

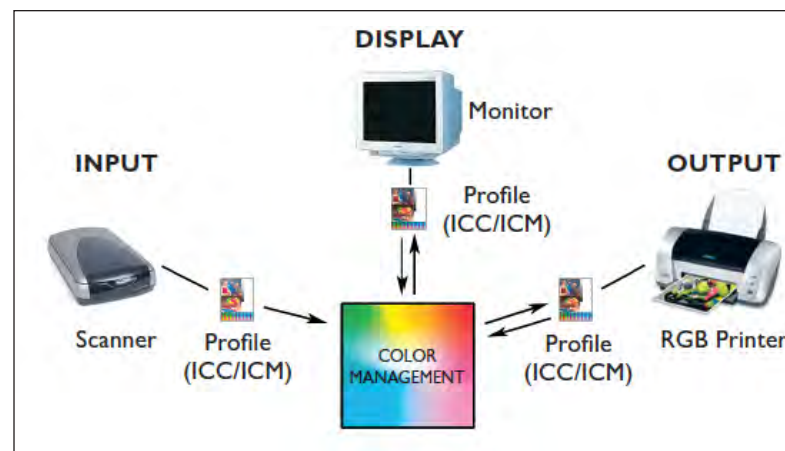
Color Management Concepts

What is Color Management:

• A Definition of Color Management for Industry Today

The Goal of Color Management

The primary goal of color management is to obtain the best possible match across color devices. Its job is to characterize the color reproduction space for every device in a workflow. For example, the colors of one frame of a video should appear the same on a computer LCD monitor, on a plasma TV screen, or on a printed poster. Color management helps to achieve the same appearance on all of these devices, provided these devices are capable of delivering the needed color reproduction. With photography it is often critical that your prints or online gallery appear how they were intended. Color management cannot guarantee identical color reproduction, as this is rarely possible, but it can give you far more control over any changes which may occur and a knowledge of the color tolerances of each device.



In Digital Workflows

In digital imaging systems, color management is the controlled conversion between the color representations of various devices, such as image scanners, digital cameras, monitors, Broadcast screens, film printers, computer printers and plotters, offset presses, and corresponding media.

Parts of this technology are implemented in the operating system (OS), helper libraries, the application, and devices. A cross-platform view of color management is the use of an ICC-compatible color management system. The International Color Consortium (ICC) is an industry consortium that has defined:

An open standard for a Color Matching Module (CMM) at the OS level color profiles for:

- Devices, including ICC devicelink-profiles that represent a complete color transformation from source device to a target device
- Working spaces, the color spaces in which color data is meant to be manipulated and defined

In Other Industries

There are other approaches to color management besides using ICC profiles. This is partly due to history and partly because of other needs than the ICC standard covers. The film and broadcasting industries make use of some of the same concepts, but they frequently rely on more limited boutique solutions. The film industry, for instance, often uses 3D LUTs (lookup table) to represent a complete color transformation for a specific RGB encoding. Many manufacturing industries utilize color swatches, reference samples and computerized manufacturing processes to control color standards internally for color control.

Note: At the consumer level, color management currently applies more to still images than video and color management is still in its infancy.