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

**Part 2:  
Extensions**

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

*Partie 2: Extensions*





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## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted.

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This document was prepared by ITU-T (as ITU-T REC. T.803) 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 second edition cancels and replaces the first edition (ISO/IEC 15444-2:2004), which has been technically revised. It also incorporates the Amendments ISO/IEC 15444-2:2004/Amd 2:2006, ISO/IEC 15444-2:2004/Amd 3:2015 and ISO/IEC 15444-2:2004/Amd 4:2015 and the Technical Corrigenda ISO/IEC 15444-2:2004/Cor 3:2005 and ISO/IEC 15444-2:2004/Cor 4:2007.

The main changes are as follows:

- Annex N ("JPX file format extended metadata definition and syntax") is deprecated;
- the Registration Authority specified in M.7, which was never created or used, is cancelled;
- signalling for HTJ2K codestreams, as specified in Rec. ITU-T T.814 | ISO/IEC 15444-15, is added;
- the RLT marker segment is added;
- references have been revised to their currently in-force editions;
- signalling for codestreams that conform to ISO/IEC 21122-1 is added;
- parameterized colour space is added to the Colour Specification box;

## ISO/IEC 15444-2:2021(E)

- outstanding amendments and corrigenda are consolidated; and
- the definition of the CAP marker segment was moved to Rec. ITU-T T.800 (2019) | ISO/IEC 15444-1:2019.

A list of all parts in the ISO/IEC 15444 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html) and [www.iec.ch/national-committees](http://www.iec.ch/national-committees).

## CONTENTS

	<i>Page</i>	
1	Scope .....	1
2	Normative references.....	1
2.1	Identical Recommendations   International Standards.....	1
2.2	Paired Recommendations   International Standards .....	1
2.3	Additional references.....	2
3	Definitions.....	2
4	Abbreviations .....	4
5	Conventions .....	4
6	General description.....	4
6.1	Extensions specified by this Recommendation   International Standard .....	5
6.2	Relation between extensions .....	6
Annex A	– Compressed data syntax, extension .....	8
A.1	Extended capabilities .....	8
A.2	Extensions to Rec. ITU-T T.800   ISO/IEC 15444-1 marker segment parameters.....	8
A.3	Extended marker segments .....	14
Annex B	– Variable DC offset, extension .....	34
B.1	Variable DC offset flow.....	34
B.2	Inverse DC offset.....	34
B.3	Forward DC offset (informative) .....	34
Annex C	– Variable scalar quantization, extension .....	36
C.1	Variable scalar quantization.....	36
C.2	Variable scalar dequantization for irreversible filters .....	36
C.3	Variable scalar quantization for irreversible filters (informative).....	36
Annex D	– Trellis coded quantization extensions.....	38
D.1	Introduction to TCQ .....	38
D.2	Sequence definition .....	39
D.3	Forward TCQ quantization (informative).....	40
D.4	Inverse quantization (normative).....	41
D.5	Lagrangian rate allocation (informative) .....	44
Annex E	– Visual masking, extensions .....	49
E.1	Introduction to visual masking (informative) .....	49
E.2	Point-wise extended non-linearity (informative) .....	49
E.3	Decoding with visual masking .....	51
E.4	Encoding with visual masking (informative).....	52
E.5	Setting parameters (informative).....	52
E.6	Compatibility with other technologies (informative).....	52
Annex F	– Arbitrary decomposition of tile-components, extensions.....	53
F.1	Wavelet sub-bands.....	53
F.2	Equation, text and decomposition updates.....	54
F.3	Inverse discrete wavelet transformation for general decompositions .....	63
F.4	Forward discrete wavelet transformation for general decompositions (informative).....	70
Annex G	– Whole-sample symmetric transformation of images, extensions.....	77
G.1	Wavelet transformation parameters, definitions and normalizations .....	77
G.2	Whole-sample symmetric (WS) wavelet transformations reconstruction .....	77
G.3	Whole-sample symmetric (WS) wavelet transformation decomposition (informative) .....	80
G.4	Examples of WS wavelet transformations (informative) .....	82
Annex H	– Transformation of images using arbitrary wavelet transformations .....	85
H.1	Wavelet transformation parameters and normalizations .....	85
H.2	Arbitrary (ARB) wavelet transformation reconstruction procedures .....	86
H.3	Arbitrary (ARB) wavelet transformation decomposition procedures (informative).....	91
H.4	Examples of ARB wavelet transformations (informative) .....	94

Annex I – Single sample overlap discrete wavelet transform, extensions .....	98
I.1 Introduction to single sample overlapping.....	98
I.2 The code-block anchor points (CBAP) extension.....	98
I.3 The SSO extension .....	101
I.4 The TSSO extension.....	109
I.5 Combining the SSO and TSSO extensions (informative) .....	111
Annex J – Multiple component transformations, extension .....	112
J.1 Introduction to multiple component transformation concepts .....	112
J.2 Overview of inverse processing .....	112
J.3 Transformations.....	118
Annex K – Non-linear transformation.....	128
K.1 Signalling the use of the non-linear transformations.....	128
K.2 Non-linear transformation specifications.....	129
Annex L – Region of interest coding and extraction, extensions .....	133
L.1 Decoding of ROI .....	133
L.2 Description of the Scaling based method.....	133
L.3 Region of interest mask generation .....	134
L.4 Remarks on region of interest coding.....	138
Annex M – JPX extended file format syntax.....	139
M.1 File format scope .....	139
M.2 Introduction to JPX.....	139
M.3 Greyscale/Colour/Palette/multi-component specification architecture .....	142
M.4 Fragmenting the codestream between one or more files .....	143
M.5 Combining multiple codestreams.....	145
M.6 Using reader requirements masks to determine how a file can be used .....	149
M.7 Extensions to the JPX file format.....	156
M.8 Differences from the JP2 binary definition.....	157
M.9 Conformance .....	157
M.10 Key to graphical descriptions (informative) .....	161
M.11 Defined boxes.....	161
M.12 Dealing with unknown boxes.....	210
M.13 Using the JPX file format in conjunction with other multi-media standards (informative).....	211
M.14 Decomposing an XML document into multiple boxes.....	211
Annex N – JPX file format extended metadata definition and syntax .....	213
N.1 Introduction to extended metadata .....	213
N.2 Additional references for extended metadata.....	213
N.3 Scope of metadata definitions .....	213
N.4 Metadata syntax.....	214
N.5 Defined boxes.....	215
N.6 Metadata definitions .....	217
N.7 Fundamental type and element definitions .....	246
N.8 JPX extended metadata document type definition .....	264
N.9 JPX extended metadata XML Schema .....	275
Annex O – Examples and guidelines, extensions .....	293
O.1 Arbitrary decomposition examples.....	293
O.2 Odd Tile Low Pass First (OTLPF) convention.....	314
O.3 Multiple component collection example.....	315
O.4 Background to enhancement of quantization.....	325
O.5 Wrapping JPEG XR (Rec. ITU-T T.832   ISO/IEC 29199-2) Codestreams by the JPX file format ...	326
O.6 Representing floating point numbers within JPEG 2000.....	328
O.7 Working with ROI Description boxes.....	329

	<i>Page</i>
Annex P – Block coder extensions.....	331
P.1 Selective arithmetic coding bypass (lazy mode).....	331
P.2 Enhancement of selective arithmetic coding bypass (fast mode) .....	331
Bibliography .....	333

### List of Tables

Table A.1 – Syntax support for extensions.....	8
Table A.2 – Capability Rsiz parameter, extended.....	9
Table A.3 – Start of tile-part parameter values, extended .....	9
Table A.4 – Number of tile-parts, TNsot, parameter value, extended .....	9
Table A.5 – Coding style parameter values for the Scod parameter.....	10
Table A.6 – Coding style parameter values of the SGcod parameter .....	10
Table A.7 – Coding style parameter values of the SPcod and SPcoc parameters, extended.....	11
Table A.8 – Multiple component transformation for the SGcod parameters .....	11
Table A.9 – Decomposition for the SPcod and SPcoc parameters, extended .....	11
Table A.10 – Transformation for the SPcod and SPcoc parameters, extended .....	11
Table A.11 – SSO parameters, extended.....	12
Table A.11bis – SXcod parameter .....	12
Table A.12 – Quantization default values for the Sqcd, Sqcc, Sqpd, and Sqpc parameters, extended.....	13
Table A.13 – Quantization values (irreversible transformation only), extended.....	13
Table A.14 – SPqcd, SPqcc, SPqpd, and SPqpc parameters (irreversible transformation only), extended.....	13
Table A.15 – SPqcd, SPqcc, SPqpd, and SPqpc parameters (irreversible transformation only), extended .....	14
Table A.16 – Region-of-interest parameter values for the Srgn parameter.....	14
Table A.17 – Component index parameter value for the Crgn parameter .....	14
Table A.18 – Region-of-interest values from SPRgn parameter (Srgn = 1 or Srgn = 2) .....	14
Table A.19 – List of markers and marker segments .....	15
Table A.20 – Variable DC offset parameter values .....	16
Table A.21 – Variable DC offset parameter values for the Sdco parameter .....	16
Table A.22 – Visual masking parameter values .....	17
Table A.23 – Component parameter value for the Cvms parameter.....	17
Table A.24 – Visual masking for the Svms parameters .....	17
Table A.25 – Downsampling factor styles parameter values .....	18
Table A.26 – Arbitrary decomposition styles parameter values.....	19
Table A.27 – Arbitrary transformation parameter values.....	20
Table A.28 – Arbitrary transformation values for the Satk parameter.....	21
Table A.29 –Component bit depth definition parameter values .....	22
Table A.30 – Component bit depth definition values for the Ncbd parameter.....	22
Table A.31 – Component bit depth definition values for the BDcbd <sup>i</sup> parameter.....	22
Table A.32 – Multiple component transformation definition parameter values.....	23
Table A.33 – Multiple component transformation definition values for the Imct parameter.....	23
Table A.34 – Multiple component collection parameter values .....	25
Table A.35 – Multiple component collection values for the Xmcc <sup>i</sup> parameter.....	25
Table A.36 – Multiple component collection values for the Nmcc <sup>i</sup> parameter.....	25
Table A.37 – Multiple component collection values for the Mmcc <sup>i</sup> parameter .....	25

Table A.38 – Multiple component collection values for the $Tmcc^i$ parameter (array-based).....	26
Table A.39 – Multiple component collection values for the $Tmcc^i$ parameter (wavelet-based).....	26
Table A.40 – Multiple component intermediate collection parameter values.....	27
Table A.41 – Non-linearity transformation parameter values.....	28
Table A.42 – Non-linearity transformation parameter values for the $Cnlt$ parameter.....	28
Table A.43 – Decoded image component bit depth parameter values for the $BDnlt$ parameter.....	28
Table A.44 – Non-linearity transformation parameter values of the $Tnlt$ parameter.....	28
Table A.45 – Non-linearity transformation parameter values of the $STnlt$ parameter ( $Tnlt = 1$ ).....	29
Table A.46 – Non-linearity transformation parameter values of the $STnlt$ parameter ( $Tnlt = 2$ ).....	29
Table A.47 – Quantization default, precinct parameter values.....	30
Table A.48 – Quantization precinct component parameter values.....	32
Table A.49 – $Ccap^2$ syntax and semantics.....	32
Table A.50 – Precinct length, tile-part header parameter values.....	33
Table A.51 – $Srlt$ values and semantics.....	33
Table A.52 – Semantics of $Jrlt^i$ values when $Srlt$ is in the range $[0, 2^{31} - 1]$ .....	33
Table D.1 – Parent LUTs for $k > 0$ in the trellis of Figure D.3.....	41
Table D.2 – Description of functional blocks in Figure D.4.....	41
Table D.3 – Description of functional blocks in Figure D.5.....	42
Table D.4 – Look-up table for $A(s)$ .....	43
Table D.5 – Look-up table for $S(s, qk)$ .....	43
Table D.6 – Description of functional blocks for Figure D.6.....	44
Table D.7 – Sub-band statistics required for LRA.....	45
Table D.8 – $\rho_b$ parameters for TCQ.....	45
Table D.9 – $\Delta_b$ parameters for TCQ.....	45
Table D.10 – $\rho_b$ parameters for SQ.....	46
Table D.11 – $\Delta_b$ parameters for SQ.....	46
Table D.12 – Description of functional blocks in Figure D.7.....	48
Table F.1 – Updates to contexts for significance propagation and cleanup coding passes.....	55
Table F.2 – Quantities for sub-band info calculation.....	59
Table F.3 – $S(ab)$ and $J(ab)$ as a function of $d_S(i)$ .....	63
Table F.4 – $S(ab)$ and $J(ab)$ as a function of $d_R(i)$ .....	63
Table F.5 – Characteristics for sample wavelet decomposition in Figure F.14.....	64
Table G.1 – Parameters for wavelet transformations.....	77
Table G.2 – Parameters of the 5-3 reversible wavelet transformation.....	82
Table G.3 – Parameters of the 13-7 reversible wavelet transformation.....	83
Table G.4 – Parameters of the 5-3 irreversible wavelet transformation.....	83
Table G.5 – Parameters of the irreversible 7-5 wavelet transformation.....	84
Table G.6 – Parameters of the irreversible 9-7 wavelet transformation.....	84
Table H.1 – Additional parameters for arbitrary wavelet transformations.....	85
Table H.2 – Minimum left extension length.....	89
Table H.3 – Minimum right extension length.....	89
Table H.4 – Parameters of the reversible Haar 2-2 wavelet transformation.....	95
Table H.5 – Parameters of the reversible 2-6 wavelet transformation.....	95



Table H.6 – Parameters of the reversible 2-10 wavelet transformation .....	95
Table H.7 – Parameters of the irreversible 6-10 wavelet transformation.....	96
Table H.8 – Parameters of the irreversible 10-18 wavelet transformation.....	96
Table M.1 – Example expression .....	151
Table M.2 – Expanded expression .....	151
Table M.3 – Example factored expression .....	151
Table M.4 – Example of a Reader Requirements expressions for Equations M-6 and M-7 .....	153
Table M.5 – Example of a Reader Requirements box for Equations M-6 and M-7 .....	153
Table M.6 – Reader Requirements table for Equations M-10 and M-11 .....	154
Table M.7 – Reader Requirements box data for Equations M-10 and M-11 .....	154
Table M.8 – Reader Requirements box data for Equations M-16 and M-17 .....	155
Table M.9 – Example Reader Requirements box to test .....	155
Table M.11 – Items which can be extended through Recommendations   International Standards .....	156
Table M.12 – Items which can be extended by registration .....	157
Table M.13 – Boxes defined within this Recommendation   International Standard .....	163
Table M.14 – Legal values of the SF <sup>i</sup> field .....	165
Table M.15 – Format of the contents of the Reader Requirements box.....	167
Table M.16 – Format of the contents of the Data Reference box .....	168
Table M.17 – Format of the contents of the Fragment List box .....	169
Table M.18 – Format of the contents of the Cross-Reference box .....	170
Table M.19 – Legal C values .....	171
Table M.20 – BPC and BPC <sup>i</sup> parameters .....	172
Table M.21 – Format of the contents of the Image Header box .....	172
Table M.22 – Legal METH values.....	176
Table M.23 – Legal APPROX values .....	177
Table M.24 – Format of the contents of the Colour Specification box.....	177
Table M.24bis – Nominal maximum sample values.....	177
Table M.25 – Additional legal EnumCS values .....	178
Table M.26 – Format of the contents of the METHDAT field for the Enumerated method.....	179
Table M.27 – Format of the contents of the METHDAT field for the Any ICC method .....	180
Table M.28 – Format of the contents of the METHDAT field for the Vendor Colour method.....	180
Table M.28bis – Format of the METHDAT field for the Parameterized method .....	181
Table M.29 – Standard illuminant values for CIELab .....	182
Table M.30 – Format of the contents of the EP field for CIELab (EnumCS = 14).....	183
Table M.30bis – Default Offset Values and Encoding of Offsets for the CIEJab Colourspace.....	184
Table M.31 – Format of the contents of the EP field for CIEJab (EnumCS = 19).....	184
Table M.32 – Colours indicated by the Assoc <sup>i</sup> field .....	185
Table M.33 – Otyp field values .....	186
Table M.34 – Format of the contents of the Opacity box.....	186
Table M.35 – Format of the contents of the Codestream Registration box.....	188
Table M.35bis .....	189
Table M.35ter – Common floating point formats (informative).....	189
Table M.36 – Format of the contents of the Composition box.....	190
Table M.37 – Format of the contents of the Composition Options box.....	191
Table M.38 – Ityp field values .....	191

Table M.39 – Format of the contents of the Instruction Set box .....	192
Table M.40 – Format of the contents of the INST <sup>i</sup> parameter in the Instruction Set box.....	194
Table M.41 – Format of the contents of the Association box.....	196
Table M.42 – AN <sup>i</sup> field values.....	196
Table M.43 – Format of the contents of the Number List box .....	196
Table M.44 – Legal Filter types.....	197
Table M.45 – Format of the contents of the Binary Filter box .....	198
Table M.46 – Format of the contents of the Graphics Technology Standard Output box .....	199
Table M.47 – Legal R <sup>i</sup> values.....	199
Table M.48 – Allowed Rtyp <sup>i</sup> values.....	200
Table M.49 – Format of the contents of the ROI Description box .....	200
Table M.49bis – Interpreting the 2 bit D field of Rtyp <sup>i</sup> for quadrilateral refinements.....	201
Table M.50 – Legal Styp values .....	202
Table M.51 – Legal Ptyp values .....	203
Table M.52 – Format of the contents of the Digital Signature box .....	203
Table N.1 – Format of the contents of the Image Creation box.....	215
Table N.2 – Format of the contents of the Content Description box .....	216
Table N.3 – Format of the contents of the History box.....	216
Table N.4 – Format of the contents of the Intellectual Property Rights box.....	217
Table N.5 – Format of the contents of the Image Identifier box .....	217
Table N.6 – Image Source values.....	218
Table N.7 – Scene type values .....	218
Table N.8 – Sensor technology values .....	220
Table N.9 – Exposure program values .....	224
Table N.10 – Metering mode values .....	225
Table N.11 – Scene illuminant values.....	225
Table N.12 – Back light values.....	225
Table N.13 – Auto focus values.....	226
Table N.14 – Name description values.....	241
Table N.15 – Date description values.....	242
Table N.16 – Additional name description values .....	245
Table N.17 – Address component type values.....	249
Table N.18 – Address type values.....	250
Table N.19 – Phone number type values.....	250
Table N.20 – Name component type values .....	253
Table N.21 – Latitude reference values.....	258
Table N.22 – Latitude values .....	258
Table N.23 – Longitude reference values.....	258
Table N.24 – Longitude values.....	258
Table N.25 – GPS Status values .....	259
Table N.26 – GPS Measure mode values .....	259
Table N.27 – GPS Speed reference unit values .....	259
Table N.28 – Direction reference values.....	259
Table N.29 – GPS Destination distance reference unit values .....	260

	<i>Page</i>
Table O.1 – Sub-band labels for Figure O.15.....	298
Table O.2 – Mapping between ROT and SPATIAL_XFRM_SUBORDINATE .....	328
Table P.1 – Selective arithmetic coding bypass (default); (the same as Table D.9 of ITU-T T.800   ISO/IEC 15444-1).....	331
Table P.2 – Example of two bit planes (fast mode) .....	332

### List of Figures

Figure 6-1 – Decoder block diagram.....	7
Figure A.1bis – Coding style default syntax.....	10
Figure A.1 – Variable DC offset syntax .....	15
Figure A.2 – Visual masking syntax .....	16
Figure A.3 – Downsampling factor styles syntax .....	17
Figure A.4 – Arbitrary decomposition styles syntax.....	18
Figure A.5 – Arbitrary transformation default syntax.....	19
Figure A.6 – Component bit depth definition syntax.....	21
Figure A.7 – Multiple component transformation definition syntax .....	22
Figure A.8 – Multiple component collection syntax.....	24
Figure A.9 – Multiple component transform ordering syntax .....	26
Figure A.10 – Non-linearity point transformation syntax .....	27
Figure A.11 – Quantization default, precinct syntax.....	29
Figure A.12 – Quantization precinct component syntax .....	31
Figure A.13 – Precinct length, tile-part header syntax .....	32
Figure B.1 – Placement of the DC offset with multiple component transformation .....	34
Figure B.2 – Placement of the DC offset without multiple component transformation .....	34
Figure D.1 – Scalar quantizers used for TCQ.....	38
Figure D.2 – Union quantizers for TCQ.....	39
Figure D.3 – Trellis showing node indices.....	39
Figure D.4 – Forward TCQ processing .....	40
Figure D.5 – Full inverse processing for TCQ indices.....	42
Figure D.6 – Approximate dequantization of TCQ indices.....	44
Figure D.7 – Lagrangian rate allocation.....	47
Figure E.1 – System diagram for point-wise extended masking extension.....	49
Figure E.2 – Non-uniform quantization for self-contrast masking .....	50
Figure E.3 – Causal neighbourhood.....	51
Figure F.1 – Possible splits of sub-bands .....	54
Figure F.2 – Parameters for the GET_HOR_DEPTH and GET_VER_DEPTH procedures .....	55
Figure F.3 – The GET_HOR_DEPTH and GET_VER_DEPTH procedures .....	56
Figure F.4 – Parameters for the SET_SUBBAND_INFO procedure .....	57
Figure F.5 – The SET_SUBBAND_INFO procedure.....	57
Figure F.6 – Parameters for the RECUR_INFO procedure.....	58
Figure F.7 – The RECUR_INFO procedure.....	58
Figure F.8 – Parameters for the INIT_θ procedure.....	59
Figure F.9 – Procedure for setting maximum number of sub-levels, $\theta(lev)$ .....	60
Figure F.10 – Parameters for the INIT_S_R procedure .....	60
Figure F.11 – Upper level procedure for defining $S(ab)$ and $R(lev)$ .....	61

Figure F.12 – Parameters for the LEV_S procedure.....	62
Figure F.13 – Procedure for defining $S(ab)$ .....	62
Figure F.14 – Sample wavelet decomposition with labelled sub-bands .....	63
Figure F.15 – Parameters for the MOD_IDWT procedure.....	64
Figure F.16 – The MOD_IDWT procedure.....	65
Figure F.17 – Parameters for the MOD_2D_SR procedure .....	65
Figure F.18 – The MOD_2D_SR procedure .....	66
Figure F.19 – Parameters for the MOD_2D_INTERLEAVE procedure .....	66
Figure F.20 – The MOD_2D_INTERLEAVE procedure .....	67
Figure F.21 – Parameters for the 2D_HV_INTERLEAVE procedure .....	67
Figure F.22 – The 2D_HV_INTERLEAVE procedure.....	68
Figure F.23 – Parameters for the 2D_H_INTERLEAVE procedure .....	69
Figure F.24 – The 2D_H_INTERLEAVE procedure .....	69
Figure F.25 – Parameters for the 2D_V_INTERLEAVE procedure .....	70
Figure F.26 – The 2D_V_INTERLEAVE procedure .....	70
Figure F.27 – Parameters for the MOD_FDWT procedure.....	70
Figure F.28 – The MOD_FDWT procedure.....	71
Figure F.29 – Parameters for the MOD_2D_SD procedure .....	71
Figure F.30 – The MOD_2D_SD procedure .....	72
Figure F.31 – Parameters for the MOD_2D_DEINTERLEAVE procedure.....	72
Figure F.32 – The MOD_2D_DEINTERLEAVE procedure .....	73
Figure F.33 – Parameters for the 2D_HV_DEINTERLEAVE procedure .....	73
Figure F.34 – The 2D_HV_DEINTERLEAVE procedure.....	74
Figure F.35 – Parameters for the 2D_H_DEINTERLEAVE procedure .....	75
Figure F.36 – The 2D_H_DEINTERLEAVE procedure .....	75
Figure F.37 – Parameters for the 2D_V_DEINTERLEAVE procedure .....	75
Figure F.38 – The 2D_V_DEINTERLEAVE procedure .....	76
Figure G.1 – Parameters of the 1D_SR_WS procedures.....	78
Figure G.2 – The 1D_SR_WS procedure.....	79
Figure G.3 – Parameters of the 1D_FILTR_WS procedure .....	79
Figure G.4 – Parameters of the 1D_FILTR_WS procedure .....	80
Figure G.5 – Parameters of the 1D_SD_WS procedure.....	80
Figure G.6 – The 1D_SD_WS procedure.....	81
Figure G.7 – Parameters of the 1D_FILTD_WS procedure.....	81
Figure G.8 – Parameters of the 1D_FILTD_WS procedure.....	82
Figure H.1 – Parameters of the extended 1D_SR_ARB procedure .....	86
Figure H.2 – Extended procedure 1D_SR_ARB .....	87
Figure H.3 – Parameters of the 1D_SCALER procedure.....	87
Figure H.4 – Parameters of the 1D_STEPR procedure.....	88
Figure H.5 – Procedure 1D_STEPR.....	88
Figure H.6 – Parameters of the 1D_EXT_WS procedure .....	89
Figure H.7 – Parameters of the 1D_EXT_CON procedure .....	89
Figure H.8 – Parameters of the 1D_UPDATER_REV procedure .....	90
Figure H.9 – Parameters of the 1D_UPDATER_IRR procedure .....	90
Figure H.10 – Parameters of the extended 1D_SD_ARB procedure.....	91

Figure H.11 – Extended procedure 1D_SD_ARB .....	92
Figure H.12 – Parameters of the 1D_STEPD procedure.....	92
Figure H.13 – Procedure 1D_STEPD .....	93
Figure H.14 – Parameters of the 1D_UPDATED_REV procedure.....	93
Figure H.15 – Parameters of the 1D_UPDATED_IRR procedure .....	94
Figure H.16 – Parameters of the 1D_SCALED procedure.....	94
Figure H.17 – Lifting implementation for forward half-sample symmetric wavelet transformations.....	97
Figure I.1 – Precincts of one reduced resolution (modified Figure B.8 of Rec. ITU-T T.800 (2019/06)   ISO/IEC 15444-1:2019).....	98
Figure I.2 – Codeblocks and precincts in sub-band <i>b</i> from four different tiles.....	100
Figure I.3 – The IDWT_SSO Procedure .....	102
Figure I.4 – The 2D_SR_SSO procedure .....	103
Figure I.5 – Parameters of the 1D_FILTR_SSO procedure .....	103
Figure I.6 – The FDWT_SSO procedure.....	105
Figure I.7 – The 2D_SD_SSO procedure.....	106
Figure I.8 – Parameters of the 1D_FILTD_SSO procedure .....	107
Figure I.9 – Position of SSO blocks.....	108
Figure I.10 – Tiling of the reference grid diagram.....	110
Figure J.1 – Inverse multiple component transformation processing .....	113
Figure J.2 – Procedure MCO_TRANSFORM.....	114
Figure J.3 – A single multiple component collection transformation (MCC_TRANS) stage.....	115
Figure J.4 – Procedure MCC_TRANS.....	116
Figure J.5 – A single component collection transformation (CC_TRANS) stage.....	117
Figure J.6 – Procedure CC_TRANS .....	117
Figure J.7 – SERM implementation of reversible decorrelation transformation.....	121
Figure J.8 – SERM implementation of forward reversible decorrelation transformation.....	122
Figure J.9 – Irreversible dependency transformation.....	123
Figure J.10 – Forward irreversible dependency transformation .....	124
Figure J.11 – Reversible dependency transformation .....	125
Figure J.12 – Forward reversible dependency transformation.....	126
Figure K.1 – Non-linear transformation application during decoding.....	128
Figure K.2 – Example gamma-type forward non-linear transformation.....	130
Figure L.1 – Rectangular mask on the reference grid .....	135
Figure L.2 – Elliptic mask on the reference grid .....	135
Figure M.1 – Example fragmented JPX file where all fragments are in the same file .....	144
Figure M.2 – Example fragmented JPX file where some fragments are stored in other files or resources .....	145
Figure M.3 – Example combination of two codestreams into a single compositing layer .....	146
Figure M.4 – Example of the box description figures.....	161
Figure M.5 – Example of the superbox description figures .....	161
Figure M.6 – Boxes defined within a JPX file.....	162
Figure M.7 – Organization of the contents of the Reader Requirements box .....	165
Figure M.8 – Organization of the contents of a Data Reference box.....	168
Figure M.9 – Organization of the contents of a Fragment Table box.....	168
Figure M.10 – Organization of the contents of a Fragment List box.....	169
Figure M.11 – Organization of the contents of a Fragment table box .....	170

Figure M.12 – Organization of the contents of an Image Header box .....	171
Figure M.13 – Organization of the contents of a Codestream Header box .....	173
Figure M.14 – Organization of the contents of a Compositing Layer Header box.....	174
Figure M.15 – Organization of the contents of a Colour Group box .....	175
Figure M.16 – Organization of the contents of a Colour Specification box.....	176
Figure M.17 – Organization of the contents of the METHDAT field for the Enumerated method .....	178
Figure M.18 – Organization of the contents of the METHDAT field for the Any ICC method.....	180
Figure M.19 – Organization of the contents of the METHDAT field for the Vendor Colour method.....	180
Figure M.19bis – Organization of the METHDAT field for the Parameterized method.....	181
Figure M.20 – Organization of the contents of the EP field for the CIELab (EnumCS = 14) .....	181
Figure M.21 – Organization of the contents of the EP field for the CIEJab (EnumCS = 19) .....	183
Figure M.22 – Organization of the contents of an Opacity box .....	185
Figure M.23 – Organization of the contents of a Codestream Registration box .....	187
Figure M.23bis – Layout of the Pixel Format Box .....	188
Figure M.24 – Organization of the contents of a Composition box.....	190
Figure M.25 – Organization of the contents of a Composition Options box .....	191
Figure M.26 – Organization of the contents of an Instruction Set box .....	191
Figure M.27 – Organization of the contents of an INST field within an Instruction Set box .....	192
Figure M.28 – Example of ROI specific metadata associated with one or more images.....	195
Figure M.29 – Example of Multiple XML documents associated with one or more images.....	195
Figure M.30 – Example of a Labelled XML document .....	195
Figure M.31 – Example of a labelled image.....	195
Figure M.32 – Organization of the contents of an Association box .....	196
Figure M.33 – Organization of the contents of a Number List box .....	196
Figure M.34 – Organization of the contents of a Label box.....	197
Figure M.35 – Organization of the contents of a Binary Filter box.....	197
Figure M.36 – Organization of the contents of the Desired Reproductions box .....	198
Figure M.37 – Organization of the contents of the Graphics Technology Standard Output box .....	198
Figure M.38 – Organization of the contents of the ROI Description box .....	199
Figure M.39 – Organization of the contents of a Digital Signature box .....	202
Figure M.40 – Organization of the contents of a MPEG-7 Binary box .....	204
Figure N.1 – Organization of the contents of Image Creation box .....	215
Figure N.2 – Organization of the contents of Content Description box.....	216
Figure N.3 – Organization of the contents of History box .....	216
Figure N.4 – Organization of the contents of Intellectual Property Rights box .....	216
Figure N.5 – Organization of the contents of Image Identifier box.....	217
Figure N.6 – Schema of the Image Creation metadata.....	217
Figure N.7 – Schema of the General Creation Information metadata.....	218
Figure N.8 – Schema of the Camera Capture metadata .....	219
Figure N.9 – Schema of the Device Characterization metadata .....	220
Figure N.10 – Schema of the Spatial Frequency Response metadata .....	221
Figure N.11 – Schema of the Colour Filter Array Pattern metadata.....	222
Figure N.12 – Schema of the Opto-electronic Conversion Function metadata.....	222
Figure N.13 – Schema of the Camera Capture Settings metadata .....	223
Figure N.14 – Schema of the Scanner Capture metadata .....	226

	<i>Page</i>
Figure N.15 – Schema of the Scanner Settings metadata .....	227
Figure N.16 – Schema of the Software Creation metadata .....	227
Figure N.17 – Schema of the Captured Item metadata .....	227
Figure N.18 – Schema of the Reflection Print metadata .....	228
Figure N.19 – Schema of the Film metadata .....	229
Figure N.20 – Schema of the Content Description metadata .....	229
Figure N.21 – Schema of the Person Description metadata .....	230
Figure N.22 – Schema of the Thing Description metadata .....	231
Figure N.23 – Schema of the Organization Description metadata.....	231
Figure N.24 – Schema of the Event Description metadata.....	232
Figure N.25 – Schema of the Participant metadata.....	233
Figure N.26 – Schema of the Event Relationship metadata .....	233
Figure N.27 – Schema of the Audio metadata .....	234
Figure N.28 – Schema of the Property metadata .....	234
Figure N.29 – Schema of the Dictionary Definition metadata .....	235
Figure N.30 – Schema of the History metadata.....	235
Figure N.31 – Schema of the Processing Summary metadata.....	236
Figure N.32 – Schema of the Image Processing Hints metadata.....	237
Figure N.33 – Schema of the Previous metadata.....	238
Figure N.34 – Schema of the Image Reference metadata .....	238
Figure N.35 – Schema of the Intellectual Property Rights metadata .....	239
Figure N.36 – Schema of the IPR Names metadata.....	240
Figure N.37 – Schema of the IPR Description metadata.....	241
Figure N.38 – Schema of the IPR Dates metadata.....	242
Figure N.39 – Schema of the IPR Exploitation metadata.....	243
Figure N.40 – Schema of the IPR Management Systems metadata.....	243
Figure N.41 – Schema of the IPR Identification metadata.....	244
Figure N.42 – Schema of the IPR Identifier metadata .....	244
Figure N.43 – Schema of the License Plate metadata .....	244
Figure N.44 – Schema of the IPR Contact Point metadata.....	245
Figure N.45 – Schema of the Image Identifier metadata.....	246
Figure N.46 – Schema of the non-negative double type .....	246
Figure N.47 – Schema of the rational type.....	246
Figure N.48 – Schema of the string including language attribute type.....	246
Figure N.49 – Schema of the degree type.....	247
Figure N.50 – Schema of the half degree type.....	247
Figure N.51 – Schema of the double size type .....	247
Figure N.52 – Schema of the integer size type .....	247
Figure N.53 – Schema of the DateTime type .....	248
Figure N.54 – Schema of the Address type .....	249
Figure N.55 – Schema of the Phone number type .....	250
Figure N.56 – Schema of the Email address type .....	251
Figure N.57 – Schema of the Web address type .....	251
Figure N.58 – Schema of the Person type .....	252
Figure N.59 – Schema of the Organization type.....	253

Figure N.60 – Schema of the Location type .....	254
Figure N.61 – Schema of the Coordinate location element.....	255
Figure N.62 – Schema of the Raw GPS Information element.....	256
Figure N.63 – Schema of the Raw GPS Information element ( <i>continued</i> ) .....	257
Figure N.64 – Schema of the Raw GPS Information element ( <i>concluded</i> ).....	258
Figure N.65 – Schema of the Direction type .....	260
Figure N.66 – Schema of the Position type .....	261
Figure N.67 – Schema of the Point type.....	262
Figure N.68 – Schema of the Rect type.....	262
Figure N.69 – Schema of the Region type.....	263
Figure N.70 – Schema of the Product Details type .....	263
Figure N.71 – Schema of the Language attribute .....	264
Figure N.72 – Schema of the Timestamp attribute .....	264
Figure N.73 – Schema of the Comment element .....	264
Figure O.1 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	293
Figure O.2 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	293
Figure O.3 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	294
Figure O.4 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	294
Figure O.5 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	294
Figure O.6 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	294
Figure O.7 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	295
Figure O.8 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	295
Figure O.9 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	295
Figure O.10 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	295
Figure O.11 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	296
Figure O.12 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	296
Figure O.13 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	296
Figure O.14 – Sample wavelet decomposition: $N_L = 3; I_R = 3; d_R() = 123; I_\theta = 2, d_\theta() = 31; I_S = 9,$ $d_S() = 320300203$ .....	297
Figure O.15 – FBI decomposition: $N_L = 5; I_R = 0; d_R() = 0$ (since $I_R = 0, I_R$ and $d_R()$ get reset in Figure F.11 to $I_R = 5$ and $d_R() = 11111$ ); $I_\theta = 4, d_\theta() = 2321; I_S = 17, d_S() = 1110111111111111$ .....	297



Figure O.16 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	299
Figure O.17 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	300
Figure O.18 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	301
Figure O.19 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	302
Figure O.20 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	303
Figure O.21 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	304
Figure O.22 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	305
Figure O.23 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	306
Figure O.24 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	307
Figure O.25 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	308
Figure O.26 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	309
Figure O.27 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	310
Figure O.28 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	311
Figure O.29 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	312
Figure O.30 – FBI decomposition: $N_L = 5$ ; $I_R = 5$ and $d_R() = 11111$ ; $I_\theta = 4$ , $d_\theta() = 2321$ ; $I_S = 17$ , $d_S() = 1110111111111111$ .....	313
Figure O.31 – SPACL decomposition: $N_L = 4$ ; $I_\theta = 2$ , $d_\theta() = 21$ ; $I_R = 0$ , $I_S = 0$ .....	314
Figure O.32 – Component collection example .....	316
Figure O.33 – Original image components.....	316
Figure O.34 – Encoder multiple component transform decisions.....	317
Figure O.35 – Decorrelation transformation array (MCC <sub>0</sub> component collection 0 parameters).....	318
Figure O.36 – Dependency transformation (MCC <sub>0</sub> component collection 1 parameters).....	318
Figure O.37 – Passing through intermediate components (MCC <sub>0</sub> component collection 2 parameters).....	318
Figure O.38 – Component collections in MCC <sub>0</sub> , transformation processing stage 0.....	319
Figure O.39 – Decorrelation transformation array (MCC <sub>1</sub> component collection 0 parameters).....	319
Figure O.40 – MCC <sub>1</sub> component collection 1 (7 components passed through).....	320
Figure O.41 – Component collections in MCC <sub>1</sub> , transformation processing stage 1.....	320
Figure O.42 – MCO marker segment for inverse multiple component transformation.....	320

## Introduction

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

This Recommendation | International Standard:

- specifies extended decoding processes for converting compressed image data to reconstructed image data;
- specifies an extended codestream syntax containing information for interpreting the compressed image data;
- specifies an extended file format;
- specifies a container to store image metadata;
- defines a standard set of image metadata;
- provides guidance on extended encoding processes for converting source image data to compressed image data;
- provides guidance on how to implement these processes in practice.

**INTERNATIONAL STANDARD  
ITU-T RECOMMENDATION**

**Information technology –  
JPEG 2000 image coding system – Extensions**

## 1 Scope

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## 2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. 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.82 (1993) | ISO/IEC 11544:1993, *Information technology – Coded representation of picture and audio information – Progressive bi-level image compression*.
- Recommendation ITU-T T.84 (1996) | ISO/IEC 10918-3:1997, *Information technology – Digital compression and coding of continuous-tone still images: Extensions.*, including Rec. 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.800 (2019) | ISO/IEC 15444-1:2019, *Information technology – JPEG 2000 image coding system: Core coding system*.
- Recommendation ITU-T T.805 | ISO/IEC 15444-6, *Information technology – JPEG 2000 image coding system – Part 6: Compound image file format*.
- Recommendation ITU-T T.814 (2019) | ISO/IEC 15444-15:2019, *Information technology – JPEG 2000 image coding system: High-throughput JPEG 2000*.
- Recommendation ITU-T T.832 (2019) | ISO/IEC 29199-2:2020, *Information technology – JPEG XR image coding system – Image coding specification*.

### 2.2 Paired Recommendations | International Standards

- Recommendation ITU-T H.273 (in force), *Coding-independent code points for video signal type identification*.

- ISO/IEC 23001-8: (in force), *Information technology – MPEG systems technologies – Part 8: Coding-independent code points.*

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- Recommendation ITU-T T.45 (2000), *Run-length Colour Encoding.*
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- ISO/IEC 21122-1:2019, *Information technology – JPEG XS low-latency lightweight image coding system – Part 1: Core coding system.*
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<https://www.w3.org/TR/xmlschema-1/>
- W3C Recommendation. *XML Schema Part 2: Datatypes* second edition (28 October 2004).  
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