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Part 12: Image File Format

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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 ~~documents~~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 or www.iec.ch/members_experts/refdocs~~www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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Field Code Changed

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This third edition cancels and replaces the second edition (ISO/IEC 23008-12:2022), which has been technically revised. ~~It also incorporates the Amendment ISO/IEC 23008-12:2022/DAmd.1:2023.~~

The main changes are as follows:

— ——clarification on the signalling of colour information in image items;

— ——support for the signalling of camera intrinsic and extrinsic matrices;

— ——support for progressive decoding, rendering and refinement;

— ——support for region annotations for image sequence or video track;

— ——support for renderable text items.

A list of all parts in the ISO/IEC 23008 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.htmlwww.iso.org/members.html and www.iec.ch/national-committees.

Field Code Changed

Introduction

The Image File Format is designed to enable the interchange of images and image sequences, as well as their associated metadata. It forms part of a family of specifications that are box-structured, and is built using tools defined in the ISO base media file format. This document specifies both structural brands that can be used with any codec and brands specific to High Efficiency Video Coding (HEVC). The file format specified in this document is referred to as the High Efficiency Image File Format (HEIF). It is suggested that HEIF be pronounced "heaff" (like heath with an ff ending). When the requirements of the HEVC-specific brands are applied, the file format can be referred to as the HEVC Image File Format.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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This document is organized as follows:

Clause 5Clause 5 specifies general requirements on files and file readers conforming to the Image File Format.

Clause 6Clause 6 specifies the file structures for the storage of a single image and an image collection. Additionally, general requirements that shall be supported in all files using the Image File Format for the storage of a single image or an image collection are specified.

Clause 7Clause 7 specifies the file structures for the storage of image sequences. Additionally, general requirements that shall be supported in all files using the Image File Format for the storage of image sequences are specified.

Clause 8Clause 8 specifies the metadata structures for a single image, an image collection, and image sequences.

Clause 9Clause 9 specifies enhancements to the ISO base media file format.

Clause 10Clause 10 specifies structural brands for a single image and an image collection, as well as image sequences. Requirements on both files and file readers are specified.

Clause 11Clause 11 specifies tools to associate annotations, e.g. metadata or images with one or more regions of an image or an image sequence.

Annex AAnnex A specifies the format for storing Exif, XMP, and MPEG-7 metadata in files conforming to the Image File Format.