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Digital imaging — Image storage

Part 1: Reference model

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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 ISO 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 fourth edition cancels and replaces the third edition (ISO 12234-1:2012), which has been technically revised.

The main changes are as follows:

— ~~subclauses 6.4.2~~6.4.2 and ~~6.4.3~~6.4.3 replace subclause 6.6 in the previous edition).

— ~~Table 2 of the~~ Table 2 of the previous edition has been divided into ~~Tables 4, 5~~Tables 4, 5 and ~~6~~6 according to the feature classifications defined in ~~Table 2~~Table 2 in ~~6.4.2~~6.4.2 and each metadata item is given a post processing rank according to ~~Table 3~~Table 3 in ~~6.4.3~~,6.4.3.

A list of all parts in the ISO 12234 series can be found on the ISO website.

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Introduction

This document addresses image storage requirements for digital photography systems, devices, and components, including digital cameras. A digital photography system typically divides the imaging chain into discrete components devoted to image acquisition, processing, storage, transmission and display. Since the components can be made by different manufacturers, there is a need to specify a standard format for image data interchange among the various components of the digital photography system.

The initial editions of ISO 12234-1 described image data interchange using only removable storage media, such as removable memory cards, floppy disks, and removable hard drives. The removable storage media was used to transport the digitized image data to other components in the imaging chain. However, many current digital cameras, including the digital cameras incorporated into smartphones and tablet computers, utilize internal non-volatile memory rather than removable memory. Therefore, the title and scope of this document have been broadened to include devices and systems that utilize non-removable image storage technologies.

This document specifies the required information content for storing images in digital photography components, devices and systems. The information content includes both the image data and data items describing the image. Annexes A, B and CAnnexes A, B and C describe various conforming formats. The data features supported by each of these formats are also described in Clause 6.6. The information content further includes a description of the file system which organizes the files containing digitized image data. Annex DAnnex D describes a conforming file system. The file system features are described in Clause 7.7.

An implementation is considered to be in conformity if, at a minimum, all mandatory elements are present. Recommended features are not required, but will substantially enhance interoperability, performance and/or robustness.

In developing the earlier editions of ISO 12234, as well as this document, a structured methodology has been followed. A reference model describes the environment as well as the overall system architecture. The architecture separates the software layers (termed the "image data format" and the "file system") from the hardware technology-dependent layer (termed the "media profile"). An image data format is media independent and contains the image data, image-related data and a means for structuring these data elements. A file system defines the data organization on the internal or removable storage media used, but it is independent of the media.

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