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Information technology — JPEG 2000 image coding system: Motion JPEG 2000

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

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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 involve the use of a patent, as indicated in Annex H.

ISO/IEC 15444-3 was prepared 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.802.

This second edition cancels and replaces the first edition (ISO/IEC 15444-3:2002), which has been technically revised. It also incorporates the amendment ISO/IEC 15444-3:2002/Amd.2:2003.

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 8: Secure JPEG 2000*
- *Part 9: Interactivity tools, APIs and protocols*
- *Part 10: Extensions for three-dimensional data*
- *Part 11: Wireless*
- *Part 12: ISO base media file format*

The following part is under preparation:

- *Part 13: An entry level JPEG 2000 encoder*

Introduction

This Recommendation | International Standard is the consequent revision of the Motion JPEG 2000 specification, based on the common text of the MP4 and MJ2 formats, which is called the ISO Base Media File Format.

This Recommendation | International Standard specifies the use of the wavelet-based JPEG 2000 codec for the coding and display of timed sequences of images. It has been defined by ISO/IEC JTC 1/SC 29/WG 1 as Part 3 of the JPEG 2000 International Standard. In this Recommendation | International Standard, a file format is defined, and guidelines for the use of the JPEG 2000 codec for timed sequences are supplied. The Motion JPEG 2000 file format MJ2 is designed to contain one or more motion sequences of JPEG 2000 images, with their timing, and also optional audio annotations, all composed into an overall presentation.

To promote interoperability between MJ2 encoders and decoders and to test these systems for compliance to this Recommendation | International Standard, a framework of compliance testing is provided. Compliance testing is the testing of a candidate product for the existence of specific characteristics required by a standard. It involves testing the capabilities of an implementation against both the compliance requirements in the relevant standard and the statement of the implementation's capability.

Motion JPEG 2000 is expected to be used in a variety of applications, particularly where the codec is already available for other reasons, or where the high-quality frame-based approach, with no inter-frame coding, is appropriate. These application areas include:

- digital still cameras;
- error-prone environments such as wireless and the Internet;
- PC-based video capturing;
- high-quality digital video recording for professional broadcasting and motion picture production from film-based to digital systems; and
- high-resolution medical and satellite imaging.

Motion JPEG 2000 is a flexible format, permitting a wide variety of usages, such as editing, display, interchange, and streaming.