

**Multimedia systems and equipment - Colour  
measurement and management - Part 2-2: Colour  
management - Extended RGB colour space - scRGB**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61966-2-2:2003 sisaldab Euroopa standardi EN 61966-2-2:2003 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 02.10.2003 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 10.07.2003.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 61966-2-2:2003 consists of the English text of the European standard EN 61966-2-2:2003.

This standard is ratified with the order of Estonian Centre for Standardisation dated 02.10.2003 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 10.07.2003.

The standard is available from Estonian standardisation organisation.

ICS 33.160.60, 37.080

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English version

**Multimedia systems and equipment -  
Colour measurement and management  
Part 2-2: Colour management -  
Extended RGB colour space - scRGB  
(IEC 61966-2-2:2003)**

Mesure et gestion de la couleur  
dans les systèmes et appareils multimédia  
Partie 2-2: Gestion de la couleur -  
Espace chromatique RVB étendu - scRVB  
(CEI 61966-2-2:2003)

Multimediasysteme und -geräte -  
Farbmessung und Farbmanagement  
Teil 2-2: Farbmanagement -  
Erweiterter RGB-Farbraum - scRGB  
(IEC 61966-2-2:2003)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 100/556A/FDIS, future edition 1 of IEC 61966-2-2, prepared by Technical Area 2, Colour measurement and management, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61966-2-2 on 2003-03-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-03-01

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Annexes designated "normative" are part of the body of the standard.  
Annexes designated "informative" are given for information only.  
In this standard, annex ZA is normative and annexes A, B and C are informative.  
Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61966-2-2:2003 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61966-2-1    NOTE    Harmonized as EN 61966-2-1:2000 (not modified).

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-845	1987	International Electrotechnical Vocabulary (IEV) Chapter 845: Lighting	-	-

# INTERNATIONAL STANDARD

**IEC**  
**61966-2-2**

First edition  
2003-01

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**Multimedia systems and equipment –  
Colour measurement and management –**

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

*Mesure et gestion de la couleur dans les systèmes  
et appareils multimédia –*

*Partie 2-2:  
Gestion de la couleur –  
Espace chromatique RVB étendu - scRVB*



Reference number  
IEC 61966-2-2:2003(E)

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# INTERNATIONAL STANDARD

**IEC**  
**61966-2-2**

First edition  
2003-01

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## **Multimedia systems and equipment – Colour measurement and management –**

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

*Mesure et gestion de la couleur dans les systèmes  
et appareils multimédia –*

*Partie 2-2:  
Gestion de la couleur –  
Espace chromatique RVB étendu - scRVB*

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

# MULTIMEDIA SYSTEMS AND EQUIPMENT – COLOUR MEASUREMENT AND MANAGEMENT –

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

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61966 has been prepared by Technical Area 2: Colour measurement and management, of IEC technical committee 100: Audio, video and multimedia systems and equipment and ISO TC 42: Photography.

The text of this standard is based on the following documents:

FDIS	Report on voting
100/556A/FDIS	100/626/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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 3: Equipment using cathode ray tubes

Part 4: Equipment using liquid crystal display panels

Part 5: Equipment using plasma display panels

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

Part 8: Multimedia colour scanners

Part 9: Digital cameras

It is published as a double logo standard.

In the ISO the Standard has been approved by 9 P-members out of 10 having cast the vote.

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

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

The contents of the corrigendum of August 2003 have been included in this copy.

## INTRODUCTION

The IEC 61966 standards are a series of methods and parameters for colour measurements and management for use in multimedia systems and equipment applicable to the assessment of colour reproduction.

The method of digitization in this part is designed to provide high bit precision, large colour gamut and extended dynamic range that is linear with respect to scene radiance. Based on IEC 61966-2-1 (sRGB), this colour space is well suited to meet the needs of the multimedia, gaming and computer graphics applications. This standard provides a robust solution to these needs. The white point and colour primaries of the scRGB solution are directly inherited from the IEC 61966-2-1 (sRGB) standard. The encoding transformations provide all of the necessary information to encode an image.

# MULTIMEDIA SYSTEMS AND EQUIPMENT – COLOUR MEASUREMENT AND MANAGEMENT –

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

### 1 Scope

This part of IEC 61966 is applicable to the encoding, editing and communication of relative scene radiance, wide dynamic range, extended colour gamut, and extended bit precision RGB colours as a colour space used in computer systems and similar applications by defining encoding transformations. Primaries and white point values of the colour space defined in this standard are identical to CIE chromaticities for ITU-R BT.709-5 reference primaries and CIE standard illuminant D65 as its white point. The scRGB colour space is an extension of sRGB and it is considered compatible with sRGB.

Additional transformations, such as white point adaptation methods, are beyond the scope of this standard. The appropriate CIE recommendations should be referred to for guidelines in this area.

### 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) – Chapter 845: Lighting*

### 3 Definitions

For the purposes of this document, the following definitions apply. Definitions of illuminance, radiance, tristimulus, and other relating lighting terms are defined in IEC 60050(845).

#### 3.1

##### **output referred colour space**

a colour space that represents the colorimetry of an output device with specified viewing conditions

#### 3.2

##### **wide dynamic range colour space**

a colour space whose encoding encompasses values below black and above white

#### 3.3

##### **luma**

luminance signal as defined by SMPTE/EG28: 1993

NOTE Video systems approximate the lightness response of vision by computing a luma component  $Y'$  as a weighted sum of nonlinear  $R'G'B'$  primary components: Each RGB signal is, comparable to the 1/3 power function with an offset defined by  $L^*$ . Luma is often incorrectly referred to as luminance.