

Color Management Systems

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The current problem in digital color reproduction is due to the fact of open systems. In former color reproduction systems all components had to be bought from one company liable for the color calibration of all their components. This solution was expensive but well performing. Nowadays the components of a color reproduction environment stem from different manufacturers. Whereas the hardware compatibility is of no problem any more the color calibration between scanners, photo CD's, monitors, recorders and printers was unsolved.

Involved are different scanning and recording technologies, different phosphors of the monitors and different printing standards: all the components use their own color space.

The first step for an easier color calibration was Adobe's PostScript Level II where the CIE-based color spaces were introduced. The latest important development within this quick changing area is the foundation of the International Color Consortium (ICC) which has adopted Apple's ColorSync 1.0 to define an independent Color Management System (CMS) standard.

Apple meets the standard with its ColorSync 2.0, as do Kodak with the Kodak Precision CMS.

On the basis of the respective operation systems the latter is incorporated into MicroSoft, Sun and Silicon Graphics Inc. so that about 80% of the desk top publication software can use the standard.

Under cartographic aspects the paper will present the CIE color spaces XYZ and LAB, the color specialities of PostScript and the ICC standard together with the adaptation of these more theoretical definitions in existing products.

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