International Standard

ISO/IEC 23091-2

Information technology — Coding-independent code points —

Part 2:
Video

Technologies de l'information — Points de code indépendants du codage —

Partie 2: Vidéo

Third edition
2025-02

Contents

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 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).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and https://patents.iec.ch. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

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*, in collaboration with ITU-T [as Rec. ITU-T H.273 (07/2024)].

This third edition cancels and replaces the second edition (ISO/IEC 23091-2:2021), which has been technically revised.

The main changes are as follows:

— correction of the range of values for analogue colour primary signals for the sYCC colour representation specified in IEC 61966-2-1;

— addition of a colour representation developed in the Society of Motion Picture and Television Engineers that is referred to as IPT-C2;

— specification of code point identifiers, referred to as YCgCo-Re and YCgCo-Ro, for YCoCg-R colour representation with equal luma and chroma bit depths, where the number of bits added to a source RGB bit depth is 2 (i.e. even) and 1 (odd), respectively, as indicated by the "e" and "o" appended to the abbreviated names;

A list of all parts in the ISO/IEC 23091 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.html and www.iec.ch/national-committees.

Introduction

In a number of specifications, there is a need to identify some characteristics of video (or still image) media content that are logically independent of the compression format. These characteristics can include, for example, aspects that relate to the sourcing or presentation, or the role of the video (or still image) media component. These characteristics have typically been documented by fields that take an encoded value or item selected from an enumerated list, herein called code points.

These code points are typically defined in the specification of compression formats to document these characteristics of the media. In past practices, the definition of these fields has been copied from document to document, sometimes with new values being added in later documents (and sometimes with later amendments specified to add new entries to existing documents).

This past practice has raised a number of issues, including the following:

a) A lack of a formal way to avoid conflicting assignments being made in different documents.

b) Having additional values defined in later specifications that can be practically used with older compression formats, but without clear formal applicability of these new values to older documents.

c) Any update or correction of code point semantics can incur significant effort to update all documents in which the code point is specified, instead of enabling a single central specification to apply across different referencing specifications.

d) The choice of reference for other specifications (such as container or delivery formats) not being obvious; wherein a formal reference to a compression format document appears to favour that one format over others, and also appears to preclude definitions defined in other compression format specifications.

e) Burdensome maintenance needs to ensure that a reference to material defined in a compression format specification is maintained appropriately over different revisions of the referenced format specification, as the content of a compression format specification can change over time and is ordinarily not intended as a point of reference for defining such code points.

This document provides a central definition of such code points for video and image applications to address these issues. This document can be used to provide universal descriptions to assist interpretation of video and image signals following decoding, or to describe the properties of these signals before they are encoded.

Information technology — Coding-independent code points —

Part 2:
Video

1 Scope

This document defines various code points and fields that establish properties of a video (or still image) representation and are independent of the compression encoding and bit rate. These properties can describe the appropriate interpretation of decoded data or can, similarly, describe the characteristics of such a signal before the signal is compressed by an encoder that is suitable for compressing such an input signal.

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/CIE 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers*