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Edition 1.2 2021-07
CONSOLIDATED VERSION

INTERNATIONAL STANDARD

colour inside

Multimedia systems and equipment – Colour measurement and management – Part 2-4: Colour management – Extended-gamut YCC colour space for video applications – xvYCC

IEC 61966-2-4:2006-01+AMD1:2016-04+AMD2:2021-07 CSV(en)

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FOREWORD

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This consolidated version of the official IEC Standard and its amendments has been prepared for user convenience.

IEC 61966-2-4 edition 1.2 contains the first edition (2006-01) [documents 100/967/CDV and 100/1026/RVC] and its corrigendum 1 (2006-11), its amendment 1 (2016-04) [documents 100/2457A/CDV and 100/2601/RVC] and its amendment 2 (2021-07) [documents 100/3535/CDV and 100/3597/RVC].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendments 1 and 2. Additions and deletions are displayed in red, with deletions being struck through. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 61966-2-4 has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

The French version of this standard has not been voted upon.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 61966 consists of the following parts, under the general title *Multimedia systems and equipment – Colour measurement and management:*

Part 2-1: Colour management – Default RGB colour space – sRGB

Part 2-2: Colour management – Extended RGB colour space – scRGB

Part 2-4: Colour management – Extended-gamut YCC colour space for video applications – xvYCC

Part 2-5: Colour management – Optional RGB colour space – opRGB ~~(under consideration)~~

Part 3: Equipment using cathode ray tubes

Part 4: Equipment using liquid crystal display panels

Part 5: Equipment using plasma display panels

Part 6: Front projection displays

Part 7-1: Colour printers – Reflective prints – RGB inputs

~~Part 7-2: Colour printers – Reflective prints – CMYK inputs (proposed work item)~~

Part 8: Multimedia colour scanners

Part 9: Digital cameras

~~Part 10: Quality assessment (proposed work item)~~

~~Part 11: Quality assessment – Impaired video in network systems (proposed work item)~~

Part 12-1: Metadata for identification of colour gamut (Gamut ID)

Part 12-2: Simple Metadata format for identification of colour gamut

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

After the publication of IEC 61966-2-1, Amendment 1, the sYCC colour encoding was used to capture, store and print extended colour gamut for still image applications. Users received pleasant benefit by exchanging and reproducing wide-gamut colour images.

Recently, various kinds of displays that are capable of producing a wider gamut of colour than the conventional CRT-based displays are emerging. However, most of the current video contents that are displayed on conventional displays, are rendered for the sRGB-gamut. Users of wide-gamut displays could benefit from wide-gamut colour images by video colour encoding that supports a larger colour gamut.

This standard defines the “extended-gamut YCC colour space for video applications”. It is based on the current implementation of YCC colour encoding that is used in the video industry (namely ITU-R BT.709-5) and extends its definition to the wider gamut of colour range.

MULTIMEDIA SYSTEMS AND EQUIPMENT – COLOUR MEASUREMENT AND MANAGEMENT –

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1 Scope

This part of IEC 61966 is applicable to the encoding and communication of YCC colours used in video systems and similar applications by defining encoding transformations for use in defined reference capturing conditions. If actual conditions differ from the reference conditions, additional rendering transformations may be required. Such additional rendering transformations are beyond the scope of this standard.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60050-845:1987, *International Electrotechnical Vocabulary (IEV) – Part 845: Lighting*

ITU-R Recommendation BT.601-5:1995, *Studio encoding parameters of digital television for standard 4:3 and wide-screen 16:9 aspect ratios*

ITU-R Recommendation BT.709-5:2002, *Parameter values for the HDTV standards for production and international programme exchange*

3 Terms and definitions

For the purposes of this document, the following terms and definitions, as well as those concerning illuminance, luminance, tristimulus, and other related lighting terms given in IEC 60050-845, apply.

3.1
scene-referred colour encoding
representation of estimated colour-space coordinates of the elements of an original scene, where a scene is defined to be the relative spectral radiance

3.2
output-referred colour encoding
representation of estimated colour-space coordinates of image data that are appropriate for specified output device and viewing conditions

3.3
extended gamut
colour gamut extending outside that of the standard sRGB CRT display defined in IEC 61966-2-1