

ISO/IEC 14492:2019-03 (E)

Information technology - Lossy/lossless coding of bi-level images

Contents

Page

0	Introduction	v
0.1	Interpretation and use of the requirements	v
0.2	Lossy coding	ix
1	Scope	1
2	Normative references	1
3	Definitions	1
4	Symbols and abbreviations	3
4.1	Abbreviations	3
4.2	Symbol definitions	4
4.3	Operator definitions	11
5	Conventions	11
5.1	Typographic conventions	11
5.2	Binary notation	11
5.3	Hexadecimal notation	11
5.4	Integer value syntax	11
5.5	Array notation and conventions	12
5.6	Image and bitmap conventions	12
6	Decoding Procedures	13
6.1	Introduction to decoding procedures	13
6.2	Generic region decoding procedure	14
6.3	Generic Refinement Region Decoding Procedure	21
6.4	Text Region Decoding Procedure	25
6.5	Symbol Dictionary Decoding Procedure	33
6.6	Halftone Region Decoding Procedure	41
6.7	Pattern Dictionary Decoding Procedure	44
6.8	Colour palette decoding procedure	46
7	Control Decoding Procedure	47
7.1	General description	47
7.2	Segment header syntax	48
7.3	Segment types	52
7.4	Segment syntaxes	54
8	Page Make-up	82
8.1	Decoder model	82
8.2	Page image composition	83
9	Encoding procedures (informative)	85
10	Control encoding procedures (informative)	85
11	Page break-up (informative)	85
11.1	Page break-up architecture	86
11.2	Page image decomposition	86
11.3	Multi-page document composition	88
Annex A	Arithmetic integer decoding procedure	89
A.1	General description	89
A.2	Procedure for decoding values (except IAID)	89
A.3	The IAID decoding procedure	91
Annex B	Huffman table decoding procedure	93
B.1	General description	93
B.2	Code table structure	93
B.3	Assigning the prefix codes	94
B.4	Using a Huffman table	95
B.5	Standard Huffman tables	96

Annex C – Gray-scale image decoding procedure.....	103
C.1 General description	103
C.2 Input parameters.....	103
C.3 Return value.....	103
C.4 Variables used in decoding	103
C.5 Decoding the gray-scale image	103
Annex D – File formats	105
D.1 Sequential organization.....	105
D.2 Random-access organization.....	105
D.3 Embedded organization	106
D.4 File header syntax	106
Annex E – Arithmetic coding	108
E.1 Binary encoding.....	108
E.2 Description of the arithmetic encoder	109
E.3 Arithmetic decoding procedure.....	116
Annex F – Profiles	124
Annex G – Arithmetic decoding procedure (software conventions).....	127
Annex H – Datastream example and test sequence	129
H.1 Datastream example.....	129
H.2 Test sequence for arithmetic coder	150
Annex I – Patents.....	156
I.1 List of patents.....	156
I.2 Contact addresses for patent information.....	157
Annex J – Compliant example encoding methods.....	158
J.1 List of JBIG2 encoding components and corresponding algorithms	158
J.2 Method references.....	159
Annex K – Electronic conformance data and sample software	161
K.1 Attached electronic data (informative).....	161
K.2 Working environments of the released sample software (informative)	162
K.3 How to use the sample software (informative)	162
Bibliography	165