International Color Consortium

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Chiba University

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ICC Chair

What is the ICC?

"Making Color Seamless Between Devices and Documents"

- **Founded 1993**
- **Mission:**
  - To create, promote, and encourage the standardization and evolution of an open, vendor-neutral, cross-platform color management system architecture and components.

Who is the ICC?

- **69 active members, including 4 founding members**
- **Vendors & Users, including companies such as:**

Adobe	Hewlett Packard	R.R. Donnelly
Agfa	Kikuze Solutions	Samsung
Apple	Konica Minolta	Seiko EPSON
Canon	Kyocera Mita	Sharp
Dainippon Screen	Lexmark	Sony
Kodak	Matsushita	Sun Chemical
Fogra	NEC	Toppan Printing
Fujifilm	Nikon	Toshiba
Fujitsu	Onyx Graphics	Xerox
Heidelberg	Quark	X-Rite

Purpose of ICC

- **Consortium of companies:**
  - Not just a standards organization, but also a force for promoting color standardization.
  - **Goal**: Create, promote and encourage evolution of an open, vendor-neutral, cross-platform colour management system architecture and components.

- **Published ICC.1:2004-10 profile specification, also available as ISO 15076-1:2005.**

- **ICC v4 implementation**
  - Improved perceptual & colorimetric rendering intent interoperability.
  - Less ambiguity in specification.
  - Improved display profiles via chromatic adaptation.

ICC Heritage

- **Several profile-like formats appeared in early 1990s**
  - Kodak (Precision Transforms)
  - Apple (ColorSync)
  - EFI (EFI Color)
  - Adobe (PostScript CSA/CRD, PDF CalRGB)
- **Several proprietary closed systems for specific workflow goals**
  - Scitex Trans-4
  - Crosfield Celsis
- **ICC's profile specification based on the Apple ColorSync profile format**

ICC profile spec - recent history

Current version of the specification

- Oct 2004 - ICC.1:2004-10 Specification (v4.2.0)

Published as ISO standard

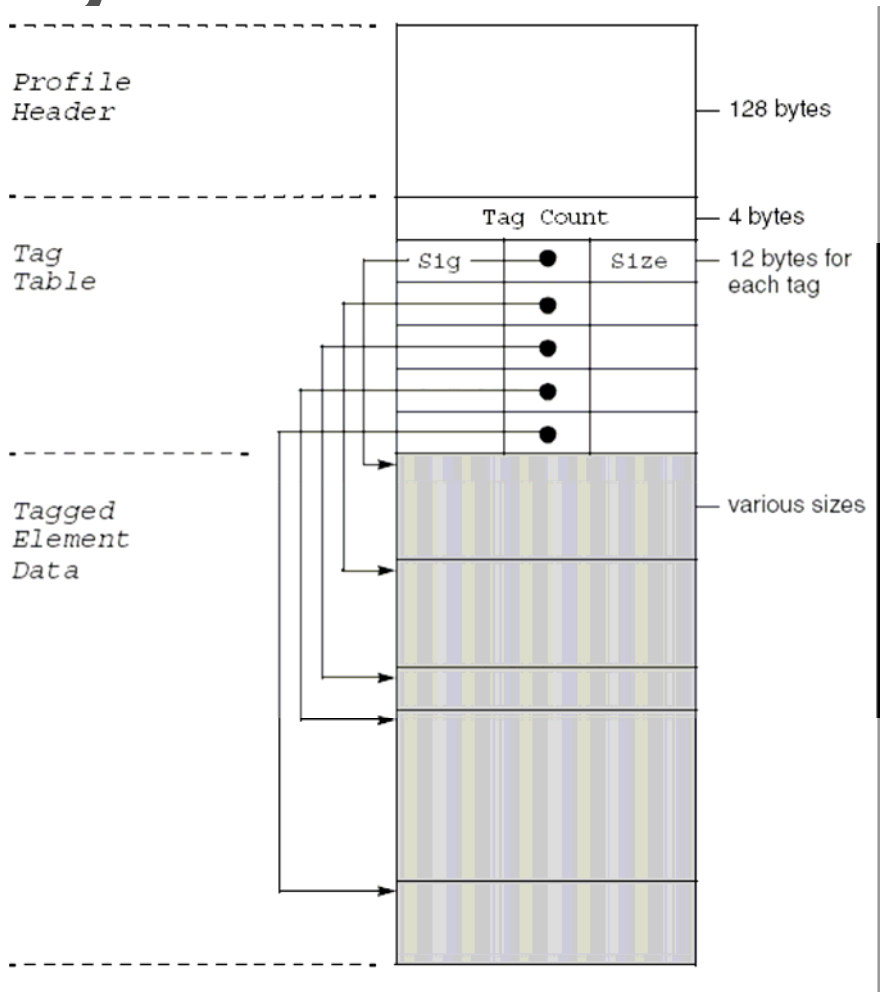
- May 2005 - ISO 15076-1 (based on ICC v4.2.0)
- May 2006 - ICC.1:2004-10 with errata, identical to ISO 15076-1

Recently approved amendments

- Feb 2005 - Perceptual Intent Reference Medium Gamut
- Jun 2006 - Motion Picture technology tags
- Nov 2006 - Floating Point Device Encoding Range
- Apr 2007 - Profile Sequence Identifier tag
- Apr 2007 - Colorimetric Intent Image State tag

ICC Profile Anatomy

- ICC profiles use a tagged format.
- Profiles made up of header plus individual tags.
- Tags can be informational or numeric, optional or required.
- Profile version (v2, v4) located in profile header.



ICC Structure

The business of the ICC is conducted through *working groups*.

Working Groups (WG):

1. Formed when a subject becomes important enough to the ICC.
2. Usually has closed terms of reference.
3. Elect a chair and vice-chair to drive completion of WG objectives.
4. Propose changes to the ICC profile specification, or other specifications if needed.

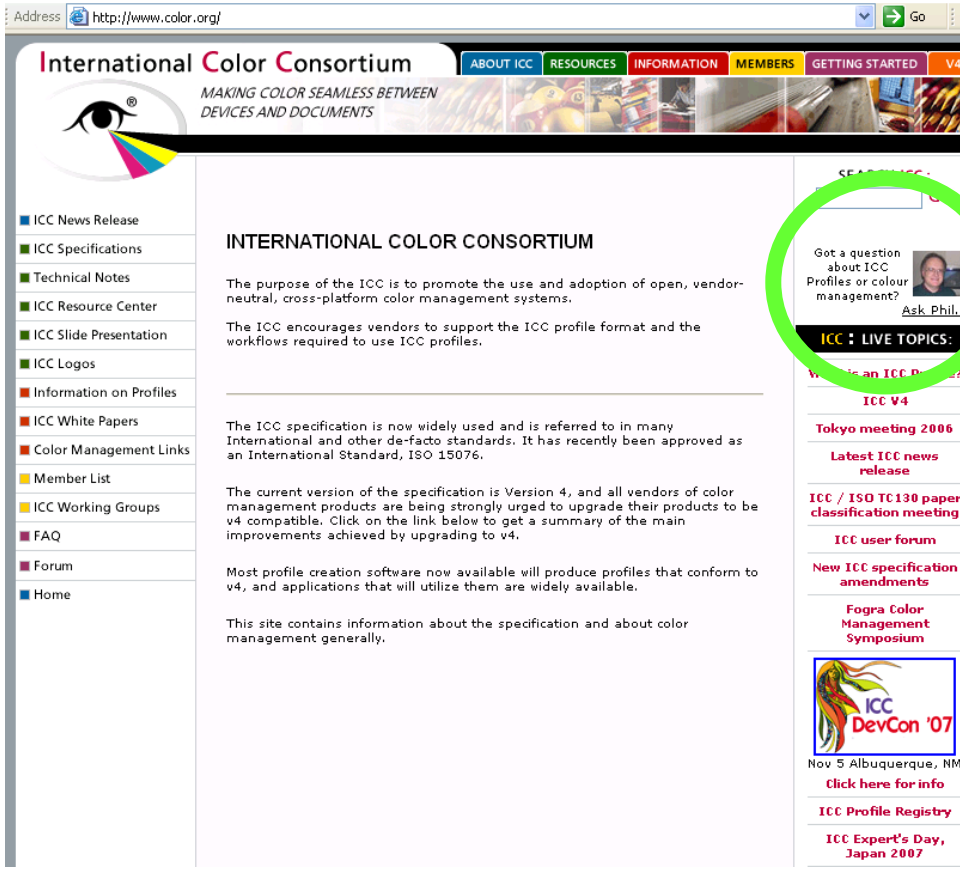
Current Working Groups

- Architecture Working Group
- Digital Motion Picture Working Group
- Digital Photography Working Group
- Graphic Arts Special Interest Group
- ICC Profile Assessment Working Group
- Specification Editing Working Group
- Workflow Working Group

- ICC Steering Committee

The ICC Website

- **Visit http://www.color.org**
  - ICC profile specification
  - White papers
  - Technical bulletins
  - FAQs
  - ICC Users Forum
  - Characterization Registry
  - Signature Registry
  - Profile Registry
  - WG information
  - Sign up!

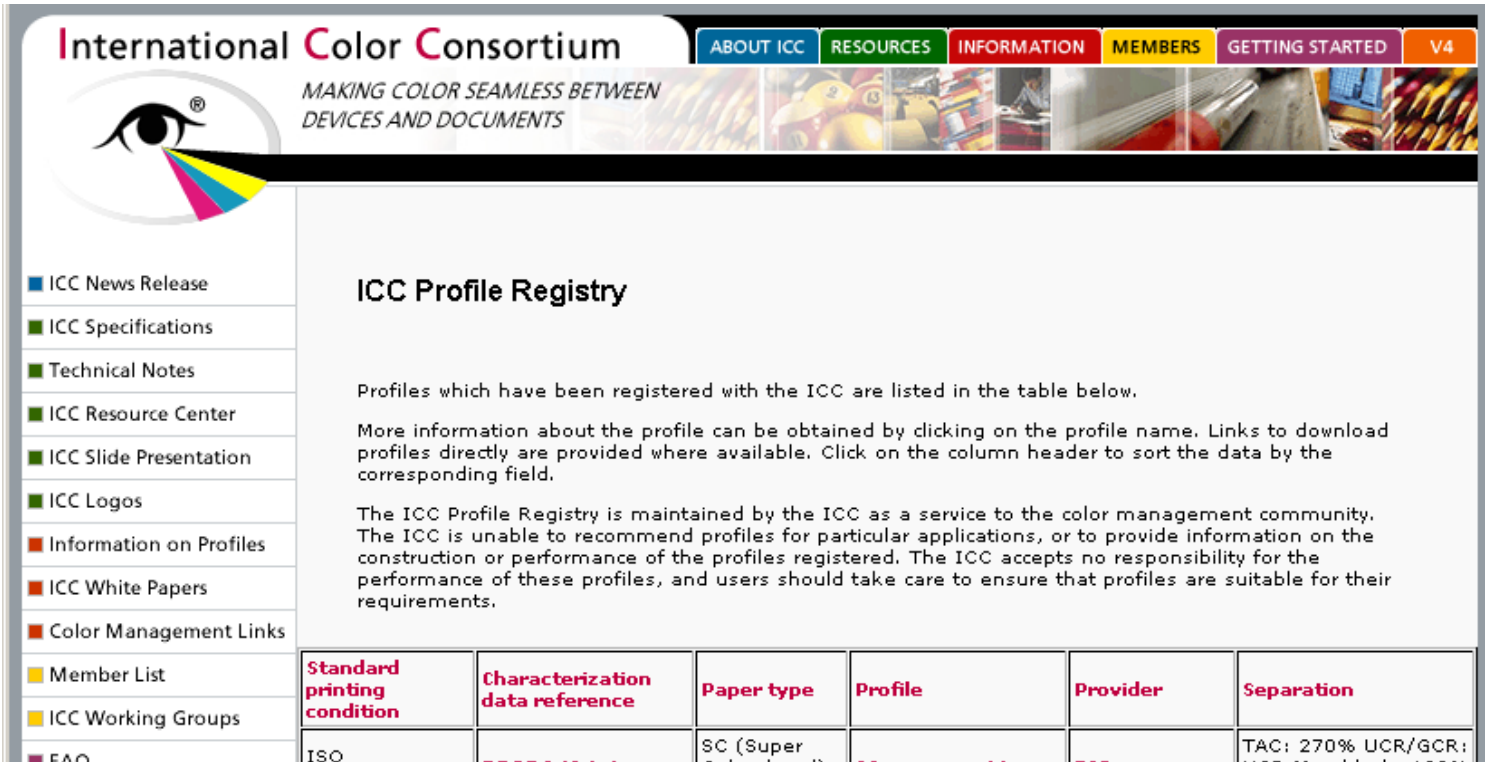


Characterization and Profile Registries

- **Characterization registry:**
  - Stores standard characterization data for manual download
- **Profile registry:**
  - Stores standard profiles for manual and automated download
  - Used for PDF/X support

Profile registry - manual selection

- Users know the reference printing condition and wish to select a suitable ICC profile for that condition
- http://www.color.org/registry



Profile registry - automated download

- ISO TC130 is defining versions of PDF/X that allow users to include links to resources such as profiles rather than including the resource itself
  - —to reduce file size
  - —to avoid having to include the same resource in multiple documents
- This is particularly important in variable data workflows

Thank you

If you are interested in joining the ICC please contact me at william.li@kodak.com, or the ICC secretary Kip Smythe at ksmythe@npes.org