

First edition  
2022-03

AMENDMENT 1  
2022-06

---

---

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

**Part 1:  
Core coding system**

**AMENDMENT 1: Profiles and levels for  
JPEG XL image coding system**

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

*Partie 1: Système de codage de noyau*

*AMENDEMENT 1: Profils et niveaux pour le système de codage  
d'images JPEG XL*



Reference number  
ISO/IEC 18181-1:2022/Amd. 1:2022(E)

© ISO/IEC 2022



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

## 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](http://www.iso.org/directives) or [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs)).

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](http://www.iso.org/patents)) or the IEC list of patent declarations received (see <https://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](http://www.iso.org/iso/foreword.html). In the IEC, see [www.iec.ch/understanding-standards](http://www.iec.ch/understanding-standards).

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/IEC 18181 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).

STANDARDSISO.COM : Click to view the full PDF of ISO/IEC 18181-1:2022/AMD1:2022

# Information technology — JPEG XL image coding system —

## Part 1: Core coding system

### AMENDMENT 1: Profiles and levels for JPEG XL image coding system

#### *Clause 8*

Replace the following sentence:

“Annexes A to L are normative in the sense that they are defining an output that alternative implementations shall duplicate.”

by:

“Annexes A to L and Annex N are normative in the sense that they are defining an output that alternative implementations shall duplicate.”

#### *Annex N*

Add the following annex after Annex M, before the Bibliography.

## Annex N (normative)

### Profiles and levels

To promote interoperability, a single profile, named "Main" profile, is defined. This profile is intended for use (among others) in mobile phones, web browsers and image editors. It includes all of the coding tools in this document.

The Main profile has two levels. Level 5 is suitable for end-user image delivery, including web browsers and mobile apps. Level 10 corresponds to a broad range of use cases such as image authoring workflows, print, scientific applications, satellite imagery, etc.

Levels are defined in such a way that if a decoder supports level  $N$ , it will also support lower levels.

Unless signalled otherwise, a JPEG XL codestream is assumed to conform to the Main profile, level 5.

The levels define thresholds for the following parameters, which are specified in Table N.1:

- `width` and `height` are the largest permissible dimensions (horizontally and vertically, respectively) of the image and its frames, in pixels.
- `output_size` is the largest size in bytes of the ICC profile (Annex B).
- `bits_per_sample` is the largest value of `bits_per_sample` in any of the channels.
- `num_splines` and `num_patches` are limits on the number of splines and patches (respectively) which are overlaid on a frame (Annex K).
- `nb_transforms` is the largest number of modular transforms for any group (including transforms in the GlobalModular section).
- `nb_channels` is the maximum number of modular channels (initially, before taking transforms into account).
- `nb_channels_tr` is the maximum number of modular channels that is derived from the channel initialization and the series of transforms, as described in C.9.2.
- `max_tree_depth` is the maximum tree depth (maximum distance from root to any leaf node) of the MA trees that are used in modular encoding; see D.7.3.
- Minimum non-zero frame duration shall be interpreted as follows: if the frame duration is above this threshold, the decoder shall make the best effort to respect the value; if the frame duration is below this threshold (but not zero), the decoder is allowed to behave as if the frame duration is equal to this threshold.