

Part One

General

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Introduction

ICC White Papers are one of the formal deliverables of the International Color Consortium, the other being the ICC specification itself – ISO 15076: *Image technology color management – Architecture, profile format, and data structure*. The White Papers undergo an exhaustive internal development process, followed by a formal technical review by the membership and a ballot for approval by the ICC Steering Committee.

The White Papers generally address single topics within color management and the use of the ICC profile, but together they include the collected wisdom and consensus view of a community of leading color scientists and developers who represent all the major companies active in the field of color management. The White Papers are based on well-founded color science, concrete experience, and best practice.

Color Management is mainly based on the ICC White Papers, including those already published on the ICC web site and draft versions published internally. The chapters here represent edited, updated, and sometimes expanded versions of the documents that have been published by the ICC. In many cases the White Paper on which a chapter is based is still in development, and this book represents an opportunity to provide an insight into the material which is undergoing discussion. Unlike the published White Papers, the chapters in *Color Management* have not been formally approved by the ICC, and it must be emphasized that I am entirely responsible for any errors, ambiguities, or misinterpretations.

Color Management also includes the chapter “ICC Profile Mechanics,” which is not based on a White Paper but on material presented at the ICC Developer Conference in Portland, Oregon, in November 2008, by Marti Maria of HP.

The recent approval and publication of the revised ICC Version 4.3 specification (also published as ISO 15076-1:2010) is an important step in the evolution of color management, since it represents a significant improvement in the clarity and consistency of the specification and incorporates all the amendments approved by the ICC between publication of the first Version 4 specification in 2001 and June 2009. By marking this new version of the specification by the present volume, I hope that the path to adoption and implementation can be eased by the expert guidance contained in these chapters.

The ICC White Papers are written primarily for the main segments of the color management community: the scientists and developers who devise and maintain color management hardware and software, the professional users who implement color management solutions, and those general users who would like to understand more about how to get colors to come out right. While the underlying content remains the same for all these segments, the technical level, language, and style in the different White Papers vary considerably, and I have intentionally preserved the approach taken in the original paper in each case. Readers will therefore find no particular consistency of voice or technical level between the White Papers or the chapters here.

While many of the chapters incorporate a definition of key terms used, readers should also consult the Glossary in Chapter 8 for explanations of any term. As a result of the ICC internal review process, the use of terminology should be reasonably consistent throughout the White Papers and this book.

The content of the book is organized into five main parts. In the first part general material about the ICC architecture, the profile format and its history, and the future of the ICC architecture are discussed. The second part focuses on issues around Version 4 of the specification, and in particular on the v4 perceptual intent. In the next part a range of workflow issues are discussed, including those specific to digital photography and graphic arts. The fourth part addresses a range of topics around measurement and viewing conditions for color management, while the fifth part gives detailed guidance for profile creators. As with the original ICC White Papers, the level of the chapters ranges from introductory to advanced. Together they provide both conceptual information and practical recommendations to users and implementers of color management systems.

The ICC specification and the White Papers will continue to be developed, and readers are recommended to visit the ICC web site at <http://www.color.org> for the latest versions of these documents, together with numerous other resources posted on the site for the benefit of the color management community.

The ICC is a member consortium, open to any organization willing to pay the membership fee and abide by the member agreement. ICC membership confers substantial benefits, and organizations which have an interest in color and are not already members should consider joining and contributing to the development of color management in the international arena.

Some readers may be puzzled by the apparent inconsistency between the European conventions adopted in spelling and notation in the latest version of the specification and the US spelling used in many ICC documents and in type names in the specification. Less obvious is that there has been a considerable input from ICC members in Japan, who in translating the specification into Japanese have identified many ambiguities and errors in the use of English in the previous version. Since the specification has become an ISO standard, the latest version has consistently adopted ISO conventions for spelling and notation, while retaining the original type names. ICC itself is an international organization and has not attempted to agree spelling conventions (there are invariably more interesting things to discuss!), and as a result the White Papers and other documents on the web site use both US and UK spellings, usually depending on the provenance of the original authors. In *Color Management* I have converted spellings to the US form, with the exception of type names from the specification.

Considerable effort has gone into preparing the guidance provided in the ICC White Papers and the versions in *Color Management*. Nevertheless, readers should ensure that the use of the material meets their needs, and neither I, the ICC, nor the publisher accept any liability for losses suffered as a consequence of any of the information or recommendations given.

