

# Automation Engine

Quality Control tools

06 - 2020

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# 1. Concept and Overview

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Quality Control tools serve any of these reasons:

- **to prevent** unnecessary work. For example preflighting incoming designs and refusing to start prepress work on those that did not match a specific basic profile.
- **to check** the work you have done. Once you have started preparing, editing or outputting files, there are many reasons to check if what you have done is as intended. Detailed inspection and comparing helps preventing many errors.

These tools can be interactive tools or Automation Engine tasks that report a status.

Learn more in

- [Automation Engine Viewer](#) on page 6
- [PitStop Preflight](#) on page 57
- [Global Vision Inspection Tasks](#) on page 66
- [Other QC Tasks](#) on page 105.

**Note:** This is not an overview of all Esko QC tools. This only describes the tools available through Automation Engine.

## 2. Automation Engine Viewer

### 2.1. Introduction

#### What is the Automation Engine Viewer?

The Automation Engine Viewer is a QC tool that enables you to view, check and compare graphic production data.

The Viewer is started from within the Automation Engine Pilot, and can so be used by anyone on a Mac or Windows computer in your network. It is not uncommon that staff from outside the prepress department like CSRs also use this tool.

#### Supporting many File Formats, Comparing and more

The Viewer supports many different file types: PDF, AI, ArtPro, images and even bitmap RIP data. Learn more in [Supported File Types](#) on page 8.

You can compare files and analyse their differences, even when they have different file types and even when they have a different size. Learn more in [Comparing Files](#) on page 40.








#### Other Esko Viewers

- The **Esko Bitmap Viewer** is similar to the Automation Engine Viewer, but only supports RIP data. It is a standalone application and is only available on Windows.
- The **Esko WebCenter Viewer** is similar to the Automation Engine Viewer, with added functionality for comments and approval and it also supports CAD and 3D files. This tool runs in a web browser.

#### Started from the Pilot

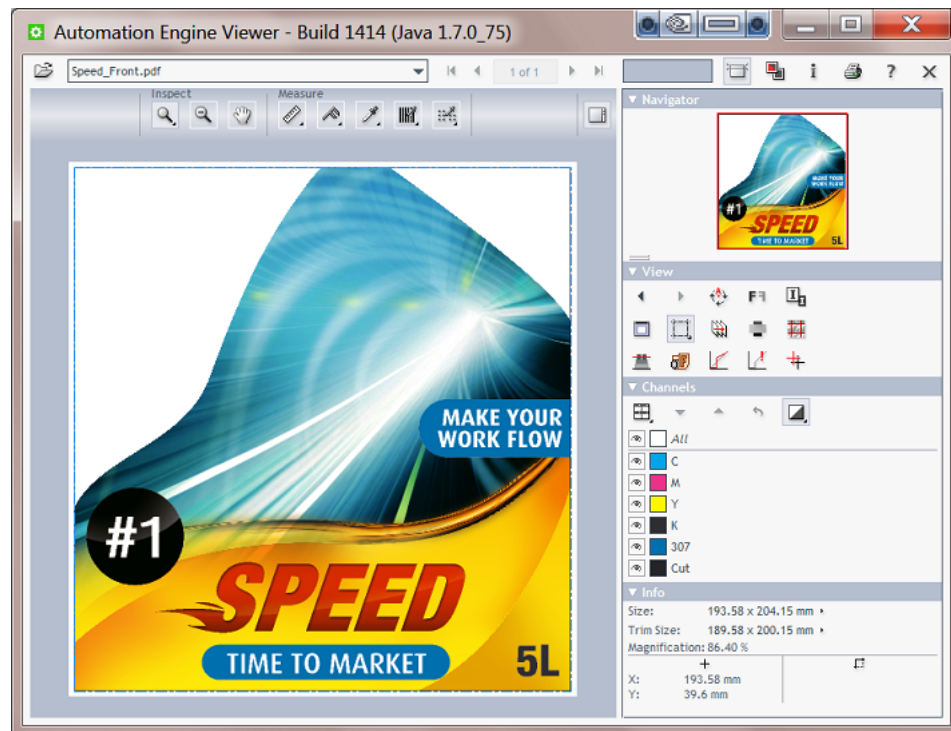
To open a file in the **Viewer**, choose any of these methods:

- Click the word **View** next to the file.

Name	View	Type	Size	Date
 Start_Front_Speed_5L.ai	<a href="#">View</a>	PDF File	45MB	6/22/12 3:21 PM
 Speed_Front_Trapped02.pdf	<a href="#">View</a>	Normalized PDF File	21MB	8/20/15 2:51 PM
 Speed_Front_Trapped02_C.tif	<a href="#">View</a>	Tiff File	8.2MB	8/20/15 3:15 PM
 Speed_Front_Trapped02_M.tif	<a href="#">View</a>	Tiff File	9.7MB	8/20/15 3:15 PM
 Speed_Front_Trapped02_Y.tif	<a href="#">View</a>	Tiff File	3.7MB	8/20/15 3:15 PM
 Speed_Front_Trapped02_K.tif	<a href="#">View</a>	Tiff File	1.5MB	8/20/15 3:15 PM
 Speed_Front_Trapped02_307.tif	<a href="#">View</a>	Tiff File	249KB	8/20/15 3:15 PM

- Right-click the file and select **View....**
- Select the file and go to **File > View**.
- When the Viewer is already open, you can also open the file from there.

Here 's an example of a file open for inspection in the Viewer:



### The Concept of Prepared View Data

Foremost, a viewer tool must be reliable, it must show data in a correct way. The Viewer does this by using the same technology as the Esko editors and RIPs.

The next main challenge for any viewer is to combine these features:

- opening files fast, even when they are big.
- being able to zoom in very deep, to show high detail, preferably also fast.

This is why you have a choice: to open files in the Viewer with or without first creating **Prepared View Data**. Learn more in [Working with Prepared View Data](#) on page 17.

### Limiting who can use deep zoom

When a user does not have the **User Access Right** for **deep zoom**, then

- you can only view file that has prepared view data.
- your zoom is restricted.

This can help you avoid that a group of users, that does not need a too detailed view, would cause load problems on the server by accidental deep zooms.

Learn more in [Defining User Access Rights](#) and [Working with Prepared View Data](#) on page 17.

### 2.1.1. Supported File Types

The Automation Engine Viewer supports these **file types**:

**Graphic files, both with and without prepared View Data**

<p>Esko normalized data:</p> <ul style="list-style-type: none"> <li>• Esko PDF</li> <li>• Esko PDFPLA</li> </ul>	<p>Non-normalized graphic files:</p> <ul style="list-style-type: none"> <li>• PDF (which includes PDF+)</li> <li>• ArtPro</li> <li>• AI (when PDF compatible)</li> <li>• (E)PS. For Adobe Illustrator 'EPS' file types, the same restrictions are valid as in PackEdge.</li> </ul>
--	--

**Images, both with and without prepared View Data**

<p>Supported:</p> <ul style="list-style-type: none"> <li>• Esko CT</li> <li>• Image EPS</li> <li>• DCS/EPS</li> <li>• PSD</li> <li>• TIFF (&lt; 600 ppi)</li> <li>• JPEG</li> </ul>	<p>Not Supported:</p> <ul style="list-style-type: none"> <li>• images with Progressive Scan compression</li> <li>• images including linework</li> <li>• RGB images</li> </ul> <p>This data can be viewed when you first use the <b>Image Import</b> task.</p>
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**RIP'ed data (Digital Film files), only with prepared View Data**

- Esko LEN/LENX
- TIFF (> 600 ppi)
- DCS 2.0 (> 600 ppi)
- VIEW (Imaging Engine print simulation files)



**Note:**

- To be able to open **TIFF**, **LEN** or **print simulation files** from Imaging Engine with the Automation Engine Viewer, you can prepare view data for your files using either:
  - the **Make all output files ready for viewing** option in your Imaging Engine task,
  - the **Prepare for Viewer** task.

See the documentation of your Imaging Engine task (in the chapter [RIP'ing with Imaging Engine](#)) for more information.

- You cannot prepare **LENX** files for viewing with the **Prepare for Viewer** task. However, you can either:
  - use the **Make all output files ready for viewing** option in your Imaging Engine task,
  - view them in the **Bitmap Viewer** (without preparation).

### How different Graphic File Types are Streamed to the Viewer

The data shown in the Viewer are always pixels, referred to as 'View Data'. Usually, you need to zoom in quite deep to see these pixels appear. This is also because these pixels can be (re-)created on the fly: when you zoom in further, you are automatically shown a new set of view data that again guarantees an optimal view.

The way that graphic files (non-images) become these pixel data is different for these groups of files:

- **Normalized** files. These are automatically converted to view data the moment you open them in the Viewer.
- **PDF native**, (E)PS and AI files are automatically normalized first before they are converted to view data.
- **ArtPro native** files. Here you have the choice to also have them normalized first or to have them shown in the Viewer using the same technology that visualizes them in ArtPro. Both methods are fully automatic.
- **Prepared View Data**. You can prepare this view data beforehand, so that when you open the file in the Viewer, it opens instantly. Learn more about this important topic in [Working with Prepared View Data](#) on page 17.

When the view data was not prepared, it will be created automatically when you open the file in the Viewer. The time this takes depends on the available power on the server and on the size of the file (Horizontal -Vertical + the amount of inks).

Learn more about controlling these automatic normalization steps and more in [the Viewer topic in the Configure panel \(Tools > Configure > Viewer\)](#).

## 2.1.2. Starting the Viewer from the Pilot

### Started from a Pilot

You can use as many Viewers as you have Pilot connections. Opening the Viewer does not allocate an extra Pilot connection.

**Note:** You can even open multiple Viewers on the same workstation by opening a second Pilot (**File > New window**) and opening a file in the Viewer from there. Mind that this not required when comparing files. Learn more in [Comparing Files](#) on page 40.

**Note:** Opening the viewer itself takes some time, so do not close the viewer when regularly viewing files.

### "View" Statuses in the Pilot

The **View** column can display any of these Viewer related statuses:

- (-). A dash indicates that the file is not viewable. For example TXT, XML, PAF, TCP, non-PDF office documents, etc.
- **View**. The word 'View' in black indicates that the file is viewable when its file type as indicated by the file type extension corresponds with its real file type.
- **View (Prepared)**. This indicates that the file can be viewed and that prepared view data are available. The file will open quickly. Learn more in [Working with Prepared View Data](#) on page 17.
- **View**. This indicates that the file can be viewed. Because no view data were prepared, they will be created on the fly while opening the file in the Viewer.
- - (**Prepared**). This indicates that the file can not be viewed because it has prepared data that are outdated. Solve this by deleting the view data or by preparing new view data. Learn how in [Working with Prepared View Data](#) on page 17.

### Digital Film (RIP'ed) Files

To view digital film files in the Viewer, the situation is slightly different.

- For **LEN** files, you always need prepared view data.
  - **View (Prepared)**. This indicates that the file has up-to-date view data and can be viewed.
  - - (**Need View Data**). This indicates that the file has no view data. It can therefore not be viewed in the Viewer.
  - - (**Prepared**) indicates that the .LEN files have view data, but that the view data is not in sync with the original file and can therefore not be viewed.
- For **TIFF** files, the behavior depends on the resolution of the file:
  - A TIFF file with a resolution lower than 600 ppi can be viewed without having prepared view data.
  - A TIFF file with a resolution higher than 600 ppi must have up-to-date prepared view data to be able to view it.

**Note:** The resolution is only checked after you clicked on **View**. A warning will be shown when no view data are found when required.

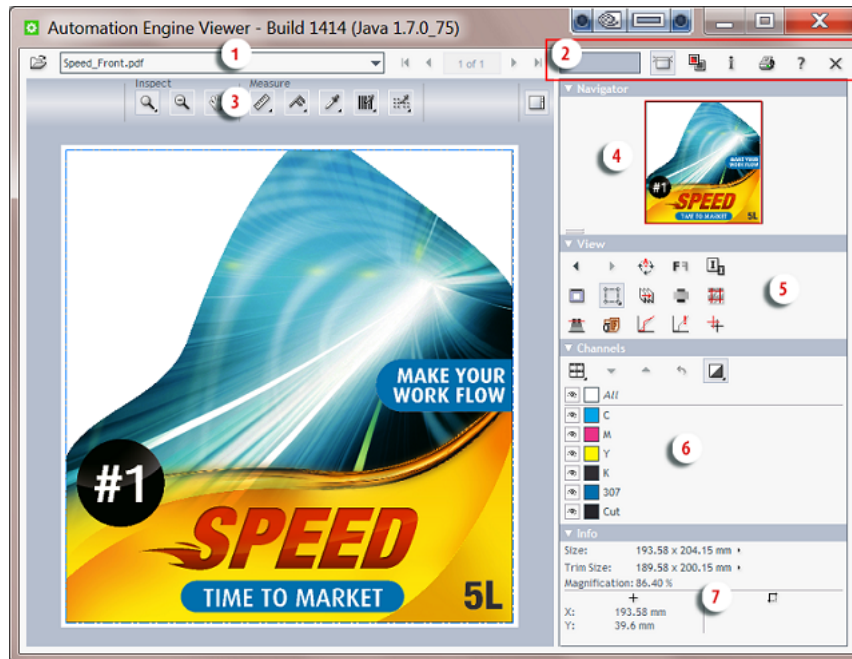
Learn more in [Working with RIP data](#) on page 52.

## 2.2. User Interface

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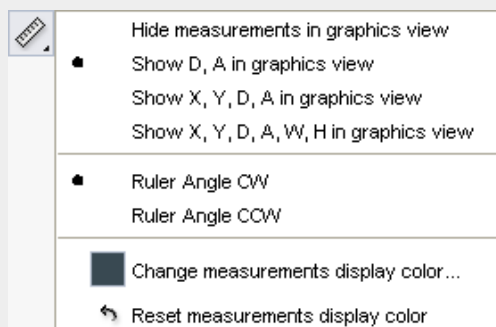
## 2.2.1. Viewer Window Overview

The Viewer offers many powerful tools that make it easy to navigate, inspect and compare files.

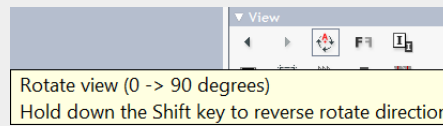


1. [The File Selector](#) on page 12.
2. [The Toolbar](#) on page 13.
3. [The \(Top\) Tools Panel](#) on page 14.
4. [The Navigator Panel](#) on page 15.
5. [The View Panel](#) on page 15.
6. [The Channels Panel](#) on page 16.
7. [The Info Panel](#) on page 17.

**Note:** Several tool-buttons show a small arrow in their lower-right corner. Right-click them (Windows) or use the CMD key (Mac) to see their extra options. An example:



**Tip:** Hover the mouse over a button icon to read a short explanation (and often also a tip).



**Tip:** Hover the mouse on the right of the view area and drag the divider to give the left or right part more space. The resulting width of the tools panel will be remembered and restored for each user.



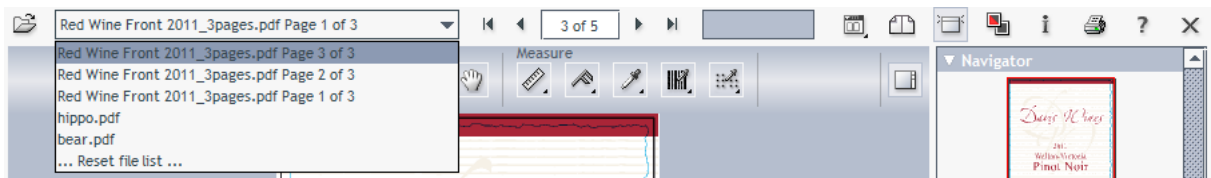
**Tip:** You can open or collapse the tool panels by clicking on their small white arrow:



### 2.2.2. The File Selector

You can open files by clicking on **View** in the Pilot. You can also open files by using the file selector on board the Viewer:

- Click on to select a file from within a Job or Container.
- Click on the drop-down icon to select a file from the list of recently viewed files.
- Click on the arrows to scroll through the recently viewed files or to see other pages of an open file.



**Note:** You can navigate through these files by using the keyboard shortcuts End, Home and Page Up / Down.

#### Limiting How Many Files you can Open

Each file that you have opened is a "file streaming session" from the Automation Engine server to this Viewer client.



**Attention:** Mind that when you compare 2 files, that this is counted as 2 file streaming sessions.

To prevent that the server allocates too much computer memory to any Viewer, the following tools serve to optimize that server memory:





- When you close the Viewer, all file streaming sessions to that Viewer are closed.
- When, in the drop-down list, you click on ... **Reset file list ...**, all file streaming sessions are also closed. Choose this when you want to continue using the Viewer with other files than those recently viewed.
- If there is no recent activity on a file already opened in the Viewer (zooming, measuring), then this file streaming session will be closed. Mind that this does not automatically close the file in the Viewer.
- By default, an Automation Engine server only allows a maximum of 4 file streaming sessions for all connected Viewers. An administrator can change this number in the [Server Admin web tool, in the item 'Processing Capabilities' of the Server Setup](#). When the maximum is reached and an extra session is requested, the user will get a warning dialog that the maximum of sessions was reached.



**Note:** An example: You have set a limit of 4 file streaming sessions.

- Pilot user 1 opens a file in his Viewer and compares it with another one. The total streaming sessions at this moment is 2.
- Then, users 2 and 3 also each open 1 file in their Viewer. The total streaming sessions at this moment is 4.
- Then, user 2 gets up from his workstation to get a coffee but leaves the Viewer and the file open. He stays away 5 minutes. Before he is back, his file streaming session automatically closes, which brings the total streaming sessions at that moment back to 3.
- Then, user 3 also starts to compare his file with another one. The total streaming sessions at this moment is 4.
- Then, user 2 is back at his workstation. His file is still open in the Viewer but the streaming session for that file was already closed on the server a few minutes ago. He tries a zoom in. He gets an error that the maximum of 4 session is already reached.




### 2.2.3. The Toolbar



-  The progress bar shows the progress of view data being streamed to your Viewer. Learn more in [Working with Prepared View Data](#) on page 17.
-  Multi-page options (only shown when viewing a multi page file). Learn more in [Working with Multi-Page Files](#) on page 50.
-  The compare tool allows you to compare two files. Learn more in [Comparing Files](#) on page 40.
-  The annotations panel becomes available when your files has XFDF annotations. Learn more in [Working with Annotations](#) on page 49.

-  The information button opens a dialog that shows the file's XMP metadata (the same one as when you when you select a file in the Pilot and click  in the Files view).



**Note:** Any barcodes mentioned in the XMP are of barcodes created with Esko tools. The barcode measurement tool on-board this Viewer can also detect and measure other barcodes.

-  The print button allows to print what you see in the Viewer. Learn more in [Print](#) on page 30.
-  The help button opens the Viewer's online help in the local default browser.
-  The close button closes the file that is being viewed (only the file, not the Viewer tool itself).

## 2.2.4. The (Top) Tools Panel

The top tools panel offers the Viewer's most used tools. You can customize which tools you see by right-clicking it and selecting or deselecting some tools.

**Note:** You can select a tool even when it is not currently available in the Viewer. For example, the **Page list** tool can be added to the top tools panel while working on a single page file for which this tool is not activated. This tool will then automatically appear in the panel the next time it can be used.




- Click  on the right to hide or show all the right side panels (Tools, Navigator, View, Channels, Info).
- Click  to show or hide the panel. Hiding the top tools panel automatically shows the right side panels and vice-versa.

The top tools panel can offer the following tools:

### Page List Tools

These are only shown when viewing multi-page files. Learn more in [Working with Multi-Page Files](#) on page 50.

### Inspect Tools






-  **Zoom** tool. Right-click it to see extra options.
-  **Zoom out** tool.
-  **Pan** tool.

Select the tool and drag the image by holding down the left mouse button and moving the mouse. You can temporarily switch to the Pan tool by holding down the space button.


Learn more in [Zoom and Pan](#) on page 21.

### Measure Tools

-  **Ruler**. Learn more in [Measure Distances and Angles](#) on page 26.

-  **Caliper.** Learn more in [Measure Heights and Widths](#) on page 28.
-  **Densitometer.** Learn more in [Measure Color](#) on page 29.
-  **Calculate screening and angle.** Learn more in [Working with RIP data](#) on page 52.
-  **Inspect barcode.** Learn more in [Checking Barcodes](#) on page 31.
-  **Inspect braille.** Learn more in [Checking Braille](#) on page 32.

### Compare Tools

The compare tools are automatically shown when you activated the  **Compare** mode. Learn more in [Comparing Files](#) on page 40.

## 2.2.5. The Navigator Panel








The **Navigator** panel shows a preview that indicates your current zoom and many other viewing choices. Click on the preview to reposition your (same size) zoom area.









**Tip:** You can resize the navigator panel:



## 2.2.6. The View Panel



The **View** panel offers the following tools:

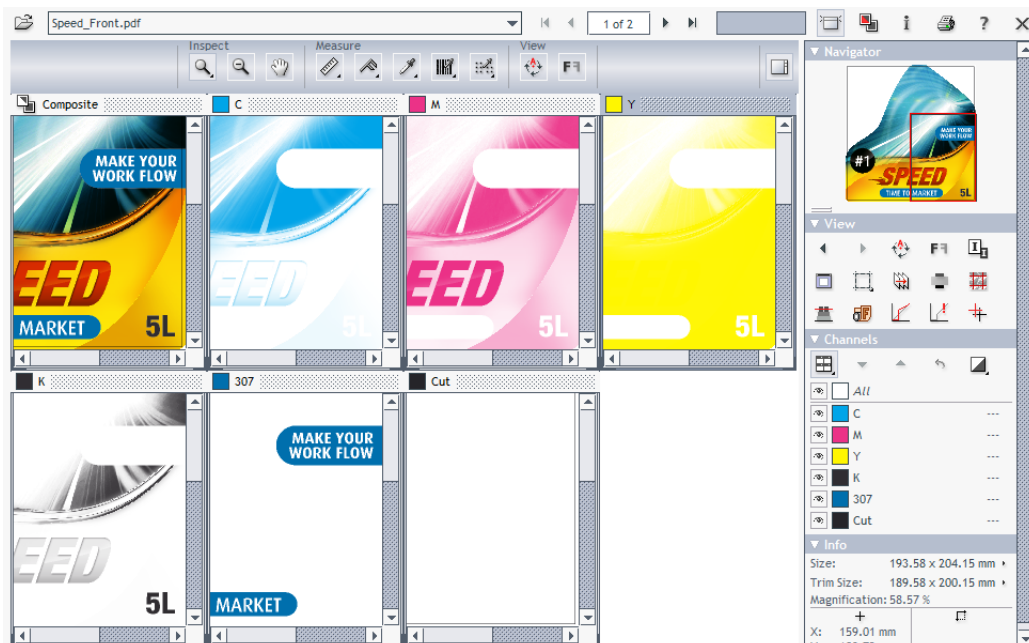
-  **Previous view:** Shows you the previous view. Hold the **Shift** key to go to the first view.
-  **Next view:** Shows you the next view. Hold the **Shift** key to go to the last view.
-  **Rotate view** tool. Hold down the **Shift** key when clicking to reverse the rotate direction. Or use the keyboard shortcuts **Ctrl + Shift + '+'** (90 degrees CW) and **Ctrl + Shift + '-'** (90 degrees CCW).
-  **Mirror view:** Mirrors the current view (**Ctrl + M**).
-  **Invert view:** Inverts the current view (typically used when viewing only one channel).
-  **Background Color:** Allows to change the background color of the image and/or the surrounding viewer window. This can be useful when evaluating an image that will be printed on a material that is not white. Setting a color for the image does not affect the channels or any color measurements.
-  **Show margins (trim box):** Shows the file's trim box as a blue dashed line. Learn more in [Change Clipping](#) on page 22.

- 
**View from back:** Mirrors the current view and also reverses the sequence in which the channels are shown. This is useful when viewing files that are printed on the back of a transparent material and therefore contain areas using opaque ink.
- 
**Set overprint highlight color:** Highlights the overprints in a color of your choice. Learn more in [Highlight Overprint](#) on page 26.
- 
**Seamless view:** Simulates a seamless layout. Learn more in [Seamless View](#).
- 
**Total Area Coverage:** Shows the sum of all separation-densities at a certain point or area in your document. Learn more in [Using Advanced View tools](#) on page 37.
- 
**Flexo Plate:** Shows a single separation as a flexo plate, by simulating both the color and the missing too small percentages. Learn more in [Using Advanced View tools](#) on page 37.
- 
**Flexo Print:** Shows the effect of highlight dot gain on the file. Learn more in [Using Advanced View tools](#) on page 37.
- 
**Break Out:** Shows an area of a single separation where the percentage is lower than the first visible dot. Learn more in [Using Advanced View tools](#) on page 37.
- 
**Registration Error:** Shows a simulation of the file printed with registration errors. Learn more in [Using Advanced View tools](#) on page 37.

## 2.2.7. The Channels Panel

The **Channels** panel shows the file's channels (separations, inks) and offers extensive separation viewing possibilities.

- Click  to switch between a **Composite view** and a tiled view of the individual separations.
- Right-click  to choose the kind of tiling to use: **Automatic**, **Horizontal** or **Vertical**.





- You can switch channels off and on. You can change their display color and transparency. You can map channels so they here appear as one.

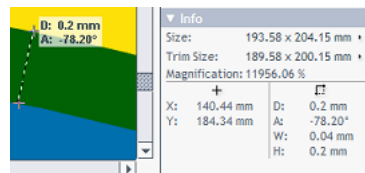
Learn more in [How to Inspect Channels](#).

## 2.2.8. The Info Panel

The **Info** panel displays:

- file information: **Size** and **Trim Size**
- viewing conditions: current **Magnification** (zoom), mouse position, results from the ruler.

To change the units, click on one of the small triangles and select the unit (pt, mm, cm, inch).



## 2.3. Working with Prepared View Data

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### 2.3.1. Concept

As mentioned [when introducing the Viewer](#) and also [when explaining how different files are streamed to the Viewer](#), preparing view data can be important to guarantee both speed and detail when viewing files.

When you regularly experience significant delays when opening files, then consider preparing view data first. Files with prepared view data always open fast.

Zooming and panning will be faster on files with prepared view data. The load on the server is also smaller when using prepared view data.

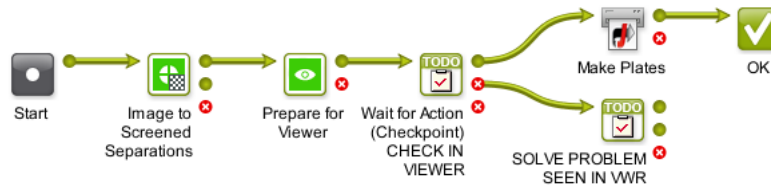
**Note:** When a (deep) zoom needs a resolution that is higher than the prepared one, the data for that zoom area will automatically be streamed from the server. You may notice this delay (visible in the progress bar).

**Tip:** **Ctrl-Shift-V** displays the current view resolution.

### Workflow

The [Prepare For Viewer task](#) creates prepared view data. Depending on your workflow, the size of the files and how consistent viewing delays are, you can choose to launch this task in one or more of these ways:

- **Ad hoc (manually)**, by selecting a file in the Pilot and launching the *Prepare For Viewer task*. When you often use this, consider making it a favorite ticket.
- **Automatic, as part of workflow tickets.** For example, when you often check RIP data in the Viewer, then consider adding the *Prepare For Viewer task* as a workflow step after the RIP'ing step. Some users also add a *Wait for Action (Checkpoint) task* to create a QC step in the users' To-Do list. An example:



- **Automatic, for all files in a specific folder.** For example, when you check all files arriving in a specific folder, you can have that folder automatically launch the *Prepare For Viewer task* on all incoming files. This way, you win time when opening those files in the viewer. Learn more in *Speed Up For Viewing* on page 20.

**Make sure your Prepared View Data is Up-To-Date**

As mentioned in *Starting the Viewer from the Pilot*, you will not be able to view a file when it has prepared view data that is outdated (older than the source file). This will be indicated by a specific status in the **View** column: - (Prepared).

View data typically becomes outdated because the source file has a more recent modification date. So make sure you only create the prepared view data as a last step before checking it in the viewer.



**Attention:** Prepared view data becomes useless when the source file was manually moved or renamed.

**Note:** When you move a source file with the *Copy or Move File task*, then the view data will follow automatically.

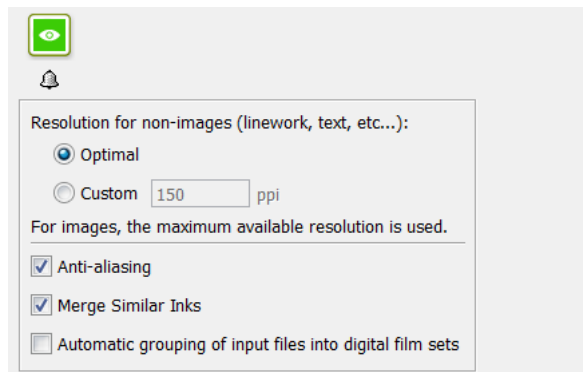
Learn more in *Managing View Data* on page 20.

**2.3.2. Prepare for Viewer Task**

This task creates view data that will be used when you open its input file(s) in the Automation Engine Viewer. The supported files types are *those that the Viewer supports*.



**Attention:** In many cases, you do not have to use this task before opening a file in the Viewer. Learn more about this choice and workflows using prepared view data *here*. Find an introduction to the Automation Engine Viewer *here*.



• **Resolution for non-images:**

- **Optimal:** The task uses a smart algorithm to decide the optimal resolution for the view data (the one that offers the best balance insuring both speed and detail). The calculated resolution is mentioned in the tasks 'details' and log file.
- **Custom:** Specify the resolution yourself.



**Attention:** We advise to only set a custom resolution in cases where you found that the optimal setting created a too small or too large set of view data.

- **Anti-aliasing:** This smooth-ens the staircase effect when images are generated from line-art objects.
- **Merge Similar Inks:** This merges inks that have a same name but have a different ruling or angle.



**Attention:** We strongly advise to enable this option when viewing ArtPro files or Normalized PDF files generated by ArtPro.

- **Automatic grouping of input files into digital film sets:** When digital film separations (RIP'ed files) are grouped into sets, they will open together in the Viewer and can so be inspected as a composite image. See some examples in [Working with RIP data](#) on page 52.
  - When this option is **not selected**, the list of task input files that the user manually selected or that a workflow created for this ticket will be **grouped regardless of their file names**. This is how you can for example get a composite view of these files (where not all have the same name before the suffix with the ink name):

Name ▲	View	Type	Size	Date
GreenMan_K.len	<a href="#">View</a> (Prepared)	CDI File	6.6MB	9/2/15 4:10 PM
Shrek_C.len	<a href="#">View</a> (Prepared)	CDI File	13MB	9/2/15 4:10 PM
Shrek_M.len	<a href="#">View</a> (Prepared)	CDI File	12MB	9/2/15 4:10 PM
Shrek_Y.len	<a href="#">View</a> (Prepared)	CDI File	5.7MB	9/2/15 4:10 PM

- When this option is **selected**, the grouping is done automatically **based on the file names** of the task input files. Using above example, you would then get 2 groups for


composite viewing: one with only 3 separations from the `Shrek` files and one with one separation from the `GreenMan` file.

### 2.3.3. Speed Up For Viewing

As mentioned in [Concept of View Data](#), you can have prepared view data created automatically for all **new** files in a subfolder of a [Job Folder](#).



**Attention:** Using this option will generate view data as soon as a file is written in this folder. And when a file in this folder is updated, its view data will be regenerated. This can lead to overhead on the server when view data are generated that will not be used. Therefore, as a more optimal alternative, consider inserting a **Prepare for Viewer** task at the right place in your workflows.

- To add this functionality to a folder, right-click any folder in a Job folder and select **Speed Up for Viewing**. The folder will get a specific icon . From that moment on, Automation Engine will automatically launch the **Prepare for Viewer** task on all new or modified files (that the **Speed Up for Viewing** task supports as input files).

The ticket of the **Prepare for Viewer** task that is used for these automatically launched tasks is defined in [the Configure tool](#).

**Tip:** When you are [creating Jobs](#) based on a template Job that has a subfolder with the attribute "**Speed Up for Viewing**", then this attribute will be inherited in the folder in the new Job.

**Note:** When, in such a folder, a file is opened and being edited in Esko PackEdge or Esko Plato, you do not want to have view data re-created every time you click **Save**. That is why the **Prepare for Viewer** task only starts and updates the view data once the file is closed in the editor.

- To stop this functionality, right-click the folder and select **Speed Up for Viewing** to switch it off again. This attribute is also removed automatically when the Job is removed, exported or archived.

### 2.3.4. Managing View Data

The [Prepare for Viewer Task](#) creates the prepared view data in a hidden `.view` folder next to the input file.



**Warning:** Accessing that hidden folder and deleting, moving or renaming this view data manually will create Viewer errors.

The size of the view data depends on the chosen resolution and on the size and amount of channels of the source file.

Because this data is not small and temporary by nature, the following mechanisms help to clean up the prepared view data:

- When you [demote a Job](#) (by removing, exporting or archiving it), all view data in that job folder is **automatically** deleted.
- You can **manually** delete the (hidden) prepared view data, by:

- right-clicking a file and choosing **Delete View Data**. This removes the prepared view data for that selected file only.
- right-clicking a folder and choosing **Delete View Data**. This removes the prepared view data for all files in that folder and its subfolders.


## 2.4. How To

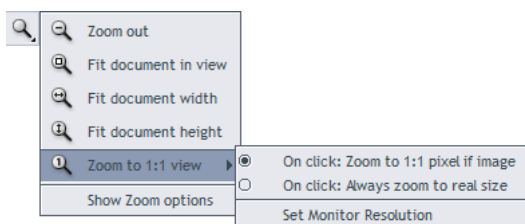
---




This is an overview of frequently used tools that you can use on all types of files.

### 2.4.1. Zoom and Pan


#### Zooming

- Double click  the zoom tool itself to zoom. If a selection was already made (for example when measuring), the zoom will fit that selection to the window.
- Scroll the mouse to zoom in/out with the location of the mouse point as center.
- For a marquee zoom, hold down the right button and drag the mouse.
- Right-click (ctrl-click on a Mac) to see extra options:



- About the **Zoom to 1:1 view**:
  - First use **Set Monitor Resolution** to inform this viewer about the current monitor. This value is saved per user per client computer. Learn more [in this KB article](#).
  - Then define what a click on  **Zoom to 1:1 view** means. Choose to make it **Zoom to real size** or choose to make it **Zoom to 1:1 pixel** to zoom to the resolution of the image, offering a lot of detail.
- Use  and  in the View panel to see a previous or next view.



#### Panning

Select the  pan tool and drag the image by holding down the left mouse button and moving the mouse. You can temporarily switch to the pan tool by holding down the space button.

While panning, you can still use these ways to zoom in/out with the mouse point as the center:


- double-click to zoom in
- right-click to zoom out
- scroll to zoom in/out.

### Keyboard Shortcuts

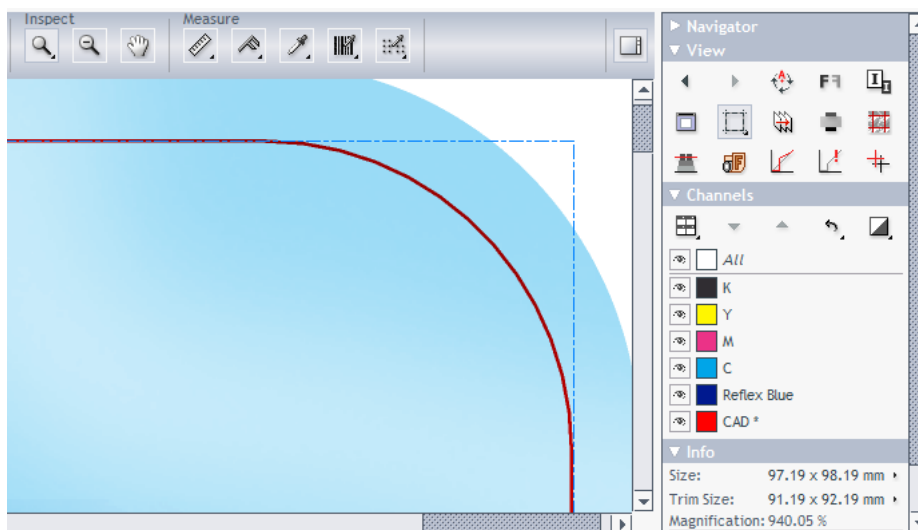
- No matter which tool you have selected, you can always use the right mouse button to zoom in:
  - combine it with a right-click to zoom in by a factor 2.
  - combine it with holding down the **Ctrl** button to zoom out by a factor 2.
- **Ctrl-'Arrow'** pans the image 25% of the window size in the direction of the used arrow.
- **Ctrl-Shift-Spacebar** temporarily switches to the pan tool to allow one drag pan.
- In the View panel, when clicking  and  to see a previous or next view, hold **Shift** to go the very first / last view.
- **Photoshop style keyboard shortcuts:**
  - **Ctrl-'+'** zooms in with a factor 2.
  - **Ctrl-'-'** zooms out with a factor 2.
  - **Ctrl-'0'** fits the file in the window.
- **PackEdge style keyboard shortcuts:**
  - **F5** zooms in with a factor 2.
  - **F6** zooms out with a factor 2.
  - **F7** temporarily switches to the pan tool to allow one drag pan.
  - **F8** temporarily switches to the zoom tool to allow one drag zoom.
  - **F9** fits the file to fit in the window.


### 2.4.2. Change Clipping

The trim box is often used as the basis for step and repeat of a one-up. It is good practice that the trim box corresponds to the bounding box of the die line.

Click  to see the trim box as a blue dashed line. This allows you to check if the trim box correctly fits the die line.

In below example, we see that the trim box fits on the 'CAD' line. Also notice the size values in the **Info** panel:




Right-click  to see extra options:

- to clip (hide) what is outside the trim box.
- to set a different color for the trim box.
- other options relate to multi-page documents. Learn more in [Working with Multi-Page Files](#) on page 50.

### 2.4.3. Inspect Channels

**Note:** We already mentioned some basic functionality when introducing [The Channels Panel](#) on page 16.

#### Selecting Channels to View

Click  to view or hide one, multiple or all channels.

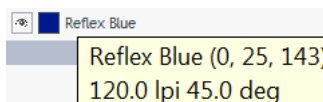
Right-click the  of a single channel to view only this channel.

#### Channel Definition

Especially when comparing files based on their channels, it is important to know the exact definition of the channels.

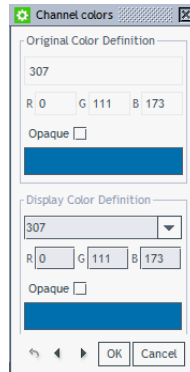
Hover with your mouse over the channel's color patch to you see what defines it:

- its name
- its RGB display values
- its ruling, angle and dotshape (when defined).



## Changing the Appearance of a Channel

Double-click a channel to open its **Channel Colors** dialog.



The top part shows the **Original Color Definition** and is read-only.

The bottom part allows you to change the way the channel is displayed. This is for example useful when the file contains a white separation because it will be printed on clear plastic. To see that separation better in the Viewer, you might want to display it as pink. To do this, set new RGB values, or double click the color path and to pick a color.

Use the drop-down list to choose a color of another channel in the file. Select **Opaque** to make the selected channel displayed opaque.

A channel of which you changed the display is marked with an asterisk (\*)



**Note:** These display changes are not remembered the next time you open this file in the Viewer.


Use the ◀ ▶ arrows at the bottom to browse through all channels, so that you can modify several channels without reopening this dialog.

Use the ↺ button to reset the display to the channel's original color definition.

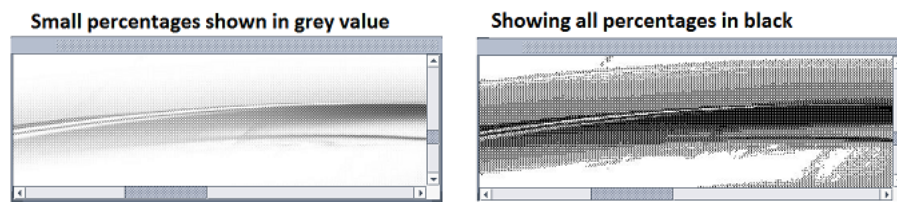
## Changing how Single Channels are Displayed

Click  to display a single channel in black instead of its own color.

**Note:** This setting is remembered the next time you open the Viewer.

A right-click on  also offers to **show single channel as black with show all effect**. This view uses black rather than a grey value for a display pixel that represents a partially covered area. This makes it easier to detect areas with small dots in RIP'ed files. An example:





### Changing the Sequence of the Channels

Opaque inks cover previously printed inks, so the sequence when viewing these channels is also important. You can change their display sequence by using the buttons. Moving a channel down means putting it later in the printing sequence, which would put it on top of the other channels.

**Tip:** You can also change the sequence by dragging the colored box of a channel to a different position.

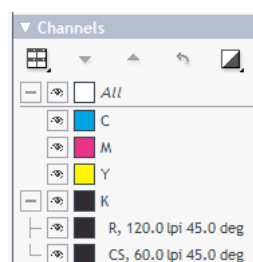
**Note:** This display sequence does not have any influence on the actual printing sequence, only the display in the Viewer is affected.

When you changed the channel sequence, click on to reset it to the original channel sequence. Right-click to choose what you are resetting (channel order, color definitions or both).

### Merging or Splitting the Display of Similar Inks

Inks with a same name are by default shown as one same ink, even when they have a different ruling, angle or dot shape defined.

If you want to see such inks as separate channels, disable the setting **Viewing Preferences > Merge Similar Inks** in the Viewer item of the Configure panel. After a restart of the Viewer, you can then click to unfold the channel and change view settings for the separate ones:



Learn more in [Matching Channels](#) on how to insist considering them as one channel while comparing.


### Keyboard Shortcuts

- Hold down **Ctrl** and press one of the number keys to select the corresponding channel and deselect all other channels. 1 is the first channel, 2 is the second etc.

When you have more than 9 channels, use **Ctrl-Shift-0**, **Ctrl-Shift-1**,... , **Ctrl-Shift-9** to select channels 10 to 19.

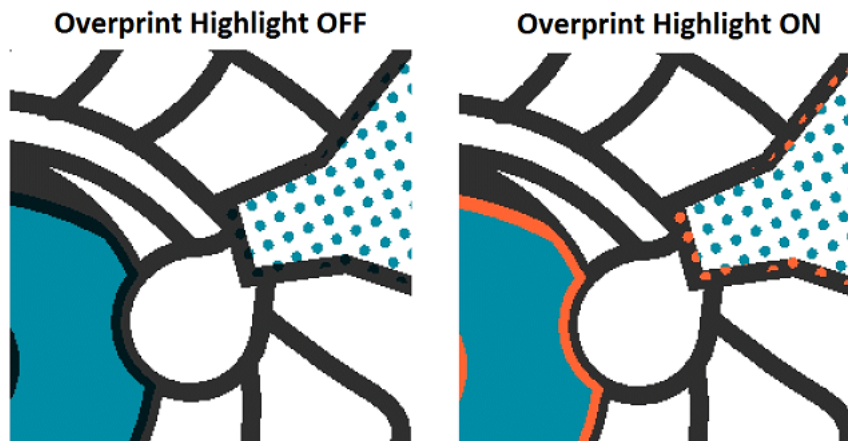
- **Ctrl-0** selects all channels.
- **Ctrl-N** selects a single channel. When multiple channels are selected, the first channel will be selected. When a single channel is selected, the channel after the currently selected will be selected, or when the currently selected is the last, the first will be selected.

### 2.4.4. Highlight Overprint

Click  to get a clear indication of all areas where two or more active channels are overlapping (keyboard shortcut **Ctrl-H**).




This tool is useful when checking trapping:



To change the highlight color, click the **Overprint Highlight** color patch and choose a custom one.

### 2.4.5. Measure Distances and Angles

To measure between two points:

1. Select the ruler tool .
2. Click the first point.
3. Either click the second point, or drag the cursor to it.

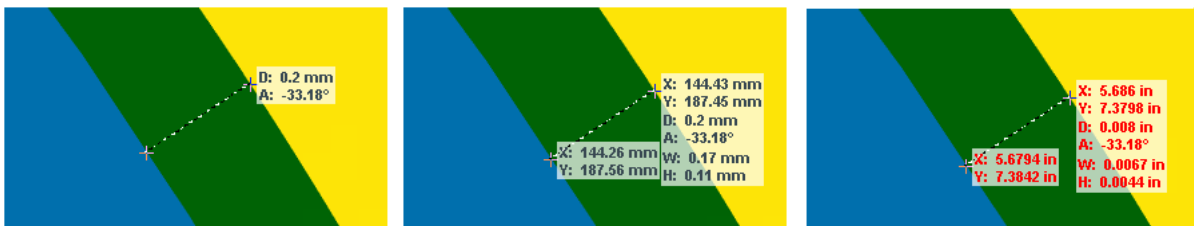
A dashed line visualizes the distance.

**Tip:** To constrain the tool to angles of multiples of 45°, hold down the `Shift` key while deciding the second point.


The measurements appear both in a pop-up and in the **Info** panel:

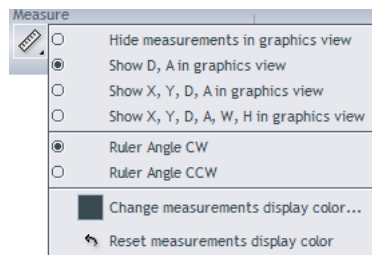
- The distance between the two points (**D**).
- The angle measured relative to the axis (**A**).
- The start and end location (**X** and **Y**).
- The horizontal (**W**) and vertical (**H**) distances traveled from the horizontal and vertical axes.

See this example where a trap is measured (use the same method to for example measure the distance to a finishing mark):



You can also:


- Right-click  to show/hide measurements, change the ruler angle or change the display color.



- Change the units used by clicking the small arrow in the **Size** line of the **Info** panel, or using **Ctrl + U**.

**Tip:** You can combine the ruler tool with other view tools. For example: click on a point, then change the view (by zooming out, panning or turning back to a previous view), and then click the second measuring point.

## 2.4.6. Measure Heights and Widths

Use the  caliper tool to measure the height or width of multiple, typically aligned, (text) objects. You can measure freely or you can use fixed preset sizes.

Click  to activate it and start measuring using the last chosen style.

Right-click the tool to choose a style or to manage fixed presets.

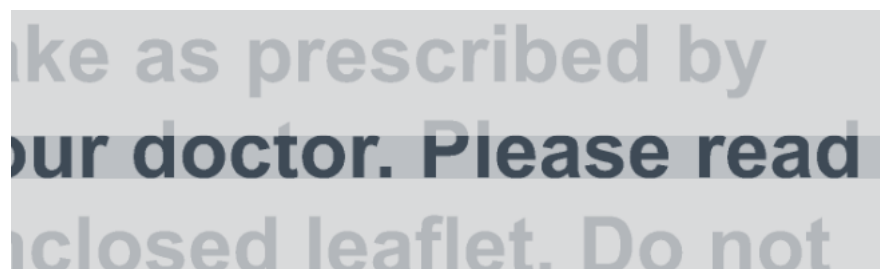
- **Free Selection** (default)
  - Click on a first point of measurement.
  - Move or drag to the second point.


**Tip:** You can use all zoom and scroll functions while you are navigating to the first or second point.

- Click on the second point. While moving the mouse, a pop-up displays the current gap size and the X / Y coordinate.


**Tip:** As an alternative to the two-click procedure, this tool also offers a click-drag-release selection. This is useful when you want to select the border of the view area, where clicking accurately can be difficult. With the click-drag-release selection, you can release the mouse outside the view area to snap accurately to that border.

When releasing the mouse, the area outside the selection will be dimmed to highlight the selected area:




Also, the **Info** panel shows the **Width** or **Height**, in .

To adjust the width or height, simply drag the lines that appeared. Click between the lines to move the caliper selection (both lines).


- Right-click  and choose **Save** if you want to use this gap size later.
- **Fixed selection**

This style offers a fixed gap size. Use this when you want to check (text) objects versus a pre-determined size.

- Right-click  and choose **Change** if you see no list of gap sizes yet.
- Use the dialog to **Add** or **Delete** gap sizes. Define their orientation as either **Height** or **Width**. Click **OK** to close.
- Start using the selected gap size.

**Tip:** The caliper selection will disappear if you switch to another tool. You can also clear it explicitly by choosing **Clear** in the tool's right-click menu.

## 2.4.7. Measure Color

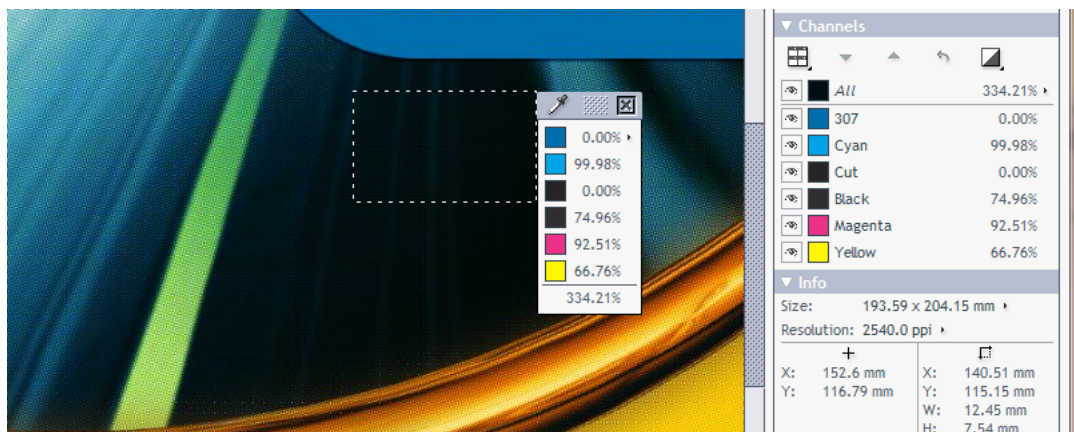
Select the  densitometer tool and either click a point in your file, or click and drag a rectangle, to measure the color.

The measured dot percentage in that point or area are shown in the **Channels** panel, and the location in the **Info** panel.

**Tip:** Double-click the densitometer to make a measurement based on the current selection or, when no selection is active, based on the current view.

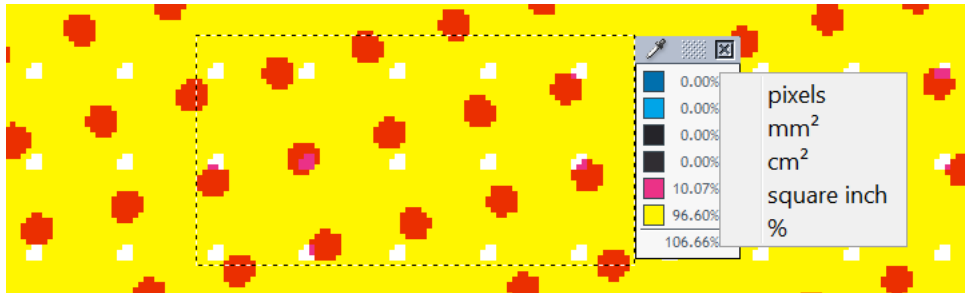
By default, the measured densities are also shown in a pop-up near the location you measured (right-click the tool to hide or show this pop-up).

In below example, you might be interested in the Total Area Coverage of that specific area (as shown in the result for 'All' channels: 334%):




**Note:** There is a dedicated tool to check TAC. Learn more in [Total Area Coverage](#) on page 38.


When viewing Digital Film files (RIP data), you can change the units in the pop-up. Click the small arrow next to the current unit and select your preferred units.




### Keyboard Shortcuts

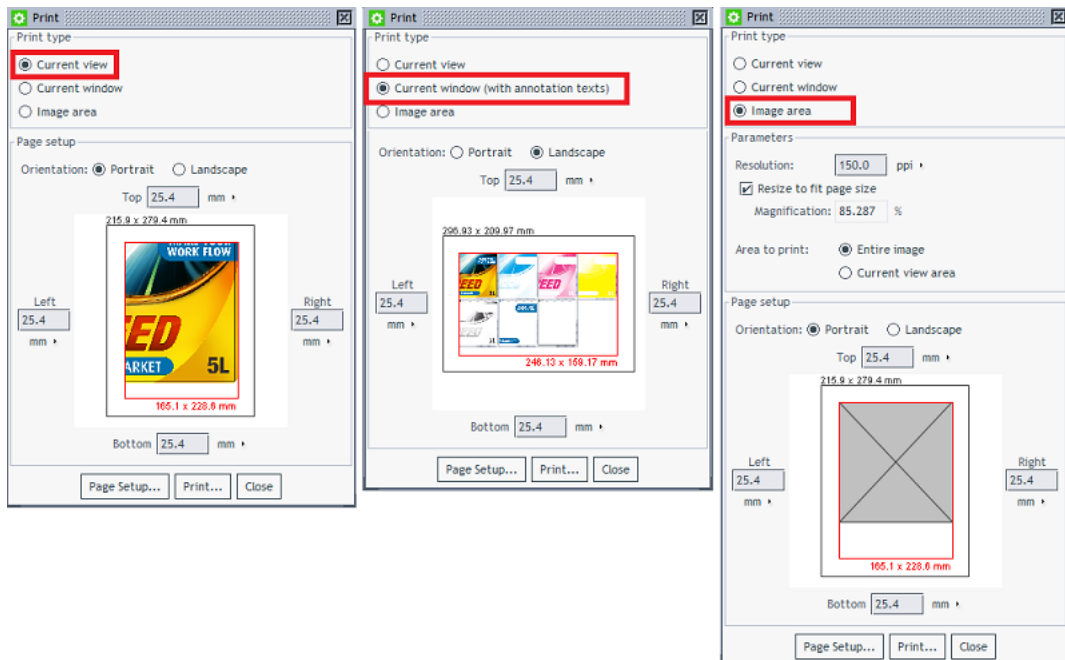
- You can clear a selection by pressing **Ctrl + D**.
- To quickly measure the whole file, press **Ctrl + A** and double-click .

## 2.4.8. Print

In case you want to share information that is visible in the Viewer to people who do not have access to the Viewer, you can use the  print option. You can for example send them a printout or E-mail them a PDF file to indicate a measurement that you were discussing.

**Note:** An elaborate annotation and approval workflow is available in Esko WebCenter.

Click  and choose which part of the file you want to print:






- **Current view.** Your current view/zoom, all selected channels. Also any visible measurement results will be included.

- **Current window.** Whatever the Viewer window shows will be printed (possibly extended to fill the chosen page size). Also, any annotations will be included too.
- **Image area.** By default this is the whole file, no matter what the current view or zoom is. You still have extra parameters to define the area and to choose all or only the selected channels.

## 2.5. Working with Graphics

### 2.5.1. Checking Barcodes

Use the  **Check Barcodes** tool to detect and check 1D/Linear, QR or DataMatrix codes. The tool scans the selected area similar to how an actual barcode scanner would.

To check a barcode, click on  to activate the tool and use the left mouse button to click-drag-release a rectangle around the barcode. Alternatively, you can first select an area and then click .

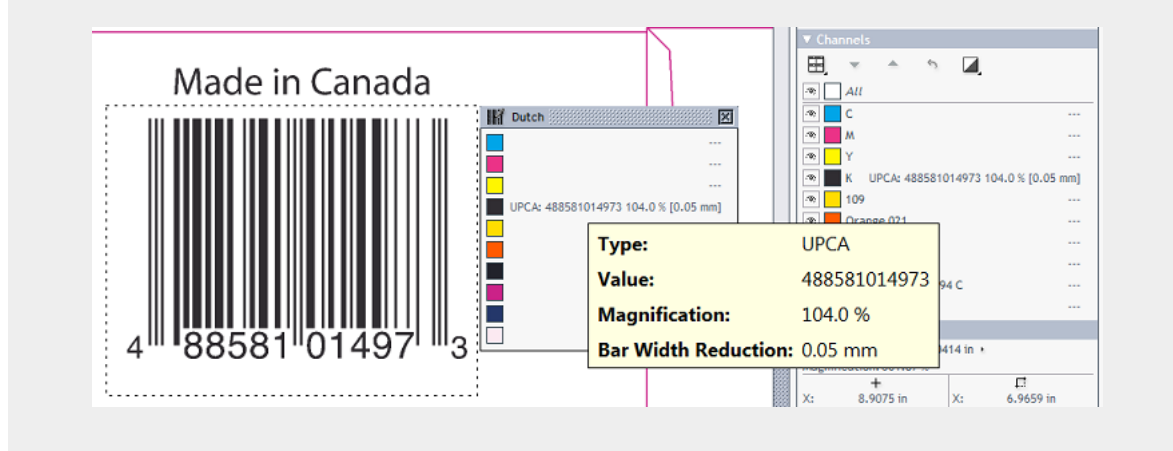
**Note:** When the area you selected contains more than one barcode, the check will only show the result of one barcode.

**Note:** For rotated barcodes, make sure the selected area contains the complete barcode.

The result appears in the *Channels panel* and in a pop-up near the barcode.

The measured result of a valid 1D/Linear barcode will show the **Type**, **Value**, **Magnification** (in %) and **Bar Width Reduction** (in mm). The last two are only shown when their value is not 0.

**Note:** To see an easy to read tool-tip describing the results, hover your mouse over the barcode results (in the pop-up or in the Channels panel).



**Measuring Bar Width Reduction (BWR)**

The measured BWR can be slightly different from what was entered when creating the barcode (in PackEdge, ArtPro or Adobe Illustrator (DeskPack)). This is due to the resolution of the pixel data that are being measured. Typically, a difference in width of 1 pixel causes a different result in the Automation Engine Viewer or when using the [Inspect Barcodes task](#).

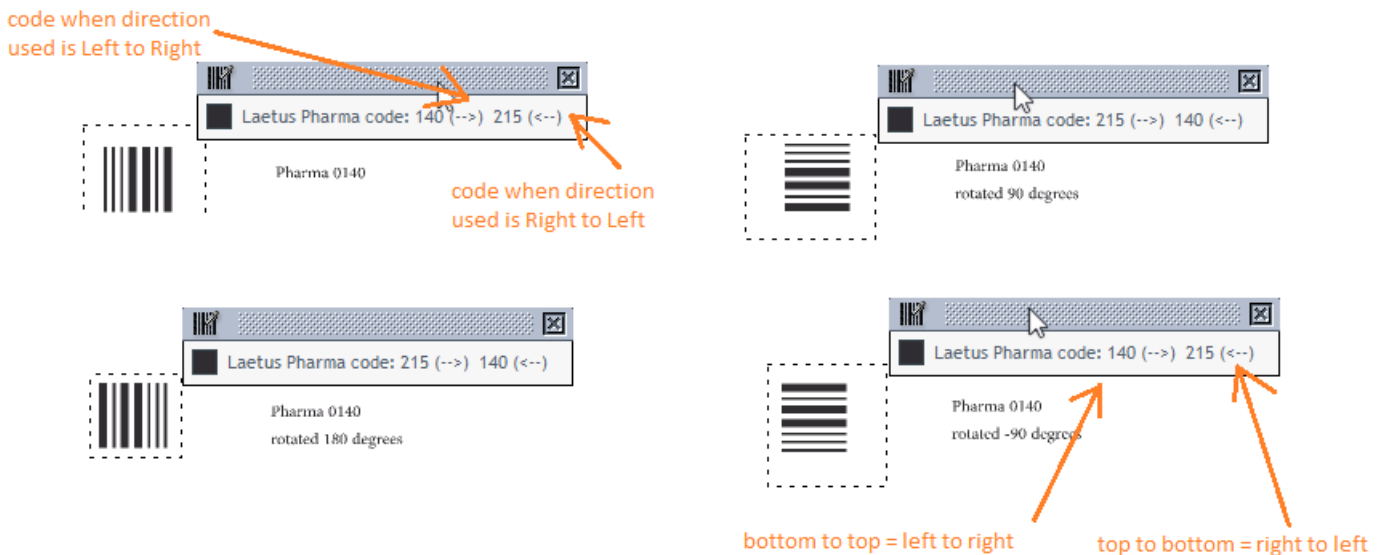
This table shows the maximum deviation that can occur when measuring BWR:

	Automation Engine Viewer		Inspect Barcodes task	
	Without prepared view data	Prepared view data at 600 ppi	600 ppi	300 ppi
Max. Dev. (mm)	0.0300	0.0125	0.0100	0.0110

**Note on reading Pharma codes**

A Pharma barcode can be read in 2 possible directions.


When using this 'Inspect Barcodes' tool, it will show 2 values. Next to those values, an arrow indicates which direction was used to measure:




When a Pharma barcode is placed vertically,

- 'Top to bottom' equals 'right to left' when you would rotate the barcode 90 degrees CW.
- 'Bottom to top' equals 'left to right' when you would rotate the barcode 90 degrees CCW.

**2.5.2. Checking Braille**

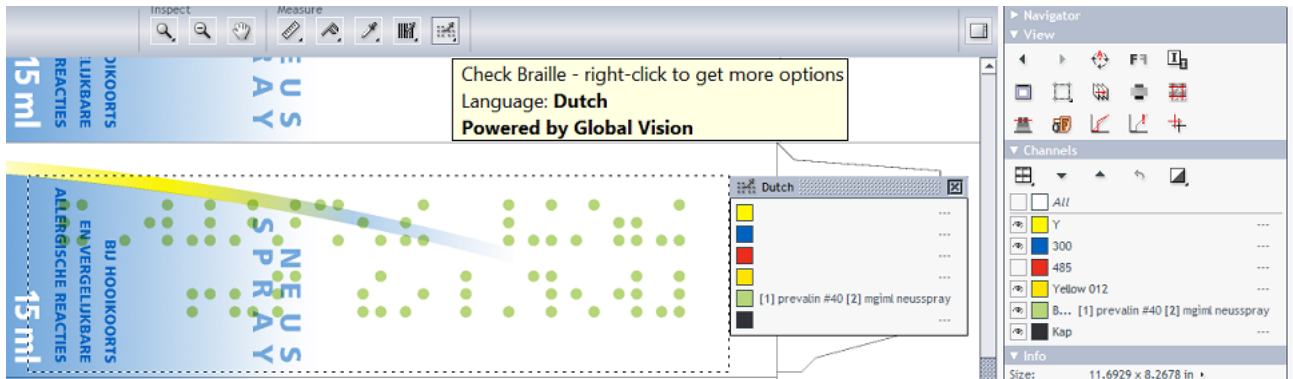
Use the  **Check Braille** tool to detect and translate braille from a selected language.

To check braille, click  to activate the tool and use the left mouse button to click-drag-release a rectangle around the braille. Alternatively, you can first select an area and then click



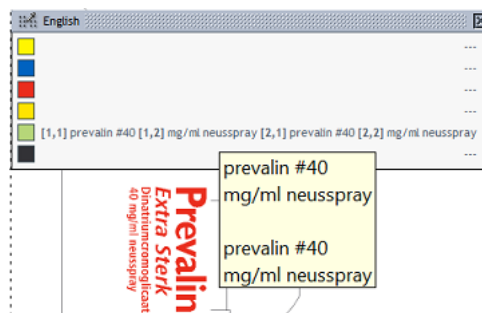


The result appears in the *Channels panel* and in a pop-up near the braille.




When the braille contains multiple lines of text, the result will add a line number in square brackets before the text of each line.

When the selected area contains more than one block of braille, the results from all blocks will be shown. An extra number will indicate the number of the block. The tool-tip also helps to visualise this:



### Language selection

Braille is written in a specific language. The translation therefore depends on which language the braille was originally coded in.

Right-click  to select that language. You can choose to do this before or after you measured the braille. By default, English is selected.






### 2.5.3. Seamless View

Click  **Seamless view** to check how well the file is suited for seamless printing.

By default, the seamless repetition is made around the trim box. When no trim box is defined (in the XMP metadata), the repetition will be made around the image's boundaries.

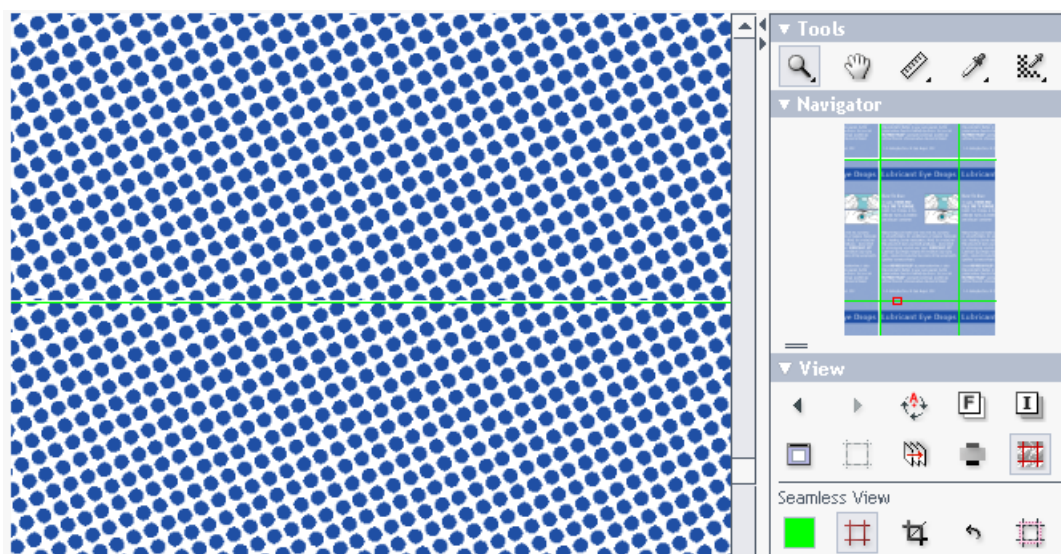


Activating this tool immediately shows a seamless repetition and offers these extra options:


-  to decide the color of the seamless guide lines.
-  to show or hide the seamless guide lines (keyboard shortcut **Ctrl-R**).
-  to set the seamless trim box to the current selection. Learn more below.
-  to reset the seamless trim box. Learn more below.
-  to enable a seamless view after you first manually defined an overlap zone. Learn more below.

### Checking if Screening is Seamless

When viewing screened data in this view, you can then zoom in to the relevant edges and check if the file will print seamless:




**Tip:** You can use [Seamless Screening in Imaging Engine](#) to stretch the screen slightly so the dots fit together at the edges.




**Tip:** When the guide lines disturb the view, click  to hide them.


Learn more about viewing RIP'ed data in [Working with RIP data](#) on page 52.

### Making the Seamless Crop Area Smaller



To select a different area for the seamless repetition (smaller than the trim box), use the  seamless crop tool.

This tool has two functions:

- When no selection is active, a click on  sets the current selection to be identical to the current seamless crop area. Initially this will be the trim box, or, when none is defined, the image boundary. You can now modify the selection to the wished trim area by dragging the corners or sides. When done modifying, click  again to confirm. A new seamless view is calculated and shown.
- When you already have an active selection (a rectangle in a black dashed line) that is different from the current seamless crop area, a click on  sets the seamless crop area to be identical to that selection.

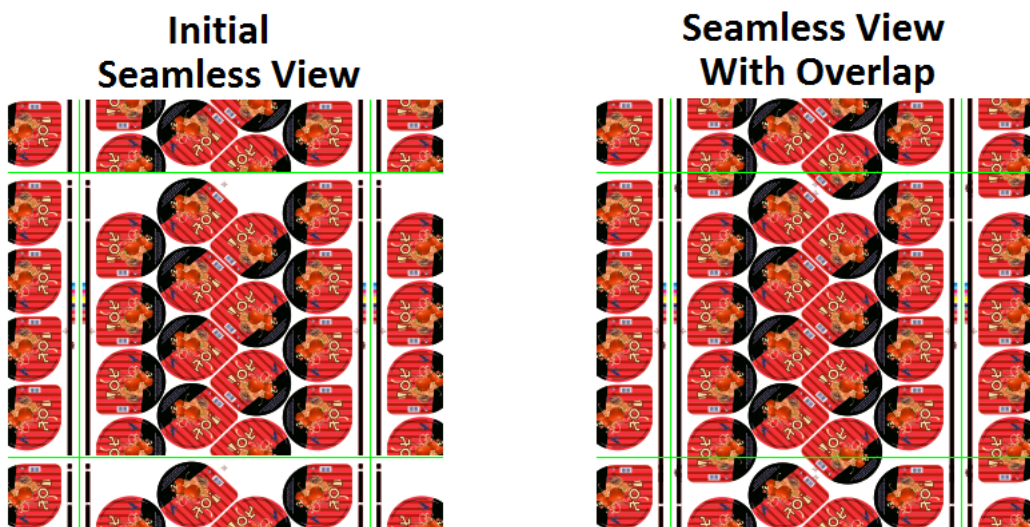
To revert to the original seamless crop area, click .

### Seamless View with an Overlap





The  **Overlap** option helps to check files that do not have a rectangular clipping but a die line with a specific shape. Combined with , you use the tool to define the overlap that you need to see the effect of a seamless print.

An example:

The file we are viewing is a label that has already been repeated for a narrow-web layout. The staggered cut type repetition makes it necessary to define an overlap:



Follow these steps to use an overlap in order to reach a seamless view:

1. Open the file and click  to activate seamless view (based on the trim box). The view is not seamless yet (as in the left side of above example).
2. Click on  to enable working with an overlap.
3. Click on  to enable moving guide line(s).
4. With your mouse, approach the guide line(s) that you want to drag and move (maybe zoom in as well).
5. When the mouse cursor changes into a double arrow, define the overlap by dragging that guide line to the wanted new position (in an example like the above, drag the top and/or bottom guide line inwards).
6. Click on  again to confirm that this is the new crop area you want to see in a seamless view. A new view is calculated that now should look seamless (as in the right side of above example).

### Keyboard Shortcuts

- **Ctrl-R** toggles the seamless guide lines on and off.
- **Ctrl-D** clears the current selection.


## 2.5.4. Compensating Distortion

### What is Distortion?

Distortion in graphic files is done to pre-compensate the distortion that will happen when it is printed, for example in flexo printing. Such distortion is typically done when RIP'ing, the last step before printing, but in some workflows the digital file is already distorted (or scaled) before the RIP'ing.

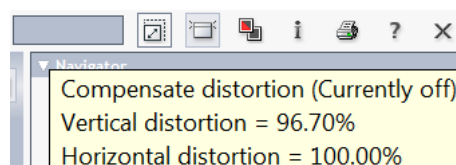
The Viewer uses the file's XMP metadata to detect if and by how much the file was distorted (V and/or H).

### The Compensate Distortion Tool

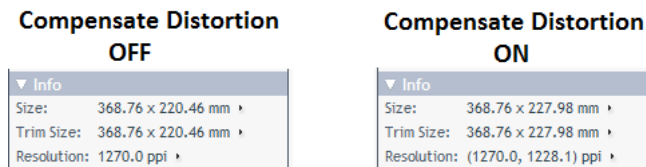
The Viewer offers a  **Compensate Distortion** tool to be able to measure the file correctly and to be able to compare files with and without distortion. The tool only appears when the file's XMP mentions distortion or scaling.

**Note:** When *comparing files*, you should compensate the distortion before aligning the files.

Click  to activate or  to deactivate the distortion compensation. The tool-tip of this button mentions what the distortion is:




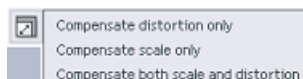
When distortion compensation is active, the size and resolution are also adjusted in the Info panel. Here is an example where the file has a vertical distortion of 96.70% :



### Compensating Scale and/or Distortion

In some workflows scaling is done instead of distortion. The viewer allows to compensate the (XMP) scaling in the same way as it does for distortion.

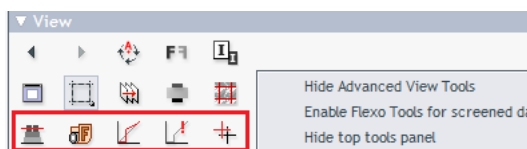
When you open a file where the XMP mentions both distortion and scaling, right-click  to choose what you want to have compensated: distortion, scaling or both.






## 2.5.5. Using Advanced View tools

### Showing or Hiding Advanced View Tools

Right-click the background of the View panel to show or hide these **Advanced View Tools**.



### Enabling Flexo Tools for Screened Data too


Because the 3 Flexo related tools    are specifically designed for non-screened data, they are by default disabled for screened data (their buttons are greyed out).

However, these **Flexo Tools** can be useful for screened data too, but only if you use them at a zoom ratio where the individual screen dots are not visible. Right-click the background of the View panel and select the option to enable them for screened data too.

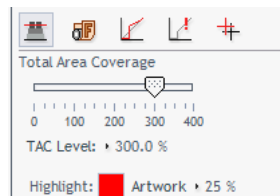


**Attention:** In these tools, when entering (percentage) decimal values, use a point, not a comma.

### Total Area Coverage

The  Total Area Coverage (TAC) tool helps to identify areas where the total amount of ink in the selected channels is larger than a given percentage.


The percentage can be adjusted between 0 and 400%. You can use the slider or enter a new value in the **TAC Level** percentage (default is 270%).

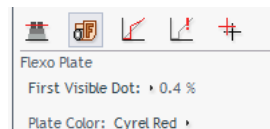


In the image area, the area exceeding the defined TAC is **highlighted** in a set color. The rest of the **Artwork** is dimmed.

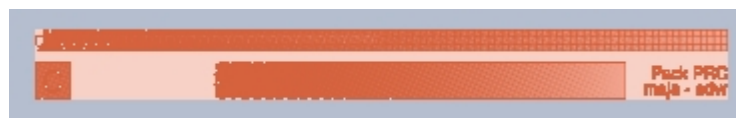
Click on the color patch to pick another highlight color. You can also change the level of dimming (edit the percentage field or click the word **Artwork** and use the slider that pops up).


### Flexo Plate

The  Flexo Plate tool simulates how the selected channel would look when imaged as a flexo plate. This simulation is characterized by a **First Visible Dot** percentage and by a **Plate Color** selection.



Here is an example in a Cyrel Red color:




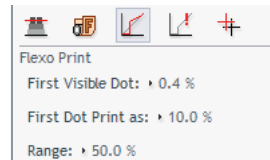
**Note:** This mode is possible when viewing single channels but also when using  "View channels in separate windows".

To change the First Visible Dot percentage, click the value and enter a new percentage or use the slider that pops up.

To change Plate Color, click the current choice to pick one from the drop down list.

## Flexo Print


The  Flexo Print tool helps to predict the effect of the flexo printing process in the highlight areas by applying a non-linear curve to the selected channels. The effect is shown immediately.

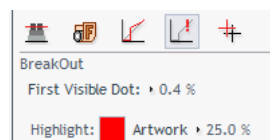


The curve has three adjustable parameters that you can change by typing a new value or by using the slider that pops up when you click on the parameter name.

- **First Visible Dot.** Under this value the output is zero (the "break out" value).
- **First Dot Print as.** This is the output value at the First Visible Dot percentage. This value is typically somewhat higher than the First Visible dot percentage, creating what is typically called a bump-up effect.
- **Range.** This is the highest affected input value. Between the First Visible Dot and the Range percentage, the effect of the bump-up is linearly decreasing. Percentages above the **Range** value are displayed unchanged.

## Break Out

In flexo printing, the  **BreakOut** tool helps locating areas where the percentage of a single separation is lower than the **First Visible Dot**.




The image is dimmed and the areas below the First Visible Dot are shown in a highlight color.

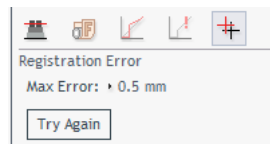
The First Visible Dot is best adjusted by clicking the current value and typing a new.

The options **Highlight** color and **Artwork** dimming are identical as described for [Total Area Coverage](#) on page 38.

**Tip:** You can still use the densitometer to measure the actual percentages.

## Registration error

The  **Registration Error** tool simulates the effect of print registration errors by randomly offsetting the visible channels by a specified distance (the **Max Error**). This simulation for example helps to check if the trapping is sufficient.



The effect is shown immediately. Here is an example:



When you change the value of the **Max Error**, click **Try Again** to see the new effect. This allows using zoom and pan tools to visually inspect the effects of a given registration error on different parts of the design.

**Note:** The tool randomly shifts all channels with the Max Error distance, but all under a random angle.


If you want to see another random simulation, click **Try Again**.

## 2.6. Comparing Files

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### 2.6.1. Intro

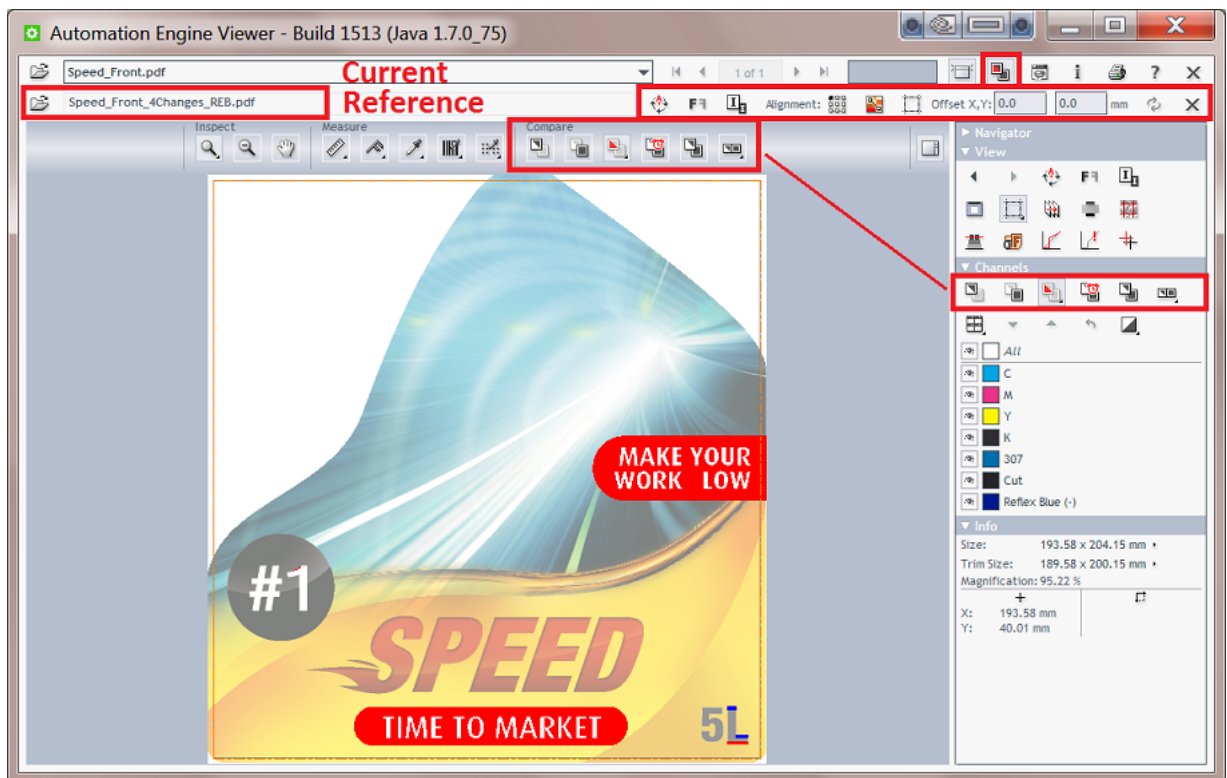
The viewer allows to compare files and inspect their differences.

To compare two files, open a first file ("Current"), then click the  **Compare** button and choose a second file ("Reference") from the dialog.


In compare mode, an extra toolbar offers to rotate, mirror or invert the reference file or [align the 2 files](#).

The extra buttons in the Channels panel (and also the Top Tools bar) offer [several ways to view the differences](#).





**Tip:** While comparing, you can still use other tools like changing view windows, zooming, panning, rotating, measuring etc.

You can stop comparing and close the reference file by clicking  again.

### Two Ways of Comparing

The Viewer offers 2 comparison modes:

- **Compare Channels.** This is the default mode. It shows differences that it finds in channels with identical definitions. Learn more [here](#).
- **Compare HSV.** This mode compares colors. Learn more [here](#).

### File Types and Precision

You can compare files that have a different file type. For example comparing an AI design with its final production PDF or comparing that one-up PDF with its step & repeat version, or even with its RIP'ed version.

Some file types require a conversion before they can be shown in the Viewer. These conversions can cause small, insignificant differences. Here are some general guidelines regarding differences in different file types:

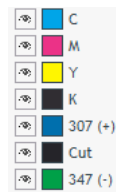
- Be aware of hidden file conversions as described in [How different Graphic File Types are Streamed to the Viewer](#) on page 9.
- Do not compare prepared with non-prepared files. Especially the '**Compare Channels**' mode will detect differences due to the different sets of pixels in the Viewer.

- When you need to compare an Esko normalized file with its (original) non-normalized version, you can set up a workflow where you always keep the first file version right after the normalization, before you start to edit it, and then compare that file with the (final) edited version.

**Note:** The tool to **Calculate Screening and Angle** () is disabled when you are comparing files and at least one of the files is not RIP data (a PDF for example).

### Comparing Files that have Different Channels



The **Channels** panel shows you when the compared files have different channels:







- **(+)** means that the channel is only present in the current (first) file.
- **(-)** means that the channel is only present in the reference (second) file.

Alternatively, you can also use the [Compare HSV mode](#) to compare files with non-matching channels.

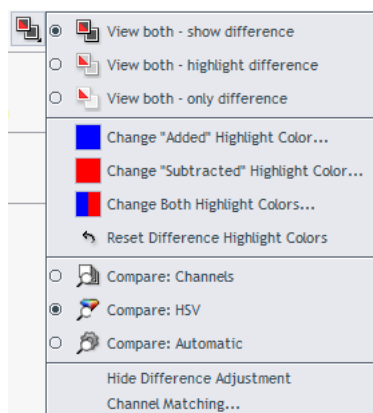
## 2.6.2. Difference View Modes and Options

-  to view only the current version (the file you opened first).
-  to view only the reference version (the file you opened later, to compare).

**Tip:** Use **Ctrl-S** to toggle between the view of the current and the reference file.

-  to view both files on top of each other, highlight the differences and dim all other areas. Right-click this button to choose other variations and extra options. Learn more below.
-  to view a blinking mode that switches the view of each file at a fixed interval.
-  to view both files on top of each other. This is typically used when the two files together form a complete layout, for example a left and right page of a reader spread. Or when two (similar) parts of a package design are created separately, but you here want to check how they align.
-  to view both files side by side, as an alternative way of comparing. The displays in each split window stay synchronized when you work with channel selection or change views and zooms. Right-click this button to select a different tiling orientation or to decide whether you want to see a third window with the differences.

## Extra Options when Viewing Differences

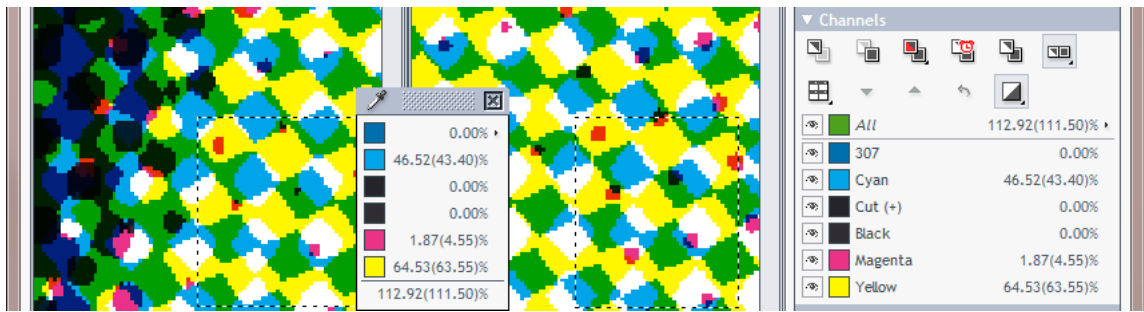


Right-click the (currently active) **View Both** icon to choose variations or other options:

- While viewing both files, choose how you want to see the differences:
  - Select to see both files and the differences highlighted.
  - Select to see both files dimmed and the differences highlighted.
  - Select to only see the highlighted differences. This mode is especially useful to spot small differences in the Navigator panel or when zoomed out viewing the entire file.
- Change the **Highlight Colors**.
- Choose the **Compare Mode**.
  - **Compare: Channels**. This (default) mode shows differences that it finds in channels with identical definitions. Learn more in [Matching Channels](#) on how to define if similar channels should be compared or not.
  - **Compare: HSV**. This mode compares colors. It looks at the two files as your eyes do or as a camera or scanner would. For example a green object will not be seen as different even when in the one file it is colored as a PMS color and in the other as an exact same color mix of cyan and yellow.
  - **Compare: Automatic**: With this setting, the 'Channels' mode is used when the definition of all visible channels is equal in the two compared files. When this is not the case, the 'HSV' mode is used.
- **Hide/Show Difference Adjustment** options in this Channels panel. Learn more in [Difference Adjustments](#) on page 44.
- **Channel Matching**. Learn more in [Matching Channels](#) on page 44.

## Using Difference View Combined with Measuring

The [measurements](#) of dot percentage, pixel count, screen ruling and angle change depending on the selected difference view mode. When the view shows both files, the measurement results also show any different values in between brackets (if any).



### 2.6.3. Difference Adjustments

#### Compare Modes

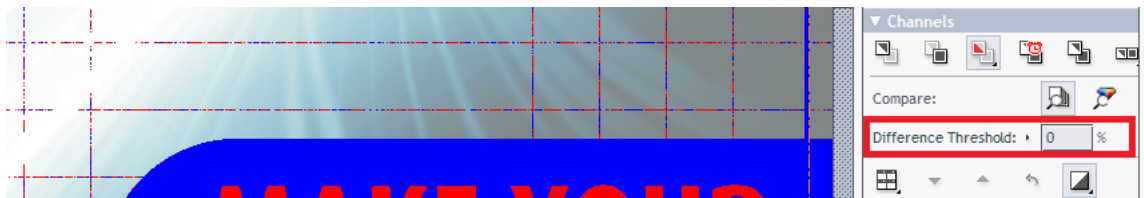
These modes are described above in *Extra Options when Viewing Differences* on page 43.

#### Difference Threshold

When comparing files that are not perfectly aligned or that have minor tonal differences, you can specify a threshold on when a difference should be highlighted. This allows you to make a distinction between minor and major differences.

Type a percentage in **Difference Threshold** or use the slider that appears when you click on the small arrow.

Here is an example where the lines that are due to a file conversion disappear when changing the threshold to 5:




### 2.6.4. Matching Channels

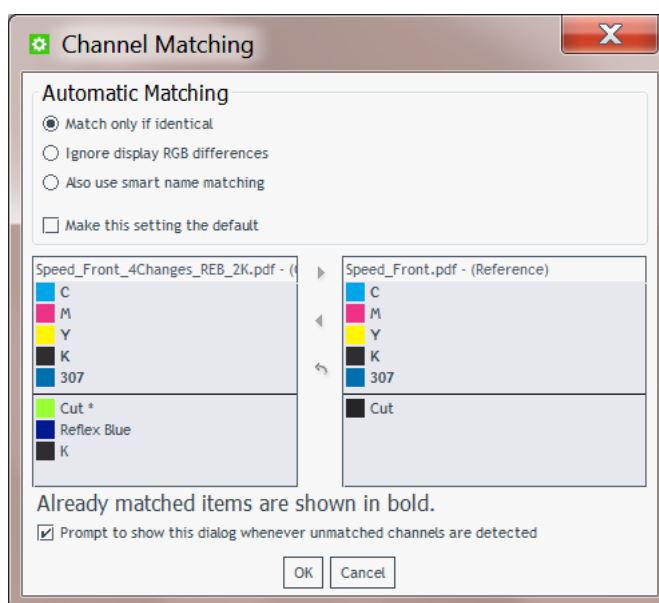
Sometimes you may want to compare channels that do not have a same channel definition. For example:

- A channel that is actually the same but has a different display color in the 2 compared files. For example an ink 'Cut' that was defined to look green in one file and pink in the other.
- Channels that are related but have different ink names in the 2 files. For example '123' and 'Pantone 123 C'.

The **Channel Matching** dialog allows you to make manual matches or define automatic matching rules.

The dialog opens when you select it from the list of  'View Both' options, or when you click on a channel name (when in compare mode).

**Note:** When selecting a new file for comparison, you might be prompted to open the dialog if the compared files contain non-matching channels.



- Initially, the 2 columns list the channels of the 2 open files.
- Above the horizontal line are the channels that are already matched. Their names are shown in bold and they are placed opposite to the channels they match to.

**Tip:** Hover the mouse over a color patch and you will be shown the full channel definition.

### Automatic Channel Matching Rules

Choose which rule this automatic matching should follow:

- **Match only if identical:** Only channels that have identical names, ruling, angle, dot shape and display colors are matched automatically. For example, in the above screenshot, notice on the left how a second black ink (K) is not matched because it has a different ruling or angle.
- **Ignore display RGB differences:** Channels are automatically matched when their name, ruling, angle and dot shape matches. Differences in display colors are ignored.
- **Also use smart name matching:** In addition to ignoring display color differences, this setting also matches channels that have a different ruling, angle or dot shape or have related names. Some examples:

- An ink 'K' at 120 LPI will match to the other file's ink 'K' at 66 LPI.
- Inks with names that only differ in use of upper and lower case. For example: 'Kiwi Green' will mach to 'Kiwi green'.
- Inks with names that only differ in color book specification. For example: '660' will match to 'Pantone 660 C' and 'Cyan' will match to 'Process Cyan'.
- Inks with names that are known abbreviations of each other. For example 'C' and 'Cyan'.

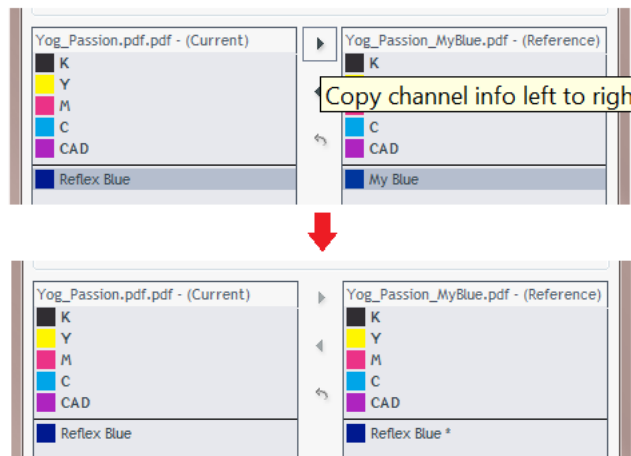
The effect of the chosen rule is immediately shown in the two columns.

**Note:** Select **Make this setting the default** when you not only want to apply this rule to the current file, but during every comparison (without need to open this dialog).

### Manually Matching Channels

When the automatic matching does not yet match all the channels that you want to compare directly, you can also manually match channels.

To do this, select the source and the target channel (one in each column) and then press **▶** or **◀**, depending on which way you want the mapping to go.



Channels that changed are marked with an asterisk (\*).

To revert a channel to its original definition, select it and click **↶**.

## 2.6.5. Alignment Tools

Alignment tools help you compare files with different sizes, or files with the same size where the content is offset differently from the trim box.



You can align such files by using these tools:

- Rotating, mirroring or inverting the reference file might already help to align.
- Click to choose any of these methods:
  - To align both files on a specific corner.
  - To align both files with the help of the ruler tool. Learn more in [Align from Ruler](#), [Auto Align from Ruler](#) and [Auto Align](#).
- Click for a quick access to [Auto Align](#).
- Click to align based on their margins (trim box). When no trim box information is included in the file's XMP, the file's boundary is used instead.
- Use   mm to indicate an offset manually.
- Click to use the alignment settings for other pages in this file.

### Align from Ruler


You can use the ruler tool to indicate a point in each file that you want to align.

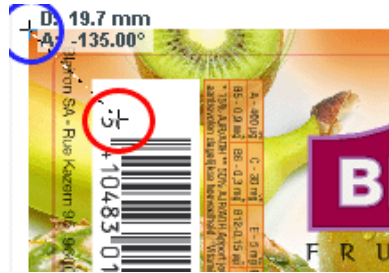
1. While viewing the differences, zoom in on an area where you will indicate two alignment points that represent the same position in their file, for example a corner of an object.
2. Click to view only the reference file.
3. Click and select **Align From Ruler** from the list. A pop-up dialog will remind you how to proceed ; click **OK** to close it.

When your mouse cursor is at this moment showing a zoom or pan tool, click to turn it into a + cursor.

4. In this reference file, click to indicate the first alignment point.  
For example you can select a corner (shown here in a red circle):

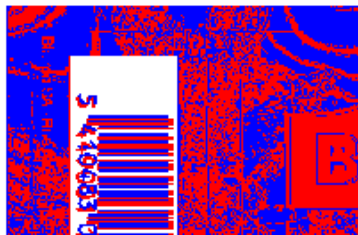


5. Click  or use **Ctrl + S** to switch to the current file. Use shortcuts for a one-time *zoom or pan*.
6. Indicate the corresponding point, that will now be in a different position.  
In our example, that same corner (shown here in a blue circle):



7. Click  again to align the files according the alignment points indicated.

Switch back to the "View Both"  mode to see how well this worked:




**Note:**

Depending on how precisely you defined the second point, you may have to zoom in and repeat the steps above to align your files with more precision.

Alternatively, you can align your files more automatically using the [Auto Align from Ruler](#) or [Auto Align](#) tools.

**Auto Align from Ruler**

 **Auto Align from Ruler** is used the same way as the [Align from Ruler](#) tool, but is more accurate at a high resolution.



When the data surrounding the alignment points match, the tool will be able to increase the alignment precision (and have a good alignment with fewer iterations).


**Auto Align**

**Auto Align (Ctrl + L)** does not use the ruler, but uses the currently visible view of the two compared images to attempt an automatic alignment.



Using this tool repeatedly with one or more zoom-ins can be a very easy and fast way to align two files.

For convenience, a separate tool button  is available to perform an automatic alignment without having to open the  alignment pop-up menu.


When a ruler selection is active, clicking  performs an **Auto Align from Ruler**, otherwise it does an **Auto Align** based on the current view.

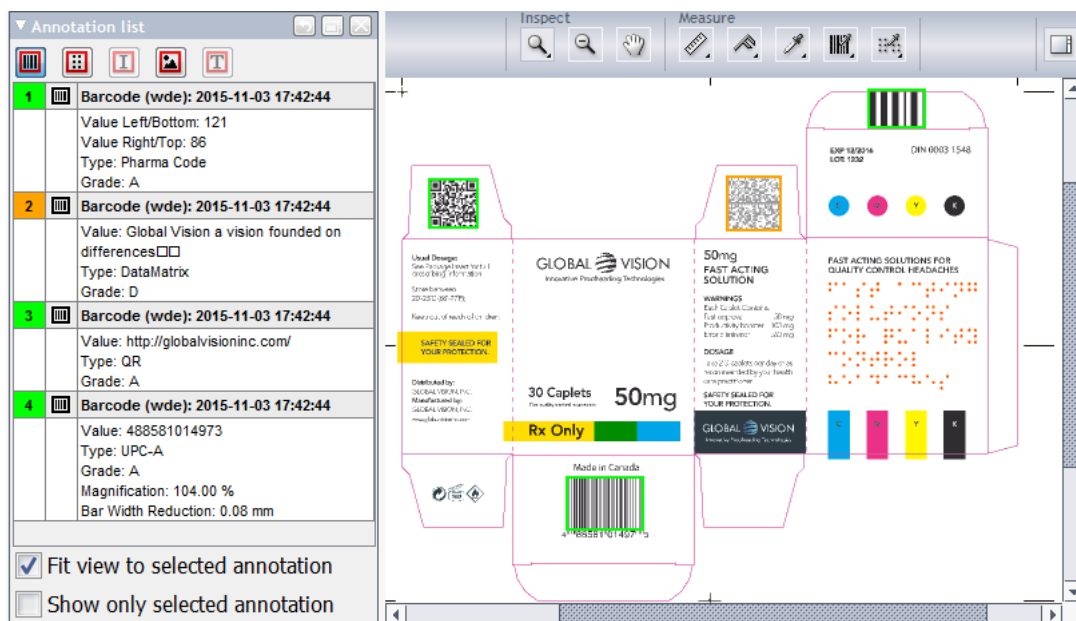
## 2.7. Working with Annotations

### Based on XDF

The five *"Inspection" tasks* generate XDF files that contain inspection annotations. These XDF files are written in a hidden subfolder.

When viewing a file in the Automation Engine Viewer that has such XDF data, the  **Annotation list** button appears in the *tool bar*.

Click  to see the file's annotations in the **Annotation list** panel.



### The Annotation List Panel

- Click its toolbar icons to choose the type of annotations that you want to see detailed. Tool-tips mention their type. They are greyed out when no such annotations are available.
- Each annotation is assigned a specific number and color.
- Select an annotation in the panel to see its colored rectangle highlighted in the main window. When **Fit view to selected annotation** is selected, the window will also zoom in to that object or found difference.
- For multi-page files, the panel shows the annotations of all pages.

- Annotations can show as outdated when the modification date of the viewed file is newer than the date when the inspection task was run on that file (modification dates of any referenced files from the input file are not taken into account).

Learn more about the content of the annotations in the pages on their respective task: [Inspect Barcodes](#), [Inspect Braille](#), [Inspect Spelling](#), [Inspect Artwork](#), [Inspect Text](#).



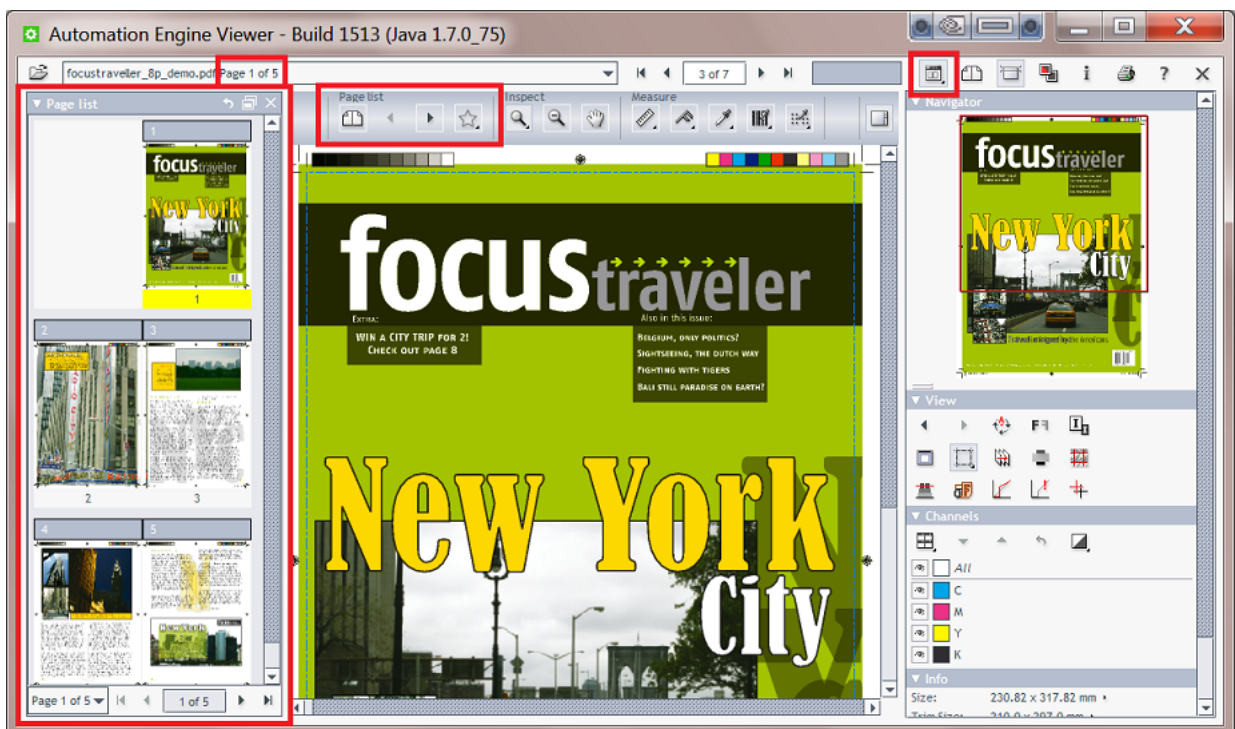
**Caution:** When you move or copy the input file using the [Copy or Move File task](#) or the [Publish on WebCenter task](#), the hidden folder with the XPDF file will be moved as well. However, when you move the input file with other tools, Automation Engine is not aware and the XPDF file will not move along and will so not be found from the new file location.


## 2.8. Working with Multi-Page Files

When opening a multi-page file, extra viewing tools become available:

### 2.8.1. Page List Panel

Click to open the **Page List** panel. Right-click to define the size of the thumbnails. Click on a thumbnail to see that page in the main window.




**Note:** The Top Tools bar also offers , a tool to mark pages. However this tool is only useful in the Esko WebCenter Viewers.

### Keyboard Shortcuts

- **End.** Go to last page (last file when multiple files open)
- **Home.** Go to first page (first file when multiple files open).
- **Page Down.** Go to next page.
- **Page Up.** Go to previous page.

## 2.8.2. Reader Spread View


Click  to enable a **Reader Spread** view, showing pairs of pages as they will appear in the final printed result.

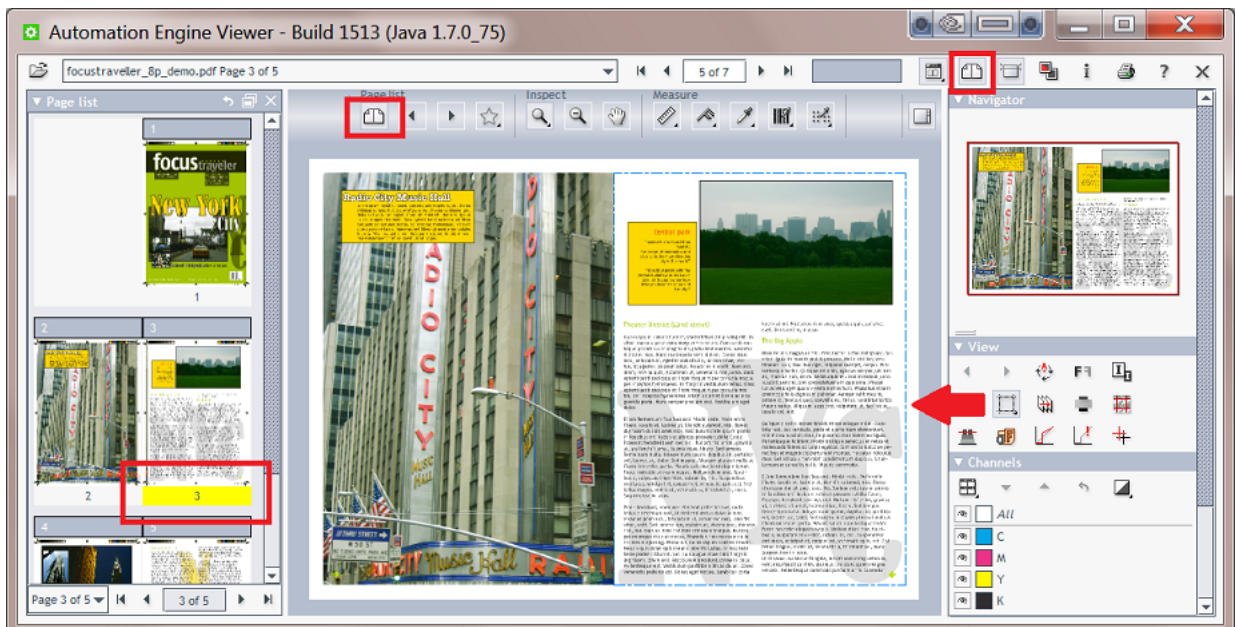


**Attention:** The compare mode is disabled while reader spread view is enabled (and visa versa).

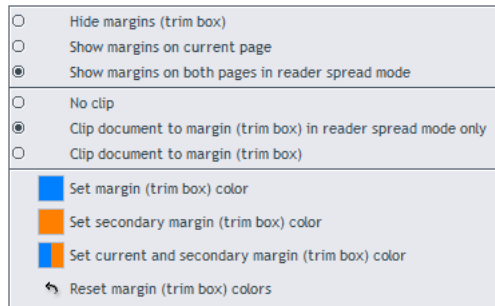
A reader spread shows two pages stitched together on their trim boxes. First and last pages are shown with an empty (white) area next to it.

Clicking   now shows the previous / next reader spread.

In reader spread view, one page is the active page. That page has its page number highlighted in the Page list panel and, when clicking , its trim box is shown.



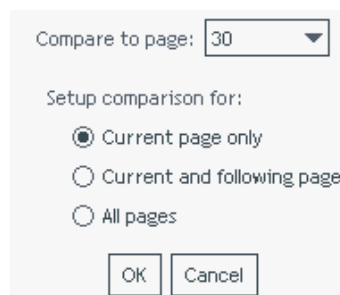
In the View panel, right-click  to use these page related options:



- choose to show the margins (trim box) of both pages when in reader spread view.
- choose to only clip on margins in reader spread view.
- choose to show the margins of the two pages in different colors.

### 2.8.3. Comparing Multi-Page Files

When comparing two multi-page files, the Viewer presents an option panel:



- **Compare to page.** Select which page in the reference file you want to compare with the current page in the current file. By default, this is the page with the same page number (if this page exists).
- Decide which (other) pages should be compared:
  - **Current page only.**
  - **Current and following pages.** As long as there are pages in both files, it continues comparing their next pages.
  - **All pages.** Same as above, but now also compares the pages before the current one, if any.

## 2.9. Working with RIP data


### A Composite View of RIP'ed Separations

**Note:** As mentioned in [Supported File Types](#), RIP'ed files require prepared view data before you can open them in the Automation Engine Viewer.



When you want to see a composite view of all RIP'ed separations of a file, you do not need to multi-select these files in the Pilot and click 'View'. You only need to select one of them and click 'View'. The viewer will automatically load the other separations. Alternatively, you can also select one of them from within the Viewer.

This mechanism does require that the *"Prepare for Viewer"* task was launched on all files together and that the option 'Group Digital Film' was enabled.

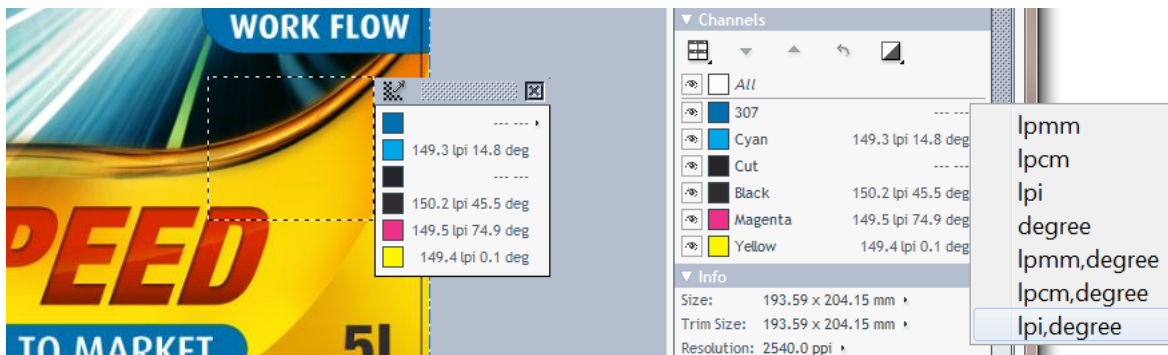
### Measuring Screen Ruling and Angle

When viewing RIP data, the [Top Tools panel](#) also offers , the **Calculate Screening and Angle** tool.

**Restriction:** This tool is disabled when you are comparing files and at least one of the files is not RIP data (a PDF for example).


Similar to the  *densitometer*, you can click on a point or click-drag an area to be measured, or you can double-click  to make a measurement based on the current selection or, when no selection is active, the current view.


The results show up in a pop-up and in the [Channels panel](#). Click the small triangle to choose the measurement units or use **Ctrl-Shift-U**:



**Note:** When no ruling or angle can be measured, no values are shown for that channel (because there's no such data in that area or there's only 100% data).


### Changing the Orientation of the Screen Angle

Right-click  to change the way measured screen angles are shown:

- **Screen Orientation from XMP** (default). Same orientation as in the file's XMP () , which is usually the angle as it is intended to be printed. The XMP of files created by Imaging Engine 14.1.1 and later will have an indication of the orientation. When no XMP orientation info is found, "Screen Orientation CW" is used.

- **Screen Orientation (C)CW.** You can also choose to see the screen angle **CW** (clockwise, downwards counting) or **CCW** (counter-clockwise, upwards counting).

### Checking Registration Errors while Viewing Dots

The  *registration error* tool is also available when viewing RIP data.

Here is an example where a white gap appears on a file that was trapped with 0.2 mm, while simulating a max error of 0.3 mm:



### Extra Set of View Data for Print Simulation

When using advanced screening effects, it is possible that the dot on screen does not look like the dot when printed.

Esko RIPs allow creating an extra set of view data that simulate the printed dots. This is an extra option in the tab 'Output' of an Imaging Engine task ticket.

An example. On the left we see a Concentric screen at 27% (with its typical ring-shaped holes). On the right we see its print simulation, where the holes were filled with ink:



Learn more about creating print simulation view data in the user guide of Imaging Engine, in [Inspecting Screens with Advanced Screening Effects](#).

**Note:** For the Automation Engine Viewer, both the RIP files and the extra print simulation files (with an extension .view) still need to be *prepared for viewing*.

## 2.10. Keyboard Shortcuts

**Note:** Many of these keyboard shortcuts are also mentioned on the page describing the related topic.




On a Mac, as a standard practice, replace below mentioned **Right-click** by **ctrl-click** and replace **Ctrl-** by **cmd-**.

Table: Keyboard Shortcuts

<b>Ctrl-Down Arrow</b>	Pan 1/4 window down
<b>Ctrl-Left Arrow</b>	Pan 1/4 window left
<b>Ctrl-Right Arrow</b>	Pan 1/4 window right
<b>Ctrl-Up Arrow</b>	Pan 1/4 window up
<b>End</b>	Go to last file or page
<b>Home</b>	Go to first file or page
<b>Page Down</b>	Go to next file or page
<b>Page Up</b>	Go to previous file or page
<b>Ctrl-Shift-Spacebar</b>	Temporarily shift to pan mode (hand)
<b>Ctrl</b>	Switches the zoom in tool to a zoom out tool
<b>Ctrl-'+'</b>	Zoom in by a factor 2
<b>Ctrl-'-'</b>	Zoom out by a factor 2
<b>Ctrl-Shift-'+'</b>	Rotate view 90 degrees clockwise
<b>Ctrl-Shift-'-'</b>	Rotate view 90 degrees counter clockwise
<b>Ctrl-0</b>	Show all channels
<b>Ctrl-1 to Ctrl-9</b>	Show channel 1 to 9
<b>Ctrl-Shift-0 to Ctrl-Shift-9</b>	Show channel 10 to 19
<b>Ctrl-A</b>	Select all
<b>Ctrl-D</b>	Clear selection
<b>Ctrl-H</b>	Toggle overprint highlight on/off
<b>Ctrl-L</b>	Auto align
<b>Ctrl-M</b>	Mirror view
<b>Ctrl-N</b>	Toggle between channels showing them one at a time
<b>Ctrl-O</b>	Open (current) file

<b>Ctrl-R</b>	Toggle seamless view guide lines on/off
<b>Ctrl-S</b>	Toggle between current and previous view (in difference view mode)
<b>Ctrl-U</b>	Toggle size units
<b>Ctrl-Shift-U</b>	Toggle resolution and screen ruling units
<b>Ctrl-Shift-V</b>	Displays (2 seconds) the current view resolution
<b>F1</b>	Show online help
<b>F2</b>	Previous view
<b>Shift-F2</b>	Next view
<b>F5</b>	Zoom in
<b>F6</b>	Zoom out
<b>F7</b>	Temporarily shift to pan tool. Returns to previous tool after one pan operation
<b>F8</b>	Temporarily shift to zoom tool. Returns to previous tool after one zoom operation
<b>F9</b>	Zoom to fit image in current view

Table: Mouse Shortcuts

<b>Right button + click</b>	Zoom in by a factor 2
<b>Right button + drag</b>	Zoom in on the selected area
<b>Right button + Ctrl + click</b>	Zoom out by a factor 2
<b>Double-click Screening and Angle tool</b> 	Measure screen ruling and angle centered in current selection
<b>Double-click Densitometer</b> 	Measure dot percentage for current selection (if any present) or current view
<b>Double-click Zoom tool</b> 	Zoom to fit selection (if any present) or full image



## 3. PitStop Preflight

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### 3.1. Preflight Concept

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Preflighting can be done for several reasons:

- Just to check a file (no "fixes" done).
- To check and correct ("fix").
- To do more than just fixes, to edit a file through one or many "actions".

There also several ways to make preflighting a part of your workflow:

- You can send the design back for others to correct it.
- You can correct what was found to be wrong and continue the workflow.
- Right before sending the file to output, you can do (another) final check, now to prevent outputting wrong data.

#### Tools

Automation Engine's *PitStop Profile Editor* is where you can create and manage

- PitStop **Profiles**: A set of rules that a file's content should adhere to.
- PitStop **Action Lists**: A set of changes you want to execute on a file.

In Automation Engine, you can use these profiles or action lists by using the *Preflight with PitStop task*.

### 3.2. The PitStop Profile Editor

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You can create and manage PitStop PDF **Profiles** and **Action Lists** in Automation Engine's **PitStop Profile Editor**.

You can find an extensive documentation on PitStop on <https://www.enfocus.com/en/support/manuals/pitstop-server-manuals>.

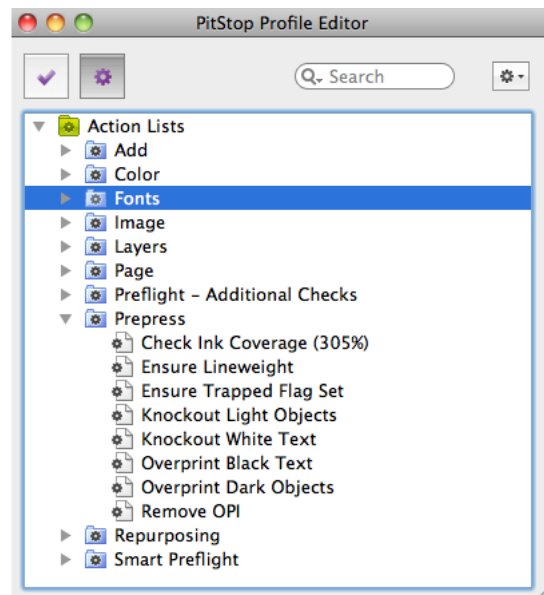
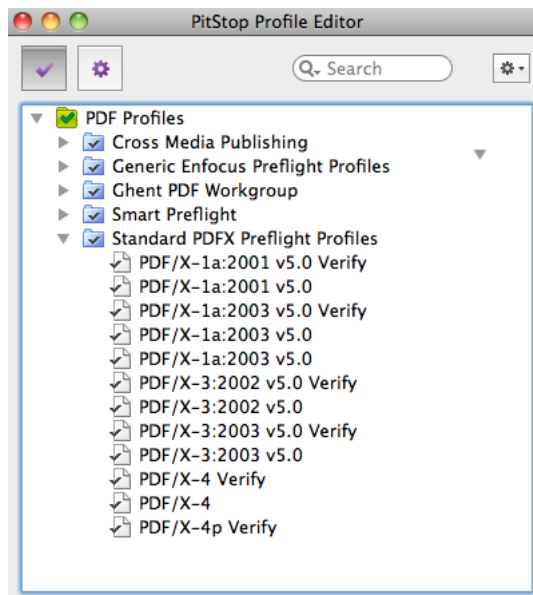
We here limit our description to topics specific to Automation Engine:

#### 3.2.1. Setting Up the PitStop Profile Editor

This tool is one of the client tools that you can download from the *Automation Engine Server Web Page*.

1. Open this **Server Web Page** by entering `http://<name of your server>` or `http://<name of your server>:9999` in the address field of your browser. You can find this tool in the section **Client Apps**, in the page **Tools**.

2. Click **Download** to install the **PitStop Profile Editor** on your client computer.
  - On Windows:
    1. Double-click the downloaded Automation Engine PitStop Profile Editor.exe.
    2. Click **Next** and click **Yes** to confirm the installation.
    3. **Browse** to the install location, by default C:\Esko.
    4. Click **Next** and click **Finish**.
  - On Mac:
    1. Double-click the downloaded Automation Engine PitStop Profile Editor.dmg.
    2. Double-click the resulting .pkg file.
    3. Click **Continue** and click **Change Install Location** to specify an install location.
    4. Click **Install** and fill in your credentials to confirm.
    5. When "The installation was successful" appears, click **Close** to finish the installation.
3. Start the application from:
  - (Windows)**All Programs > Esko > Automation Engine PitStop Profile Editor > PitStop Profile Editor.**
  - (Mac)**Applications > Automation Engine PitStop Profile Editor > PitStop Profile Editor.**
4. In **Edit > Preferences**, fill in the host name of your Automation Engine server. This is needed to make this tool see the profiles and action lists on that server.

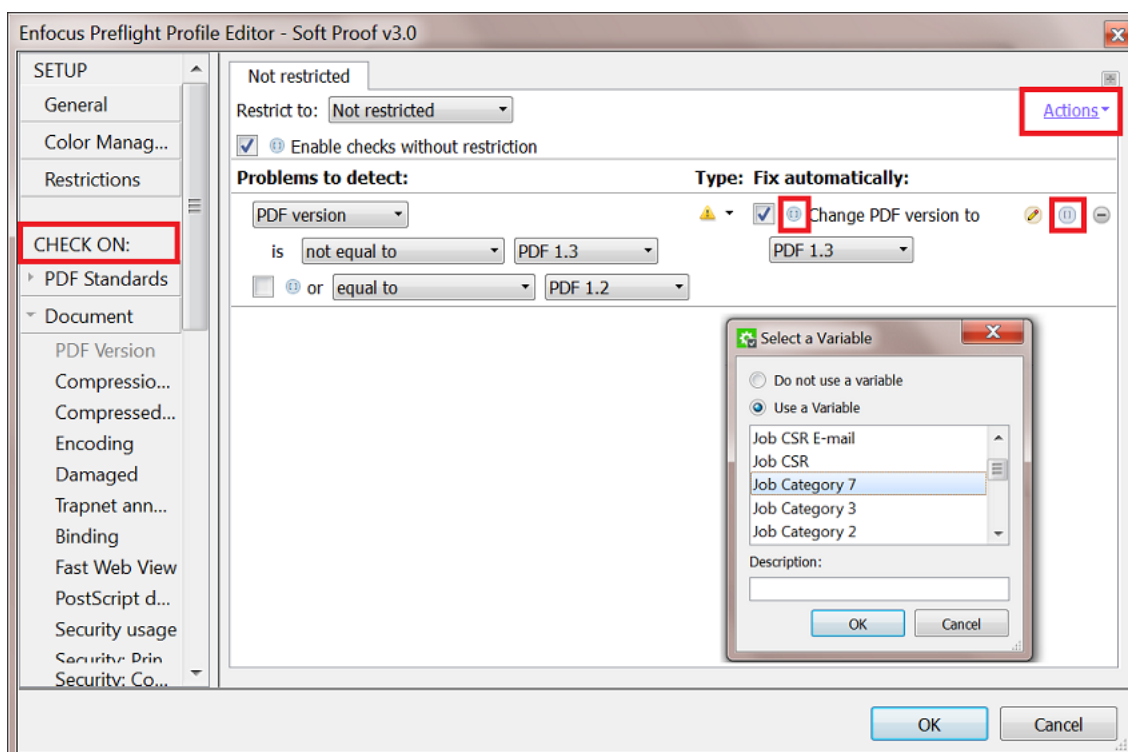


### 3.2.2. Smart Preflight: Using Variable Names in PitStop Profiles

Justs like when using task Tickets, you can reduce the number of profiles and action lists by using SmartNames . In PitStop terminology, this concept is named "**Smart Preflight**".

Follow these steps:

1. Use the Pilot to create SmartNames. Learn more in [Creating a SmartName \(General\)](#).
2. In the **PitStop Profile Editor**, select one of the **PDF Profiles** and click on . Choose **New** and choose any of its options.
3. In the open profile, enable one of the options in the category **CHECK ON**.
  - a) Choose any of the **Available Checks**.
  - b) Click on and choose **Enable Variable Names**('Variable Names' is PitStop's term for SmartNames).
4. Click on the blue SmartName icon to open a list with all global SmartNames.



5. Select a **Variable** (SmartName) and click **OK**.

You can use a SmartName in fields that require

- text
- numbers

- measurements with a size in "mm", "cm" , "in", "p" (picas) or "pt" (points)



**Attention:** Measurements needs to include the unit! For example "210 mm". When no unit is specified, it assumes **points** as unit.

For example, to represent A4 dimensions, the SmartName should resolve to "210 mm" and "297 mm". If the SmartName resolves to "210" and "297", the dimensions will be seen as 74 mm x 105 mm .

- a toggle that sets a check-box to on or off.
  - Off = a SmartName value "0", "FALSE" or empty.
  - On = a SmartName value "1", "TRUE" or anything else.

### 3.3. Preflight with PitStop Task

#### Basics of the Preflight with PitStop task

The **Preflight with PitStop** task allows you to preflight a PDF file in Automation Engine using technology from Enfocus. [This KB article](#) shows which version of PitStop is used internally in this "Preflight with PitStop" task.



**Attention:** When the input file is a normalized PDF, the task does not allow to run **profiles** with the option **"Allow Fixes"** selected. It then also does not allow to run **action lists**, regardless whether these actions change the file or not.

**Note:** This task uses the latest [Enfocus PitStop Server preflight technology](#) (its version number is mentioned in the [report](#)).

#### Preflight Result States

As a workflow step, this task by default offers four output pins where your input files can end up (hover your cursor over a pin to see its default name):



- **Finished OK:** When the preflight resulted in an OK status (no warnings or errors were found).
- **Finished with Warnings:** When the preflight resulted in warnings (but no errors).
- **Finished with Errors:** When the preflight resulted in one or more errors.
- **Error:** When the task encounters an error unrelated to the preflight status.

Learn more about controlling task statuses [here](#).

### 3.3.1. Preflight Tab

You can use this task to run one or more **Action Lists** and/or run a preflight **Profile**.



**Attention:** An Enfocus preflight profile can also contain action lists.

You can create action lists and profiles in the [PitStop Profile Editor](#) that comes with Automation Engine.

- **Action Lists:** Use **Add** or **Remove** to define which action lists you want to run. Use **Move Up / Down** to change the order in which they will be executed.
- **Profile:** If you want to check the PDF against a profile, select a preflight profile from the list.

**Note:** You can use **Variable Names** inside profiles or action lists. This makes the profile or action list 'smart'. Learn more about this concept of **Smart Preflight** in [Smart Preflight: Using Variable Names in PitStop Profiles](#) on page 59

#### Extra Task Status Options When Used as a Single Ticket

When you open a single ticket (when it is not a step in a workflow), extra options appear (as in above screen shot):

- In **When rules are violated**, choose what happens when preflighting results in errors: **Task ends with warning** or **Task fails**.
- In **When warnings appear**, choose what happens when preflighting results in warnings: **Task ends OK**, **Task ends with warning** or **Task fails**.



**Attention:** Learn more [here](#) about controlling the statuses when this task is a workflow step.

### 3.3.2. Certified Tab

#### Concept of Certification

Certifying a PDF means that you embed a 'proof of preflight' in the PDF. The generator of a PDF can so embed a proof of having done a preflight with a specific profile.

The receiver of that PDF (for example a printer) can then check whether the generator did this required QC step before sending him that file. Some industry partners may even only accept PDF files with specific PitStop Certifications.

Here is an example of how a certification is documented on board the preflight report:

The screenshot shows a preflight report header with the Enfocus PitStop Library logo and a 'CERTIFIED PDF' badge. Below the header, the 'Processing' section contains the following information:

Certified PDF status	Preflighted successfully
Preflight Profile	Soft Proof v3.0 Easy
Created by	Enfocus Customer Support - DigiMagic Inc.
	Enfocus - DigiMagic Inc.
Pages processed	1
Application used to preflight	Automation Engine 14.1.0 powered by Enfocus PitStop 13 update 1
Application used to create the report	Enfocus PitStop 13 update 1
Preflighted on	UTC: November 30, 2015 - 13:55:25 [ November 30, 2015 - 14:55:25 ]

Whereas a regular PDF only contains Acrobat metadata, an Enfocus Certified PDF contains a lot of additional information ("Enfocus metadata"), such as the used preflight profile and the version history.

You can also use this task to remove an (earlier made) certification or to insist to keep it.

The certification itself can be checked separately by the [Verify Certification task](#), for example at the start of the workflow at the printer.

**Note:** To learn more about the certification concept and workflow, search for "Understanding Certified PDF" in the [PitStop \(Pro / Server\) reference guides](#).

#### Options

- Set **Certify** to
  - **Make Certified** to certify the file according the profile selected in the tab "Preflight".
  - **Keep Certified** to preserve the existing (un)certified status of the file.
  - **Make Uncertified** to remove all the certified information from the file.

When choosing **Make Certified** or **Keep Certified**, you can define these extra parameters:

- Add a **User** name, **E-Mail** or **Session Comment** to the certified PDF.
- **Allow to roll back**: Enable this if you want the users to be able to roll back to previous versions of the file (for example to compare). When you disable this, the certification history will still be in the file but users can not roll back to previous versions.



**Attention:** Because the **roll back** option stores extra data, the PDF file size can increase drastically.

### 3.3.3. Report Tab

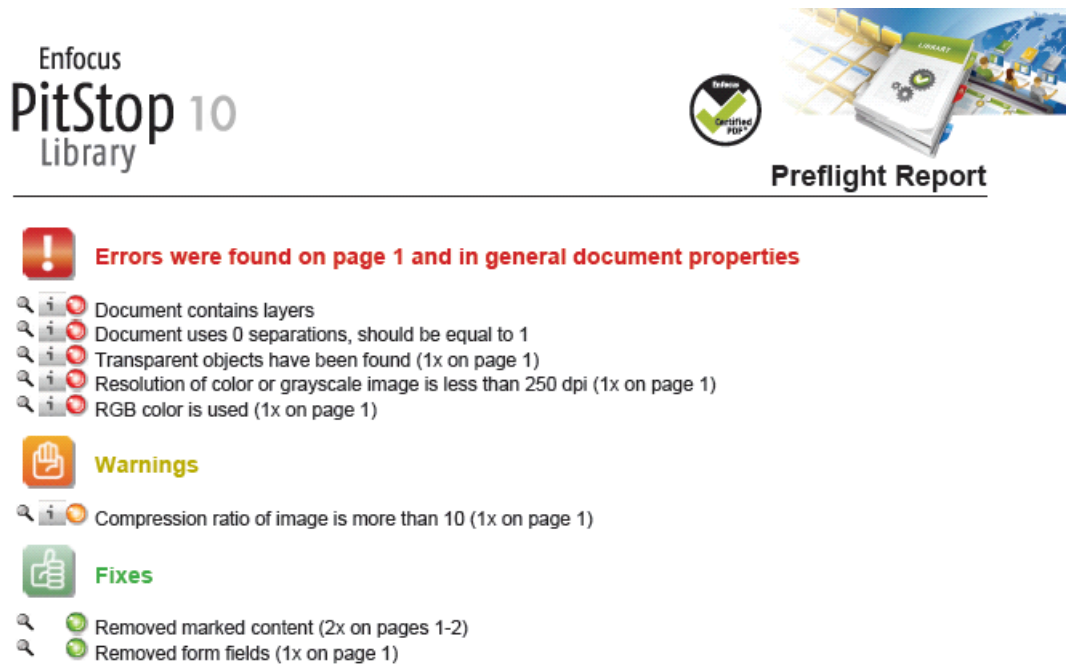
- Decide if you want to **Generate a report** and where this **Report** should be written.
- **Settings for the generated report:**
  - **Units:** Choose from **Inch**, **mm**, **cm**, **Point** or **Pica**.
  - **Language:** Choose one from the list.

- **Type:** Choose if you want a PDF or XML report, or both.

### Preflight Report Contents

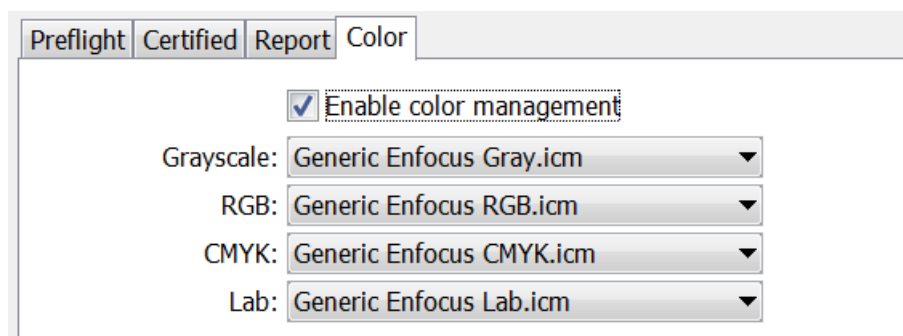
A preflight report contains the **Errors** and **Warnings** found during the preflight, and also lists the **Fixes** it may have done.

An example of the first page of a PDF report:



**Tip:** You can make reports appear on their own task status output pin. Learn more in [Configuring Output Statuses](#).

### 3.3.4. Color Tab





Preflighting often includes color conversions. Unlike normalized PDFs, native PDFs can contain objects in RGB or device independent color spaces.

When the action list or profile includes a color conversion, you can here specify the default ICC profile that will be used for objects that were not tagged with one yet.

To do so, select **Enable Color Management** and choose an ICC profile for the object types in **Grayscale, RGB, CMYK** or **Lab**.

### 3.4. Verify Certification Task

**Note:** The concept of certification is described [in this page about the tab 'Certify' in the 'Preflight with PitStop' task](#).

Certifying a PDF stores the preflight information on board the PDF file. This includes the preflight profile, the preflight report and the information whether the PDF has subsequently been modified.

If you do not re-certify a PDF after it has been modified, it is no longer certified.

You can certify a PDF using **PitStop Pro**, PitStop **Server** or by using the ['Preflight with PitStop' task](#).

The **Verify Certification** task checks if the PDF file was certified to comply with the settings of the profile that you indicated in **Verify against a Profile**.



The task's status will be **'Verification OK'** when the profile that was used to certify the PDF is identical or stricter than the profile selected in this task.

## 4. Global Vision Inspection Tasks

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### 4.1. Introduction

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Automation Engine offers a set of tasks that use technology from the company [Global Vision](#):

- [Inspect Artwork](#) compares files.
- [Inspect Barcodes](#) detects and decodes barcodes in the file.
- [Inspect Braille](#) detects and decodes braille in the file.
- [Inspect Spelling](#) checks spelling (of a chosen language).
- [Inspect Text](#) checks text rules.

#### Profiles

Several of these tasks ask you to select an inspection **Profile**. You can change and create such profiles using the [Global Vision profile Editor](#).

#### These Tasks Require a Software License from Global Vision

To enable these **Inspection** tasks, you need to get a license from Global Vision and then have it installed on Automation Engine. You can also purchase this license via Esko, as a subscription.

Learn more in [the Configure panel where you do this](#).

### 4.2. Recurring Options in Global Vision Tasks

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The following options are available in several Global Vision tasks:

#### Resolution

Several tasks first rasterize the files to RGB files and then inspect that data (PNG files). This option allows you to define the resolution of these RGB images. The minimum supported resolution is 72 ppi, the maximum is 2400 ppi.

**Note:** The default resolution is 300 ppi. Do not set this higher when it is not necessary. Creating high resolution raster data is a significant load for the server. See this other note with [specific information about a different resolution that is used to inspect barcodes](#).

**Note:** Low resolutions like 72 ppi may not be good enough to detect differences. Especially braille needs a higher resolution.

**Note:** These RGB images are written in a central temporary folder that is automatically deleted when the task ends successfully.

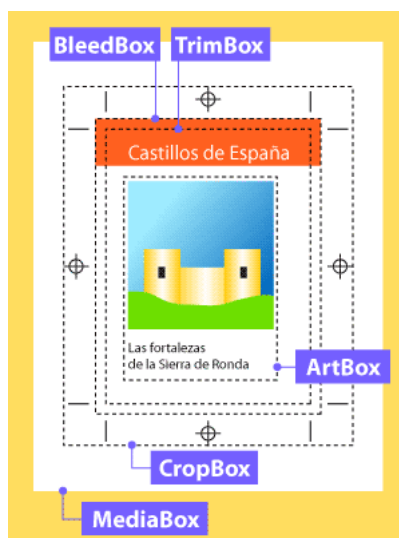
## Region

This option allows you to indicate the region in the master file that you want to have inspected. All artwork outside that region will be ignored during the inspection. This region can be rectangular or have the shape of a (die-)line.

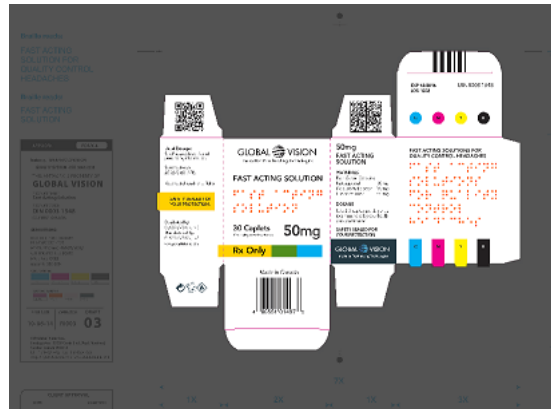
**Tip:** Smaller regions will also create smaller rasterized data and so speed up the inspection. This is also true when you select or ignore specific inks or layers (see below).

**Note:** In case of the [Inspect Artwork task](#), this is the region of the master file that you want to compare with the sample file(s). Adding to below mentioned general rules, learn more specifics in [Compare Artwork Tab](#) on page 74.

Several regions match to the standard PDF page boxes:




- **Trim Box.** The area after cropping to an area with all content. When no trim box is defined, the crop box will be chosen. When no crop box is defined, the media box will be chosen.
- **Media Box.** This is the entire "real" page and may be larger than the actual crop box.
- **Visible Objects.** Automatically crops to the area with all content, starting from the crop box.
- **Crop Box.** Adobe Acrobat uses this size for screen display and printing. When no crop box is defined, the media box will be chosen.
- **Shape.** Locates the largest object in center of the master file and uses that shape as region. This might be a rectangle or a circle (labels, pages...) or a specific shape typically defined by a die-line (boxes). An example:



Alternatively, you can define the shape in the **Options...** dialog:

- Define shape by **Inks**. Use this when you want to specify the shape by using the bounding box of all data in the here defined ink. You here typically define the ink of the die line. All objects inside the shape (contour) that can be formed out of the data in that ink will be inspected. Process inks are not supported to define a shape.

Click on  to get a list of the inks of the input file. Use Ctrl/cmd- or Shift-select to select multiple inks.

**Note:** In case of the *Inspect Artwork task*, although you here selected them from the input file, the ink(s) will serve to find a region in the master file.

**Note:** The input field is not case sensitive.




**Attention:** When specifying multiple inks (for example "die, cut, knife"),

- only the first one of which a shape can be made will be used.
- when none of them can be used as a shape, the task will result in an error.

- Define shape by **Layers**. Similar to above **Inks**. All objects inside the shape (contour) that can be formed out of the data in that layer will be inspected.

### Ignoring Ink or Layers

Ignoring an ink or layer means that their data will not be part of the raster image and so not part of the inspection.

- **Ignore Inks**. Click on  to have them read from the task input file (you can multi-select in this dialog). Use this for example if you have made a difference in the ink used for text. In such case, you could here choose to ignore that ink to check if there are any unwanted differences in the other inks.
- **Ignore Layers**. Same as above "Ignore Inks", but to ignore layers. You can for example ignore the layer that contains the images.



**Attention:** It is also common to here ignore the ink or layer that was used to define a region based on a shape. For example: inspect the region defined by the shape of the ink "die line" and also here also add the ink "die line" to ignore it from the comparison.

## Report

All "Inspect" tasks write report(s).

- **Report File.** Define the report's location and name. When you use SmartNames to define a relative path, the report will be created relative to the parent folder of the input file. The task will fail when the report tries to overwrite the input file.

**Tip:** You can configure an extra output pin to see the report appear on its own pin. Learn more in [Configuring Output Statuses](#).

- **Report Type.** Choose whether you want a PDF and/or an XML report.
  - A PDF report contains several pages, showing and describing what it found during the inspection. The first page shows the bounding box of the region that was inspected.  
The first page of the report shows a preview of the RGB data. It also shows bounding box around the region that was inspected (in pink). When any inks or layers were ignored, this data will also not be shown here.
  - An XML report contains the file URLs and details of what was found during the inspection.
- **Add annotations output pin.** This will add an extra workflow step output pin so it becomes possible to launch specific tasks on the XFDF annotation file (if the type of task writes it). learn more about working with these annotation files in [Inspection Results as Annotations in Viewers](#) on page 69.

## 4.3. Inspection Results as Annotations in Viewers

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The five "[Inspection](#)" tasks generate XFDF files that contain inspection annotations. These XFDF files are written in a hidden subfolder.

These annotations show up in the Automation Engine Viewer. Learn more in [Working with Annotations](#) on page 49.

These annotations can also show up in the WebCenter Viewer. Learn more in the below page about [Seeing Inspection Annotations in the WebCenter Viewer](#) on page 69.

### 4.3.1. Seeing Inspection Annotations in the WebCenter Viewer

There are 2 ways to see the annotations in the WebCenter Viewer:

- When publishing an inspected file from Automation Engine to WebCenter.
- When launching the inspection from WebCenter itself.

#### Publishing an Inspected File to WebCenter

When you ran an inspection task in Automation Engine and you then use the [Publish on WebCenter task](#), you can select its option **Publish Annotations** to make sure that also the XFDF file is published to the chosen WebCenter project.

When you then view the document in the WebCenter Viewer, the annotations will also be visible.

### Launching the Inspection from WebCenter

In this case, WebCenter triggers the inspection(s) (and creation of the XFDF). It does this as part of a **WebCenter Task** that triggers a workflow on its own OBGE (or on an external Automation Engine).

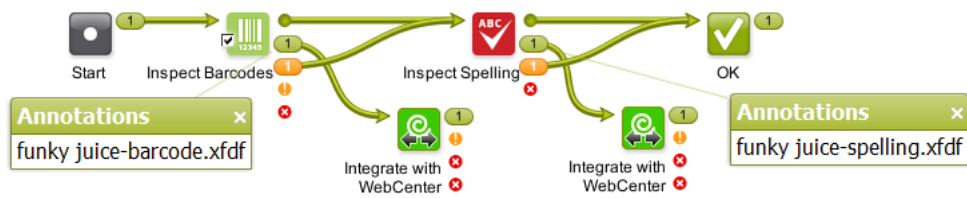
We illustrate this workflow by means of an example:



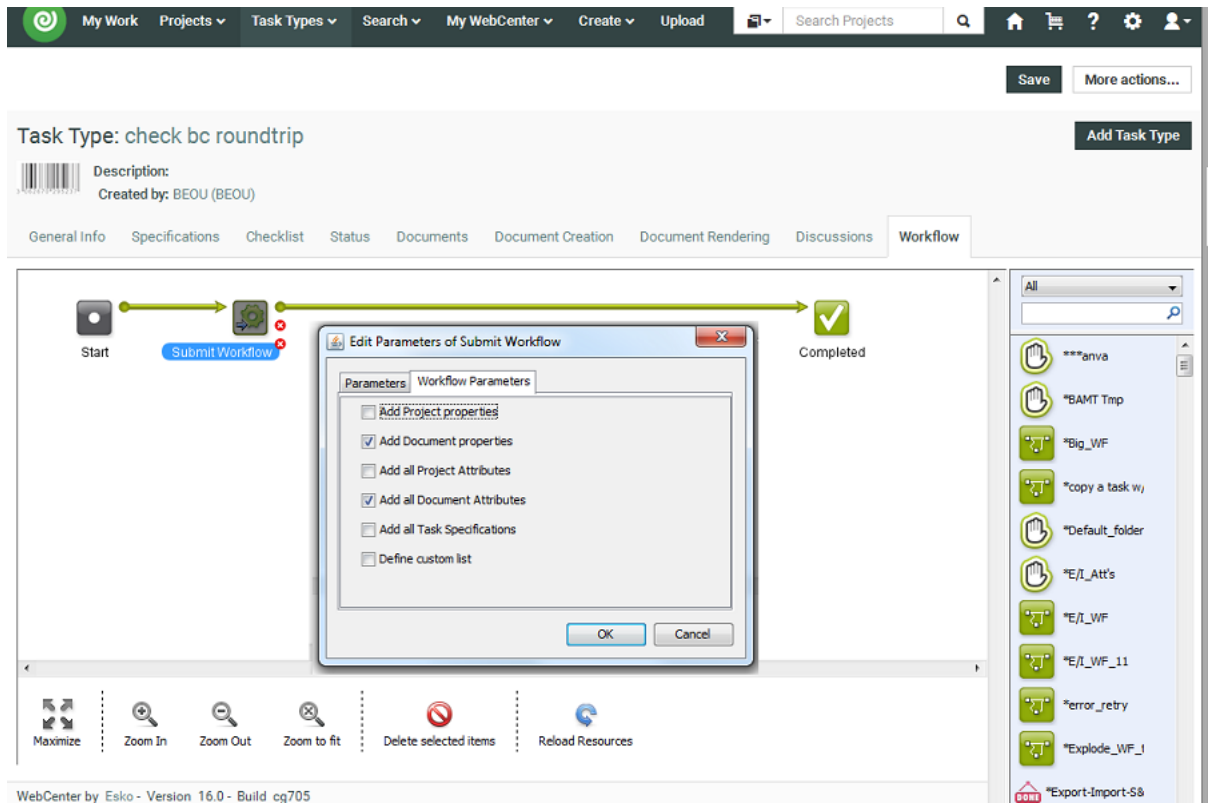
**Attention:** This example assumes you are familiar with creating WebCenter Tasks. Learn more in the [WebCenter documentation](#).

Here are the main steps to set up this workflow:

1. In your WebCenter project (template), define a WebCenter **Task** that contains a **Submit Workflow** that will launch the inspection task(s) on a graphics file.
2. The **Submit Workflow** step in that WebCenter **Task** links to a workflow that uses inspection tasks where you configured an extra output pin in for the annotation file. This XFDF file is so forwarded to the **Integrate with WebCenter** task (more details on this task in below steps). For example:



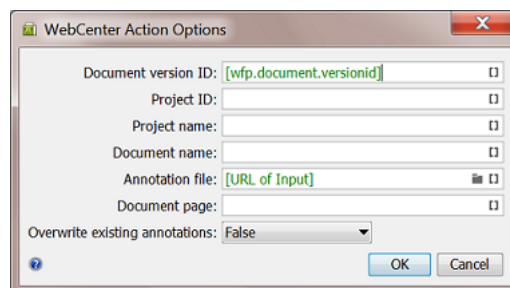
3. The **Submit Workflow** step in that WebCenter Task needs to use the **Workflow Parameters "Add Document properties"** See an example:



Optionally, also use **Add all Document Attributes**. This can for example be useful to communicate the document's language to the spelling inspection.

4. In workflow that is being submitted, in the **Integrate with WebCenter** ticket(s), the **action "Upload Document Annotations"** is used.

In the **Options** of that action, use the workflow parameter `[wfp.document.versionid]`. This is needed to associate that (set of) annotations with that document version. An example:



## 4.4. Inspect Artwork

---

**Note:** This is one of several inspection tasks that use technology from the company [Global Vision](#). Learn about the general concept and setup in the [Introduction](#) on page 66.

### 4.4.1. Concept and Workflow

#### Concept

This task compares one or more 'sample' files to a 'master' file. It selects the defined region of interest, aligns the files and then compares them. It supports multi-page inspections as well as step & repeat files.

Comparing files is typically done

- to make sure files are identical when you ignore a specific ink or layer.
- to make sure only the intended differences are there.

The task detects these types of differences:

- Text changes (moved, missing, broken, added)
- Font changes (size, style)
- Graphics (deletion, insertion, change)
- Color
- Registration

#### Technique

The task prepares RGB raster data of the sample and master file at a custom resolution and then compares that raster data.

This task compares colors, meaning the way as if a human eye or a camera or a scanner looks at the files. For example if the task sees that a green object is the exact same color in both master and sample file, it will not see this as a difference, no matter what separations that green color is made up of.

**Note:** In the Automation Engine Viewer, the default compare mode is one that compares separations ('channels'). In that mode, the Viewer will detect a difference if the same green object is in one file made up of a Pantone ink and in the other file a mix of CMYK. The Viewer also offers the mode to compare HSV values, which is similar to the mode this task uses.

**Note:** This task is similar to the [Compare PDF](#) task.

The found differences are mentioned in the report file but are also written as an XFDF file (a standard Acrobat comments file). When you open the inspected sample file in the Automation Engine Viewer, the viewer will read this XFDF file and show its contents in the annotations list. Learn more in [Working with Annotations](#) on page 49.



## Smart comparing

The task automatically uses these features:

- Rotation detection. The task detects if the sample file is a rotated version of the master file and takes this into account when inspecting.
- Skew correction and alignment. This is for example useful when one of the files is a scan that was slightly angled when being scanned.
- Repeat detection. The task automatically detects if a file is a repeated area inside the other file. Such detected repeats are mentioned and shown in the report file.

## Supported File Types

The sample and the master files can be any of these file types:

- PDF
- Normalized PDF
- PDFPLA
- AI Adobe Illustrator (when PDF compatible)
- TIFF (1-bit and 8-bit. Multichannel images are not supported)
- LEN
- JPEG
- PNG
- BMP
- Folder

## Detailed Reporting

A detailed PDF report lists and visualises the found differences. An XML report details the coordinates of where differences were found. Learn more in [Report Tab](#) on page 75.

## Status and Workflow Output Pins

The sample file (task input file) is also the task output file. This makes it easy to continue your workflow with this file. It will be placed on one of these output pins:

- **Match.** When no differences were found.
- **Mismatch.** When one or multiple differences were found.
- **Error.** When the task itself could not function properly. For example when no *profile* was selected, when the master file could not be found or when the files could not be matched.

See an example (to help visualize the output pins, an end status step was created with the same name as the status):



**Tip:** To get that extra output pin for the report(s) as in above example, you will need to configure it as mentioned in [the page about the inspection report](#).

### Integration with Automation Engine Viewer

When opening the sample file in the Automation Engine Viewer, the area where differences were found are shown in red rectangles and automatically become part of the **Annotations list**. Learn more in [Working with Annotations](#) on page 49.

## 4.4.2. Compare Artwork Tab

- **Compare With.** Indicate the master file you that want to compare your input sample file(s) with.

**Note:** This field needs a full URL (path). When using SmartNames, make sure you also define a file extension.

When the task input is a folder, you here also need to define a folder. The first file in the master folder is compared with the first one in the sample folder. The second master one to the second sample one, etc. When the amount of files in the input folder is not equal to that in the master folder, the task ends in error. The task does not check files in subfolders.

- **Compare Resolution.** This option is present in several Global Vision tasks. Learn more in [Generic Option "Resolution"](#).
- **Profile.** An inspection profile is a collection of parameters that define how (precise) to inspect. Profiles differ (slightly) in thresholds of what you consider as differences. They are centrally located \*.ini files that you can adapt using the ["Global Vision Profile Editor"](#). You can there both adapt the default inspection profiles or create your own.



**Attention:** The profiles listed below are the default ones from Global Vision. You might use a (test-)version that already offers other profiles that were fine-tuned for Esko prepress workflows.

- **None.** The task will end in error when you do not select a profile.
- **Booklet.** Choose this setup to compare multi-page files. It will compare all pages of the sample file with each same-number page of the master-file. Alternatively, for a slightly more precise inspection, choose **Digital** and select **Multipage**.

- **Digital to Scan.** Choose this profile to compare a digital artwork file to a scanned master file.
- **Digital.** Choose this profile to compare revisions or variations of digital artwork.
- **Proof.** Choose this profile to compare files that are supposed to be the same. This is typically to compare digital artwork against a digital proof. Also use it to compare a proof against a printed hard copy. This profile uses refine, auto distort and smoothing to compensate for changes in the image.
- **Scan to Scan.** Choose this profile to compare scanned files.

**Note:** The parameters of the chosen profile are listed on the last page of the [report](#).

- **Multipage.** By default only the first page of a document is inspected. Select this option to compare all pages of the input multi-page sample file to each same-number page of the master file.

**Note:** The task will end in error when the sample file and the master file do not have the same number of pages.

**Note:** This option is ignored when the profile 'Booklet' is chosen (or any other custom profile that already uses the multipage parameter in its configuration).

- **Region.** This option is present in all Global Vision tasks. Learn its basics in [Generic Option "Region"](#). As this task has both a master and sample file(s), these following notes are important:

**Note:** When using a region based on a **Shape**, the task looks for the content of the defined shape in the master file and looks for that similar content in the sample file. This also done when choosing regions based on **Trim** or **Media Box**: the content in that box of the master file will be looked for in the sample file and then compared.



**Caution:** Even when you select an ink or layer from the list of those in the input sample file, this ink or layer is used to find a shape in the master file.

- **Ignore Inks** and **Ignore Layers.** These options are present in several Global Vision tasks. Learn more in [Generic Options "Ignore Inks or Layers"](#).
- **Configure.** This button opens the item in the configure panel where you can activate the software license that you acquired from Global Vision.

### 4.4.3. Report Tab

This option is present in several Global Vision tasks. Learn more in [the Generic Option "Report"](#). We here only mention some specifics for this task.



**Caution:** The last page of the PDF report summarizes the parameters of the profile chosen in the task ticket. Any parameters that were chosen separately in the Esko ticket (like resolution), and that overruled parameters in that profile, are not mentioned here. This means that the here mentioned 'Desired DPI' is possibly not the one that was really used for inspection.

## 4.5. Inspect Barcodes

**Note:** This is one of several inspection tasks that use technology from the company [Global Vision](#). Learn about the general concept and setup in the [Introduction](#) on page 66.

### 4.5.1. Concept and Workflow

This task inspects all barcodes in a file. It scans and decodes them and verifies their grade (quality level) against the minimum grade chosen in the ticket.

A barcode quality problem could for example be that it is too small or it could have too little color contrast, a QR code could miss some parts, etc.

You can also check if the barcodes defined in the Product or Job database are present in the file.

The main advantage of this task is that you do not have to open these files and check them visually or use a device to verify them. The detailed report is also a useful step in your quality control process.

**Note:** You can use the [Global Vision Profile Editor](#) to compare barcodes in a master and sample file.

This task also checks the barcode "quiet zones". For 2D barcodes, a specific grade is given for these zones, one for each side, 100% when the zone is big enough.

#### Supported Barcodes



**Attention:** Add-on codes and composite codes are not supported. UPC-A or EAN-13 add-on codes are recognized but are not graded.

- **1D/Linear codes:**
  - PharmaCode
  - RSS/GS1 Databar Omnidirectional Stacked
  - RSS/GS1 Databar Expanded
  - RSS/GS1 Databar Limited
  - RSS/GS1 Databar Stacked
  - RSS/GS1 Databar Expanded Stacked
  - RSS/GS1 Databar Omnidirectional
  - RSS/GS1 Databar Truncated
  - UPC-E
  - UPC-A
  - EAN 13
  - EAN 8
  - Code 39
  - Code 93
  - Code 128

- GS1 128
- MSI
- Interleaved 2 of 5
- Codabar
- ITF-14
- ITF-16
- Telepen (only decoding supported)
- Code 11 (only decoding supported)
- UPC-A add-on codes (only decoding supported)
- **2D codes:**
  - Data Matrix
  - GS1 Data Matrix
  - QR
  - MicroQR

### Detecting Rotated Barcodes

For linear barcodes, the option "Support Rotation" in the profile needs to be enabled in order to be guaranteed that a rotated barcode is detected. If the option is not enabled, linear barcodes can only be detected when in 0, 90, 180 and 270 degree angles.

However, because linear barcodes can be sheared, it is possible that rotated barcodes are still detected even if the option "Support Rotation" is not enabled.

Rotated 2d barcodes with an angle other than 0, 90, 180, 270 degrees can not be guaranteed to be detected.

### Supported File Types

The input file types supported by this task are the same [as described here for the Inspect Artwork task](#), here excluding the type 'Folder'.

### Status and Workflow Output Pins

The task input file is also the task output file. It will be placed on one of these output pins:

- **OK.** When all barcodes conform to the chosen minimum barcode grade and, when that option is selected, all the barcodes described as product or job barcode are found (with their specified parameters). Learn about these options in [this next page](#).
- **Not OK** (status 'Warning'). When one or more barcodes do not conform to the chosen minimum grade, or, when that option is selected, when a barcode described as product or job barcode is not found or has different parameters. This is also the status when the input file has no barcodes.
- **Warning.** When all barcodes conform to the chosen minimum grade, and, when that option is selected, when a barcode described as product or job barcode is not found or has different parameters.
- **Error.** When the task itself could not function properly. For example when no [profile](#) was selected, or no license was available.

See an example (to help visualize the output pins, an end status step was created with the same name as the status):



**Tip:** To get that extra output pin for the report(s) as in above example, you will need to configure it as mentioned in [Configuring Output Statuses](#).

### Integration with Automation Engine Viewer

When opening the inspected file in the Automation Engine Viewer, the detected barcodes are indicated in red rectangles and is detailed in the **Annotations list**. Learn more in [Working with Annotations](#) on page 49.

**Note:** Due to used resolutions, small differences can occur when comparing BWR measured by the task with BWR measured interactive in the AE Viewer. Learn more [here](#).

## 4.5.2. Check Barcodes Tab

- **Minimum Grade.** Select the minimum grade (quality level) to which all found barcodes must comply. Choose a letter or a number. Numbers deliver more detail. Learn more below and in [Barcode Profile Parameters](#) on page 95.
- **Grades in Letters (ISO 15416:2000)**

Table: Overview of Barcode Grades in Letters

Grade	Meaning
A	These barcodes should scan easily the first time with most scanning equipment. The aim should be to produce codes of this quality whenever the printing processes and materials allow this.
B	Codes of this quality may read after a single scan. If a second scan is required, the probability of success is very high.
C	This is the minimum quality that most barcodes should achieve. It means that re-scanning might be required to get a successful read. Flatbed scanners, which read the barcode at several places, are recommended with codes of this quality.
D	This grade is only acceptable for ITF-14 barcodes printed on fiberboard.
F	F is fail.

### Barcode Individual Grade Parameters (Letters)

The overall grade of a barcode is determined by its individual grade parameters. The overall grade is equal to the lowest grade of any of these individual ones:

Table: Value of Individual Grade Factors in overall Barcode grade (Letters)

Barcode Group Type	Individual Grade Parameter	Meaning
1D/ Linear	Minimum Reflectance	Pass or fail grade (A or F) and the min reflectance value (darkest part of the barcode).
1D/ Linear	Symbol Contrast	The difference in contrast between the darkest and the lightest part of a barcode (%).
1D/ Linear	Minimum Edge Contrast	Pass or fail grade (A or F) determined by the minimum contrast between a space and its adjacent bars.
1D/ Linear	Modulation	The ratio between symbol contrast and minimum edge contrast.
1D/ Linear	Defects	The amount of discrepancies in the reflectance of a barcode.
1D/ Linear	Decode	Pass or fail grade (A or F) determined by whether the barcode was generated correctly (i.e. sufficient spacing between bars).
1D/ Linear	Decodability	The ease of barcode identification.
2D	Modulation	The contrast difference between light and dark regions.
2D	Decode	Pass or fail grade (A or F) determined by whether the barcode was generated correctly (for example sufficient spacing between bars).
2D	Axial Non-Uniformity	The difference in length of the two axis of the barcode.
2D	Grid Non-Uniformity	The vector deviation of the barcode from an ideal position.
2D	Fixed Pattern Damage	The damage done to the pattern of a barcode.
2D	Unused Error Correction	The amount of unused error correction embedded in the barcode.

- **Grades in Numbers (ISO 15416:2016)**

This new calculation method can in some cases result in a higher averaged score for the above parameters using this interpolation method compared with the method using letters (ISO 15416:2000).

Find more details about the decimal grades method in [http://www.aisvision.com/files/2815/1602/9515/ISO\\_15416\\_December\\_2016\\_Changes.pdf](http://www.aisvision.com/files/2815/1602/9515/ISO_15416_December_2016_Changes.pdf) and in <https://www.sis.se/api/document/preview/921309/>.

There are 41 possible grades: 0.0 , 0.1, 0.2 up to 4.0 (source <http://www.axicon.com/fractional-grading.html>).

Table: Value of Individual Grade Factors in overall Barcode grade (Numbers)

Gr	Sym cont	Mod	Deco	Def	Dec	Rmax/Rmin	Min. Edge Contrast
0.0	< 15%	< 30%	< 20%	> 30%	Fail	< 2	< 15%
0.1 to 0.9	15% to 19%	30% to 39%	20% to 24%	NA			
1.0 to 1.9	20% to 38%	40% to 49%	25% to 36%	26% to 30%			
2.0 to 2.9	39% to 54%	50% to 59%	37% to 49%	21% to 29%			
3.0 to 3.9	55% to 69%	60% to 69%	50% to 61%	16% to 20%			
4.0	>= 70%	>= 70%	>= 62%	<= 15%	Pass	>= 2	>= 15%

- **Profile.** An inspection profile is a collection of parameters that defines how (precise) to inspect. They are centrally located \*.ini files that you can adapt using the Esko tool "[Global Vision Profile Editor](#)". You can there both adapt the default inspection profiles or create your own.

When unsure, use the **Default** profile. Selecting **None** will result the task to end in error.

- **Compare barcode data with job or product barcode data.** When this option is selected, the task will, after having checked the minimum grade, also check if all barcodes specified in the [Product Part Properties](#) or in the [Job Setup](#) of the input file are present as such in this file. Not just their type or code, but also all the other parameters entered in those product or job parameters.

This table shows you how the terms in Automation Engine's product and job parameters map to the terms used by Global Vision (that are also used in the reports).

Automation Engine term	Global Vision term
BOBST	Laetus Pharma Code
CLF-8	Laetus Pharma Code
CODABAR	Codabar
CODE-128	Code 128



Automation Engine term	Global Vision term
CODE-39	Code 39
CODE39_EXTENDED	Code 39
DATAMATRIX	DataMatrix
EAN-13	EAN 13
EAN-8	EAN 8
GS1-128	GS1 128
GS1_DATABAR-OMNIDIRECTIONAL	GS1 Databar Omnidirectional
GS1_DATABAR-EXPANDED	GS1 Databar Expanded
GS1_DATABAR-EXPANDED_STACKED	GS1 Databar Expanded Stacked
GS1_DATABAR_LIMITED	GS1 Databar Limited
GS1_DATABAR_STACKED	GS1 Databar Stacked
GS1_DATABAR_STACKED_OMNIDIRECTIONAL	GS1 Databar Stacked Omnidirectional
GS1_DATABAR_TRUNCATED	GS1 Databar Truncated
GS1_DATAMATRIX	GS1 DataMatrix
GS1_US-COUPON-INTERIM	UPC-A + GS1 Databar Expanded Stacked
HIBC-39	Code 39
HIBC-128	Code 128
ITF-14	ITF-14
ITF-16	ITF-16
INT_2_of_5	Int. 2 of 5
KURANDT	Laetus Pharma Code
LAETUS_PHARMA	Laetus Pharma Code
MS_7	EAN 8
MSI	MSI
MARKS_AND_SPENCER	EAN 13
NDC_HRI	UPC-A
PLESSEY	MSI
PZN	Code 39
PZN8	Code 39
PARAF_ITALY	Code 39
QR	QR
MicroQR	Micro QR
UPC-A	UPC-A

Automation Engine term	Global Vision term
UPC-E	UPC-E
UPC-SCS	Int. 2 of 5

- **Region.** Learn more about specifying an inspection region in [Generic Options](#).
- **Resolution.** This option is present in several Global Vision tasks. Learn more in [Generic Option "Resolution"](#). Make sure the resolution is high enough to detect barcodes.



**Attention:** The resolution you can specify here does not influence the accuracy with which the barcode is inspected. This resolution is used to render the complete file before inspecting any barcodes. The higher this resolution, the longer it will take to render the complete file.

To set a high accuracy of inspection of the barcode itself, you can define a higher resolution in the barcode profile that you are using. This can be done via the Global Vision Profile Editor.

This means that it's possible to inspect the file at for example a resolution of 300 ppi, but that the barcode is inspected at 1.200 ppi.

Setting different resolutions in the profile leads to different results. An example:

An 'Inspect Barcodes' task that inspects at 300 ppi, can result in a narrow bar width of

- 0.48 mm when the profile resolution is set to 300 ppi
- 0.46 mm when the profile resolution is set to 600 ppi
- 0.45 mm when the profile resolution is set to 1.200 ppi.

- **Ignore Inks.** When you are sure your barcodes do not contain specific inks, you can here ask to ignore those inks. This can speed up the task. Learn more in [Ignoring Ink or Layers](#) on page 68.
- **Ignore Layers.** Same as above, but for layers.
- **Configure.** This button opens the item in the configure panel where you can activate the software license that you acquired from Global Vision.

### 4.5.3. Report Tab

This option is present in several Global Vision tasks. Learn more in [the Generic Option "Report"](#). We here only mention some specifics for this task.

**Note:** Pharma codes (folder and gluer) return a different number when read upside down. The report mentions both possible numbers. For example "121" might show up as "121 86".



**Attention:** These reports do not include information about the comparison with Product or Job barcode data. Those details are part of the task's log file.

- The **PDF report** first shows a summary of all found barcodes and their grade. It then describes the barcodes in detail.
- The **XML report** also contains all details about the found barcodes.

## 4.6. Inspect Braille

**Note:** This is one of several inspection tasks that use technology from the company [Global Vision](#). Learn about the general concept and setup in the [Introduction](#) on page 66.

### 4.6.1. Concept and Workflow

This task detects braille, translates it to a chosen language and displays information such as the language, number of dots, number of characters, number of lines, dot spacing, character spacing, word spacing and line spacing values.

Braille should comply to the [Marburg Medium braille specification](#). Braille that does not comply might get misinterpreted. For example wrongly grouping dots of different characters into one character, or not detecting certain dots to be part of the braille, or not recognizing the braille at all.

The task can also compare the found braille to a given text.

**Note:** You can use the [Global Vision Profile Editor](#) to **compare braille** data between a master and sample file.

#### Supported File Types

The input file types supported by this task are the same [as described here for the Inspect Artwork task](#), except the type 'Folder'.

#### Status and Workflow Output Pins

When finished, the task input file will be placed on one of these output pins:

- **OK.** When no error occurred and when the **compare** option is not enabled.
- **Not OK** (status "warning"). When the option **compare** was used and found a mismatch.



**Attention:** A mismatch will not be shown in the report file (the actual comparison is done with the report data). Mismatches are mentioned at the bottom of the task log file. For example:

```
INFO: GlobalVisionTask.INFO.ComparingWithBrailleData
ERROR: GlobalVisionTask.Message.BrailleDataDifference (< correct text >, <
mismatch >)
```

- **Error.** When the task itself could not function properly. For example when no license was available.

**Tip:** To get an extra output pin for the report(s), you will need to configure it as mentioned in [the page about the inspection report](#).

## Integration with Automation Engine Viewer

When opening the inspected file in the Automation Engine Viewer, the detected braille is indicated in red rectangles and is detailed in the **Annotations list**. Learn more in [Working with Annotations](#) on page 49.

### 4.6.2. Check Braille Tab

- **Language.** Braille is written in a specific language. Some braille characters mean different things in different languages. Select the language in which you think that the braille code is written. You then will get the correctly translated version in that language.

**Note:** A language translation set is an XML file that describes mapping of characters. Some (pharma) companies create their own mapping style. You can use the [Global Vision Profile Editor](#) to export and add custom languages.

- **Compare.** Enable this option to compare the text resulting from all the detected and translated braille with the text written in this field or resolved by a SmartName in this field. To indicate a new line in the text, add a space in the text field.



**Attention:** The comparison is done with the text in this field, *not* with text present inside an external file.

**Note:** If your file has separate groups of braille that you want to compare with a text you defined here in this field, you can work with layers. Add the different groups of braille to different layers in your file and use the option **Select Layers** to control which translated braille you here compare with the here defined (smart) text.

- **Region.** Learn more about specifying an inspection region in [Generic Option "Region"](#).
- **Resolution.** Make sure the resolution is high enough to detect braille. 72 ppi for example will not be sufficient to detect the braille objects. Learn more in [Generic Option "Resolution"](#).
- **Select Inks.** Braille is usually present in a specific ink or layer. Specify one or more inks that contain the braille data. Once braille is found in one ink, all braille is expected to be in that ink (all braille in another selected ink will then be ignored). The list of inks does not determine the order in which the inks are searched.
- **Select Layers.** Same as **Select Inks**, but for layers. Except that when you specify multiple layers, that not just the first (found) layer will be checked.
- **Configure.** This button opens the item in the configure panel where you can activate the software license that you acquired from Global Vision.

### 4.6.3. Report Tab

This option is present in several Global Vision tasks. Learn more in [the Generic Option "Report"](#).

## 4.7. Inspect Spelling

**Note:** This is one of several inspection tasks that use technology from the company [Global Vision](#). Learn about the general concept and setup in the [Introduction](#) on page 66.

## 4.7.1. Concept and Workflow

### Concept

This task checks the spelling of the text in the input file. You need to specify the language the text is written in. This can also be a custom dictionary.



**Attention:** This task only checks spelling of live text objects (not of contourized text).

### Supported File Types

This task supports PDF, Normalized PDF, PDFPLA, AI (when PDF compatible), TXT, DOC(X), RTF, XML, HTML and XLS(X) files.

### Status and Workflow Output Pins

When finished, the task input file will be placed on one of these output pins:

- **Match** (status "OK"). When the spelling was correct.
- **Mismatch** (status "Warning"). When the spelling was not correct.
- **Error**. When no live text was found or when the task itself could not function properly (for example when no license was available).

**Tip:** To get an extra output pin for the report(s), you need to configure it as mentioned in [the page about the inspection report](#).

### Integration with Automation Engine Viewer

When opening the inspected file in the Automation Engine Viewer, the spelling violations are indicated in the **Annotations list**. Learn more in [Working with Annotations](#) on page 49.

## 4.7.2. Check Spelling Tab

- **Language.** Select the language the text is written in.

**Note:** You can customize a language (dictionary) by using the [Global Vision Profile Editor](#).

- **Region.** Learn more about specifying an inspection region in [Generic Option "Region"](#).

**Tip:** When your file contains live text in more than one language, you could organize the different texts in specific layers and then specify a layer selection in this task.

- **Select Layers.** You can specify one or more layers that contain the text in the selected language.

### 4.7.3. Report Tab

This option is present in several Global Vision tasks. Learn more in [the Generic Option "Report"](#).

## 4.8. Inspect Text

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**Note:** This is one of several inspection tasks that use technology from the company [Global Vision](#). Learn about the general concept and setup in the [Introduction](#) on page 66.

### 4.8.1. Concept and Workflow

#### Concept

This task compares the text in the input file with the text in another file. You select a profile that defines how should be compared and what should be seen as a difference (for example if you consider a font type or font size change a difference).



**Attention:** This task only detects and compares live text objects (not contoured text).

#### Supported File Types

This task supports PDF, Normalized PDF, PDFPLA, AI (when PDF compatible), TXT, DOC(X), RTF, XML, HTML and XLS(X) files.

**Note:** For XLS(X) files only the visible text is checked, so not the text outside the visible part of the cell.

#### Status and Workflow Output Pins

When finished, the task input file will be placed on one of these output pins:

- **Match** (status "OK"). When the text matches.
- **Mismatch** (status "Warning"). When the text does not match.
- **Error**. When one of the files has no live text or when the task itself could not function properly (for example when no license was available).

**Tip:** To get an extra output pin for the report(s), you need to configure it as mentioned in [the page about the inspection report](#).

#### Integration with Automation Engine Viewer

When opening the inspected file in the Automation Engine Viewer, the found differences are indicated in the **Annotations list**. Learn more in [Working with Annotations](#) on page 49.

### 4.8.2. Compare Text Tab

- **Compare with.** Indicate the file (full URL) that contains the text that you want to compare with the text from the input file. For example: your input file is a PDF and you compare it with a Word file containing the original text.
- **Profile.** Select a profile that defines what should be seen as a difference and other parameters. Learn more about these profiles in the [Global Vision Profile Editor](#).
- **Region.** Learn more about specifying an inspection region in [Generic Option 'Region'](#).
- **Select Layers.** You can specify one or more layers that contain the text.

### 4.8.3. Report Tab

This option is present in several Global Vision tasks. Learn more in [the Generic Option "Report"](#).

## 4.9. Global Vision Profile Editor

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### 4.9.1. Concept and Workflow

The Global Vision Profile Editor is a version of [Global Vision's](#) standalone application ArtProof/ScanProof. This Esko version has a different interface and functionality.

The main reason for an Esko user to use the Global Vision Profile Editor is to be able to test and manage the **Profiles** that are used in Automation Engine's Inspection tasks.

You can also use its interactive tools to compare artwork, inspect barcodes, translate braille, inspect text or spelling.



**Caution:** This application is very memory intensive, especially when you open files that are large in dimensions, or if you request a high resolution. Check if your local computer has enough memory on <http://www.esko.com/systemrequirements> (section Automation Engine - Client).

#### License from Global Vision

As with the Inspection tasks, you need a license from Global Vision to use this application. This was introduced [here](#).

#### How to Install

This application is one of the tools that you can download from the Automation Engine server web page.

- Open this server web page by entering `http://<name of your master server>` or `http://<name of your master server>:9999` in the address field of your browser.
- Download this application from **Client Apps > Tools**.
- When asked for the **Host Name**, enter the name of your Automation Engine server where you have installed your license from Global Vision.

### General Working

This application first creates rasterized files at a chosen resolution and then inspects these files.

PDF files or AI files are first opened in a *Prepare PDF window*. You can there for example choose to ignore inks or layers before the file is being rasterized.


### File Support

- PDF and AI files (when PDF compatible)
- RIP data: TIFF, LEN
- Pictures: BMP, PNG, JPG






The **Inspect Text** and **Inspect Spelling** modes also support these file types:

- DOC, XLS, XLSX, XML, HTML





## 4.9.2. Interface Overview

1.  **File Menu**. To load files or change the resolution that artwork files will be rasterized with.


**Tip:** You can also load files via double-clicking inside the master or sample panel. Also do this if you loaded a wrong file and want to replace it with another.

2.  **Reset Interface**. To clear the inspection window and all the loaded files. Do this before starting to inspect a completely different set of files.
3.  **Back**. To close the inspection window.
4. **Editor Modes**. To choose to compare , inspect barcodes  or translate braille .
5. **Action**. To choose the type of action for that mode.
6. **Profile**. To choose the specific profile for that mode and action.

**Note:** Choose **Manage** at the bottom of the list when you want to add, copy, rename or delete a profile without activating any inspection mode. Be aware that 'Apply' also saves the made changes!


7.  or  or  to start the inspection.
8.  **Cancel Inspection**. To stop the inspection while running.



-  **Configure Inspection Parameters.** When in inspection mode, use this one to view or make changes to the selected profile and re-execute the changed profile.

**Note:** If you want save the changes to the profile, then select '**Manage**' from the **Profile's** drop-down list.






**Note:** This icon is disabled when the chosen profile is one that was installed with the application (those are read-only). Use '**Manage**' from the **Profile's** drop-down list to make a custom copy of such a profile. You can then view and make changes to that new profile.

-  **Help.** To change various preferences. The Hi-Contrast option is explained in [Comparing files](#) on page 90.


### 4.9.3. Prepare PDF Window

When loading PDF or AI files, they are first opened in a **Prepare (Master/Sample) PDF** window. This is where you can still rotate or crop the file or hide selected separations or layers before the file is rasterized. These changes do not modify the original PDF/AI file.

#### Tool bar

-     , **Marquee Zoom** (drag an area), **Central Zoom In/Out** and **Total View**. These functions only affect the view in this dialog ; they do not decide what will be rasterized.
-  **Reload file.** Choose this to discard any changes made so far and re-opens the file in this "Prepare PDF" window.
- Accept.** Click accept to confirm any changes you made, start the rasterization process. When done, the PDF Prepare window closes and the resulting raster data is shown in the (master or sample) "Inspection" window.
- Close.** Choose this to cancel this preparation and close this window.

#### Left Panels




- Enable overprint.** In prepress environments, leave this enabled.
- You can choose to limit the region to the file's Media, Trim or Crop Box.
- Layers and Separations:**  
 Click the  eye icon to hide them in this view and exclude them from the raster data. Click again to show / include them again.  
 Right-click the name of a layer or separation to enable or disable "**Use Shape as Region**". Select this when you want this (die) layer or separation to be used as shape to be inspected. When no shape can be extracted from the chosen layer or separation, the crop box will be chosen.


**Note:** Only one layer or separation can serve as region shape at a time.

- **Process.** The process inks cannot be used to extract a region based on a shape. You can only double click them to hide/show them in this view and exclude/include them from the raster data.



#### 4.9.4. Comparing files

**Note:** This is a quick start guide. We also assume you have read the introduction pages [of the Inspection tasks](#) and [of the Profile Editor](#).



1. Select the Compare mode .
2. Choose the **Action** 'Compare'.
3. Choose the **Profile** you want to inspect with. Learn more in [Compare Profile Parameters](#) on page 92.
4. In , choose the resolution at which you want to inspect.
5. In , load a master and sample file.

**Note:** When a file is loaded, click  next to the name of the master or sample file to get information about the raster data or to change the appearance of the file in this window.




When loading PDF (compatible) files, the **Prepare PDF** window will open. Learn more about this extra step in [Prepare PDF Window](#) on page 89.


6. Once a file is loaded, you can use the **Inspection** toolbar to make some changes before you start the inspection. For PDF files, you could already have done some of those changes in the **Prepare PDF** window.
  -  Define which region you want to have inspected. Select an option and a blue dashed line will indicate the resulting region.
    - **Crop Box.** This is typically the whole file. Learn more about PDF boxes in [recurring options](#).
    - **Marquee.** Select it and then drag an area. Optionally, when you want to target a block of text in a single ink, click on  **Crop Contents** to crop to the content in that marquee.
    - **Visible Objects.**
    - **Shape.** Select this option then click in the center of the shape you want. When no shape can be found, the largest object in the middle will be used as shape.








**Note:** The last used type of region stays selected for the next loaded master file.


-  To **Reload** the file. In case of a PDF file, the Prepare PDF window will open again.
-  To **Rotate** or **Mirror** the file.

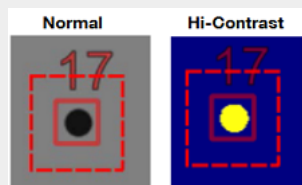
**Note:** The application already detects rotations between master and sample automatically.






-  **Marquee Zoom** and  **Total View**. The chosen view does not affect the region to inspect.
7. Click  to start the inspection. The region that you defined in the master will be looked for in the sample and then compared.

**Note:** Click  to cancel the inspection.

8. When the inspection is finished, an inspection window and a panel shows you the found differences found in the sample file.
- Use the Inspection window toolbar to help visualise the result:
    -    Click the small arrows to speed up or down the flashing of the differences.
    -  to show only the master or  to show only the sample image. In these modes, you can click on the flash-button itself  to change (back) to a combined view with flashing differences.
    -  to show or hide the whole difference image.

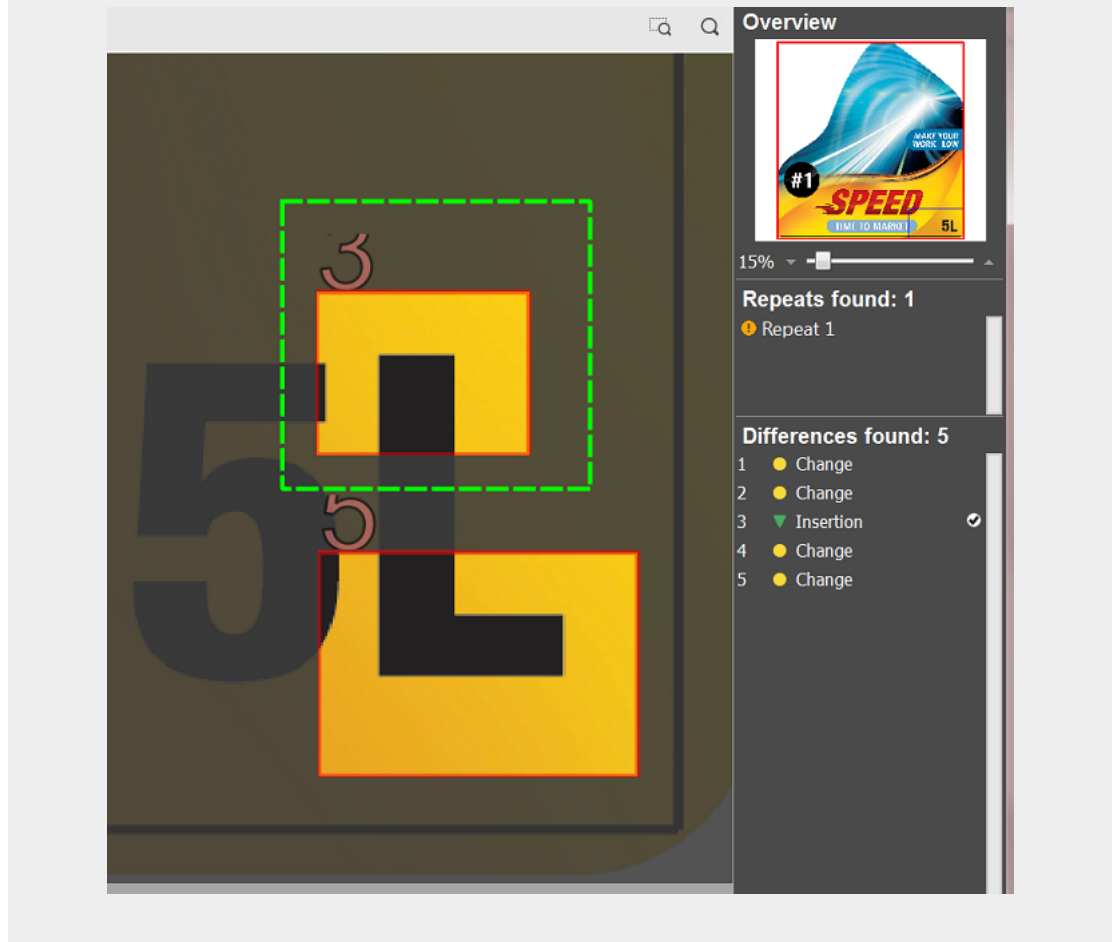
**Note:** In  **Preferences**, the option **Hi-Contrast Difference Image** enables a difference view that uses a blue background (re-run the inspection to get this option to take effect).




-  to show or hide an edge difference image.
-  to show or hide the mask (change the color in  **Preferences**).
-  to show or hide the box around the difference.
-  to show or hide the number of the difference.
- **Repeats found:** Valid when one of the images is a step & repeat file of the other. Learn more about the parameters for detecting repeats in [Compare Profile Parameters](#) on page 92.

- **Differences found:** Changes, Insertions or Deletions. Click the item to zoom in to that difference. An  icon appears to indicate that you have inspected that difference.

**Note:** You can group differences to be seen as one difference. See this example where the movement of the letter "L" was detected as 2 differences. Press **Alt** and drag a rectangle around their red rectangles to group them as one difference. Mind that there is no 'undo' function.



9. Optionally, you can

- choose another profile and start the inspection again.
- click  to check the current profile. When you change parameters, click **Apply** to run the inspection again with your changed settings (this does not save the changes to the profile). Learn more about the parameters in [Compare Profile Parameters](#) on page 92.

**Note:** To save the changes you made a profile, select '**Manage**' from the **Profile's** drop-down list, make the changes there and click '**Apply**' there.

### Compare Profile Parameters

## General

- **Difference grouping (pixels).** The radius for grouping differences together (0 to 999).

## Text

This relates to text in PDFs, even when contoured. Also scans saved as PDF.

- **Low contrast.** Parameters typically for areas with color on color, like a black text on top of an image.
  - **Minimum detection size (pixels).** Ignores differences detected below this amount of pixels.
  - **Maximum difference shift (pixels).** Maximum allowable pixel tolerance before an item is seen as a difference.
  - **Sensitivity.** Sets the sensitivity to detect differences. Enter a value or use the slider.
  - **Advanced**
    - **Reduce image noise and imperfections.** This produces a less pixelated image. Mind that a higher value may inhibit difference detection (0 to 20).
    - **Correct text kerning and image shift.** Reduces detection of small changes in text kerning and image shifts (0 to 5).
- **High contrast.** Same type of parameters as above for low contrast, but here for high contrast areas, for example a black text on a white background.

## Artwork

These parameters are valid for all objects other than text. You can set the same type of parameters as those for "Text", as described above.

## Color

**Enhanced color detection (digital).** Enable this option when you are comparing digital files and you want to use an enhanced method of detecting color differences.

- **Minimum detection size (pixels).** Ignores differences detected below this amount of pixels.
- **Sensitivity.** Sets the sensitivity to detect differences. Enter a value or use the slider.

## Repeat Detection

When comparing a file with a repeated version of that file, use these parameters to fine-tune the detection of the repeats and their content.

- **Find repeating shapes.** Matches comparable images by their shape (5% to 99%).
- **Find repeating content.** Checks how similar their content is, by checking the maximum amount of allowable differences between repeats (5% to 99%). Mind that values greater than 30 may degrade the quality of repeat detection.

## Scan

These parameters are relevant when the file is a scan of a printed sample.

- **Ignore edges (pixels).** Increases the mask area along the edge of the image (0 to 50).
- **Mask creases (pixels).** Used in conjunction with Shape extraction. Increases the mask area along the inner die lines of the master to eliminate crease differences from being detected (0 to 50).
- **Correct distortion, rotation and skew.** Enable this to automatically compensate for any angular misalignment or distortion differences between the master and sample.

**FAQs**

- **How to Ignore Registration Differences?**

Change one or both of these parameters:



- Increase the Minimum Detection Size.
- Increase the Maximum Difference Shift.

### 4.9.5. Inspecting Barcodes


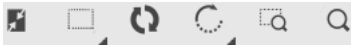

**Note:** This is a quick start guide. We also assume you have read the introduction pages [of the Inspection tasks](#) and [of the Profile Editor](#).

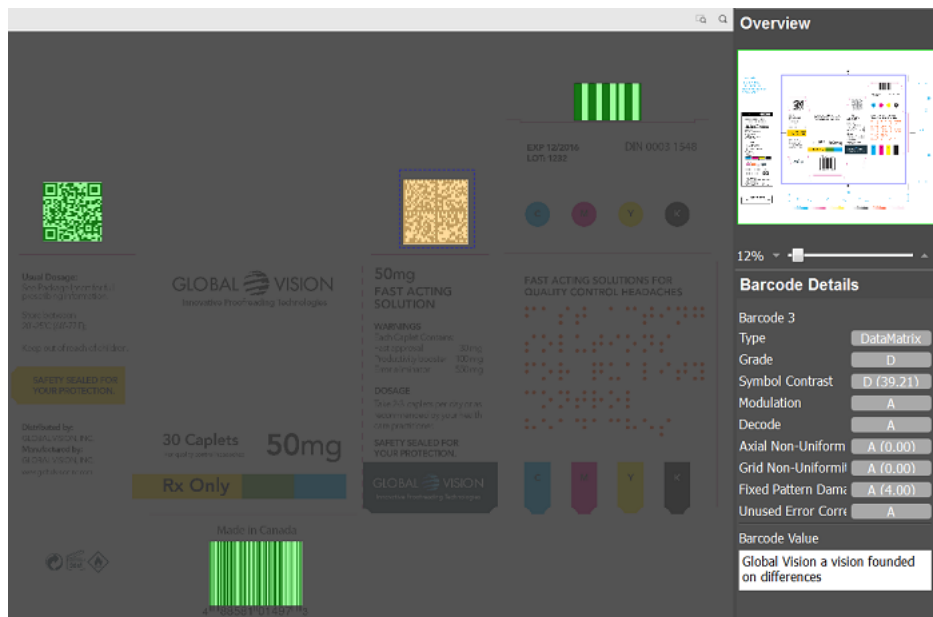


**Attention:** We here only list the main differences with comparing files, as we describe [here](#).



1. Select the mode 'Inspect Barcodes' .
2. Choose the **Action** 'Inspect Master' or 'Inspect Sample'.  
The barcode inspection is only done on 1 file, but in case you earlier loaded and compared a master and a sample image, you can choose which one to inspect. This way, you can use the barcode inspection as an extra inspection after you did a compare.
3. Choose the **Profile** you want to inspect with. Learn more in [Barcode Profile Parameters](#) on page 95.
4. In , choose the resolution at which you want to inspect.

Linear barcodes can be hard to detect when you choose a very low resolution.

5. In , load a master or sample file (or double-click the left or right background window).
6. Once a file is loaded, you can use the **Inspection** toolbar  to make some changes before you start the inspection. For PDF files, you could already have done some of those changes in the **Prepare PDF** window.
7. Click  to start the inspection.
8. When the inspection is finished, the inspection window highlights the decoded barcodes. The highlight color represents their grade (gray for barcodes where grading is not supported). A side panel shows details on the selected barcode (in a blue dashed line rectangle).



9. Optionally, you can

- choose another profile and start the inspection again.
-  click  to check the current profile. When you change parameters, click **Apply** to run the inspection again with your changed settings (this does not save the changes to the profile). Learn more about the parameters in [Barcode Profile Parameters](#) on page 95.

**Note:** To save the changes you made a profile, select '**Manage**' from the **Profile's** drop-down list, make the changes there and click '**Apply**' there.

## Barcode Profile Parameters

**Note:** On this page, we use the term 'linear' for 1D/Linear barcodes.

### Linear

- **Process**

Disable this if you do not want linear barcodes inspected.

- **Scan Gap Horizontal**

This is the number of columns to skip between 2 scans when detecting vertically oriented linear barcodes. A higher value increases detection speed but may reduce accuracy of detection. Adjust this parameter if there are issues with detecting vertical oriented barcodes.



- **Scan Gap Vertical**

This is the number of rows to skip between 2 scans when detecting horizontally oriented linear barcodes. A higher value increases detection speed but may reduce accuracy of detection. Adjust this parameter if there are issues with detecting horizontal oriented barcodes.



- **Min. Quality Score**

This is the minimum number of scan lines that must be decoded properly. The lower, the higher the detection rate but also a higher chance of false positives. The default value is 5.

- **Min. Vicinity Horizontal (pixels)**

When a same barcode is detected twice (same type, same decoded value, same orientation), this is the minimum horizontal distance in pixels between them to merge the detection of the duplicate barcodes.

- **Min. Vicinity Vertical (pixels)**

Same as above, but the vertical distance.

- **Edge Threshold**

This is the minimum transition value used to detect the transition between spaces and bars. Use low values to detect high contrast barcodes and high values for low contrast codes.

- **Ignore quiet zone**

Enable/disable quiet zone verification for barcodes that require a quiet zone.

- **Support Rotation**

Enable/disable detection of non-90-degree-rotated linear barcodes (barcodes not at 0, 90, 270 degree orientations).

- **Support Negative Barcodes**

Enable/disable detection of barcodes in (white) knockout.

- **Ignore Checksum**

Enable/disable checksum verification for UPC/EAN barcodes.

- **Grade Output Format:** An older method uses letters to grade the quality of the barcode. The ISO 15416:2016 implements a new calculation method resulting in decimal numeric



grades. This is more precise. The inspection report will show the grading in the format that was selected in this profile.

- **ISO/IEC 2016 Standard (uncheck for 2000 standard).** The '2000' standard sticks to rounded numbers ; the '2016' one uses decimals values as well.
- **Include in Grading: Data Structure**

If checked this will include Data Structure grading in overall grading.

**Note:** The **overall grading** is determined by the lowest ISO grading parameter. Non ISO grading parameters are not included in the overall grading by default.

Example: If '**Include in Grading: Data Structure**' is checked and it receives a grading of D, and D is the lowest grading, then the overall grading will be D.

- **Include in Grading: Quiet Zone**

If checked this will include Quiet Zone grading in overall grading.

- **Include in Grading: Narrow Bar**

If checked this will include Narrow Bar grading in overall grading.

- **Include in Grading: Wide to Narrow Ratio**

If checked this will include Wide-to-Narrow-Ratio in overall grading.

- **Fail Grading if BWR out of the specified range**

Will fail the grading if Bar Width Reduction is out of specified range (adjustable ; default is minimum BWR set at -0.10 and maximum BWR at 0.10).

## Linear Types

Enable or disable the type of linear barcodes that you want to have detected.

### Data Matrix

- **Process**

Disable this if you do not want data matrix codes detected and inspected.

- **Max. Number Codes**

This is the maximum expected number of data matrix codes with unique sizes that can be detected in an inspection. The higher this value, the slower the detection.

- **Scan Gap**

This is the horizontal scan gap. A higher value increases detection speed but may reduce accuracy of detection. Adjust this parameter if there are issues with detecting data matrix barcodes.

- **Detection Level**

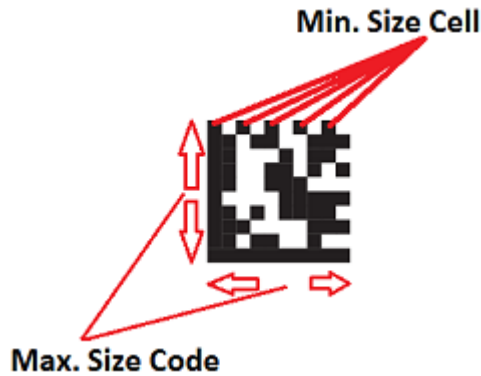
This is the general level of the effort the algorithm spends on detection. A higher value increases accuracy but decreases detection.

- **Edge Threshold**

This is the minimum transition value used to detect the transition between light and dark cells. Use low values to detect high contrast codes and high values for low contrast codes.

- **Min. Size Cell (pixels)**

This is the minimum size in pixels of a data matrix cell. Increase this value to remove small data matrix candidates and to avoid small artifacts being detected as false codes.

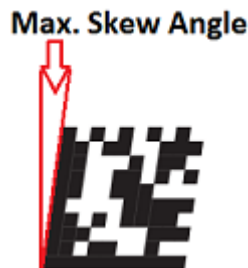


- **Max. Size Code (pixels)**

This is the maximum size of the data matrix code in pixels. Use it to remove big data matrix candidates and speed up detection of codes. Decrease this value if larger data matrix codes are mis-detected.

- **Max. Skew Angle**

This is the maximum data matrix skew angle in degrees. Increase this value to allow detection of skewed or rotated data matrix codes.



## QR

- **Process**

Disable this if you do not want QR and Micro QR codes inspected.

- **Scan Gap Horizontal**

Same as mentioned above for linear barcodes.

- **Scan Gap Vertical**

Same as mentioned above for linear barcodes.

- **Min. Quality Score**

Same as mentioned above for linear barcodes.

- **Edge Threshold**

Same as mentioned above for data matrix codes.

**General**

- **Red Light Simulation**

Enable/Disable red light simulation when grading barcodes.

- **Filters**

Adjust these filters when there are issues with barcode detection due to noise. None = No filtering (default), 1x = filter one time, 2x = filter two times.

- **Smooth Filter.** Enable/disable smoothing the image with a Gaussian filter. The effect is blurring the image to remove noise and ease barcode detection on degraded images.
- **Median Filter.** Enable/disable using a Median filter to remove noise and ease barcode detection on degraded images. This filter removes noise while preserving barcode edges.



- **Open Filter.** Enable/disable using an Open filter to remove small light noise such as thin straight vertical lines on barcode and ease barcode detection.



- **Close Filter.** Enable/disable using a Close filter to remove small dark noise and ease barcode detection.

**FAQs**

**Should I get the same grade results at different resolutions?**

Grade results can be different when done at a different resolution, especially the **Decodability**. Decodability measures bar/space ratios against the standard.

An example: at 600 DPI, wide barcode bars may be 10 pixels and narrow bars 5 pixels, resulting in a wide to narrow bar ratio of 2. At 300 DPI, wide barcode bars may be 5 pixels and narrow bars 2 or 3 pixels, resulting in a different wide to narrow bar ratio. Especially when






the narrowest bar is very small (1 or 2 pixels), the decodability may be different. In general, a higher DPI produces more accurate grade results.

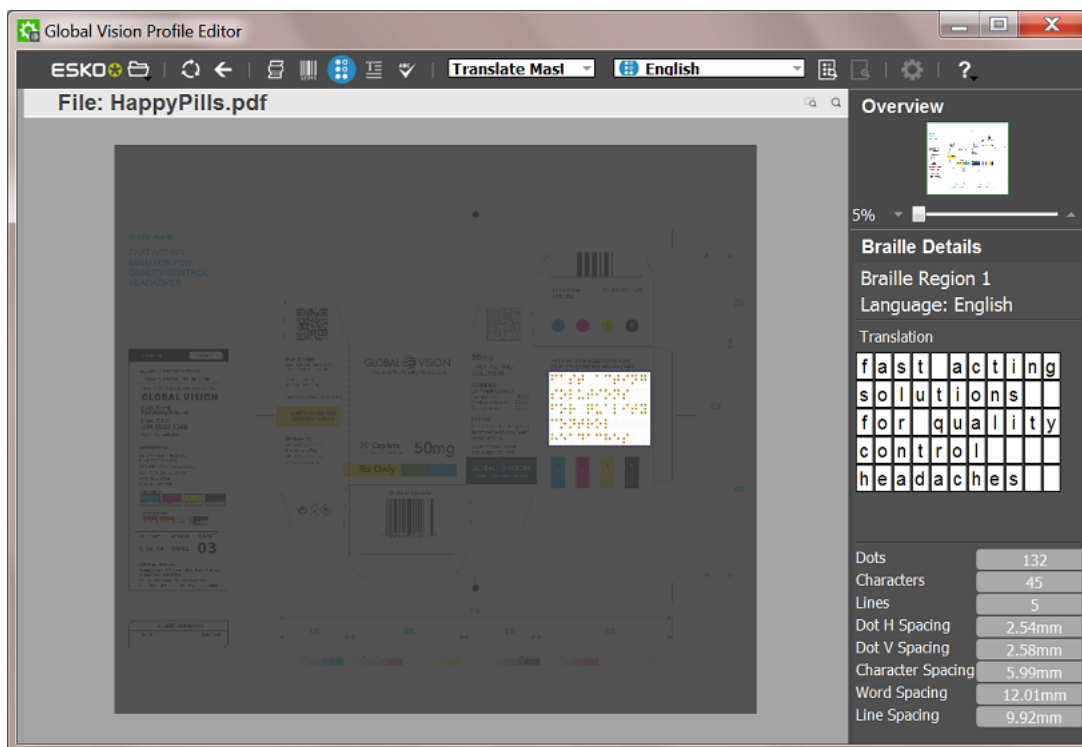
### 4.9.6. Translating Braille

**Note:** This is a quick start guide. We also assume you have read the introduction pages [of the Inspection tasks](#) and [of the Profile Editor](#).



**Attention:** We here only list the main differences with comparing files, as we describe [here](#).

1. Select the mode 'Inspect Braille' .
2. Choose the **Action** 'Translate Master' or 'Translate Sample'. The braille inspection is only done on 1 file, but in case you already loaded a master and a sample, you can choose which one to inspect. This way, you can use the braille inspection as an extra inspection after you did a compare.
3. Choose the **Profile** you want to inspect with. For braille, the profile only defines what language the braille is written in and should be translated back to.
4. In , choose the resolution at which you want to inspect. Braille can be hard to detect when you choose a very low resolution.
5. In , load a master or sample file (or load them via double-clicking the left or right background window).
6. Once a file is loaded, you can use the **Inspection** toolbar  to make some changes before you start the inspection. For PDF files, you could already have done some of those changes in the **Prepare PDF** window.  
Learn more about this toolbar in the pages on [Comparing files](#) on page 90.
7. Click  to start the translation.
8. When the inspection is finished, the inspection window highlights the found braille and a side panel shows details on the selected group of braille (in the blue dashed line rectangle).



**Tip:** In the **Braille Details** panel, you may need to use the slider under the Translation characters to read more of the translated text.

### Braille Profile Parameters



The **Braille Language Editor** enables you to add, modify or delete braille characters of a chosen language.




## 4.9.7. Comparing Text

**Note:** This is a quick start guide. We also assume you have read the introduction pages *of the Inspection tasks* and *of the Profile Editor*.



**Attention:** We here only list the main differences with comparing files, as we describe [here](#).

1. Select the mode 'Inspect Text' .
2. Choose the **Action** 'Compare'.
3. Choose the **Profile** you want to compare with. Learn more in [Text Compare Profile Parameters](#) on page 102.
4. In , choose the resolution at which you want to inspect.

5. In , load a master and load a sample file (or double-click the left or right background window).
6. For each loaded file, you can use the **Inspection** toolbar  to make some changes before you start the inspection. For PDF files, you could already have done some of those changes in the **Prepare PDF** window.  
Learn more about this toolbar in the pages on [Comparing files](#) on page 90.
7. Click  to start the comparison of the text.
8. When the inspection is finished, a side panel lists the found differences. Select one to zoom in to that difference.

## Text Compare Profile Parameters

**Tip:** Hover with your mouse over the parameters to see the tool tips with more info.

### Difference Types

Indicate whether these text parameters can cause a difference or not.

### Languages

These parameters are important to set the text reading order. All languages are supported in different orientations, but the profile requires one choice:

- **Left to Right.** For standard western text.
- **Right to Left.** For example for Arabic, Hebrew and Farsi.
- **Asian.** For texts where characters represent words (and often left to right).

### Reading Order

Choose a **Correction Level** (see the tool-tips).

### Templates

Using an **Inspection Template** enables to find smaller fragments of text that may be repeated across a carton. The template can also instruct to inspect only a specific section

These templates are "Quality Review of Documents" templates (QRD), a standard used in the [EMA](#) (pharma) world.

Choose between

- **None.**
- **Carton/label.**
- **Custom.** Pick one from the offered list.

### Advanced




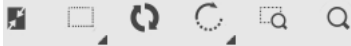

- **Table and Line processing.** Choose whether you want to ignore or check underlines and tables.
- **Microsoft Word Document Options.** Choose whether you want to ignore any content in headers/footers in Word documents.

## 4.9.8. Checking Spelling

**Note:** This is a quick start guide. We also assume you have read the introduction pages [of the Inspection tasks](#) and [of the Profile Editor](#).



**Attention:** We here only list the main differences with comparing files, as we describe [here](#).

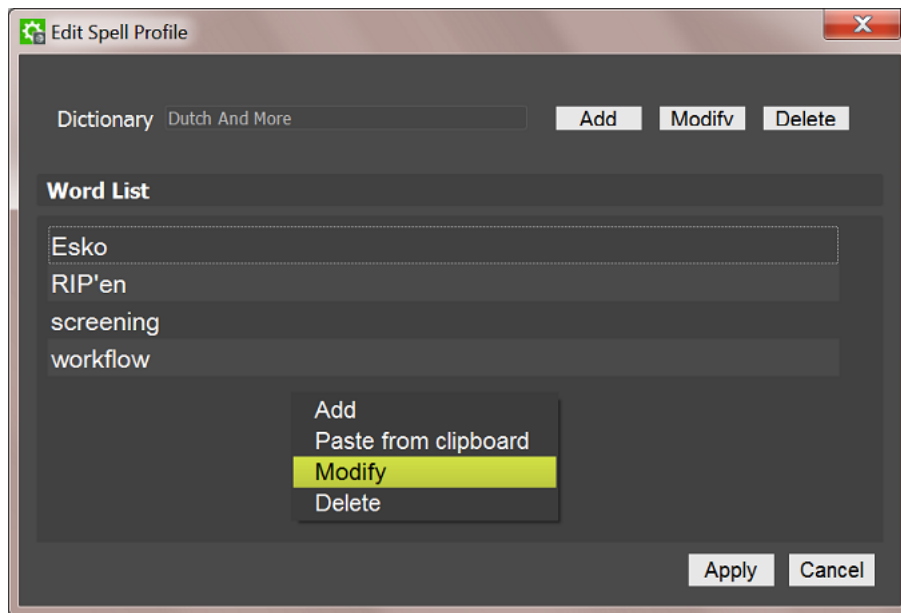
1. Select the mode 'Spell Check' .
2. Choose the **Action** 'Inspect Master' or 'Inspect Sample'. The spell check is only done on 1 file, but in case you already loaded a master and a sample, you can choose which one to inspect. This way, you can use the spell check as an extra inspection after you did a compare.
3. Choose the **Profile** you want to inspect with. These are dictionaries. Learn more in [Spell Check Profile Parameters](#) on page 103.
4. In , choose the resolution at which you want to inspect.
5. In , load a master or sample file (or double-click the left or right background window).
6. Once a file is loaded, you can use the **Inspection** toolbar  to make some changes before you start the inspection. For PDF files, you could already have done some of those changes in the **Prepare PDF** window.  
Learn more about this toolbar in the pages on [Comparing files](#) on page 90.
7. Click  to start the spelling check.
8. When the check is finished, a side panel lists the found problems. Click on one to zoom in to that problem.

### Spell Check Profile Parameters

When spell-checking, the only profile parameter is the choice of language (dictionary).

To create a custom dictionary, go to **Manage** in the **Profile's** list, select and copy a default one and save it with a different name.

When you opened a custom dictionary, use the buttons or right-click the dialog to add/modify/delete a word. You can also first copy an external list of words and then paste that clipboard list in this dialog.



### 4.9.9. Shortcut Keys

Table: Shortcut Keys Global Vision Profile Editor

Key	Function
CTRL/CMD - M	Load master file.
CTRL/CMD - S	Load sample file.
CTRL/CMD - S when in Inspection mode	Opens the chosen profile.
F11	When in Inspection window of the Compare mode, navigates to the next difference. (On Mac, you may need to switch off the system preferences default for F11.)
Mouse Track Wheel	<ul style="list-style-type: none"> <li>On Windows: Scroll up to magnify the image. Scroll down to reduce the magnification.</li> <li>On Mac: Scroll down to magnify the image. Scroll up to reduce the magnification.</li> </ul>
Left mouse button	After taking a marquee zoom, hold down and move within the window to pan the view.
ALT + Select/Drag Rectangle	When in Inspection window of the Compare mode, to group differences.
SHIFT + Select/Drag Rectangle	Marquee zoom.



## 5. Other QC Tasks

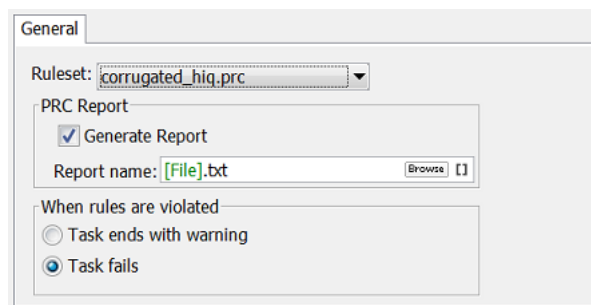
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### 5.1. Check Print Rules (PRC)

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Print Rule Checker (PRC) is an old technology on board the Esko editor PackEdge. It checks the file, completely or partially, for potential printing problems or violations of standard printing conventions. These checks can include insufficient line thickness, wrong halftone densities, the use of too many inks, and various other production related issues.

The **Check Print Rules (PRC)** task checks the file according a rule set that you made in PackEdge. The task adds the results of its checks into the Normalized PDF file. When you then open this file in PackEdge, you can quickly see a full report of these checks and use dedicated tools to quickly navigate to the parts where rules were violated.



Task options:

- Select the **Ruleset** from the drop-down list. These were created in PackEdge and saved in a default central folder. Learn more about defining such rule sets in [the PackEdge user guide](#).

**Note:** In this background task version of PRC, rules on 'Small Parts' and 'Close Objects' are not checked.

- **PRC Report.** Enable this also get a .txt report that describes the used rule set and the found infringements.
- Decide what the state of the task should be **when rules are violated**: **Task ends with a warning** ⚠ or **Task fails** ❌.

### 5.2. Compare PDF

---

#### Concept and workflow

This task compares the input PDF file(s) to a reference PDF file. It creates TIFF files of each separation and then compares those.

You can see the found differences in a separate layer or file and also in an XML report.

**Note:** The *Inspect Artwork* task also serves to compare files but is more elaborate.

The task can have these output states:

- **Match:** No differences were found.
- **Mismatch:** Differences were found.
- **Error:** The task itself malfunctioned (reference file was not found, no license was available...).

### Task Options

- **Compare**
  - **Compare With.** Define the reference file with which you want to compare the input PDF file(s).
  - Select the **Compare Region** (of both input and reference file) within which you want to compare. Learn more about page boxes [here](#).
  - Set the **Compare Resolution** for the automatically created TIFF files. Enter a value between 50 and 300 ppi.
  - Set the **Noise Tolerance.** The compare resolution defines in what *detail* you compare the files. This noise tolerance however defines how *strict* you want to compare: what do you consider as a difference? If you do not want the most strict form, you can here define a tolerance.

The distance in this field represents the maximum (horizontal or vertical) distance between isolated pixels for them to be ignored. An isolated pixel is a pixel that is different in both files but that has all surrounding pixels equal in both files. The higher you put the value, the more tolerant you are against noise. The more you allow noise, the less strict the comparison will be. The default is '0 mm' (no differences allowed, most strict).

An example: A comparison shows 2 isolated pixels that are 10 mm apart and also 2 isolated pixels that are only 2 mm apart. If you now set the noise tolerance to '5 mm', then the set of isolated pixels that are 10 mm apart will be ignored in the comparison.

- **Ignore Separations.** Add the names of separations to ignore during the comparison. For example for multilingual variants you may want to ignore the separation(s) that contain(s) text.

**Tip:** Double-click on a line in the canvas and use the small drop-down list to select separations of the ticket's input file.

- **Differences**
  - **Output in:** Define the folder where you want to save the file containing the found differences and the report file. When you type in a name, it will be created as a subfolder of the input file.

**Note:** This field is thus only valid when you enable one or both of the below options.

- Select **Create Differences layer** if you want to add the found differences in a separate layer.

**Note:** When page boxes are different and/or separations do not match, the task will report a mismatch but will not create a difference layer.

In **Layer File**, when you use the SmartName `[File]`, the extra layer will be added to your input file. Alternatively, you could browse to an existing PDF file or use SmartNames to have a new one created automatically, for example "`[file]_Diff`".

- Select **Report differences to file** to save the differences in a separate XML report file. This XML file has the extension `*.comp`. When the files don't match, this report contains the coordinates of the mismatched pixels for each separation.

**Note:** In the Esko editor Neo, you can insert these `.comp` files on top of the opened PDF to see the coordinates of where differences were found.

**Tip:** You can configure an extra output pin to see your report appear on its own pin. Learn more in [Configuring Output Statuses](#).