Using i1 Profiler to Build CMYK and Device Link Profile

Oct. 27, 2015 (v2)

1. Objectives
   1) Use i1 Profiler to build a CMYK ICC profile
   2) Use i1 Profiler to build a device link profile

2. Resources
   i1 Profiler 1.6.3 (free download from www.Xrite.com)
   i1 Publish dongle or i1 Pro 2 (act as a dongle)
   CGATS.17 formatted measurement files
   SCCA Calculator

3. Procedures to build a CMYK ICC profile
   1) Insert the dongle or connect i1 Pro 2 on the laptop and launch i1 Profiler 1.5.0 (see a ‘green checkmark’ displayed in i1 Profiler).
   2) Click ‘Advanced.’
   3) Select ‘CMYK Printer.’
   4) Select ‘Profiling’ and wait for a few seconds to see the ‘Printer Profiling Workflow’ diagram displayed at the bottom of screen.
   5) Skip ‘Patch Sets’ and go to ‘Test Charts’ by double clicking on the desired chart. For example, choose IT8.74 CMYK Random 1P (see screen shot highlighted in blue) or load a TDF (.txf).
6) Drag the CGATS.17 formatted data file, e.g., GRACoL_SSCA, to the Measurement icon of the workflow. Choose ‘M1.’

Note: If data file is not available locally or is wrongly formatted, a “Warning” sign will be displayed.

Note: If there is no metadata, click ‘OK’ to declare the device calibration status is ‘unknown.’

7) Click on ‘Profile Setting’ in the Workflow. Set CMYK constraints, e.g., set TAC from 400 to 320, choose ‘intelligent black,’ etc.

8) Click on ‘ICC Profile’ in the workflow and add a hot folder and select allocation as a place to save the ICC profile.

9) Click ‘Create and save ICC Profile.’ This action may take a while.

10) Inspect the ICC profile in ColorThink Pro or examine its visual effect in Photoshop.

4. Procedures to build a device link ICC profile

1) Click ‘Advanced.’

2) Select ‘Device Link Profiling.’

3) Drag the source ICC profile to the “Source”, e.g., TR006_SCCA_Sterling.icc.

Note: The instructor will give a separate demonstration on using the SCCA Calculator to adjust a dataset to account for the difference between the dataset white point and the actual printing stock.
4) Drag the destination profile to the “Destination”, e.g., InvercoteG_UVinc.icc. If spectral data is available, click “M1-D50.”

5) Click the “Profile Setting.”
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6) Click “Device Link” and provide a file name and select path of the hot folder.

7) Click “Create and Save Profile.”

a. In “Color Purity” options, check the “Preserve Black”; select “Force 100% solid” for the solid ink mapping. Single-color ramp may be preserved. Repeat the process to preserve cyan, magenta, and yellow solids.

Note: “Preserve,” means “no scum dots” in the single-color ramp. It’s good for offset printing, but not colorimetric match.
8) Assessing the effect of the device link profile.

a. Open Adobe Photoshop, click ‘Color Setting’, and select InvercoteG_UVinc as the CMYK Working Space, and the Absolute Colorimetric Intent.

b. Open the untagged 3-row control strip in Adobe Photoshop, convert the CMYK file to destination space via device link, DL_TR006(SCCA)-G(M1).icc, and click OK.
c. Save the image with the embedded profile checked. InvercoteG_UVinc will be tagged to the image.

d. Verify that dot areas of CMYK solids are preserved by the device linked profile, i.e., solid remains as solid and no scum dots when ‘preserve’ function is selected. Dot area coverage of RGB overprints is changed to match the color in the source.