

Paper for Consideration by the Digital Information Portrayal Working Group (DIPWG)

Comments about S-52 Colour Calibration Formula

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Executive Summary:	An input paper has informed that the mathematical model to convert colour coordinates in the current S-52 do not work with LCD displays
Related Documents:	
Related Projects:	

Introduction / Background

1. We have been requested to comment on the proposal [TSMAD26/DIPWG5-09.4A](#), "Calibration Guidelines for Displays in S-52."

Analysis/Discussion/Conclusions

2. Colour calibration can be divided into three parts.
 - a) Colour coordinates specified in the S-52
 - b) Colour calibration tolerances specified in the S-52
 - c) Mathematical model to transfer the specified colour coordinates suitable for a computer based display technology
3. In the current S-52, a and b are well defined and are expressed in generic way suitable for any display technology
4. In the current S-52 the c (mathematical model) is given in the current S-52 for CRT based display technology.
5. Today the CRT technology is past history and there is a great variety of different new technologies. To name a few: LCD with cold cathode fluorescent tube backlight, LCD with LED backlight, LCD with trans-reflective background, OLED, Plasma, etc.
6. Each new technology require their own mathematical model to convert from "colour coordinates specified" into the hardware details used to produce the colour in the given technology.
7. In the begin of the ECDIS in the ninety-nineteen's it was feasible to include the mathematical formula for the one and only available technology – the CRT - to display charts.
8. Today we have a great variety of the available technologies and we should consider, if we shall include a mathematical model for any of these technologies.
9. It is also known that some display manufacturers has adopted a manufacturing process in which a computer based "trial and error" algorithm seek the best match for a given display unit for the S-52 specified colour coordinate. This indicates that a mathematical formula is not easy to achieve for all new display technologies.

Recommendations

10. New edition of the S-52 could be either without any mathematical model or the mathematical model is declared as an example for one named display technology

Justification and Impacts

11. Obviously CRT based mathematical example is outdated. This is causing confusion.

Action Required of DIPWG

DIPWG is invited to:

- a. consider this comment paper
 - b. agree either
 - removal of mathematical model
- or
- declaring that the mathematical model included is just an example