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Information technology — Digital compression and coding of continuous-tone still images: Application to printing systems

Technologies de l'information — Compression numérique et codage des images fixes à modelé continu: Application aux systèmes d'impression

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Foreword

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The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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ISO/IEC 10918-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*, in collaboration with ITU-T. The identical text is published as Rec. ITU-T T.872 (06/2012).

ISO/IEC 10918 consists of the following parts, under the general title *Information technology -- Digital compression and coding of continuous-tone still images*:

— *Part 1: Requirements and guidelines*

— *Part 2: Compliance testing*

— *Part 3: Extensions*

— *Part 4: Registration of JPEG profiles, SPIFF profiles, SPIFF tags, SPIFF colour spaces, APPn markers, SPIFF compression types and Registration Authorities (REGAUT)*

— *Part 5: JPEG File Interchange Format (JFIF)*

— *Part 6: Application to printing systems*

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Introduction

This Recommendation | International Standard specifies a subset of features and application tools for the interchange of images encoded according to the JPEG image coding standard (Rec. ITU-T T.81 | ISO/IEC 10918-1) for printing.

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RECOMMENDATION ITU-T

Information technology – Digital compression and coding of continuous-tone still images: Application to printing systems

1 Scope

This Recommendation | International Standard specifies a subset of features and application tools for printing applications that encode or decode images based on JPEG (Recommendation ITU-T T.81 | ISO/IEC 10918-1) encoding. Its creation was proposed by members of the digital printing industry to ensure that applications developed for printing systems can exchange JPEG images.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

- Recommendation ITU-T T.81 (1992) | ISO/IEC 10918-1:1994, *Information technology – Digital compression and coding of continuous-tone still images – Requirements and guidelines*.
- Recommendation ITU-T T.871 (2011) | ISO/IEC 10918-5:2011, *Information technology – Digital compression and coding of continuous-tone still images – JPEG File Interchange Format (JFIF)*.
- Recommendation ITU-R BT.601-6 (2007), *Studio encoding parameters of digital television for standard 4:3 and wide screen 16:9 aspect ratios*.
- ISO 15076-1:2010, *Image technology colour management – Architecture, profile format and data structure – Part 1: Based on ICC.1:2004-10*.

3 Definitions

For the purposes of this Recommendation | International Standard, the following definitions apply:

3.1 CMYK: 32-bit four-colour channel encoding in which the first channel consists of an eight-bit value for Cyan, the second channel consists of an eight-bit value for Magenta, the third channel consists of an eight-bit value for Yellow, and the fourth channel consists of an eight-bit value for Key (black); in the absence of appropriate metadata, the interpretation of these values is device dependent.

3.2 complement: Subtract from 255.

3.3 grayscale: Eight-bit single channel encoding in which the value is monochromatic, e.g., describes the intensity of light varying from white to black or from black to white.

3.4 ICC Profile: Set of data that characterizes the input or output values of a colour device, e.g., as specified in ISO 15076-1.

3.5 JPEG File Interchange Format (JFIF): The interchange format specified in Rec. ITU-T T.871 | ISO/IEC 10918-5 having 1 or 3 colour channels and 8 bits per colour channel.

3.6 RGB: 24-bit three-colour channel encoding in which the first channel consists of an eight-bit value for Red, the second channel consists of an eight-bit value for Green, and the third channel consists of an eight-bit value for Blue; in the absence of appropriate metadata, the interpretation of these values is device dependent.