INTERNATIONAL STANDARD

ISO/IEC
18477-1

Information technology — Scalable compression and coding of continuous-tone still images —

Part 1:
Scalable compression and coding of continuous-tone still images

Technologies de l'information — Compression échelonnable et codage d'images plates en ton continu —

Partie 1: Codage des images à gamme dynamique élevée

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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 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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, SC 29, *Coding of audio, picture, multimedia and hypermedia information.*

ISO/IEC 18477 consists of the following parts, under the general title: *JPEG HDR image coding system:*

— *Part 1: Coding of high dynamic range images*

— *Part 2: Extensions for high dynamic range images*

— *Part 3: Box file format*

— *Part 6: IDR Integer Coding*

— *Part 7: HDR Floating-Point Coding*

The following parts are under preparation:

— *Part 4: Conformance testing*

— *Part 5: Reference software*

— *Part 8: Coding of high dynamic range images*

— *Part 9: Encoding of alpha channels*

Introduction

This part of ISO/IEC 18477 specifies a coded codestream format for storage of continuous-tone photographic content. JPEG XT is a scalable image coding system that builds on top of the legacy Rec. ITU-T T.81 | ISO/IEC 10918-1 coding system, also known as JPEG, but extends it in a backwards compatible way. This part of ISO/IEC 18477 specifies the commonly deployed components of the JPEG coding system. Additional parts of ISO/IEC 18477 will extend on this baseline.

JPEG XT has been designed to be backwards compatible to legacy applications while at the same time having a small coding complexity; JPEG XT uses, whenever possible, functional blocks of Rec. ITU-T T.81 | ISO/IEC 10918-1, Rec. ITU-T T.86 | ISO/IEC 10918-4 and Rec. ITU-T T.871 | ISO/IEC 10918-5 to extend the functionality of the legacy JPEG Coding System. It is optimized for good image quality and compression efficiency while also enabling low-complexity encoding and decoding implementations.

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1 Scope

This part of ISO/IEC 18477 specifies a coding format, referred to as JPEG XT, which is designed primarily for continuous-tone photographic content.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 10918-1, *Information technology — Digital compression and coding of continuous-tone still images — Requirements and guidelines*

ISO/IEC 10918-4, *Information technology — Digital compression and coding of continuous-tone still images: Registration of JPEG profiles, SPIFF profiles, SPIFF tags, SPIFF colour spaces, APPn markers, SPIFF compression types, and Registration Authorities (REGAUT)*

ISO/IEC 10918-5, *Information technology — Digital compression and coding of continuous-tone still images: JPEG File Interchange Format (JFIF)*

3 Terms and definitions

For the purposes of this document, the following definitions apply.

3.1
bit stream
partially encoded or decoded sequence of bits comprising an entropy-coded segment

3.2
block
8 × 8 array of samples or an 8 × 8 array of DCT coefficient values of one component

3.3
byte
group of 8 bits

3.4
coder
embodiment of a coding process

3.5
coding
encoding or decoding