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

CORRIGENDUM 1

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Annex B

Replace the existing Annex B, by the following:

Annex B
(informative)

Non-linear encoding for scRGB : scRGB-nl and its YCC Transformation: scYCC-nl

B.1 General

This annex describes non-linear encoding for scRGB: scRGB-nl and its YCC transformation: scYCC-nl. Applications and hardware developers who want to support various colour compression schemes based on luma-chroma-chroma spaces can utilise this standard. This transformation is targeted for compression and storage, and is not targeted for displaying images.

B.2 Non-linear encoding in 12-bit

The relationship is defined as follows:

If $R_{\text{scRGB}}, G_{\text{scRGB}}, B_{\text{scRGB}} \geq 0{,}003\ 130\ 8$

$$\begin{aligned} R'_{\text{scRGB}} &= 1{,}055 \times R_{\text{scRGB}}^{(1{,}0/2{,}4)} - 0{,}055 \\ G'_{\text{scRGB}} &= 1{,}055 \times G_{\text{scRGB}}^{(1{,}0/2{,}4)} - 0{,}055 \\ B'_{\text{scRGB}} &= 1{,}055 \times B_{\text{scRGB}}^{(1{,}0/2{,}4)} - 0{,}055 \end{aligned} \quad \text{(B.1)}$$

If $0{,}003\ 130\ 8 > R_{\text{scRGB}}, G_{\text{scRGB}}, B_{\text{scRGB}} > -0{,}003\ 130\ 8$

$$\begin{aligned} R'_{\text{scRGB}} &= 12{,}92 \times R_{\text{scRGB}} \\ G'_{\text{scRGB}} &= 12{,}92 \times G_{\text{scRGB}} \\ B'_{\text{scRGB}} &= 12{,}92 \times B_{\text{scRGB}} \end{aligned} \quad \text{(B.2)}$$

If $R_{\text{scRGB}}, G_{\text{scRGB}}, B_{\text{scRGB}} \leq -0{,}003\ 130\ 8$

$$\begin{aligned} R'_{scRGB} &= -1{,}055 \times \left(-R_{scRGB}\right)^{(1{,}0/2{,}4)} + 0{,}055 \\ G'_{scRGB} &= -1{,}055 \times \left(-G_{scRGB}\right)^{(1{,}0/2{,}4)} + 0{,}055 \\ B'_{scRGB} &= -1{,}055 \times \left(-B_{scRGB}\right)^{(1{,}0/2{,}4)} + 0{,}055 \end{aligned} \quad \text{(B.3)}$$

12 bit non-linear version of scRGB-nl: $R_{\text{scRGB-nl}}, G_{\text{scRGB-nl}}, B_{\text{scRGB-nl}}$ is defined as:

$$\begin{aligned} R_{\text{scRGB-nl}} &= \text{round}\left(1\ 280 \times R'_{\text{scRGB}} + 1\ 024\right) \\ G_{\text{scRGB-nl}} &= \text{round}\left(1\ 280 \times G'_{\text{scRGB}} + 1\ 024\right) \\ B_{\text{scRGB-nl}} &= \text{round}\left(1\ 280 \times B'_{\text{scRGB}} + 1\ 024\right) \end{aligned} \quad \text{(B.4)}$$