Digital Proofing Options

How to Evaluate the Level of ColorSync Savvy

Dan Reid

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Contract Proofing Today:
Traditionally and Digitally

- Analog Contract Proofers
  - (3M Matchprint, Dupont Waterproof, Chromalin, Fuji Color Art)
- Digital Contract Proofers
  - (Imation Rainbow, Dupont Digital WaterProof, Kodak Approval, Iris)
- Professional inkjet Proofers
  - (Epson 5000, Canon BJC-8500, HP 2500)

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What are you Proofing?

- Colorimetric proof
  - Simulate the color of another device
- Densitometric proofs
  - Match the ink densities of the press
- Dot pattern (screening)
- Black plate generation
- Named Colors (PMS, Toyo, Focoltone)

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What are you Proofing?

Colormetric proofs

- Soft-proof the color of production output on a different printer.
- Not interested in possible screening problems or trapping issues
- Not accepted in the printing industry as means of communicating color.

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What are you Proofing?

Densitometric proofs

- The print density of each primary color calibrated to press ink densities.
- Though the proofing inks may colormetrical print different the actual printed ink densities are of importance.
- Widely accepted in the printing industry.

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What are you Proofing?

Dot pattern proofs

- Check for Moiré patterns (screen interference) and trapping problems
- Film used in the proofing process is also used to create the press printing plates.
- Widely accepted in the printing industry.

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What are you Proofing?

Black plate generation simulation

- Proof the black generation of the final output by knowing the proofer's black plate generation.
- Match the colorimetery of the final output black plate on the proofer.

What are you Proofing?
Named Colors

- Pantone, Focoltone, Trumatch, etc.
- How does the Proofer handle named colors?
  - Some printers have tables, others allows palettes to be substituted
    - If so, can the tables/palettes be defeated?
  - Can a different palette be designated with each print que?

What are you Proofing?

What Proofing system is correct for you?

- CTP & DTP rely on the accuracy of the digital proof since no film is used.
- A calibrated film based proofing system can be cross simulated on an desktop inkjet to check colors only.
- The paper/ink combo of the proofer is the limiting factor in simulating the production device's color.

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Mucho Importante!

- Single biggest factor in using a Proofer in a color managed workflow is the Raster Imaging Processor software (RIP)
- A RIP either prints directly to the proofer or indirectly by creating film.

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Prerequisites for color managing a Proofer

- A RIP must print/image in consistent manner.
- Allow simulation of final output
  - (Web Press, Wide/Grand format, different printing papers, etc.)
- Postscript 3 compatible

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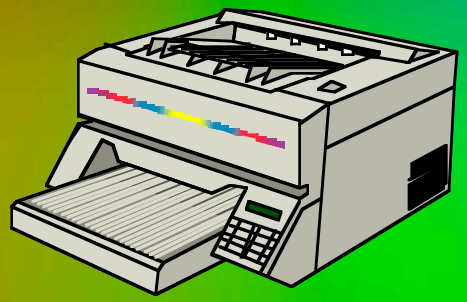
Postscript's evolution

Postscript 1

- Single channel image files (B&W)
  - B&W Laser printers, Imagesetters



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Postscript's evolution

Postscript 2

- Three channel image files (RGB, L^*a^*b)
- Color Space Arrays (CSA) and Color Rendering Dictionaries (CRD)
- ICC/ICM Profiles are backwards compatible with CSAs & CRDs
- CMYK files are converted to three channel files before printing

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Postscript's evolution

Postscript 3

- Four channel image processing (CMYK)
- Control of each primary color ink channel
  - Including LTcyan and LTmagenta
- Supports proofing ICC/ICM profiles in CMYK - CMYK processing necessary in a color managed proofing workflow.

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Check yo' RIP

Build this test file in PhotoShop to check for Postscript 3 compatibility.

Inner Box

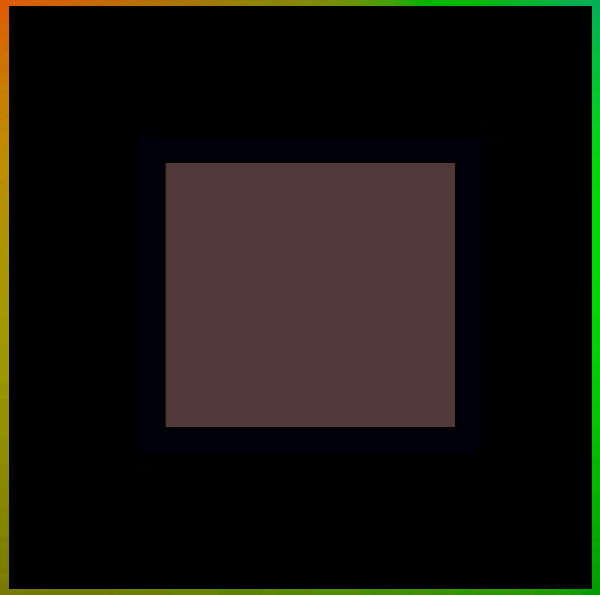
Cyan = 100%

Yellow = 100%

Magenta = 100%

Outer Box

Black = 100%



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The evolution of Postscript:
Portable Document Format (PDF)

- Based on Postscript definition
- Supports ICC profiles natively for simplified communication of color
- No need to “print” from an application if RIP supports PDF natively

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Controlling Ink Application

Process Control

- Total ink limit
  - Optimizes color gamut of paper
- Linearization/Calibration/Dot Gain
  - Can the RIP interface with a color measurement instrument or is the calibration visual?
  - Ensures requested ink percentages are printed correctly.
- GCR (w/ UCA) or UCR specification
  - Paper/ink “sweet spot” - specifies primary color balance with black plate for neutrality across the entire tonal scale.
  - Individual to paper/ink combination

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Applying ICC/ICM Profiles at the RIP

- Can you convert image data using ICC/ICM profiles at the RIP?
  - Does the RIP recognize embedded ICC/ICM profiles?
  - Can you specify default input profiles for different file formats and color spaces?
  - Can a simulation (production ICC/ICM profile) be designated in addition to the proofer's profile?
  - Manual designation of rendering intents for each color transform?

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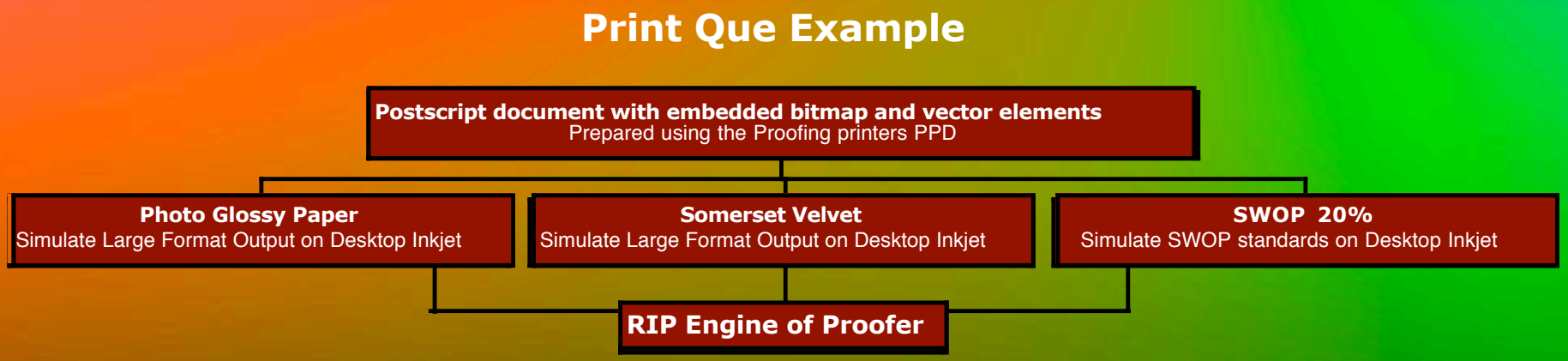
Applying ICC/ICM Profiles at the RIP?

- Can the RIP create different print que's to simulate multiple papers and/or printers?



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Applying ICC/ICM Profiles at the RIP

- Does the RIP support *Device Link Profiles*?
  - Preserves black plate composition for accurate simulation of Production output on Proofer.
  - Vector and/or Bitmap objects must be converted to production ICC profile first before processing with a *Device Link Profile*.

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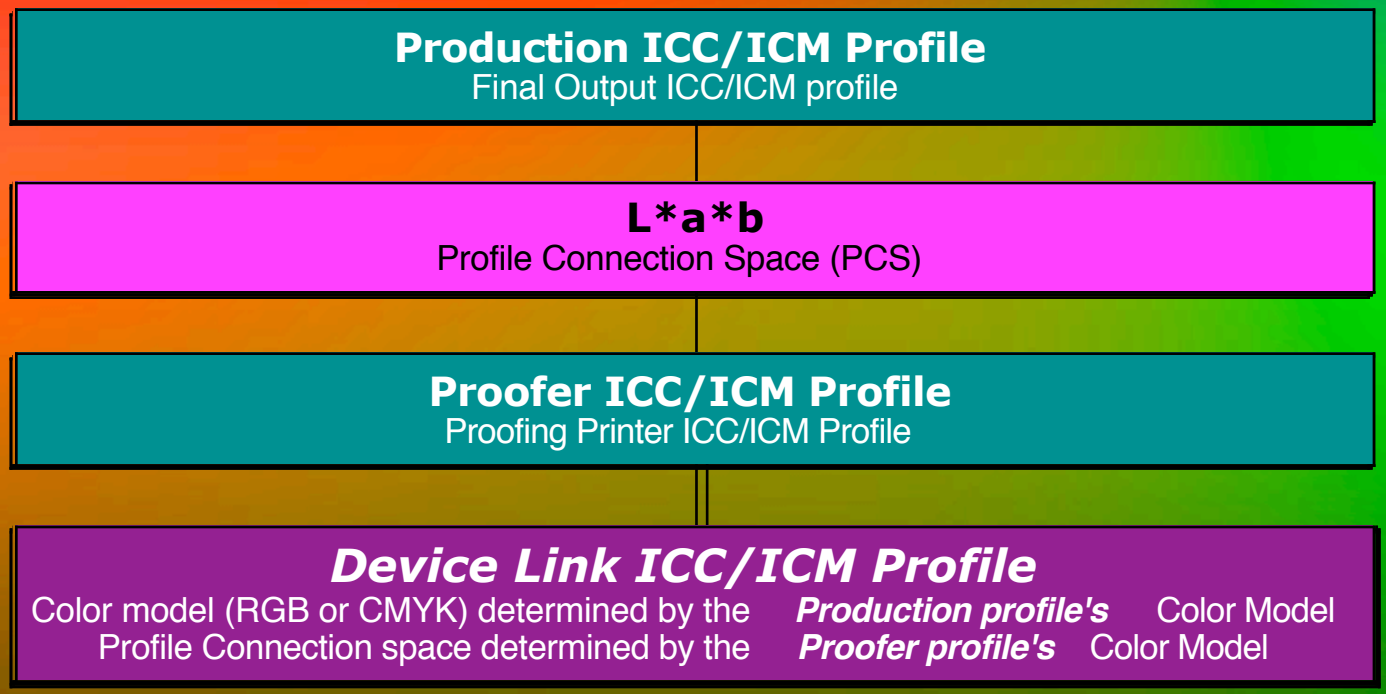
Applying ICC/ICM Profiles at the RIP: *Device Link Profiles*

Device Link Profile **Transform Schematic**



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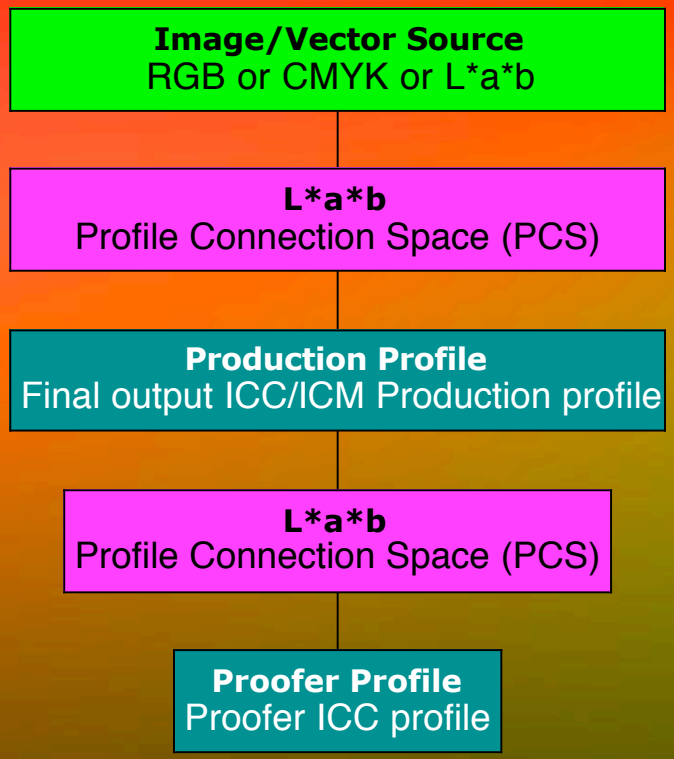
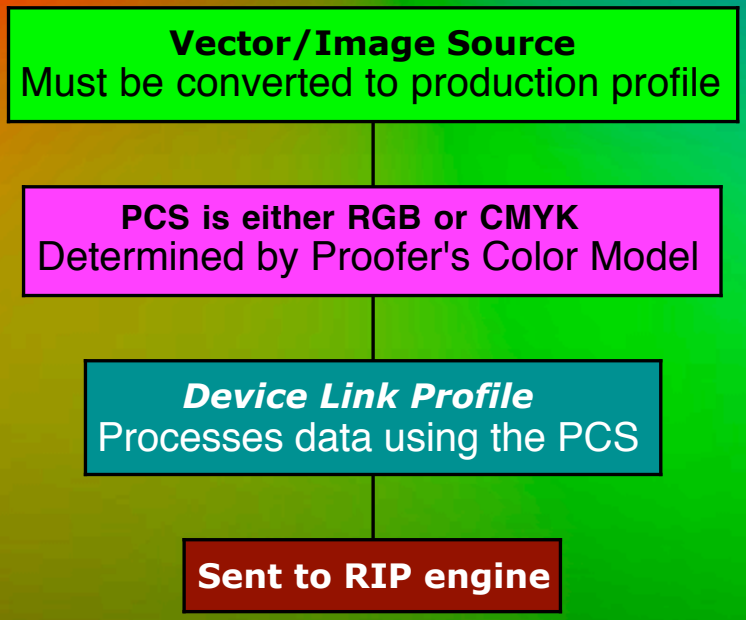
Applying ICC/ICM Profiles at the RIP: Proofing Scenarios

Two ICC Profile Proofing Scenario



Device Link Profile Proofing Scenario



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Interpreting a Manufactures ICC/ICM Compliance

Gotchas to watch out for in RIPs

- Some RIPs apply simulation profiles before RIPing the file. You must be able to defeat these settings for optimum control of color output.
- Confirm industry standard ICC/ICM profiles can be used by RIP and not just ICC profiles supplied or created by the RIP manufacturer.

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Interpreting a Manufactures ICC/ICM Compliance

Gotchas to watch out for in RIPs

- Can't designate source profiles
- Ink Limiting specified by the media stock selected (no manual designation)
- RGB images are handled differently than CMYK.
- Calibration/Linearization is either not possible or relies on a visual method.

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Stump the Chump!

Q&A

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