TECHNICAL REPORT

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Information technology — Coding-independent code points —

Part 4:
Usage of video signal type code points

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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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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.

This document was prepared by ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information* in collaboration with ITU-T. The technically identical text is published as ITU-T Series H Supplement 19 (10/2019).

This second edition cancels and replaces the first edition (ISO/IEC TR 23091-4:2019), which has been technically revised.

The main changes compared to the previous edition are as follows:

— Tables are added to describe the carriage of these combinations in baseband transmission formats.

— For high dynamic range and wide colour gamut usage, an additional combination describing usage of the IC_TC_P colour representation of Rec. ITU-R BT.2100 and content mastering with a mastering display having 4000 cd/m^2 peak brightness is described.

— Two new informative annexes are added. Annex A describes commonly used video property combinations that are not specified in industry standards. Annex B indicates the relevance of the system identifier tags in consumer distribution specifications.

— Additional general refinements are also included to improve readability and clarity and improve the use of terminology.

A list of all parts in the ISO/IEC 23091 series can be found on the ISO website.

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.

Introduction

This document discusses video signal property description code points and their combinations that are widely used in production and video content workflows. Video properties and values are usually expressed in "metadata" that can exist across production and distribution workflows. Knowledge of these properties and their combinations has value as content is processed in the end-to-end production-to-distribution workflow chain.

The combinations of all possible expressible video properties as code point values could hypothetically result in hundreds or thousands of permutations; but many of those combinations are rarely or never used in practice. For example, it is highly unlikely that perceptual quantization (PQ) transfer characteristics function specified in Rec. ITU-R BT.2100 would be combined with the colour primaries specified in Rec. ITU-R BT.601. Only a small subset of the possible combinations is used in practice.

This document is written to provide information to help the producers of various content processing tools to avoid processing mistakes that can cause video quality degradation due to having incorrect assumptions made about video property combinations. There are only a few limited sets of video property combinations that are widely used in present-day video production and distribution equipment chains. This document describes these limited sets of combinations that are currently widely used and describes how the associated signal type metadata is carried to aid in the automation of content workflows across various domains of capture, production, and distribution. Lastly, this document aims to help its readers, especially toolset developers, to repurpose tools to work properly across several domains (e.g., capture, production, production distribution, and service distribution) where similar video conversion functions (e.g., chroma subsampling or colour space conversions) may be performed.

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