....	36
Figure A.18 – Packets length, main header syntax.....	37
Figure A.19 – Packet length, tile-part header syntax.....	38
Figure A.20 – Packed packet headers, main header syntax	39
Figure A.21 – Packed packet headers, tile-part header syntax	40
Figure A.22 – Start of packet syntax	41
Figure A.23 – Component registration syntax.....	42
Figure A.24 – Comment syntax.....	42
Figure A.25 – Compressed data ordering showing the relative position of the 4K tile-parts relative to the basic 2K tile-parts	50
Figure A.26 – Codestream structure for 4K digital cinema profile	50
Figure A.27 – Extended tile-parts for the scalable 4K digital cinema profile	50
Figure A.28 – Codestream structure for the scalable 4K digital cinema profile.....	50
Figure A.29 – Codestream structure for the scalable 2K digital cinema profile.....	50
Figure B.1 – Reference grid diagram.....	60
Figure B.2 – Component sample locations on the reference grid for different XRsiz and YRsiz values	60
Figure B.3 – Example of upper left component sample locations	61
Figure B.4 – Tiling of the reference grid diagram	61
Figure B.5 – Reference grid example	63

	<i>Page</i>
Figure B.6 – Example tile sizes and locations for component 0.....	64
Figure B.7 – Example tile sizes and locations for component 1.....	65
Figure B.8 – Precincts of one reduced resolution.....	66
Figure B.9 – Code-blocks and precincts in sub-band <i>b</i> from four different tiles.....	68
Figure B.10 – Diagram of precincts of one resolution level of one component.....	69
Figure B.11 – Diagram of code-blocks within precincts at one resolution level.....	70
Figure B.12 – Example of a tag tree representation.....	71
Figure B.13 – Example of the information known to the encoder.....	74
Figure B.14 – Example of progression order volume in two dimensions.....	78
Figure B.15 – Example of the placement of POC marker segments.....	79
Figure C.1 – Arithmetic encoder inputs and outputs.....	80
Figure C.2 – Encoder for the MQ-coder.....	82
Figure C.3 – ENCODE procedure.....	83
Figure C.4 – CODE1 procedure.....	83
Figure C.5 – CODE0 procedure.....	84
Figure C.6 – CODELPS procedure with conditional MPS/LPS exchange.....	85
Figure C.7 – CODEMPS procedure with conditional MPS/LPS exchange.....	87
Figure C.8 – Encoder renormalization procedure.....	88
Figure C.9 – BYTEOUT procedure for encoder.....	89
Figure C.10 – Initialization of the encoder.....	90
Figure C.11 – FLUSH procedure.....	91
Figure C.12 – Setting the final bits in the C register.....	92
Figure C.13 – Arithmetic decoder inputs and outputs.....	92
Figure C.14 – Decoder for the MQ-coder.....	93
Figure C.15 – Decoding an MPS or an LPS.....	94
Figure C.16 – Decoder MPS path conditional exchange procedure.....	95
Figure C.17 – Decoder LPS path conditional exchange procedure.....	96
Figure C.18 – Decoder renormalization procedure.....	97
Figure C.19 – BYTEIN procedure for decoder.....	97
Figure C.20 – Initialization of the decoder.....	98
Figure D.1 – Example scan pattern of a code-block bit-plane.....	99
Figure D.2 – Neighbours states used to form the context.....	100
Figure D.3 – Flow chart for all coding passes on a code-block bit-plane.....	107
Figure F.1 – Inputs and outputs of the IDWT procedure.....	112
Figure F.2 – The IDWT ($N_L = 2$).....	113
Figure F.3 – The IDWT procedure.....	114
Figure F.4 – Inputs and outputs of the 2D_SR procedure.....	114
Figure F.5 – One level of reconstruction from four sub-bands (2D_SR procedure) into sub-bands.....	114
Figure F.6 – The 2D_SR procedure.....	115

	<i>Page</i>
Figure F.7 – Parameters of 2D_INTERLEAVE procedure	115
Figure F.8 – The 2D_INTERLEAVE procedure.....	116
Figure F.9 – Inputs and outputs of the HOR_SR procedure.....	117
Figure F.10 – The HOR_SR procedure	118
Figure F.11 – Inputs and outputs of the VER_SR procedure	119
Figure F.12 – The VER_SR procedure.....	119
Figure F.13 – Parameters of the 1D_SR procedure	120
Figure F.14 – The 1D_SR procedure.....	120
Figure F.15 – Periodic symmetric extension of signal	120
Figure F.16 – Parameters of the 1D_FILTR procedure.....	121
Figure F.17 – Inputs and outputs of the FDWT procedure.....	124
Figure F.18 – The FDWT ($N_L = 2$).....	124
Figure F.19 – The FDWT procedure	124
Figure F.20 – Inputs and outputs of the 2D_SD procedure	125
Figure F.21 – One-level decomposition into four sub-bands (2D_SD procedure)	125
Figure F.22 – The 2D_SD procedure	125
Figure F.23 – Inputs and outputs of the VER_SD procedure	126
Figure F.24 – The VER_SD procedure	126
Figure F.25 – Inputs and outputs of the HOR_SD procedure.....	127
Figure F.26 – The HOR_SD procedure.....	127
Figure F.27 – Parameters of 2D_DEINTERLEAVE procedure.....	128
Figure F.28 – The 2D_DEINTERLEAVE procedure.....	129
Figure F.29 – Parameters of the 1D_SD procedure.....	130
Figure F.30 – The 1D_SD procedure	130
Figure F.31 – Parameters of the 1D_FILTD procedure.....	131
Figure G.1 – Placement of the DC level shifting with component transformation.....	133
Figure G.2 – Placement of the DC level shifting without component transformation.....	133
Figure H.1 – The inverse wavelet transformation with the 5-3 reversible filter	138
Figure H.2 – The inverse wavelet transformation with the 9-7 irreversible filter	138
Figure I.1 – Conceptual structure of a JP2 file	141
Figure I.2 – Example of the box description figures	144
Figure I.3 – Example of the superbox description figures.....	144
Figure I.4 – Organization of a box.....	144
Figure I.5 – Illustration of box lengths	145
Figure I.6 – Organization of the contents of a File Type box.....	147
Figure I.7 – Organization of the contents of a JP2 Header box.....	148
Figure I.8 – Organization of the contents of an Image Header box.....	148
Figure I.9 – Organization of the contents of a Bits Per Component box.....	151
Figure I.10 – Organization of the contents of a Colour Specification box	152

	<i>Page</i>
Figure I.11 – Organization of the contents of the Palette box	154
Figure I.12 – Organization of the contents of a Component Mapping box	155
Figure I.13 – Organization of the contents of a Channel Definition box.....	156
Figure I.14 – Organization of the contents of the Resolution box.....	158
Figure I.15 – Organization of the contents of the Capture Resolution box	159
Figure I.16 – Organization of the contents of the Default Display Resolution box.....	160
Figure I.17 – Organization of the contents of the Contiguous Codestream box.....	161
Figure I.18 – Organization of the contents of the XML box	162
Figure I.19 – Organization of the contents of the UUID box	162
Figure I.20 – Organization of the contents of a UUID Info box.....	162
Figure I.21 – Organization of the contents of a UUID List box	163
Figure I.22 – Organization of the contents of a Data Entry URL box	163
Figure J.1 – Initialization of the software-conventions decoder.....	165
Figure J.2 – Decoding an MPS or an LPS in the software-conventions decoder	166
Figure J.3 – Inserting a new byte into the C register in the software-conventions decoder.....	166
Figure J.4 – The FDWT_ROW procedure.....	172
Figure J.5 – The GET_ROW procedure	173
Figure J.6 – The INIT procedure	174
Figure J.7 – The START_VERT procedure	175
Figure J.8 – The RB_VERT_1 procedure	176
Figure J.9 – The RB_VERT_2 procedure	177
Figure J.10 – The END_1 procedure.....	178
Figure J.11 – The END_2 procedure.....	179
Figure J.12 – Illustration of code-block contributions to bit-stream layers	193
Figure J.13 – 4:2:2 format (co-sited).....	196
Figure J.14 – 4:2:2 format (centred).....	196
Figure J.15 – 4:2:0 format (co-sited).....	197
Figure J.16 – 4:2:0 format (centred).....	197
Figure J.17 – Distribution scenario for D-Cinema and live events.....	198
Figure J.18 – Sender and receiver sequence of operations	200
Figure J.19 – J2K codestream and network packets.....	201
Figure J.20 – Attribute numbering (Layer-Resolution).....	202
Figure J.21 – Attribute numbering (Resolution-Layer).....	202
Figure J.22 – Network packet and attribute number.....	203
Figure J.23 – Format of the header used for JPEG 2000 packetization.....	203
Figure J.24 – Attribute header value.....	204
Figure J.25 – Example of forwarding network packets.....	205
Figure J.26 – Packet forwarding in intermediate distributor	205
Figure J.27 – Packet forwarding ("Resolution-Layer" type)	206

Figure J.28 – Packet forwarding ("Layer-Resolution" type)	207
Figure J.29 – Experience of Campbell and Robson for the construction of the CSF: modulation of a sine-wave grating for luminance	208
Figure J.30 – CSF of luminance	209
Figure M.1 – Elementary stream structure for broadcast application profiles – boxes with dashed borders are optional	217
Figure M.2 – Frame Rate Coding box content	219
Figure M.3 – Maximum Bit Rate box content.....	219
Figure M.4 – Field Coding box content.....	219
Figure M.5 – Time Code box content.....	220
Figure M.6 – Broadcast Colour Specification box content.....	220
Figure M.7 – Mastering Display Metadata.....	221

INTERNATIONAL STANDARD ITU-T RECOMMENDATION

Information technology – JPEG 2000 image coding system: Core coding system

1 Scope

This Recommendation | International Standard defines a set of lossless (bit-preserving) and lossy compression methods for coding bi-level, continuous-tone grey-scale, palletized colour, or continuous-tone colour digital still images.

This Recommendation | International Standard:

- specifies decoding processes for converting compressed image data to reconstructed image data;
- specifies a codestream syntax containing information for interpreting the compressed image data;
- specifies a file format;
- provides guidance on encoding processes for converting source image data to compressed image data;
- provides guidance on how to implement these processes in practice.

NOTE – As this specification was first published as common text only after ISO/IEC JTC1 had approved the first edition in 2000, edition numbers in the ITU and ISO/IEC versions are offset by one. This is the fourth edition of ITU-T T.800 and the fifth edition of ISO/IEC 15444-1.

2 References

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- Recommendation ITU-T T.81 (1992) | ISO/IEC 10918-1:1994, *Information technology – Digital compression and coding of continuous-tone still images: Requirements and guidelines*.
- Recommendation ITU-T T.84 (1996) | ISO/IEC 10918-3:1997, *Information technology – Digital compression and coding of continuous-tone still images: Extensions*.
- Recommendation ITU-T T.84 (1996)/Amd.1 (1999) | ISO/IEC 10918-3:1997/Amd.1:1999, *Information technology – Digital compression and coding of continuous-tone still images: Extensions – Amendment 1: Provisions to allow registration of new compression types and versions in the SPIFF header*.
- Recommendation ITU-T T.86 (1998) | ISO/IEC 10918-4:1999, *Information technology – Digital compression and coding of continuous-tone still images: Registration of JPEG Profiles, SPIFF Profiles, SPIFF Tags, SPIFF colour Spaces, APPn Markers, SPIFF Compression types and Registration Authorities (REGAUT)*.
- Recommendation ITU-T T.87 (1998) | ISO/IEC 14495-1:2000, *Lossless and near-lossless compression of continuous-tone still images – Baseline*.
- Recommendation ITU-T T.88 (2000) | ISO/IEC 14492:2001, *Information technology – Lossy/lossless coding of bi-level images*.
- Recommendation ITU-T T.810 (2006) | ISO/IEC 15444-11:2007, *Information technology – JPEG 2000 image coding system: Wireless*.
- ISO/IEC 646:1991, *Information technology – ISO 7-bit coded character set for information interchange*.
- ISO 8859-15:1999, *Information technology – 8-bit single-byte coded graphic character sets – Part 15: Latin alphabet No. 9*.

2.2 Additional references

- Recommendation ITU-R BT.601 (latest), *Studio encoding parameters of digital television for standard 4:3 and wide screen 16:9 aspect ratios*.

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- Recommendation ITU-R BT.709 (latest), *Parameter values for the HDTV standards for production and international programme exchange.*
- IEC 61966-2-1:1999, *Multimedia systems and equipment – Colour measurement and management – Part 2-1: Colour management – Default RGB colour space – sRGB.*
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- ISO/CIE 11664-1: (latest), *Colorimetry – Part 1: CIE standard colorimetric observers.*
- ISO 15076-1: (latest), *Image technology colour management – Architecture, profile format and data structure – Part 1: Based on ICC.1:2010.*
- ISO 26428-1:2008, *Digital cinema (D-cinema) distribution master – Part 1: Image characteristics.*
- ISO/IEC 11578:1996, *Information technology – Open Systems Interconnection – Remote Procedure Call (RPC).*