



**International  
Standard**

**ISO/IEC 19566-10**

**Information technology — JPEG  
Systems —**

**Part 10:  
Reference software**

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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. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives) or [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs)).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

A list of all parts in the ISO 19566 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).

## Introduction

The JPEG Universal Metadata Box Format (JUMBF) provides a mechanism to embed and refer generic metadata in JPEG files. Specific content types can be assigned to identify the specific type of the embedded metadata.

This document describes a reference software implementation that handles JUMBF data according to the Content Types specified in ISO/IEC 19566-5. Initially, the JUMBF reference dataset is presented, consisting of standalone JUMBF files as well as JPEG-1 encoded images. In addition, the respective validation procedure is specified which enables the validation of candidate implementations of ISO/IEC 19566-5. Finally, a detailed analysis of the Java reference implementation of ISO/IEC 19566-5 is presented, demonstrating the software design which is followed to support the JUMBF data model.



# Information technology — JPEG Systems —

## Part 10: Reference software

### 1 Scope

This document specifies a reference software implementation of ISO/IEC 19566-5. The reference software is accompanied with a reference dataset which provides an extensive list of the various JUMBF data structures specified in ISO/IEC 19566-5.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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/IEC 19566-5, *Information technologies — JPEG systems — Part 5: JPEG universal metadata box format (JUMBF)*

### 3 Terms, definitions and abbreviated terms

#### 3.1 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org>

##### 3.1.1

##### **codestream**

compressed image data representation that includes all necessary data to allow a (full or approximate) reconstruction of the sample values of a digital image

#### 3.2 Abbreviated terms

APP11	application marker 11: JPEG XT extension marker
CBOR	concise binary object representation
CLI	command line interface
CSV	comma separated values
GUI	graphical user interface
IoC	inversion of controls
ISOBMFF	ISO base media file format