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

**Part 3:
Motion JPEG 2000**

**AMENDMENT 2: Motion JPEG 2000
derived from ISO base media file format**

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

Partie 3: Motion JPEG 2000

*AMENDEMENT 2: Motion JPEG 2000 dérivée du format de fichier de
média de base de l'ISO*



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Contents

Page

Foreword.....	iv
Introduction	v
1 Scope.....	1
2 Normative references	1
3 Terms and definitions.....	1
4 Compatibility and Technology derivation	2
4.1 Family Members	2
4.2 ISO Media file Inheritance and Compatibility	2
4.3 JP2 Inheritance and Compatibility	2
4.4 Conformance	2
4.5 Profiles and Levels	3
4.6 Visual Composition.....	3
4.7 Box Order.....	5
5 File Identification.....	5
6 Required Additions	5
6.1 Sample Description Box.....	5
7 Template Fields Used	7
Annex A (normative) File and Codestream profiles.....	9
A.1 Profile Introduction	9
A.2 Motion JPEG 2000 Simple Profile.....	9
Annex B (informative) Guidelines for use of the JPEG 2000 Codec	10
B.1 Introduction	10
B.2 Frequency Weighting for Motion Sequences.....	10
B.3 Encoder sub-sampling of components	11
Annex C (informative) Indicating Sub-sampling Chroma Offset	12
Annex D (informative) Field Structures for Interlace	14
Bibliography.....	17

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.

Amendment 2 to ISO/IEC 15444-3:2002 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

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Introduction

This document 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; it will be consolidated subsequently into a new edition of ISO/IEC 15444-3:2002.

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1 Scope

This Amendment specifies the use of the wavelet-based JPEG 2000 codec for the coding and display of timed sequences of images (motion sequences), possibly combined with audio, and composed into an overall presentation. In this specification, a file format is defined, and guidelines for the use of the JPEG 2000 codec for motion sequences are supplied.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 639-2:1998, *Codes for the representation of names of languages — Part 2: Alpha-3 code*

ISO/IEC 14496-1:2001, *Information technology — Coding of audio-visual objects — Part 1: Systems* [particularly the syntax description language (SDL), clause 14]

ISO/IEC 15444-12, *Information technology — JPEG 2000 image coding system — Part 12: ISO base media file format* (technically identical to ISO/IEC 14496-12)

ITU-T Rec.T.800 | ISO/IEC 15444-1, *Information technology — JPEG 2000 image coding system: Core coding system*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

motion sequence

timed sequence of JPEG 2000 images

4 Compatibility and Technology derivation

4.1 Family Members

This is a stand-alone specification; it defines the file format for MJ2. However, it stands as a member of a family of specifications with common formatting.

The other family members include:

- The JPEG 2000 single image format, JP2.
- The ISO Base Media File Format, on which the MP4 format is based.
- The QuickTime file format, on which the ISO Base Media format is based.

These specifications share a common definition for the structure of a file (a sequence of objects, called boxes here and atoms in QuickTime), and a common definition of the general structure of an object (the size and type).

All these specifications require that readers ignore objects that are unrecognizable to them.

This specification takes precedence over those from which it inherits, in any case where there are differences or conflicts; however no such conflicts are known to exist.

4.2 ISO Media file Inheritance and Compatibility

The Motion JPEG 2000 file format is defined as derived from the ISO Base Media file format. Notwithstanding anything in that base specification, hint tracks are not a normative part of this specification. Sections 7 (Streaming Support) and 10 (RTP Hint Track Format), though compatible with this specification, do not form normative parts of this specification. They may be used as a compatible, optional, extension, but are not required for compatibility with this specification. There may be license implications in the use of this or other compatible extensions to this format.

4.3 JP2 Inheritance and Compatibility

The still image format, JP2, defines a number of boxes. The signature box from that specification shall be present. If the JP2 specification requires a particular position (e.g. first in the file), that positioning shall be followed here.

It is permissible under this specification to make a file that adheres to both this specification and the JP2 specification. In that case:

- 1) The compatibility list shall include all the compatible brands.
- 2) The objects (boxes or atoms) required by the JP2 specification shall also be present.
- 3) The objects (boxes or atoms) optional in the JP2 specification may also be present.

A still image reader, reading a file which contains both a presentation (conformant to this specification) and a still image, would 'see' only the still image. Likewise a motion reader would 'see' only the presentation. A more powerful reader may display both, or offer the user a choice.

The JP2 specification includes an optional IPR (Intellectual Property Rights) box which is therefore also optional in this specification. Among other issues this addresses unique identification and protection of content.

4.4 Conformance

Implementations of Motion JPEG 2000 decoders shall support JPEG 2000 image sequences, as well as raw and twos-complement audio if audio output is available. They may also support compressed audio, using MP4 formats, or other track types from MPEG-4. The support of such MPEG-4 tracks is not required; however,