# Activity 6: Create a print curve to align a press to an industry specification for gray balance

## Background

#### Contents

You can create a print calibration curve to adjust tonality by simultaneously calibrating cyan, magenta, and yellow inks so that neutral shades of gray are maintained, while black is calibrated separately for lightness and darkness.

## Tasks

#### Goal

Create a print calibration curve to an industry standard for gray balance using a **P2P51** chart. (A simple Tint Ramp chart is not suitable, as you must use a measurement chart that contains required gray scale patches in order to be able to measure and compute gray balance.)

#### Task 1: Create the print calibration curve

- 1. In ColorFlow, click the **Print Curves** tab.
- 2. In the Calibration Curves section at the top left, click the

Add button ? Unknown Attachment

- The **Devices** dialog box appears.
- Drag the device "XX Offset Press" that you created in a previous activity to the viewer window and close the Devices dialog.
- 4. Click the **Properties** icon ? Unknown Attachment in the

Offset Press panel and define the device condition:

- a. From the **Plate Setup** list, select **None**. You can also select a plate setup defined in the **Plate Curves** tab.
- b. From the **Screening** list, select 20u Staccato or add the value to the list if it doesn't exist. Skip this step if you selected a plate setup above.
- c. From the Substrate list, choose Type 1 or 2 (coated art) 170 g/m2.
- d. Leave Process Inks as CMYK
- e. Click **OK**.
- 5. Click the **Measurement** icon 📀. (Note: Measurement icon will appear as 💿 if you have already created an offset press with the same properties in a previous exercise.)
- 6. In the **Charts** panel, use the **Measurable by** list control to select your measurement device.
- 7. In the **Charts** list, choose a **P2P51** chart suitable for your measurement device.

- 8. In a real-life situation, you would **Export** the P2P51 chart, o utput the chart from Prinergy, print the chart on press and measure it in ColorFlow. For the purpose of this training, you will import a sample P2P51 measurement data file:
  - a. Click the **Measurements** tab.
  - b. Click Import.
  - c. Leave the Characterization
  - **d.** In the **Characterization Print Curve** dialog, leave the Print Curve as the default **Linear (None)** and click **OK**.
  - e. Select the sample P2P51 sample data file.
  - f. Click OK. (If you have used an existing Offset Press device condition, you will get a message saying Device Condition Response Update: This action will update curves and profiles in color setups using the device condition, discarding adjustments. Continue? Click Yes.)
  - g. Click Close.
- **9.** Define the calibration target to an industry specification:
  - **a.** Click the **Calibration** icon  $\checkmark$  in the link area between the Calibration Target and the Offset Press panels.
  - **b.** Ensure the **Show curves in Prinergy** check box is selected in the **Conversion Definition** dialog.
  - c. In the Process Inks tab, choose GRACoL 2006 Coated 1 from the Target list.
  - d. Curves Method: Gray Balance is selected automatically.
  - e. Leave the **3/4-tone Correction** with the default value.
  - f. Click OK.

A print calibration curve is generated to match the gray balance specification for the chosen industry specification.

10. In the Calibration Curves table list in the top left, doubleclick the name of the curve you just created and enter xx new print calibration curve for gray balance (where xx= your initials). Hit the Enter or Return key to set the name.

# Task 2: Output a page using the print calibration curve in Prinergy

- 1. In Prinergy, create a new job, and name it as XX print Curve for gray balance (where XX = your initials).
- 2. Refine GrayBalanceTestFile.pdf with 1stRef-Normz.
- **3.** Output the PDF file using Virtual Proof.LoosePage with the print curve you just created:
  - a. In the Virtual Proof.LoosePage Process template dialog box, from the Output To list, choose Virtual Proof.

- b. Leave ColorFlow Color Relationship Management unchecked.
- c. Expand the Calibration & Screening panel.
- d. Click the **ColorFlow Current State** radio button.
- e. Expand the Print Curve drop down list and select XX new print calibration curve for gray balance.
- **4.** Open the generated output in VPS and measure the 50% patch.

Confirm that the gray balance print calibration curve has been applied: 50% cyan should measure 51.4. 50% magenta should measure 53.5. 50% yellow should measure 52.2. 50% black should measure 44.1. (Your measurements may vary by .1-.2%)

#### Outcome

You have created and applied a print calibration curve to match output to the GRACoL 2006 gray balance specification.