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Information technology — JPEG XL image coding system —

Part 1: Core coding system

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

Partie 1: Système de codage de noyau

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Foreword

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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.

This second edition cancels and replaces the first edition (ISO/IEC 18181-1:2022), which has been technically and editorially revised. It also incorporates the Amendment ISO/IEC 18181-1:2022/Amd 1:2022.

The main changes are as follows:

— technical corrections and clarifications, in particular to correct the values of various constants, correct errors in pseudocode, and clarify ambiguities in order to remove discrepancies between this document and ISO/IEC 18181-3 and ISO/IEC 18181-4;

— a thorough update of the document structure in order to improve clarity of presentation and to obtain a more logical ordering of the material from the point of view of decoder implementation.

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 and www.iec.ch/national-committees.

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Information technology — JPEG XL image coding system —

Part 1:
Core coding system

1 Scope

This document specifies a set of compression methods for coding one or more images of bi-level, continuous-tone greyscale, or continuous-tone colour, or multichannel digital samples.

This document:

— specifies decoding processes for converting compressed image data to reconstructed image data;

— specifies a codestream syntax containing information for interpreting the compressed image data;

— provides guidance on encoding processes for converting source image data to compressed image data.

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 15076-1, *Image technology colour management — Architecture, profile format and data structure — Part 2: Based on ICC.1:2022*

ISO/IEC 60559, *Information technology — Microprocessor Systems — Floating-Point arithmetic*

IEC 61966-2-1, *Multimedia systems and equipment — Colour measurement and management — Part 2-1: Colour management — Default RGB colour space — sRGB*

ITU-R BT.2100-2, *Image parameter values for high dynamic range television for use in production and international programme exchange*

ITU-R BT.709-6, *Parameter values for the HDTV standards for production and international programme exchange*

IETF RFC 7932:2016, *Brotli Compressed Data Format*

SMPTE ST 428-1, *D-Cinema Distribution Master — Image Characteristics*

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

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