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Information technology – JPEG XS low-latency lightweight image coding system – Part 2: Profiles and buffer models (ISO/IEC 21122-2:2019)

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**Part 2:
Profiles and buffer models**



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ISO/IEC 21122-2:2019(E)**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).

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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/IEC 21122 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.

Introduction

ISO/IEC 21122-1 (JPEG XS) specifies a single syntax designed to serve a wide range of applications, bit rates, resolutions, qualities, and services. Its main target applications are video transport over video links and IP networks, real-time video storage, video memory buffer, omni-directional video capture system, head-mounted displays for virtual or augmented reality and sensor compression for the automotive industry. These applications have different requirements in terms of complexity, latency and compression efficiency. Even within a given application field, different requirements are usually identified depending on the targeted use case.

Considering the impracticality of implementing the full syntax of ISO/IEC 21122-1, and in order to meet the requirements of the different target applications while safeguarding as much as possible the interoperability enabled by the common syntax defined in ISO/IEC 21122-1, a limited number of subsets of this syntax are stipulated by means of “profiles”, “levels”, and “sublevels”.

The coding tools specified in ISO/IEC 21122-1 allow encoder and decoder implementations to limit the end-to-end latency to a fraction of the frame size. To ensure this property, this document specifies a buffer model, consisting of a decoder model and a transmission channel model.

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

Part 2: Profiles and buffer models

1 Scope

This document defines a limited number of subsets of the syntax specified in ISO/IEC 21122-1 and a buffer model to ensure interoperability between implementations in the presence of a latency constraint.

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

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

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

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

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

3.1.1

blanking codestream fragment

placeholder *codestream fragment* (3.1.8) representing blanking periods

3.1.2

horizontal blanking period

timespan expressed in units of the grid point sampling rate between the last *pixel* (3.1.22) of an image line — not being the last line of an image — and the first pixel of the next image line

3.1.3

vertical blanking period

timespan in units of the grid point sampling rate between the last line of an image [including the *horizontal blanking periods* (3.1.2)] and the first line of the next image

3.1.4

buffer model

combination of a *decoder model* (3.1.12) and a *channel model* (3.1.6) whose behaviour can be defined by a set of parameters