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Date: 07 April 2025

Origin: International

Latest date for receipt of comments: 31 May 2025

Project No. 2025/00410

Responsible committee: IST/37 Coding of picture, audio, multimedia and hypermedia information

Interested committees:

Title: BS ISO/IEC 18181-2 Draft Information technology. JPEG XL image coding system. Part 2: File format.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/IEC DIS 18181-2

Information technology — JPEG XL image coding system —

Part 2: File format

*Technologies de l'information - Système de codage d'images JPEG
XL —*

Partie 2: Format de fichiers

ICS: 35.040.30

ISO/IEC JTC 1/SC 29

Secretariat: JISC

Voting begins on:
2025-04-07

Voting terminates on:
2025-06-30

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Reference number
ISO/IEC DIS 18181-2:2025(en)

Full document details: 25/30509805 DC



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Published in Switzerland

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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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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*.

This third edition cancels and replaces the second edition (ISO/IEC 18181-2:2024), which has been technically revised.

The main changes are as follows:

- [9.11](#) was added, specifying a new HDR gain map box.
- An informative note was added related to the combination of JUMBF and Brotli compression.
- Clarifications were added to [Annex A](#) (JPEG bitstream reconstruction procedure).

A list of all parts in the ISO/IEC 18181 series can be found on the ISO website.

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.

Information technology — JPEG XL image coding system —

Part 2: File format

1 Scope

This document specifies the transport and container formats for JPEG XL codestreams as specified in ISO/IEC 18181-1:2024. This document specifies how to add metadata and extensions to JPEG XL codestreams. A file as described by this document is called a JPEG XL file.

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 18181-1:2024, *Information technology — JPEG XL image coding system — Part 1: Core coding system*

ISO/IEC 10918-1:1994, *Information technology — Digital compression and coding of continuous-tone still images: Requirements and guidelines*

ISO/IEC 19566-5, *Information technologies — JPEG systems — Part 5: JPEG universal metadata box format (JUMBF)*

IETF RFC 7932, J. ALAKUIJALA, & Z. SZABADKA. *Brotli Compressed Data Format. RFC Series*¹⁾

ISO 21496-1, *Digital Photography — Gain map metadata for image conversion — Part 1: Dynamic Range Conversion*

3 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 alternate image

image reconstructed from the baseline image and the information in the HDR gain map box

3.2 baseline image

image decoded from the primary JPEG XL codestream contained in a JPEG XL file, ignoring the information in the HDR gain map box

3.3 box

structured collection of data describing the image or the image decoding process

1) <https://www.rfc-editor.org/info/rfc7932>.

3.4

box content

data wrapped within the box structure

3.5

box type

kind of information stored within the box

3.6

file format

set of data structures for the storage of metadata and extensions of a codestream

3.7

JPEG XL file

data file encoded in the file format defined by this document

3.8

superbox

box that carries other boxes as payload data

4 General

This document defines the file format of a JPEG XL file.

A JPEG XL file shall contain a codestream as specified in ISO/IEC 18181-1:2024, and may contain additional metadata and extensions.

A JPEG XL file shall come in one of the following forms:

- A box structure, as defined in [Clause 5](#).
- A direct JPEG XL codestream without box structure

The rest of this document only defines the box structure, the codestream without box structure is valid but is completely specified in ISO/IEC 18181-1:2024.

A decoder shall require the file format to follow either the structure of a codestream without box structure, or follow the box structure as defined in [Clause 5](#) and follow all box requirements in [Clauses 6](#) to [9](#). A decoder can extract the codestream from the box structure and decode the image from the codestream using the procedure specified in ISO/IEC 18181-1:2024, and can decode the contents of other boxes following their respective specifications in this document.

NOTE A direct JPEG XL codestream without box structure is also a valid JPEG XL file. This allows, for example, a more efficient encoding of images for the web, in cases where information encoded in other boxes than the codestream is not required.

5 File organization

A JPEG XL file using the box structure is formed as a series of boxes. These boxes contain all data within the file, including the initial signature required by the file format.

NOTE This box-based file format is based on the same syntax as described in ISO/IEC 15444-1:2024, Annex I or ISO/IEC 15444-2:2023, Annex M, or ISO/IEC 21122-3. The binary format of a box is also described in [Clause 8](#).

Boxes of different types contain different types of data, such as the file signature, metadata and the codestream. [Clause 9](#) defines box types that may appear in a JPEG XL file and their requirements. Boxes with an unrecognized type shall be ignored and skipped by the decoder.

A JPEG XL file shall contain a JPEG XL codestream. The codestream can be split across multiple boxes: JPEG XL partial codestream boxes. In this case, the codestream is formed by the concatenation of the content of all those boxes.