



Color Management

Color Management, Open Source, and Inkscape



Color Management Basics

- Primary goal
 - Simple (but not necessarily easy)
 - Match output from different devices
- Perception
 - Only for certain professionals
 - Only esoteric experts care
 - Many who could benefit are missing out



Color Management Basics



- Quick test
 - Same camera
 - Same tripod
- Problems
 - Lighting different
 - Hue shifted in print
 - Hue shifted in grab



Color Management Basics

- People need it but don't realize they do
 - Businessmen
 - Home users
 - Any company selling product over the 'net
- Current state
 - Main OS vendors have long running solutions
 - Linux has been seriously lagging
 - Even how things relate to X11 complicates matters



Color Management Basics

- Good news
 - Quality devices more affordable and common
 - End user expectations increasing
 - Collaboration across many Open Source projects
- Developer momentum
 - Picking up significantly around the time of LGM
 - More projects adding at least some Color Management



ICC Profiles

- Main focus of current Open Source CMS
- Different types needed
 - Monitor/display
 - Scanner
 - Printer
 - Target
- Knowing ICC profiles are pivotal is the key



Tools

- Common tools for creating, applying and maintaining ICC profiles
 - Argyll Color Management System
 - <http://www.argyllcms.com/>
 - Oyranos
 - <http://www.oyranos.org/>
 - LPROF
 - <http://lprof.sourceforge.net/>
 - XICC
 - <http://burtonini.com/blog/computers/xicc>



Multi-monitor

- Very tricky
- Different supporting technologies
 - Vendor specific
 - Xinerama
 - XrandR
- Multiple steps
 - Profile
 - Adjust
 - Fetch



Scribus

- Professional PDF/print workflow
- Some drawbacks for SVG
 - Needs to support more SVG features
- Good news
 - Support planned for v 1.3.6
 - Info
 - <http://docs.scribus.net/index.php?page=cms>
 - <http://www.gimp.org/release-notes/gimp-2.4-cm.html>



GIMP 2.4

- Recent introduction
 - Fall 2007
 - <http://www.gimp.org/release-notes/gimp-2.4-cm.html>
- Full base features
 - Sets RGB and CMKY working profiles
 - Display profile
 - Soft-proofing profile
- Mixing image colorspaces is tricky



Inkscape 0.46

- Feature Overview
 - Implicit working colorspace defined as sRGB
 - <color-profile> for linking profiles since 0.44
 - Features new for 0.46
 - Display Adjustment
 - Soft-proofing
 - CMS-based color selection



Inkscape 0.46

- Display Adjustment
 - Correcting output data/path to emit proper color
 - SVG Data starts as sRGB so only a single profile is needed
- Alternative ways to set profile
 - Explicitly from those found in expected locations
 - Automatically from the display (XICC on X11)
 - Automatic not yet supported on Windows



Inkscape 0.46

- Soft-proofing
 - Used to simulate final target result
 - Target print profile should factor in paper and inks used
 - Target non-print profile may account for other factors
 - A user can switch proofing to different profiles to check the same artwork on different outputs
 - Out of gamut warning
 - Marks colors that will be illegal for the final output
 - Warning color is user configurable



Inkscape 0.46

- CMS-based color selection
 - Displays a slider per color component
 - Unlike prior HSL and CMYK pickers, values are real
 - Handles main colorspaces (RGB, CMYK, CMY, YCC, Lab, etc)
 - Allows for multiple ICC profiles in a single SVG file
 - Work is preliminary and in need of refinement



Inkscape for Web Graphics

- Most end users do not have corrected displays
 - PC vs. Mac too light/too dark problem
- sRGB is the “close enough” web colorspace
- “Web” workflow
 - Work targeting sRGB
 - Preview with “Mac” profile(s)
 - Preview with “PC” profile(s)
 - Preview with mobile profiles



Inkscape for Print Graphics

- Most in need of color managed workflow
- Desired colors marked with an ICC profile
 - A CMYK profile (there is no single CMYK)
 - Corrective RGB profile
 - Profile listing spot colors (but not named colors)
- Multiple color profiles can live in a single SVG
- Proofing profile very useful



Inkscape for Mobile Devices

- Good but possibly overlooked use for CMS
- No explicit SVG file profile needed (sRGB)
- Multiple proofing profiles
 - LCD and display differences including bit-depth
 - Backlight on/off
 - Sunlight/artificial light/darkness
 - Viewing angle
 - etc.



Cross Application Integration

- Status
 - As many applications as possible should be managed
 - Many more now support CMS than in 2005
 - OpenICC is helping
- What next?
 - Developers add support to more applications
 - Users ask for support in more applications