International Standard

ISO/IEC 21122-3

Information technology — JPEG XS low-latency lightweight image coding system —

Part 3: Transport and container formats

Third edition
2024-08

Reference number
ISO/IEC 21122-3:2024(en)

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Published in Switzerland

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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 third edition cancels and replaces the second edition (ISO/IEC 21122-3:2022), which has been technically revised.

The main changes are as follows:

— support for JPEG XS codestreams using temporal differential coding (TDC).

— clarifications on coding of interlaced signals.

A list of all parts in the ISO/IEC 21122 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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Introduction

This document is part of a series of standards for a low-latency lightweight image coding system, denoted JPEG XS.

In many use cases during production or transmission of a movie, limiting the latency and the recompression loss is a more important aspect than the compression efficiency. The JPEG XS coding system offers compression and recompression of image sequences with very moderate computational resources while remaining robust under multiple compression and decompression cycles and mixing of content sources, e.g. embedding of subtitles, overlays or logos. Typical target compression ratios ensuring visually lossless quality are in the range of 2:1 to 20:1, depending on the nature of the source material. The end-to-end latency can be confined to a fraction of a frame, typically between a small number of lines down to below a single line.

This document specifies transport and container formats for JPEG XS codestreams. It also defines metadata that enriches transport protocols for transmission of image sequences, in order to facilitate transport, editing and presentation.

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Information technology — JPEG XS low-latency lightweight image coding system —

Part 3:
Transport and container formats

1 Scope

This document defines transport and container formats for JPEG XS codestreams as specified in ISO/IEC 21122-1. It defines file formats for working with still image and motion image sequence files on computer platforms and gives guidance on how to embed the codestream in transport streams, allowing internet-based communication.

This document uses already existing specifications for file formats and extends them for the embedding of JPEG XS codestreams.

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 1: Based on ICC.1:2010*

ISO/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange*

ISO/IEC 10646, *Information technology — Universal coded character set (UCS)*

ISO/IEC 11578, *Information technology — Open Systems Interconnection — Remote Procedure Call (RPC)*

ISO/IEC 14496-12, *Coding of audio-visual objects — Part 12: ISO base media file format*

ISO/IEC 21122-1, *JPEG XS low-latency lightweight image coding system — Part 1: Core coding system*

ISO/IEC 21122-2, *JPEG XS low-latency lightweight image coding system — Part 2: Profiles and buffer models*

ISO/IEC 23008-12:2022, *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 12: Image File Format*

ISO/CIE 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers*

Rec. ITU-T H.273 | ISO/IEC 23091-2, *Coding-independent code points — Part 2: Video*

ANSI/CTA 861-G:2016, *A DTV Profile for Uncompressed High Speed Digital Interfaces*

W3C Recommendation, Extensible Markup Language (XML) 1.0 (Fifth Edition), 26 Nov. 2008 (https://www.w3.org/TR/REC-xml/)

3 Terms and definitions

For the purposes of this document the terms and definitions given in ISO/IEC 14496-12, ISO/IEC 21122-1, ISO/IEC 21122-2, ISO/IEC 23008-12 and the following apply.

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