

Creating a custom spot color book

This tutorial will teach you how to use spot colors in Asanti. In classic printing techniques, such as offset or screen printing, spot colors are simple: load the custom ink on the print unit. In inkjet it's slightly different. The color needs to be reproduced with the ink set of the device. By default Asanti is already equipped with commonly used spot color libraries such as Pantone. Other color books can be added by simply downloading them (e.g. HKS, RAL ...).

But sometime these color libraries are not sufficient. A sample may be provided of which the color needs to be reproduced as close as possible. Two things can then be done: visually compare with a printed swatch book or measure the color and add it to the Asanti databases. This tutorial will teach you how to measure spot colors ([ex 1](#)) and use the custom color book in the layout editor ([ex 4](#)). Additional exercises cover; spot color calculations ([ex 2](#)), swatch book printing ([ex 3](#)) and spot color mapping ([ex 5](#)).

Download the Asanti Sample Files via the Asanti Client (Help > Asanti Online > Download Sample Files).

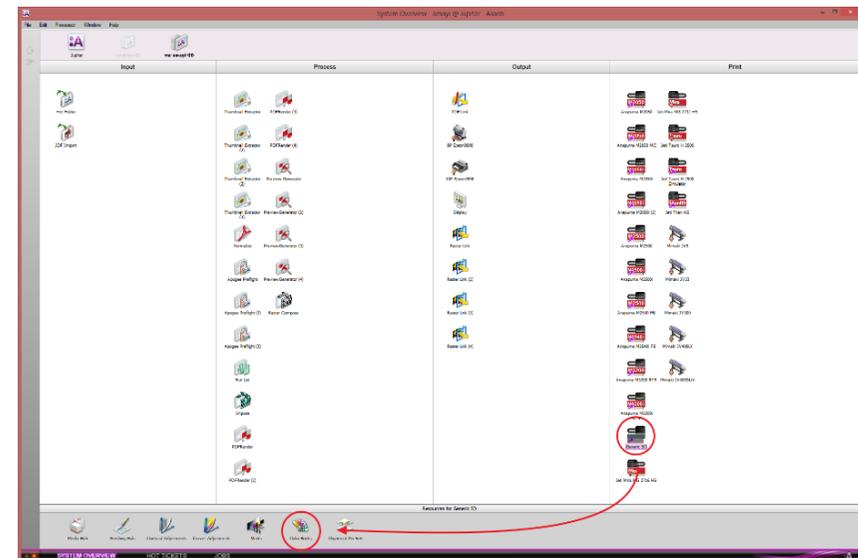
1. Custom color books with spectral data.

Color books with spectral data allow a very accurate reproduction of these colors. It allows Asanti to compensate for certain variables such as a different substrate white point and a better color mixing when one or more colors are covering each other.

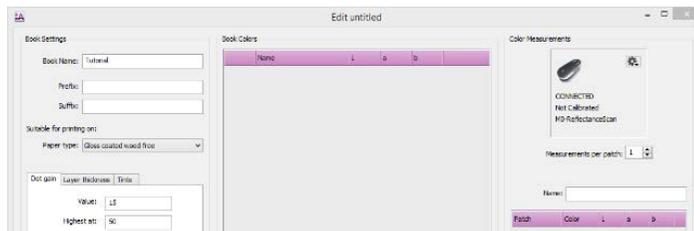
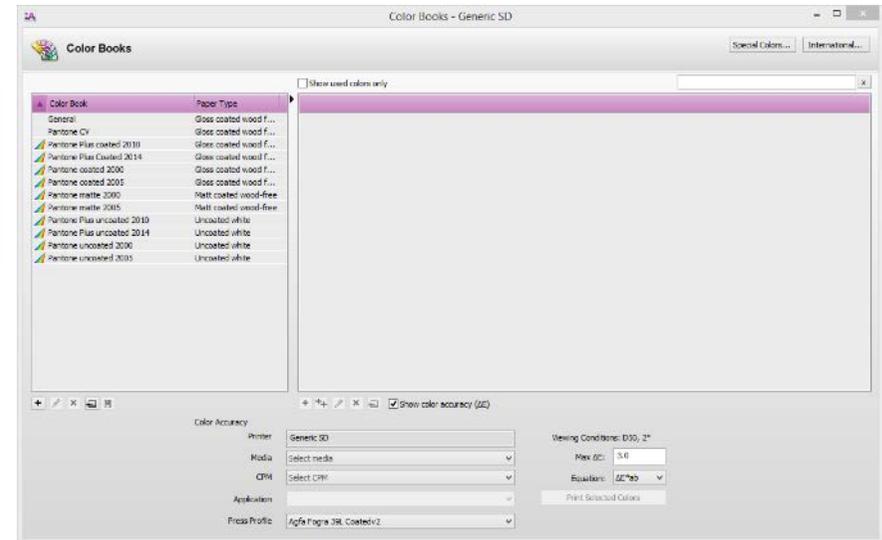
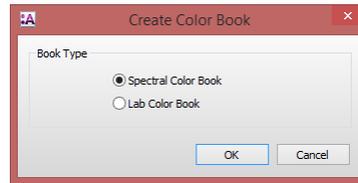
Color books with spectral measurement data are truly device and substrate independent while $L^*a^*b^*$ color books are device independent but still have a certain influence of the substrate in their values.

The Pantone color books are by default installed as color books with spectral data.

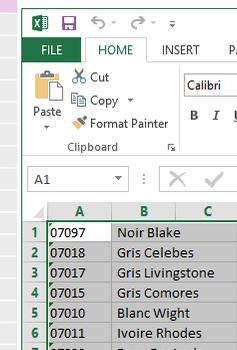
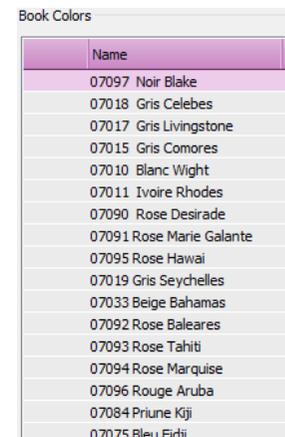
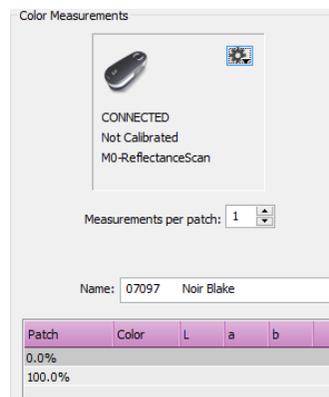
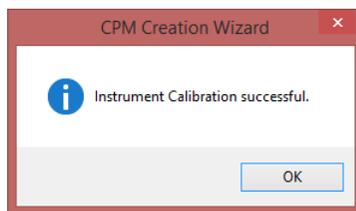
1. Select the Generic SD digital press (or any other sign and display press) and double click the Color Books resource. This will give access to the color books overview.
Or from the Layout Editor windows menu - Resources - Color Books (Ctrl + Alt + 6)



- The color books overview will be displayed. Notice the rainbow icon in front of the Pantone book name to indicate that this is a spectral color book.
- Click the + icon to add a new spot color book.
- Select the Spectral Color Book and click OK.
- The custom color book creation window will open. Name the color book "Tutorial".



- Open the Spot Color Tutorial.xls file (from the Sample Files) with Microsoft Exell . This file contains a series of spot color names. Select the complete data range and copy them to the clipboard.
- Go back to the custom color book. Use the Ctrl+V short cut to paste the list of spot colors in the color book. By default the first spot color will be selected.
- Attach the EyeOne. The UI will recognize the measurement device. Click on the cogwheel to calibrate the device.



9. Select the first spot color and measure the paper white and the 100% tint. TIP: use any Pantone Guide to measure a range of spot colors (they do not need to match the name exactly).
10. Proceed with the next colors. The 0% tint only needs to be measured only once.
11. Click OK to add the color book. A new color book called "Tutorial" is now stored in the Asanti databases.

Name: 07097 Noir Blake

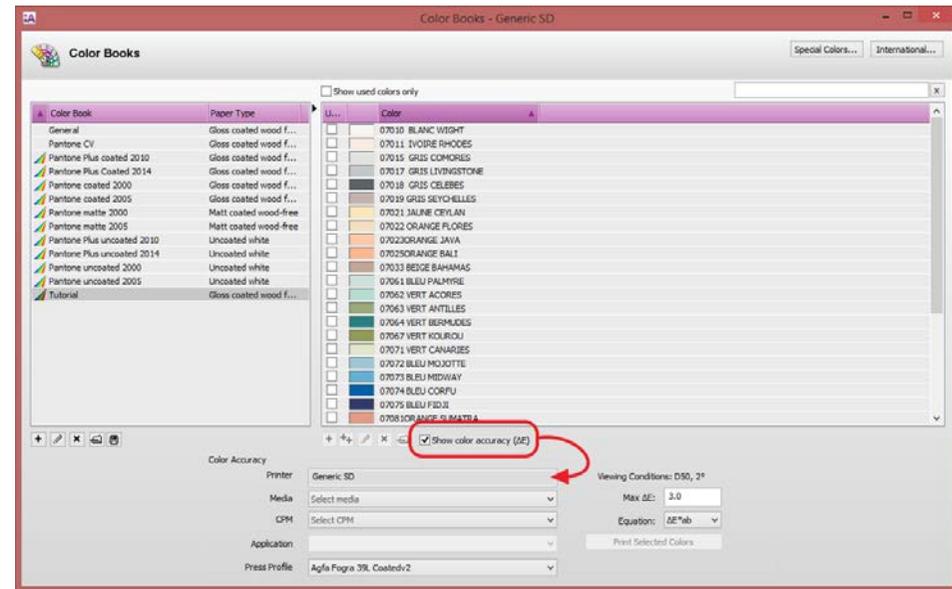
Patch	Color	L	a	b
0.0%		94.6	1.3	-3.9
100.0%		23.1	-0.3	-1.4

Name	L	a	b
07097 Noir Blake	61.9	2.2	3.6
07018 Gris Celebes	51.9	2.2	2.6
07017 Gris Livingstone	83.0	-0.7	3.8
07015 Gris Comores	78.0	-5.8	2.5
07010 Blanc Wight	86.3	-0.5	3.3
07011 Ivoire Rhodes	51.8	23.8	-20.1
07090 Rose Desirade	86.0	9.1	60.1
07091 Rose Marie Galante	58.5	4.9	-18.8
07095 Rose Hawaii	50.0	56.4	-26.5
07019 Gris Seychelles	68.7	-13.6	-32.8
07033 Beige Bahamas	81.0	27.1	9.0
07092 Rose Baleares	83.9	27.2	6.0
07093 Rose Tahiti	44.1	0.3	8.5
07094 Rose Marquise	58.9	55.0	-6.4
07096 Rouge Aruba	58.0	49.6	5.3
07084 Priune Kiji	59.7	62.5	32.2
07075 Bleu Fidji	61.7	61.2	43.4
07074 Bleu Corfu	67.9	53.6	60.7
07073 Bleu Midway	89.2	3.2	90.1
07072 Bleu Mojotte	92.3	-1.0	55.6
07062 Vert Acores	49.8	56.8	-26.9
07061 Bleu Palmyre	37.9	25.2	-39.8
07071 Vert Canaries	32.6	21.4	-51.2
07063 Vert Antilles	32.9	12.2	-39.2
07067 Vert Kourou	47.9	-17.8	-45.3
07064 Vert Bermudes	56.2	-56.9	0.3
07083 Brique Galapagos	34.2	1.2	2.7
07082 Orange Borneo	94.8	-5.4	54.7
07081Orange Sumatra	67.7	-1.3	56.7
07025Orange Bali	58.2	-1.7	42.6
07023Orange Java	50.3	-2.4	24.9
07022 Orange Flores	73.3	31.7	63.5
07021 Jaune Ceylan	62.1	17.1	48.5

2. Calculate the color difference of a series of spot colors.

The spot colors are reproduced with the inks available on the digital press. A conversion needs to be done. A conversion can change the colors when the colors can't be reproduced inside the color gamut of the digital press. Asanti 2.0 offers the possibility to calculate the ΔE of each color from a spectral color book.

1. Select the new custom spot color book in the spot color overview.
2. Activate the "Show color accuracy (ΔE)" option. This will open the Color Accuracy options which allow you to set a media, CPM and application.
3. Select the parameters (in this case for the Generic SD).
 - Media: Generic
 - CPM: Std – GenericSD – 4C
 - Application: Color On Media
 - Press Profile: ISOcoatedv2 (used for high light reproduction where substrate colors can have an influence).



Color Books - Generic SD

Color Books

Special Colors... International...

Show used colors only

Color Book	Paper Type	U...	Color	L	a	b	ΔE	L	a	b	C	M	Y	K
General	Gloss coated wood f...	<input type="checkbox"/>	07010 BLANC WIGHT	97.0	-0.4	2.0	0.1	97.0	-0.4	2.0	3.9	2.6	5.7	0.0
Pantone CV	Gloss coated wood f...	<input type="checkbox"/>	07011 IVOIRE RHODES	94.1	2.1	7.6	0.2	94.3	2.0	7.7	3.5	7.8	13.7	0.0
Pantone Plus coated 2010	Gloss coated wood f...	<input type="checkbox"/>	07015 GRIS COMORES	90.1	-2.2	3.0	0.1	90.1	-2.2	3.1	14.7	7.3	14.7	0.2
Pantone Plus Coated 2014	Gloss coated wood f...	<input type="checkbox"/>	07017 GRIS LIVINGSTONE	80.1	-1.7	-0.6	0.1	80.2	-1.6	-0.6	26.1	16.2	18.7	3.4
Pantone coated 2000	Gloss coated wood f...	<input type="checkbox"/>	07018 GRIS CELEBES	41.5	-1.8	-3.3	0.1	41.5	-1.8	-3.4	60.9	46.2	42.7	37.6
Pantone coated 2005	Gloss coated wood f...	<input type="checkbox"/>	07019 GRIS SEYCHELLES	74.5	4.2	5.9	0.0	74.5	4.2	6.0	24.1	26.3	28.3	6.7
Pantone matte 2000	Matt coated wood-free	<input type="checkbox"/>	07021 JAUNE CEYLAN	92.0	1.5	23.4	0.1	92.1	1.5	23.5	3.6	9.4	33.1	0.0
Pantone matte 2005	Matt coated wood-free	<input type="checkbox"/>	07022 ORANGE FLORES	90.0	3.0	17.9	0.0	90.0	2.9	17.9	5.7	12.5	28.8	0.4
Pantone Plus uncoated 2010	Uncoated white	<input type="checkbox"/>	07023ORANGE JAVA	84.8	12.3	23.9	0.3	84.8	12.4	24.2	2.2	25.7	37.5	0.0
Pantone Plus uncoated 2014	Uncoated white	<input type="checkbox"/>	07025ORANGE BALI	80.4	20.5	30.3	0.4	80.1	20.2	30.3	0.0	35.7	46.3	0.0
Pantone uncoated 2000	Uncoated white	<input type="checkbox"/>	07033 BEIGE BAHAMAS	70.3	7.7	10.1	0.0	70.3	7.7	10.0	23.8	32.5	35.0	9.2
Pantone uncoated 2005	Uncoated white	<input type="checkbox"/>	07061 BLEU PALMYRE	87.9	-6.9	1.1	0.0	87.9	-6.9	1.1	23.1	4.9	16.8	0.0
Tutorial	Gloss coated wood f...	<input type="checkbox"/>	07062 VERT ACORES	85.2	-14.4	0.4	0.3	85.4	-14.2	0.7	33.4	0.1	21.7	0.0
		<input type="checkbox"/>	07063 VERT ANTILLES	67.7	-13.7	21.0	0.1	67.7	-13.7	21.1	43.9	15.8	56.7	10.6
		<input type="checkbox"/>	07064 VERT BERMUDES	48.9	-25.6	-7.0	0.1	49.0	-25.7	-7.1	76.7	19.1	42.5	26.5
		<input type="checkbox"/>	07067 VERT KOUROU	62.1	-15.6	34.8	0.1	62.1	-15.5	34.8	45.1	15.0	75.5	20.0
		<input type="checkbox"/>	07071 VERT CANARIES	90.1	-6.3	11.6	0.1	90.2	-6.3	11.6	17.0	3.7	25.4	0.0
		<input type="checkbox"/>	07072 BLEU MOJOTTE	77.4	-8.5	-12.8	0.0	77.4	-8.5	-12.8	40.2	12.4	11.4	2.1
		<input type="checkbox"/>	07073 BLEU MIDWAY	68.4	-13.5	-24.3	0.1	68.4	-13.5	-24.2	57.7	16.4	8.3	3.4
		<input type="checkbox"/>	07074 BLEU CORFU	39.9	-1.0	-46.1	0.4	40.0	-1.4	-46.1	94.3	60.7	0.6	0.6
		<input type="checkbox"/>	07075 BLEU FIDJI	26.3	10.1	-28.1	0.1	26.4	10.0	-28.2	89.0	81.3	13.6	35.4
		<input type="checkbox"/>	07081ORANGE SUMATRA	70.9	23.5	21.6	0.1	70.9	23.5	21.6	9.5	45.4	44.4	3.3

Color Accuracy

Printer: Generic SD

Media: All Media

CPM: Std - GenericSD - 4C

Application: Color On Media

Press Profile: ISOcoatedv2

Viewing Conditions: D50, 2°

Max ΔE: 3.0

Equation: ΔE*ab

Print Selected Colors

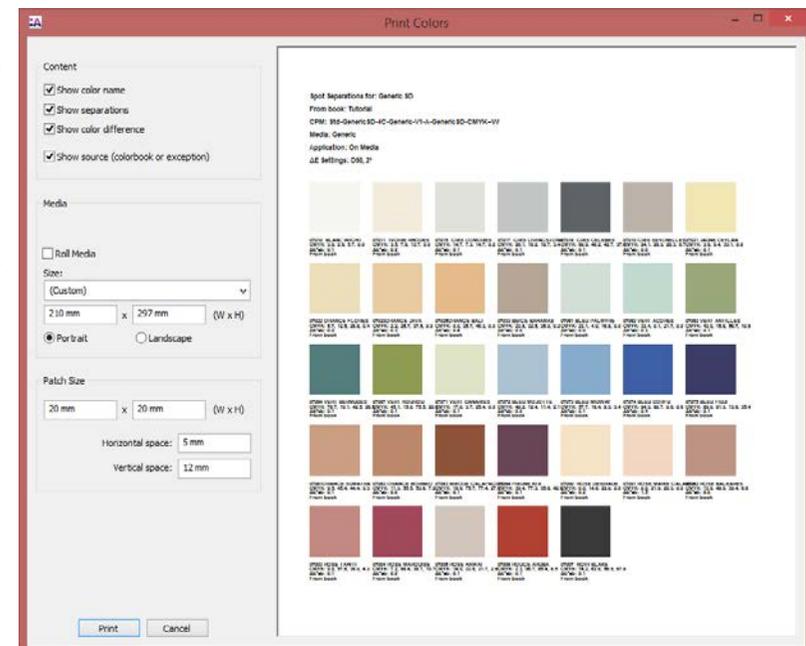
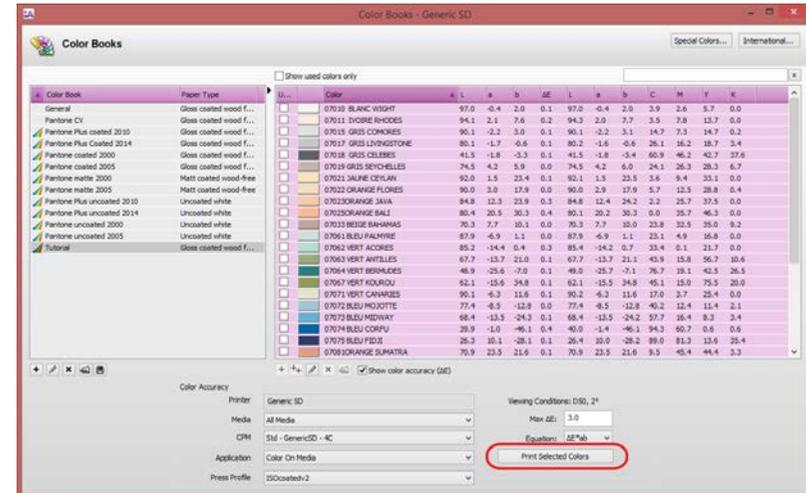
The color accuracy is calculated. For each spot color the Lab value of the source (color book) and destination (CPM) is calculated together with the CMYK values from the CPM. All values above the Max ΔE will be notified in red.

Calculating the color accuracy can be time consuming for color books with a lot of colors.

3. Print a color swatch book

A printed color swatch book can be useful as a visual reference to indicate how spot colors will be reproduced with the selected CPM. The swatch book is automatically generated as an Asanti Job and takes into account the calibration and profile from the CPM.

1. Select the new custom spot color book in the spot color overview.
2. Select all spot colors from the color book (Ctrl+A).
3. Make sure that the “Show color accuracy” option is enabled with the required color accuracy parameters. For Generic SD:
 - Media: Generic
 - CPM: Std – GenericSD – 4C
 - Application: Color On Media
 - Press Profile: ISOcoatedv2 (press profile only used for reference).
4. Click “Print Selected Colors”.
5. A dialogue will appear. Change the output size to A4 (210x297) and the patch size to 20x20 mm. The patches are now ordered on one A4.
6. Click the Print button.

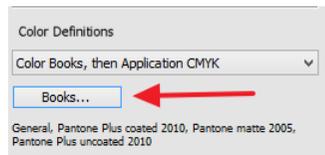


The result for Generic SD is an A4 PDF page which can be printed on any office printer. With an Anapurna or Jeti the map will be color managed with the correct CPM and dispatched to the engine. These colors are color managed in the same way as Layout Editor generated jobs.

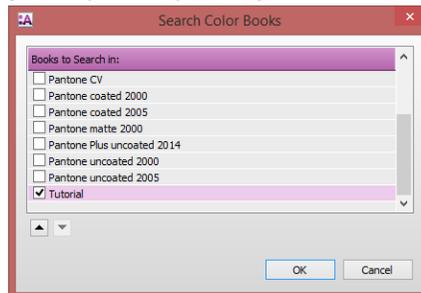
4. Use custom spot color books in the Layout Editor

This exercise will teach you how to use the (custom) color books in the Layout Editor.

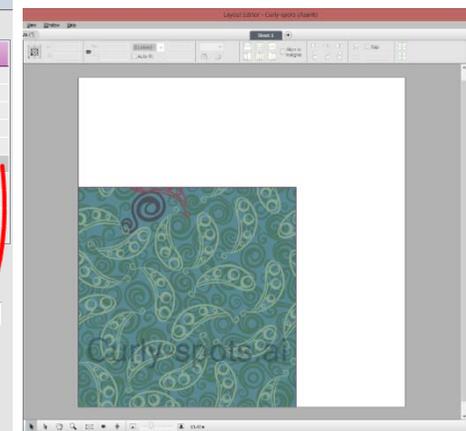
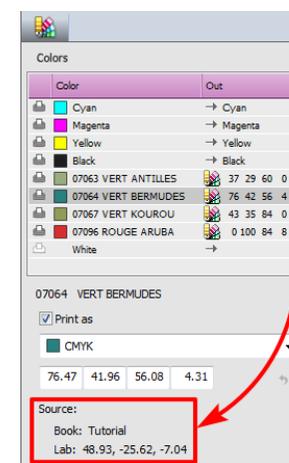
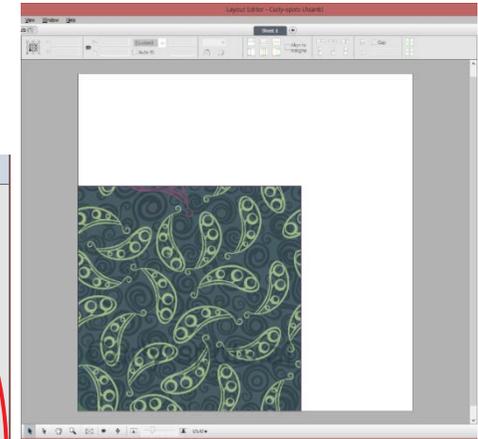
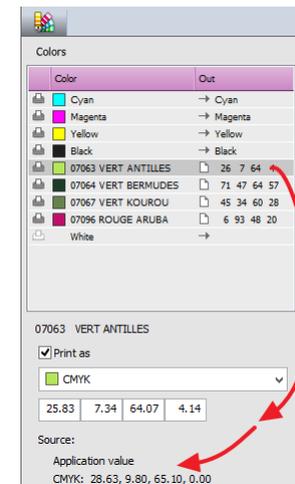
1. Drag the Curly-spots.ai file (from the Sample Files) on the Generic SD device.
2. Drag the image on the sheet.
3. Open the Spot Colors inspector.
4. Select one of the spot colors: Notice that the application values are used. The CMYK values from the application (Illustrator converts the Lab spot color description to CMYK using the output intent). These values are then converted to the color space of the simulation profile by Asanti.
5. Click the Books button to add the Tutorial spot color book.



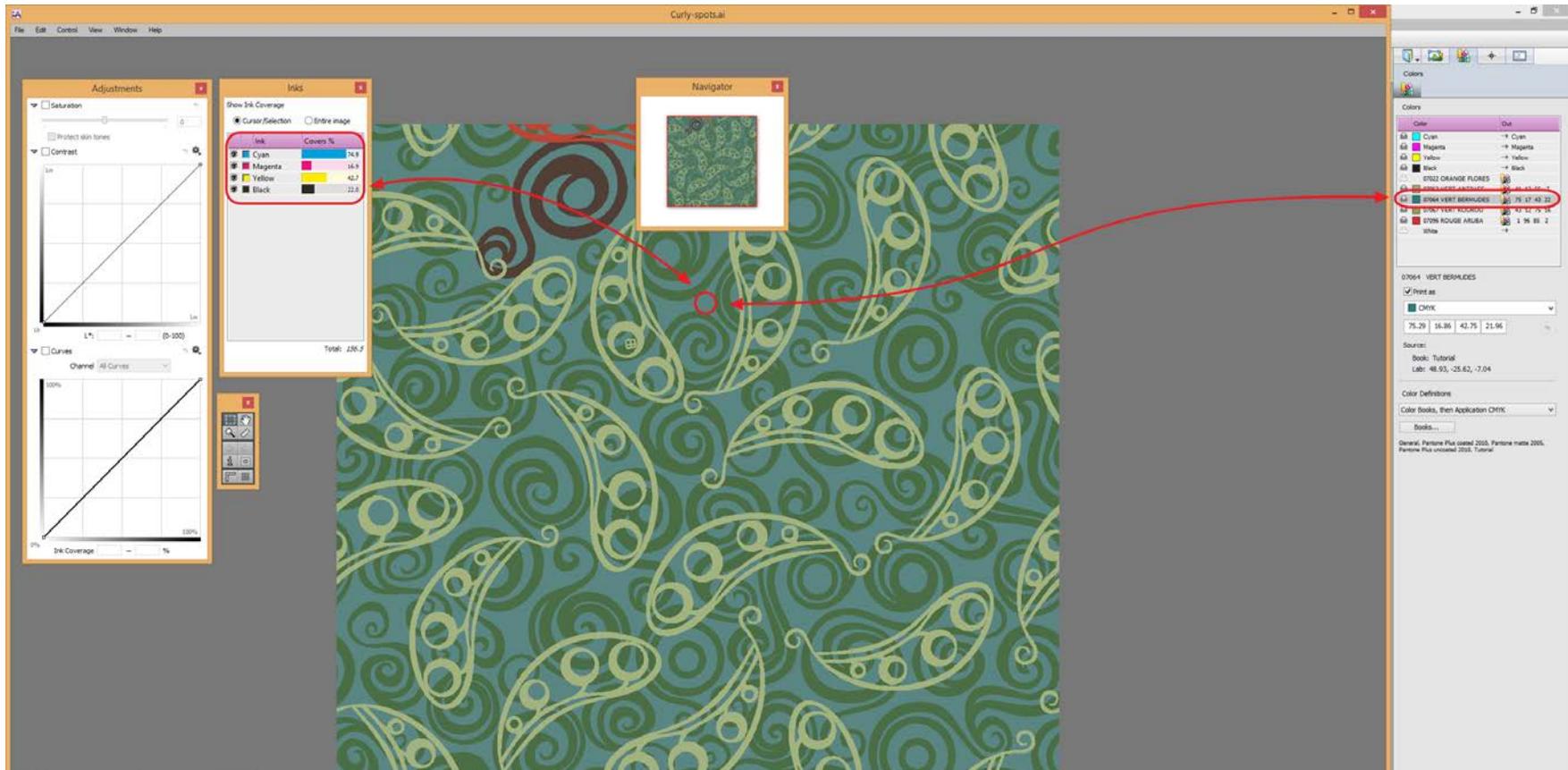
6. Scroll down to add the color book to the search list. You could also change the search priority list by using the small arrow buttons below the Color Books. Click OK.



7. The Layout Editor will recognize something has been changed. Click "Apply Changes" and "Create Previews".
8. The visual representation of the Layout Editor will change when the preview is completed. Notice that the color definitions of the Tutorial color book are now used in the Colors Inspector.



9. Open the Raster Preview and open the Inks Palette (Window – Palettes – Show Inks).
10. Select the Cursor/Selection tool from the Tools palette to measure the Ink Coverage.
11. Hover with the mouse over the background (07064 VERT BERMUDES spot color). Notice that the CMYK values are identical as shown in the Layout editor (same applies to the reddish 07096 ROUGE ARUBA spot color). Other spot color CMYK values do not match because these spot colors are set to overprint. Asanti simulates the overprint colors.

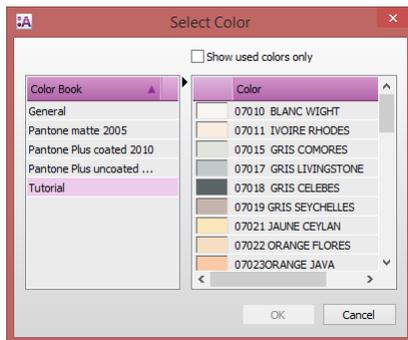


Spot color definitions are looked up based on their name. Asanti checks the color books sequentially. If a spot color with the same name is found in multiple books, the definition from the first book will be used. The priority of a color book can be changed by using the arrows.

5. Mapping a spot color to another spot color

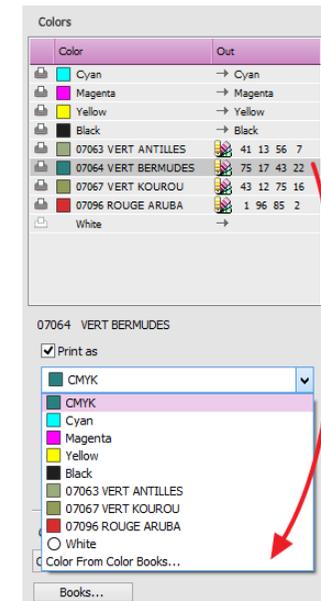
Sometimes spot colors do not match what is really needed (e. g. after visually matching with the swatch book). Rather than sending the file back to the designer (or to do an additional measurement for an unknown spot color) Asanti allows to map spot colors from one to another.

1. Select any spot color from the colors list in the Colors inspector (eg. 07064 VERT BERMUDES) and click on the “Print as” drop down menu.
2. Select “Color From Color Books...” to display all spot color books that will be used for color definition lookup (see exercise above: clicking the Books button).
3. Select the Tutorial Color book and select one of the spot colors (this is the color which needs to be used).



4. The “07064 VERT BERMUDES” color is now mapped to the new color which you selected from the Tutorial color book.

Color	Out
Cyan	→ Cyan
Magenta	→ Magenta
Yellow	→ Yellow
Black	→ Black
07022 ORANGE FLORES	
↑ 07064 VERT BERMUDES	
07063 VERT ANTILLES	41 13 56 7
07067 VERT KOUROU	43 12 75 16
07096 ROUGE ARUBA	1 96 85 2
White	→



- 5. Click "Apply Changes". The mapped color will be used once all files are reprocessed.

