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Information technology — JPEG 2000 image coding system: Extensions

Technologies de l'information — Système de codage d'image JPEG 2000: Extensions

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 15444-2:2004 was prepared jointly by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*, in collaboration with ITU-T. The identical text is published as ITU-T Rec. T.801.

ISO/IEC 15444 consists of the following parts, under the general title *Information technology — JPEG 2000 image coding system*:

— *Part 1: Core coding system*

— *Part 2: Extensions*

— *Part 3: Motion JPEG 2000*

— *Part 4: Conformance testing*

— *Part 5: Reference software*

— *Part 6: Compound image file format*

— *Part 9: Interactivity tools, APIs and protocols*

— *Part 12: ISO base media file format*

The following parts are under preparation:

— *Part 8: Secure JPEG 2000*

— *Part 10: Extensions for theree-dimensional data and floating point data*

— *Part 11: Wireless JPEG 2000*

INTERNATIONAL STANDARD
ITU-T RECOMMENDATION

Information technology – JPEG 2000 image coding system: Extensions

1 Scope

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.

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

- ITU-T Recommendation T.81 (1992) | ISO/IEC 10918-1:1994, *Information technology – Digital compression and coding of continuous-tone still images: Requirements and guidelines.*
- ITU-T Recommendation T.82 (1993) | ISO/IEC 11544:1993, *Information technology – Coded representation of picture and audio information – Progressive bi-level image compression.*
- ITU-T Recommendation T.83 (1994) | ISO/IEC 10918-2:1995, *Information technology – Digital compression and coding of continuous-tone still images: Compliance testing.*
- ITU-T Recommendation T.84 (1996) | ISO/IEC 10918-3:1997, *Information technology – Digital compression and coding of continuous-tone still images: Extensions.*
- ITU-T Recommendation 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.*
- ITU-T Recommendation 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).*
- ITU-T Recommendation T.87 (1998) | ISO/IEC 14495-1:2000, *Information technology – Lossless and near-lossless compression of continuous-tone still images – Baseline.*

- ITU-T Recommendation T.88 (2000) | ISO/IEC 14492:2001, *Information technology – Lossy/lossless coding of bi-level images.*
- ITU-T Recommendation T.800 (2002) | ISO/IEC 15444-1:2003, *Information technology – JPEG 2000 image coding system: Core coding system.*

2.2 Additional references

- ITU-T Recommendation T.42 (1996), *Continuous-tone colour representation method for facsimile.*
- ISO/IEC 8859-1:1998, *Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1.*
- ISO 8601:2000, *Data elements and interchange formats – Information interchange – Representation of dates and times.*
- ISO 3166-1:1997, *Codes for the representation of names of countries and their subdivisions – Part 1: Country codes.*
- ISO 3166-2:1998, *Codes for the representation of names of countries and their subdivisions – Part 2: Country subdivision code.*
- ISO/IEC 11578:1996, *Information technology – Open Systems Interconnection – Remote Procedure Call (RPC).*
- ISO/IEC 646:1991, *Information technology – ISO 7-bit coded character set for information interchange.*
- ISO 5807:1985, *Information processing – Documentation symbols and conventions for data, program and system flowcharts, program network charts and system resources charts.*
- ISO/IEC 15938, *MPEG-7.*
- ISO 10126-2:1991, *Banking – Procedures for message encipherment (wholesale) – Part 2: DEA algorithm.*
- IEEE Standard 754-1985 R1990, *IEEE Standard for Binary Floating-Point Arithmetic.*
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- IETF RFC 1766 (1995), *Tags for the Identification of Languages.*
- IETF RFC 2279 (1998), *UTF-8, A transformation format of ISO 10646.*
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- PIMA 7666, *Photography-Electronics still picture imaging-Reference Output Medium Metric RGB Color encoding: ROMM-RGB.*
- PIMA 7667:2001, *Photography-Electronics still picture imaging-Extended sRGB color encoding e-sRGB.*
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- W3C. XML Schema Part 1: Structures, Rec-xmlschema-1-20010502, <http://www.w3.org/TR/xmlschema-1>.
- W3C. XML Schema Part 2: Datatypes, Rec-xmlschema-2-20010502, <http://www.w3.org/TR/xmlschema-2>.