Defining the PCO simulation

After you have characterized the color response of the PCO, you can define the PCO simulation target. Simulation target is the color response that you want to achieve in the PCO. For example, if you select GRACoL C1 as the simulation target for your press, the color response of the PCO is the press's color response when it simulates GRACoL C1.

Depending on how you define the simulation target and the PCO device condition's color response type, the PCO may have a colorimetric response or tonal response:

- If the device condition in the PCO has a colorimetric color response, you can generate ICC profiles and DeviceLinks, and use either the tonal match or gray balance method to generate simulation curves
- If the device condition in the PCO has a tonal color response, or if the simulation target only contains tonal data—for example, if the simulation target is an ISO TVI curve—you can only use the tonal match method to generate simulation curves

1. In the PCO, click the **Simulation** icon .
2. Enter a **Simulation Name** or use the default name.
3. Select the **Show curves in Prinergy** check box if you want the generated print calibration curve to be available for manual selection in Prinergy output.
4. Click the **Process Inks** tab.
5. In the **Target** list, select the color response that you want to simulate:
   - An industry specification—for example, GRACoL 2006 Coated 1
   - The color response of a different device condition—for example, a reference device condition or device condition that you previously characterized
   - Select **None** if you want to use the PCO device condition's actual color response—for example, you want to align SCO devices to PCO devices
     Note: If a desired target is not shown in the **Target** list, you can show it by selecting the **Show in Target Lists** check box of the desired device condition in the **Device Conditions** tab.
6. For a curve controlled device, do the following:

   a. For G7 calibration, select the **G7** check box. This selects the G7 target automatically.
   b. If you want the curve to be available in Prinergy, select the **Show curves in Prinergy** check box.
   c. In the **Process Inks** tab, from the **Curves Method** list, select a desired method:
      - **Tonal Match:** Refers to Tonal Value Increase (TVI), also known as dot gain, and uses the calculated Effective Dot Area (EDA) for calibration. Calculations are based on the density measurements of each ink or colorant. You can use the same target response for each process color, or different target responses for optimizing color builds
      - **Gray Balance:** Adjust tonality by simultaneously calibrating cyan, magenta, and yellow inks so that neutral shades of gray are maintained, while the black ink is calibrated separately for lightness and darkness.
      - **Manual Adjustments only:** Generates a linear curve that can be manually adjusted later

d. Optionally click **View Curves...** to check the shape of the calibration curves. If curve method **Gray Balance** is selected and the curve correction appears too aggressive in the 3/4-tone and shadow region, adjust the **3/4-tone Correction** slider. This may occur if the 100% CMY patch has a strong cast.
e. If you have added and measured one or more spot inks, in the **Spot Inks** tab, select a target from the **Target** list and select a curve method.
Note: For a spot ink whose response has not been measured, the following settings always apply: **Curves Method**: **None** and **Curves Method**: **Manual Adjustments Only**. You can view the Curves Method for each spot ink by clicking **Details** in the Conversion Definition dialog.

- If you have measured the SCTV response of spot inks, select **Target** value **Linear** (selected automatically). This sets the **Curves Method** to **Linear SCTV** .
- To calibrate spot inks to an EDA or TVI target, select any **Target** value other than **Linear** or **None**. This sets the **Curves Method** to **Tonal Match**.
- To generate linear curves that can be manually adjusted, select **Target** value **None**. This sets the **Curves Method** to **Manual Adjustments Only**.

7. For a discontinuous Flexographic PCO press:
   - The color of the target in the highlight region is typically lighter, unless the target is also discontinuous. If the color of the target in the highlight region is *darker* and you want to improve color match of the target response across the entire tonal range, select the **Allow Mindot Tint Out Increase** check box.
   - To adjust the transition from the Mindot to the defined curve, adjust the **Highlight Contrast** slider or enter a value in the box. For most cases, the default value of 70% is acceptable.
     - Reducing Highlight Contrast produces a curve that is flatter near the Mindot, meeting the defined curve at a lower point but reducing contrast in this region.
     - Increasing Highlight Contrast produces a curve that preserves highlight contrast, but meets the defined curve at a higher point.
8. To use a DeviceLink profile, do the following:

   - If your ColorFlow edition is not licensed to generate DeviceLinks, from the **DeviceLink Method** list, select **Imported** and then click **Import** to import a DeviceLink profile.
   - To generate a DeviceLink profile, from the **DeviceLink Method** list, select the desired method. For more details, see Generating a DeviceLink profile.

   Limitations:

   - You cannot generate a simulation DeviceLink for a discontinuous flexographic PCO.
   - If the simulation target is discontinuous, you can generate either a simulation calibration curve or a discontinuous PCO DeviceLink, but you cannot generate both.
9. Click **OK**.
   A simulation calibration curve and/or a simulation DeviceLink are generated. If you select to use the **ColorFlow Color Relationship Management** option in Prinergy output, Prinergy refines input files to the color response of the simulation target.

Note: If the PCO device condition has extended process inks, possible curve methods are renamed **Gray Balance and Spot Color Tone Value** and **Tonal Match and Spot Color**

Tone Value. For either method, extended process inks are calibrated to match the Spot Color Tone Value (SCTV) response of same-named inks present in the simulation target. For extended process inks not present in the target, and for G7 calibration, linear SCTV calibration is performed.