# A Universal Paradigm for Color Management

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In recent years, various methods have been developed for representing, encoding, and controlling colors in digital color-imaging systems. Although many of these methods have been based on the concept of "device-independent" color, none has proven to be completely successful for all systems and applications.

This paper will describe a new paradigm for digital color encoding and color management. This single—and deceptively simple—"universal" color-management paradigm encompasses the functionality of all existing color-imaging systems. The paradigm, together with its unique color-encoding method, offers a complete solution to the difficult problem of supporting disparate types of input and output devices and media on a single system. Moreover it fulfills the most fundamental requirement of color management by providing unambiguous and unrestricted communication of color among systems of every kind.

The paper will describe how this universal paradigm can be implemented in practice using color transformations consistent with specifications developed by the International Color Consortium (ICC), an industry group formed in 1993 to promote interoperability among color-managed systems. It also will be shown how a color managed system based on the universal paradigm can make optimum use of current interchange metrics, such as the KODAK Photo YCC Color Interchange Space used in the Photo CD System.