RICOH

RICOH Accessibility Designer User Guide

Version 1.5

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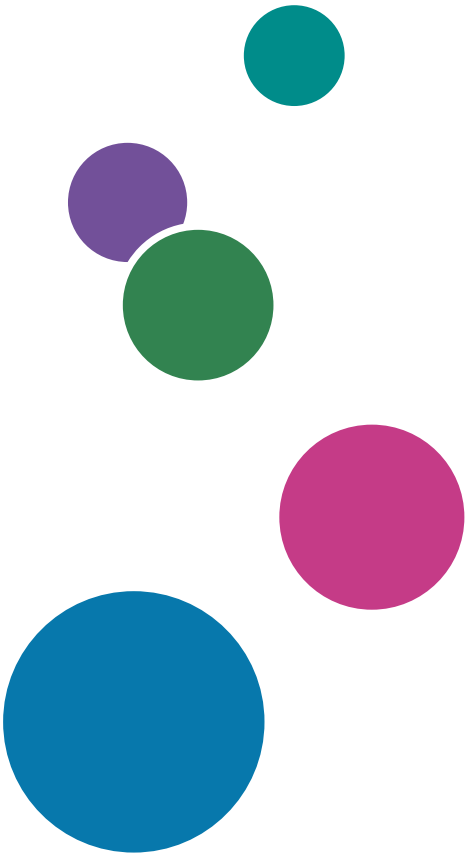
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For information not in this manual, refer to the Help System in your product.



Introduction

Important

To the maximum extent permitted by applicable laws, in no event will the manufacturer be liable for any damages whatsoever arising out of failures of this product, losses of documents or data, or the use of this product and operation manuals provided with it.

Make sure that you always copy or have backups of important documents or data. Documents or data might be erased due to your operational errors or malfunctions of the machine. Also, you are responsible for taking protective measures against computer viruses, worms, and other harmful software.

In no event will the manufacturer be responsible for any documents created by you using this product or any results from the data executed by you.

Do not remove or insert any disk while operating this application.

Cautions Regarding This Guide

- Some illustrations or explanations in this guide may differ from your application due to improvement or change in the application.
- The contents of this document are subject to change without notice.
- No part of this document may be duplicated, replicated, reproduced in any form, modified or quoted without prior consent of the manufacturer.

Guides for This Application

The following guides are available for this application.

Instruction Manuals

These instruction manuals are included:

- *RICOH Accessibility Designer Setup Guide*
  This guide explains the setup and startup procedures, and the settings required before you can use this application.
- *RICOH Accessibility Designer User's Guide*
  This guide explains the functions and basic operations of this application.

Help

The **Help** menu provides access to the HTML version of the *RICOH Accessibility Designer User's Guide* and *RICOH Accessibility Designer Setup Guide* directly from the user interface.

Note

A web browser must be installed to view the HTML documentation. The recommended browser is the most recent version of Mozilla Firefox®. A PDF reader, such as Adobe Reader®, must be installed to view the PDF documentation.

How to Read the Documentation

Before Using This Application

This manual contains detailed instructions and notes on the operation and use of this application. To ensure correct operation, read this manual carefully and completely before using this application. Keep this manual in a handy place for quick reference.

How to Use the Manuals and Help

Use the instruction manuals and field help according to your needs.

To learn how to install and start this application

See the *RICOH Accessibility Designer Setup Guide*.

To learn about the functions and basic operations of this application

See the *RICOH Accessibility Designer User's Guide*.

Displaying the Instruction Manuals (Setup Guide and User's Guide)

Use this procedure to view the instruction manuals.

Displaying the Setup Guide and User's Guide in HTML Format

The HTML versions of the Setup Guide and User's Guide are available directly from the user interface. Start the application, then click the question mark  located in the upper-right corner of the interface panel and select Help.

Symbols

The following symbols are used in this manual to help you to identify content quickly.

Important

- This symbol indicates points to pay attention to when using the product. Be sure to read these explanations.

Note

- This symbol indicates helpful supplementary information that is not essential to completing a task.

Bold

Bold type indicates the names of dialogs, menus, menu items, settings, field labels, buttons, and keys.

Italic

Italic type indicates the titles of manuals and variables that you must replace with your own information.

Monospace

Monospace type indicates computer input and output.

[ ]

Square brackets indicate the names of dialogs, menus, menu items, settings, field labels, buttons, and keys.

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The proper names of the Windows operating systems are as follows:

- Windows 10:
  Microsoft Windows 10 Pro
  Microsoft Windows 10 Enterprise
- Windows 11:
  Microsoft Windows 11 Pro
- Windows Server 2016:
  Microsoft Windows Server 2016 Standard
- Windows Server 2019:
  Microsoft Windows Server 2019 Standard
- Windows Server 2022:
  Microsoft Windows Server 2022 Standard
- Windows Server 2025:
  Microsoft Windows Server 2025 Standard

Other product names used herein are for identification purposes only and might be trademarks of their respective companies. We disclaim any and all rights to those marks.

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1. Overview

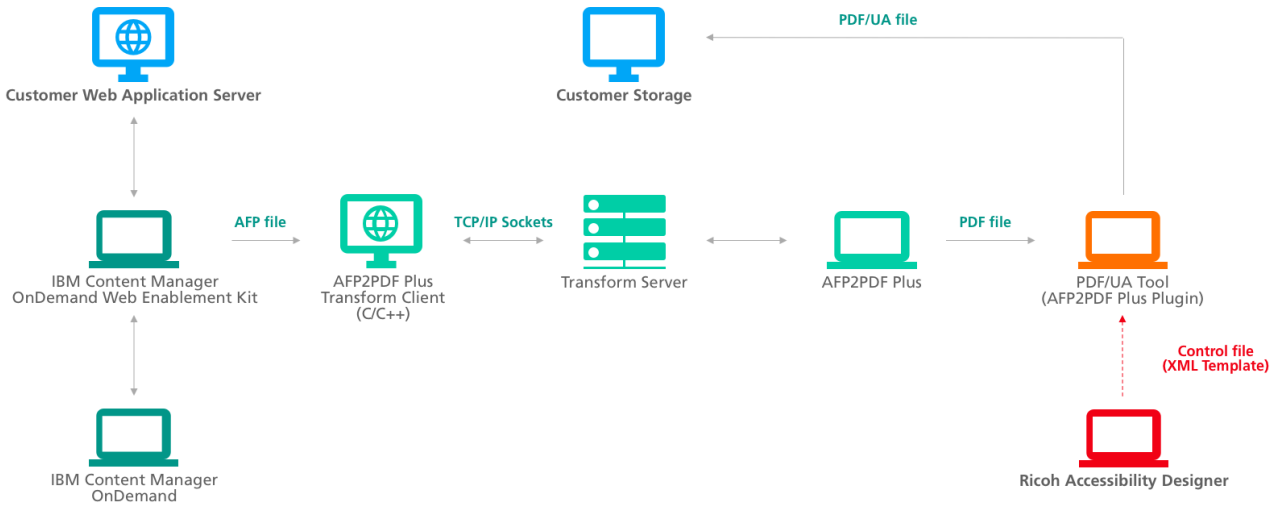
- **RICOH Accessibility Designer Overview**
- **User Interface**

RICOH Accessibility Designer Overview

RICOH Accessibility Designer allows users to create control files used in the process of converting Adobe Portable Document Format (PDF) files to PDF/Universal Accessibility (PDF/UA) documents.

RICOH Accessibility Designer lets you mark PDF content, by structuring document elements in a logical reading order, to ensure that a PDF is accessible to all assistive technology (AT) users. The tagged PDF content is saved into a project, exported as a control file.

Ricoh Accessibility Designer within the PDF/UA Workflow



With the help of RICOH Accessibility Designer, experienced users can generate an XML control file that records content for further reuse on multiple statement documents. To create an accessible PDF document, the PDF/UA Tool requires both a control file and a PDF document.

Note

- To convert Advanced Function Presentation (AFP) documents to PDF files make sure to use the AFP2PDF Plus transform.

The Assistive Technology (AT) software interprets the PDF/UA document to those who depend on universally accessible information.

Important

- Make sure you use a PDF/UA conforming software to verify that your PDF document meets the requirements of the PDF/UA technical specifications of accessibility prior to start your project.

RICOH Accessibility Designer allows you to perform various functions:

- Helps you create standardized tagging, with the help of the PDF/UA tool.
- Create or reorder the reading order of the document content.
- Work with multiple PDF samples for the same statement format.

- Add macro definition files to the project to reuse the same content structure within the control file.
- Create and export a single control file to be used across multiple PDF documents.
- Validate your work prior to exporting the control file.

Control Files

As you use RICOH Accessibility Designer to tag the content of a PDF file, instead of saving markup in the PDF file itself, you save markup to one control file.

In a repeating environment where your PDF workflow does not change often, you could choose to create only one control file to be applied to multiple PDF files with identical or similar content. The control file is an XML document that contains all the information related to your project, including the PDF content and all the properties for an element, such as type, alternative text, or position.

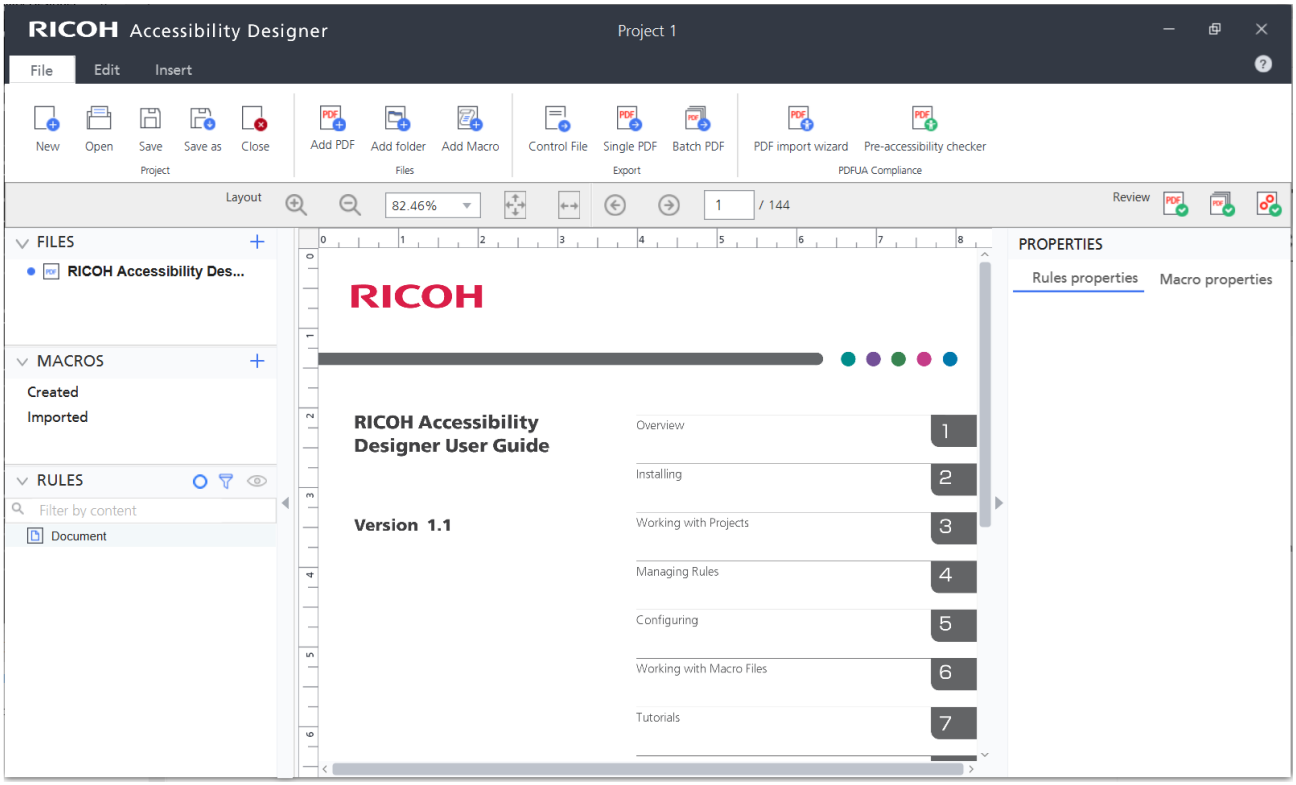
Important

- The control file is not linked directly to the project saved with, it can be used with any other project for reusing tagged content. To add additional tagged content to the control file, you should open the project in RICOH Accessibility Designer, create rules and overwrite the existing control file by exporting the project you have worked on.

To manage control files you use the RICOH Accessibility Designer menu option **[Export]** from **[File]**, the **[Control File]** section.

User Interface

Accessibility Designer provides an easy to use and intuitive user interface for editing and tagging universally-accessible PDF documents.

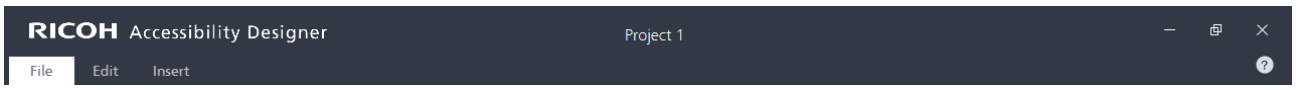


The user interface consists of the following areas:

1. **Menu bar** with file management, file editing, inserting and viewing options.
2. **Document content area** with sections for opened PDF files, macro definition files, and rules.
3. **Workspace area** for matching elements on the currently opened PDF page.
4. **Properties area** with information such as name, description, position, or alternative text.

Menu Bar

The menu bar is available at the top of the Accessibility Designer user interface and it provides access to functions as project management, file editing, inserting elements, viewing PDF files and reviewing PDF matched content.



The menu bar lets you do the following:

- Switch between the available menu options. Click the **[File]** tab, the **[Edit]** tab, or the **[Insert]** tab. You can also navigate between the tabs by keyboard, using the following key combinations: **Tab** or **Shift+Tab**.
- Show the project name and the PDF file opened, at the top of the menu bar.

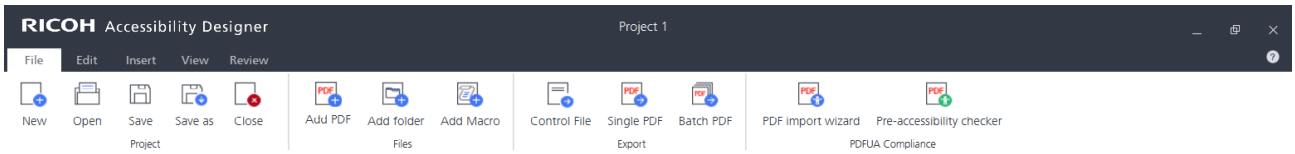
  Note

  – The default project name generated by the system is Project 1.

- Display the HTML version of the *User's Guide*. Click the button and select **[Help]**.
- See the version information for Accessibility Designer. Click the button and select **[About]**.
- See the license information for Accessibility Designer. Click the button and select **[License]**.

File Tab

On the **[File]** tab you have access to file management functions on the PDF documents and projects.



These options are available:

[Project]

- **[New]**
  Create a new project.
- **[Open]**
  Open a project already saved.
- **[Save]**
  Save the content of the current PDF as a project file.
- **[Save as]**
  Make a copy or save the content of the current project under a different name or location.
- **[Close]**
  Close the current project.

  Note

  – You are prompted to save any changes to the project before closing.

[Files]

- **[Add PDF]**
  Add PDF files to mark structure elements.

  Note

  – You can also drag and drop PDF files to the **[FILES]** section with the list of opened PDF documents.

- **[Add folder]**
  Add a folder to the project.
- **[Add Macro]**
  Add macro rules to the project.

[Export]

- **[Control File]**
  Export current project as control file.
- **[Single PDF]**
  Export the current PDF file that was processed with PDFUA.
- **[Batch PDF]**
  Export a selection of PDF files that were processed with PDFUA.

[PDFUA Compliance]

[PDF import wizard]

Import one or more PDF files and verify their PDFUA compliance.

[Pre-accessibility checker]

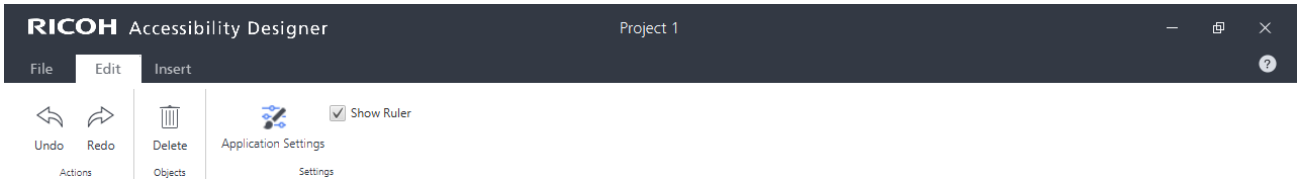
Verify the PDFUA compliance for one or more existing PDF files.

Note

- RICOH Accessibility Designer remembers the last folder used when browsing for files or projects, saving projects or exporting control files.

Edit Tab

On the **[Edit]** tab, you can do actions such as undo, redo, delete actions, or access the settings and enable or disable the ruler.



These functions are available:

[Actions]

- **[Undo]**
  Reverse the most recent actions applied to the active PDF.

- **[Redo]**
  Reverse the last **[Undo]** action. This command is used only after the **[Undo]** command.

  Note

  – You can undo or redo multiple action rules, but all actions are reversed in the order they are listed.

[Objects]

- **[Delete]**
  Remove selected objects.

[Settings]

- **[Application Settings]**
  Lets you access the settings.
- **[Show Ruler]**



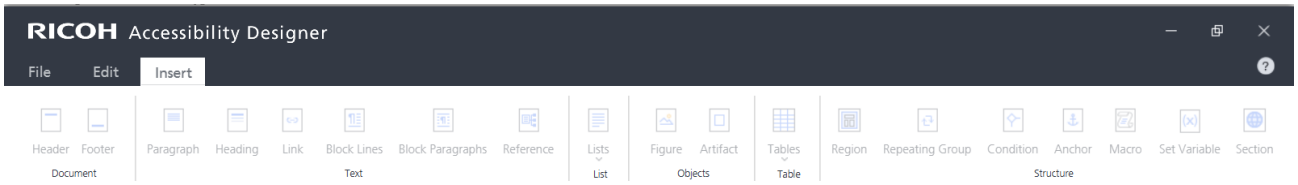
  Use this functionality, located at the margins of the workspace view, to help you position document elements or quickly read the position and extent of current selected object.

Note

- By default, **[Show Ruler]** is enabled. You can clear the check box at any time to hide it from the workspace area.

Insert Tab

The **[Insert]** tab lets you create rules on the PDF document. You can insert your rules in a hierarchical order maintaining a clear and logical structure.



For more information on how to add rules to a PDF document, see Creating Rules, p. 31.

Toolbar

The toolbar tab gives you control over layout options such as showing, zooming, or page navigation options as well as to the review options.

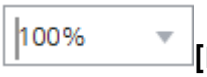


These options are available:

[Layout]

[Zoom]

To adjust the zoom level of the pages, use one of these controls:

- **[Zoom in]**
  Use this option to increase the size of the page.
- **[Zoom out]**
  Use this option to decrease the size of the page.
- **[Percentage]**
  Use this control to adjust the size of the displayed page according to a specific percentage. You can either select one of the options from the drop-down menu or you can enter any percentage.
- **[Fit to width]**
  Use this option to fit the page to the width of the workspace area.
- **[Fit to window]**
  Use this option to resize the page to fit the application window.

[Page Navigation]

To switch between pages, use one of these buttons:

- **[Previous]**
  Use this button to go back to the previous page of the PDF file.
- **[Next]**
  Use this button to go to the next page of the PDF file.
- 
  Use this option to go directly to a specific page.

[Review]

**[Single PDF]**

Indicates a single PDF file validation.

**[Multiple PDF]**

Indicates a batch PDF files validation.

**[Debug Preview]**

Indicates the debugging mode.

For more information on the validation process, see Validating PDF, p. 121.

Workspace

The workspace area displays the PDF page that you are currently working on.

Note

- The workspace displays a single page at a time.

All rules are highlighted in blue. After validating the PDF document, matched content is highlighted in green, while unmatched content is red.

To hide a rule from the workspace area, select , the selection tool.

Viewing options

You can switch the page that is displayed in the workspace just by selecting the page number from the **[Page Navigation]** section, in the **[View]** tab.

You can go to the next or the previous page by clicking , the button, in the **[View]** tab, in the **[Page Navigation]** section.

You can click , the **[Zoom out]** button, or , the **[Zoom in]** button, to adjust the size of the page in the workspace.

Note

- You can also use the floating page functionality, available at the bottom of the workspace area, for zoom and page navigation options. Make sure that the **[Floating Pane]** option is selected in the **[View]** tab.

Document Content

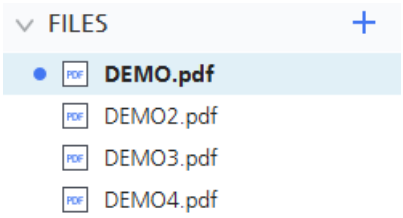
The left panel is divided into sections to highlight the current PDF document you are working on and the rules applied to the document.

Note

- The option of rotating pages and content is currently not supported.
- The only writing system currently supported is left-to-right and top-to-bottom. Any other language that has a different writing systems, such as right-to-left (Arabic or Hebrew) or bottom-to-top (Traditional Chinese or Vietnamese) is not supported yet.

Files

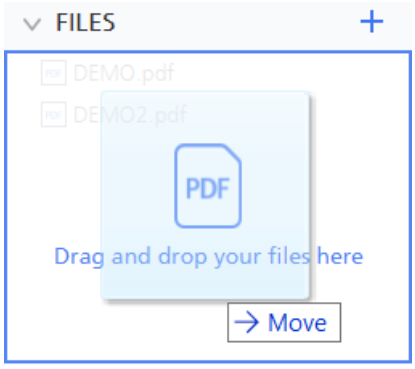
The **[FILES]** section indicates the list of opened PDF documents.



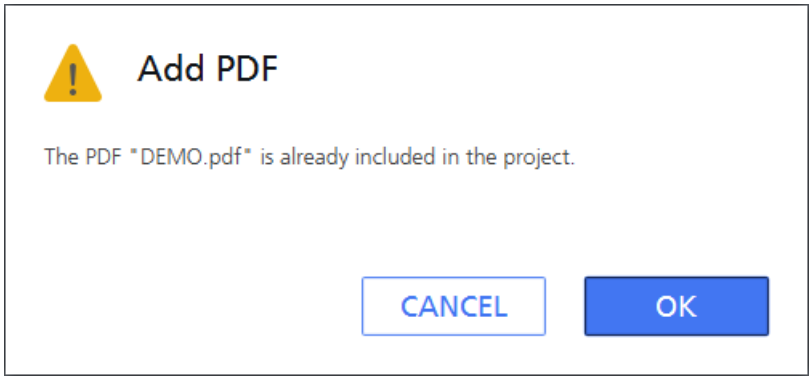
To add a PDF file to the project, click +, on the top right of the **[FILES]** section.

Note

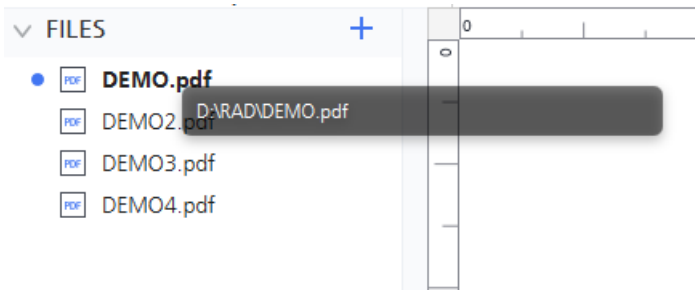
- You can also drag and drop multiple PDF files located on your computer to the **[FILES]** section.



- You can also add PDF documents by clicking , the **[Add PDF]** icon or , the **[Add folder]** icon, from the **[Files]** tab.
- When an imported PDF file has the same name as one of the existing files in the **[FILES]** section, a warning dialog box appears.

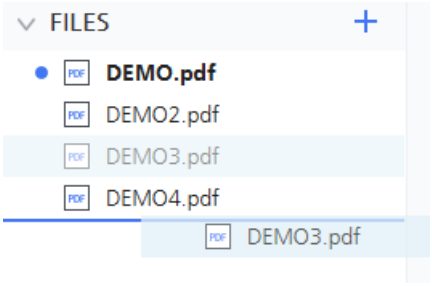


- To display the full path of a PDF or a folder, hover the mouse pointer over the file or the folder.



To organize and rearrange the PDF files and folders in a different order:

1. Select the PDF file or the folder that you want to move.
2. Drag and drop it to a new position.



You can also make changes to the PDF files and to the folders by using the right-click menu. Right-click a file or a folder and select one of the options available in the menu:

- To view PDF properties, select **[File Settings]**. See Displaying PDF Settings, p. 18 for more information.
- To remove PDF documents from the project, select **[Unload]**.

  Note

  – All the rules created using that PDF file will still be available into the **[RULES]** section.
- To validate several PDF documents:

  1. Hold Ctrl+A to select multiple files.
  2. Right click and select **[Batch Validation]** from the options available in the menu

If the project contains sources that have been moved or renamed since the document was saved, right click on the file and choose one of the relink options:

[Relink file]

Relinks the project with the missing PDF file.

[Relink from folder]

Relinks the project with the folder where the PDF file is located.

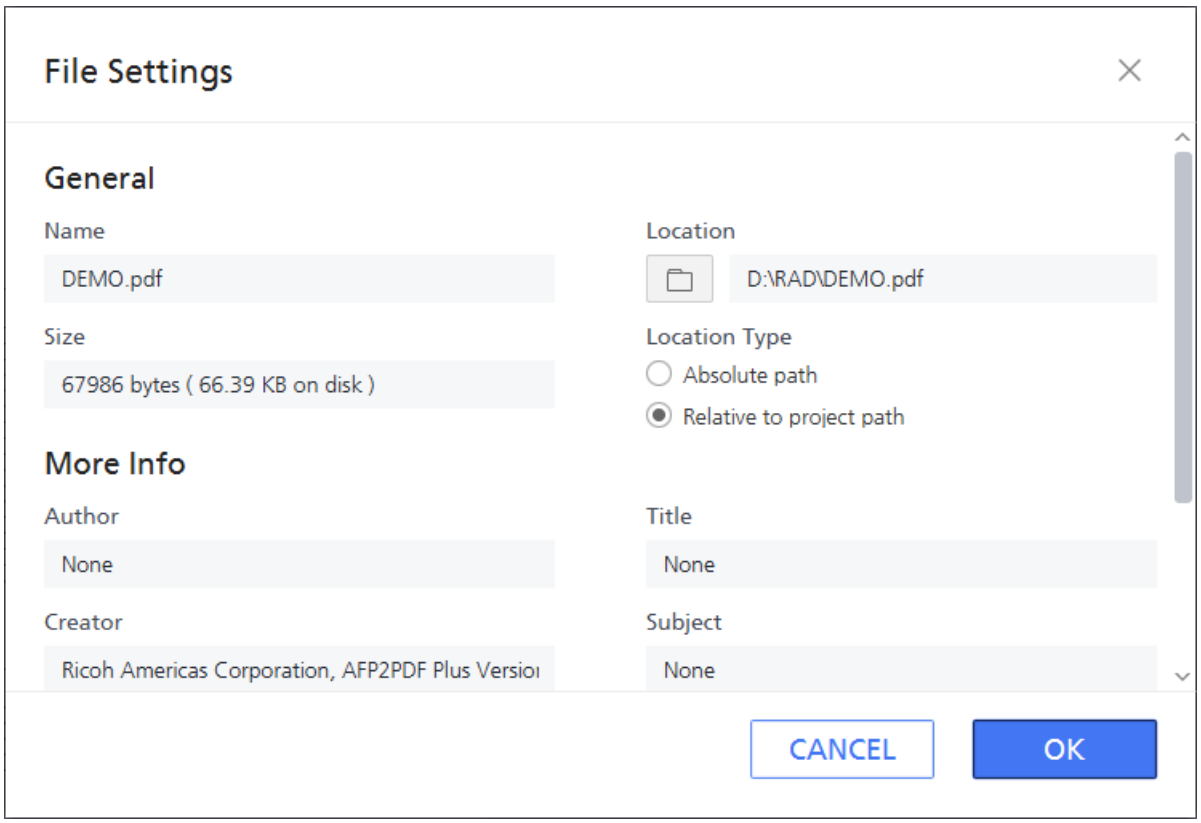
Note

The right-click menu available for folders allows you just to **[Relink file]**, **[Relink from folder]**, and **[Unload]**.

For more information on how to use or change view options, see Toolbar, p. 14.

Displaying PDF Settings

The **[File Settings]** dialog displays detailed information about a PDF document to identify it on the **[FILES]** list. The information is either set by the person who created the PDF document or generated automatically.



[General]

This sections lets you view general information on the file. It also allows you to change the file location and select the location type.

- **[Name]**: Indicates the name of the PDF document.
- **[Size]**: Indicates the size of the PDF document, in bytes or MB on disk.
- **[Location]**: Indicates the full path of the current PDF file.

  Note

  – By default, the **[Location]** field displays the absolute path of the PDF file.
- **[Location Type]**: Indicates how the PDF path is saved into the project file.

  [Absolute path]

  Specifies the full PDF path saved into the project.

  For example:

  Project file path: `c:\projects\project.uaproj`.

  PDF file path: `c:\files\demo.pdf` .

  Absolute PDF path within project file:`path="c:\files\demo.pdf"`.

  Note

  – If you move the project file anywhere on your disk, without moving the PDF file, the project file will still be able to locate the PDF. However, if the project file is moved on another disk, the PDF will not be found.

[Relative to project path]

Specifies the PDF path saved into the project, relative to the project path. When opening a project, the PDF path becomes the project path together with the relative path.

For example:

Project file path: `c:\my work\project.uaproj`.

PDF file path: `c:\my work\demo.pdf`.

Relative PDF path within project file: `path="demo.pdf"`.

Note

– If you move the project file anywhere on your disk, without moving the PDF file, the project file will not be able to locate the PDF. However, if you move both project and PDF files anywhere on the same disk or on another disk, the project finds the PDF file.

– By default, the **[Location Type]** is set to **[Relative to project path]**.

[More Info]

This section offers additional information on the PDF file.

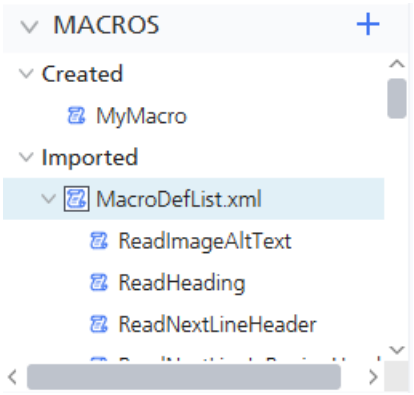
- **[Author]**: Indicates the name of the document creator.
- **[Creator]**: Indicates the name of the application used to create the original document.
- **[Producer]**: Indicates the name of the application used to convert the original document into a PDF file.
- **[Locale]**: Indicates country conventions for time, date, and language.
- **[Title]**: Indicates the title of the PDF document.
- **[Subject]**: Indicates the subject of the PDF document.
- **[PDF Version]**: Indicates the PDF standard version of the document.
- **[Page Size]**: Indicates the height and width of the document in inches.

Note

- The values within these fields cannot be modified.

Macros

The **[MACROS]** screen displays macro definitions lists, divided into sections. Each section indicates the method of adding macro definitions to create macro rules.



[Created]

Indicates the list of macro definitions created into the project.

For more information on how to create macro definitions, see Creating Macro Definitions, p. 103.

[Imported]

Indicates the list of imported macro definition files that contain the hierarchy of the file, with the file name at the top of the section together with the list of macro definitions.

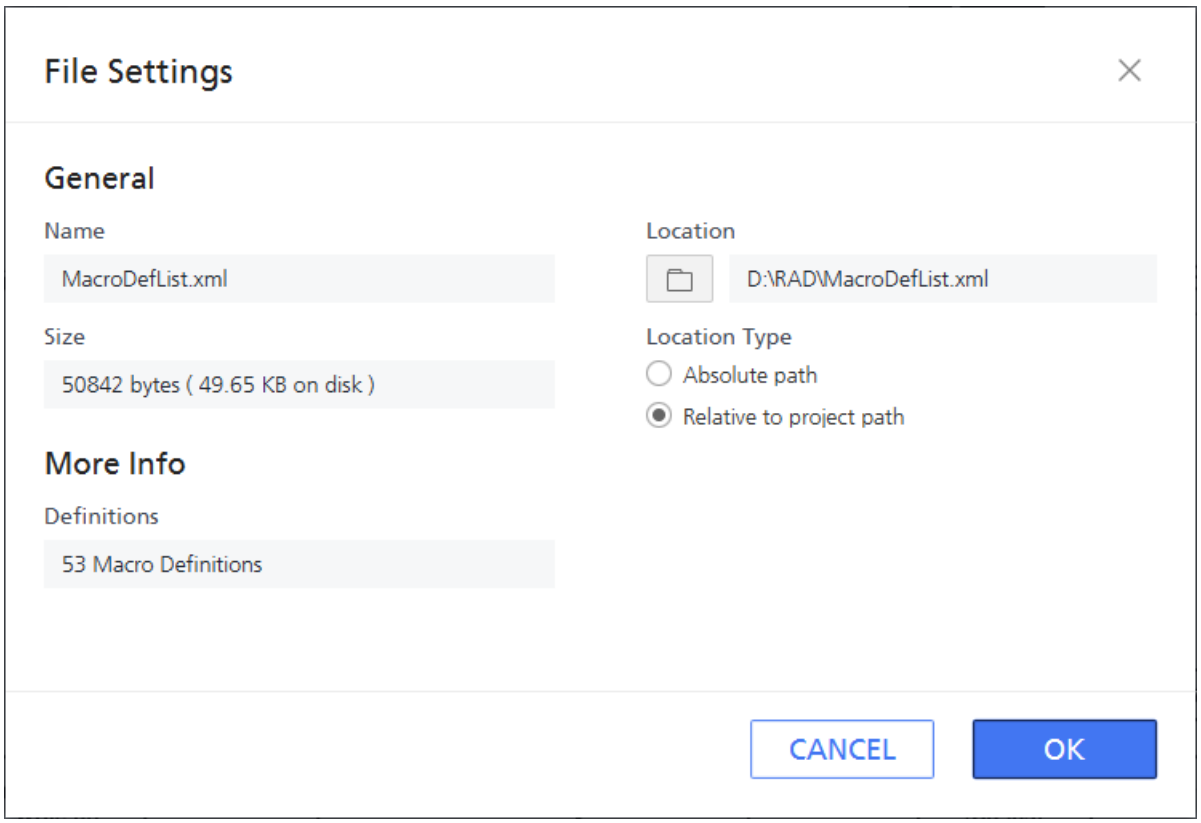
You can also make changes to macro files by using the right-click menu. Right-click a file and select one of the options available in the menu:

- To view the properties for a macro definition file, select **[File Settings]**. See Displaying Macro Definition File Settings, p. 21 for more information.
- To remove macro files from the project, select **[Unload]**.
- The macro view panel supports the same rule management operations as the **[RULES]** section, including drag and drop, cut, copy, paste, delete, disable, add breakpoint, and set variable.

For more information on how to access the list of macro definitions, see Adding Macro Rules to the Project, p. 99.

Displaying Macro Definition File Settings

The **[File Settings]** dialog displays detailed information about a macro definition file to identify it on the **[MACROS]** list. The information is either set by the person who created the macro definition file or generated automatically.



[General]

This sections lets you view general information on the file. It also allows you to change the file location and select the location type.

- **[Name]**: Indicates the name of the macro definition file.
- **[Size]**: Indicates the size of the macro definition file, in bytes or KB on disk.
- **[Location]**: Indicates the full path of the current macro definition file.

  Note

  – By default, the **[Location]** field displays the absolute path of the macro definition file.
- **[Location Type]**: Indicates how the macro definition file path is saved into the project file.

  [Absolute path]

  Specifies the full macro definition file path saved into the project.

  For example:

  Project file path: `c:\projects\project.xml`.

  Macro definition file path: `c:\files\macro.pdf` .

  Absolute macro definition file path within project file:`path="c:\files\macro.pdf"`.

  Note

  – If you move the project file anywhere on your disk, without moving the macro definition file, the project file will still be able to locate the macro definition file. However, if the project file is moved on another disk, the macro definition file will not be found.

[Relative to project path]

Specifies the macro definition file path saved into the project, relative to the project path. When opening a project, the macro definition file path becomes the project path together with the relative path.

For example:

Project file path: `c:\my work\project.xml`.

Macro definition file path: `c:\my work\macro.pdf`.

Relative macro definition file path within project file: `path="macro.pdf"`.

Note

– If you move the project file anywhere on your disk, without moving the macro definition file, the project file will not be able to locate the macro definition file. However, if you move both project and macro definition files anywhere on the same disk or on another disk, the project finds the macro definition file.
– By default, the **[Location Type]** is set to **[Relative to project path]**.

[More Info]

This section offers additional information on the macro definition file.

- **[Definitions]**: Indicates the number of macro definitions included into the macro file.

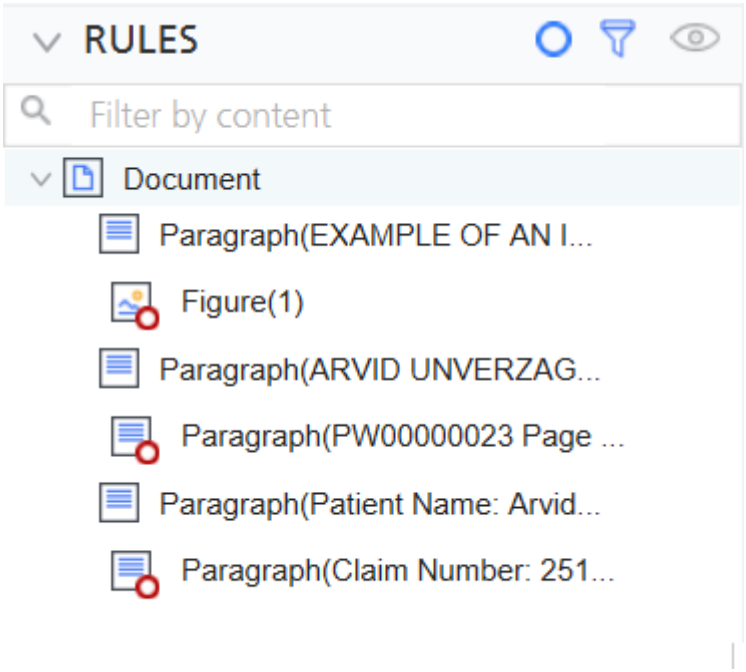
Note

- The values within these fields cannot be modified.

Rules

The **[RULES]** section allows you to view the hierarchy of defined rules. To comply with PDF/UA, all PDF content must be categorized in semantic elements included in a tagged structure tree.

Rules structure define the logical reading order of the document for the AT to be able to process the document structure and help the user get access to the PDF content.



Any matching content changes made on the workspace area are applied directly to the **[RULES]** section.

Important

- The rules matched on a page are also applied on the other pages of the PDF document.

For more information on how to work with rules, see Managing Rules, p. 31.

To hide a rule from the workspace area, select , the selection tool.

To search for a rule on the **[RULES]** section, select , the filtering tool.

File Structure

[Header]

For more information, see Matching Document Elements, p. 32.

[Body]

For more information, see Matching Text Elements, p. 32, Matching List Elements, p. 34, Matching Object Elements, p. 34, or Creating and Defining Structure Rules, p. 41.

[Table]

For more information, see Matching Table Elements, p. 35.

[Footer]

For more information, see Matching Document Elements, p. 32.

2. Installing

- **System Requirements**
- **Installing RICOH Accessibility Designer**
- **Running RICOH Accessibility Designer**

System Requirements

Supported operating systems:

Windows®

- Microsoft® Windows 10
- Microsoft Windows 11
- Windows Server 2016 Standard
- Windows Server 2019 Standard
- Windows Server 2022 Standard
- Windows Server 2025 Standard

Important

- We do not recommend installing RICOH Accessibility Designer on operating systems that are not supported. However, if you want to install RICOH Accessibility Designer on non-supported operating systems, you must run the installation program adding this parameter:

```
RADInstaller.exe -DVERIFY_OS_ACTIVE=false
```

Installing RICOH Accessibility Designer

To install RICOH Accessibility Designer:

1. Log in to Windows as an administrator.
2. Download and launch **RADInstaller**.
3. Open the installer and follow the installation steps.
4. Follow the steps by accepting the terms of the License Agreement and choosing the install folder, then click **Install**.
5. Once the installation is complete, click **Done**.

To launch the RICOH Accessibility Designer interface, follow one of these possibilities:

1. Open the install folder and run `Rad.exe` for Windows.
2. Click the Windows Start button and type RICOH RAD to search RICOH Accessibility Designer, then click on it.

On Windows operating system, these files and folders are created in the `C:\ProgramData\Ricoh\Rad\` directory:

\logs

The folder contains the application logs.

\templates

The folder contains table templates.

\styling

The folder contains styling themes.

styling.xml

Styling configuration file.

rules_styling.xml

Styling configuration file.

Running RICOH Accessibility Designer

To run RICOH Accessibility Designer:

1. To launch RICOH Accessibility Designer, use `Rad.exe`.

   Note

   The default installation folder is `C:\Program Files\RICOH\RICOH Accessibility Designer`.

2. To load a license file, click **INSTALL LICENSE**.

   You need to retrieve the license file after the purchase. For more information on the installation of a permanent license, see Installing a Permanent License in the *RICOH Accessibility Designer Setup Guide*.

3. Once the license file is loaded, click **Close**.

Note

With RICOH Accessibility Designer you can continue to use projects and macros from earlier versions without loss of functionality. Older versions of RICOH Accessibility Designer cannot open projects and macros created with newer versions. PDF2PDFUA can use control files and macros created with older versions of RICOH Accessibility Designer. Older PDF2PDFUA cannot open control files and macros created with a newer version of RICOH Accessibility Designer. If you have an older version, you must update RICOH Accessibility Designer to benefit from the latest functions.

3. Working with Projects

- **Exporting the Control File**
- **Exporting a Single PDF File**
- **Exporting Batch PDF**
- **Exporting Rules**

You can create a new project with PDF documents located on your computer or update an existing project using the **[Project]** functions. The project created by RICOH Accessibilty Designer is saved in an XML format that uses the filename extension `.uaproj`.

Creating New Projects

To create a new project:

1. On the menu bar, go to **[File]** and select **[New]** to add a new project.

   Note

   - The default project name generated by the system is Project 1.

2. In the **[Files]** section from the **[File]** tab, click , the **[Add PDF]** icon or , the **[Add folder]** icon.

   Note

   - You can also add PDF files by clicking + on the **[FILES]** section located on the left side of the screen.

3. In the **[Add PDF]** dialog box, browse for the files or folders that you want to add, select them, and click **[Open]**.

   Note

   - You can select multiple PDF files in the dialog box in order to open more PDF files at once.

Editing Projects

To edit an existing project:

1. On the menu bar, go to **[File]** and select the **[Open]** option to open a job that you have previously worked with.
2. In the **[Open]** dialog box, browse for the files that you want to add, select them, and click **[Open]**.

Deleting PDF Files

To delete PDF documents from the project:

1. Go to the **[FILES]** section and click on the PDF file or the folder you want to remove from your project.
2. Right click on the file name and select **[Unload]**.

   Note

   - All the rules created using those files will still be available into the **[RULES]** section.

Exporting the Control File

The project you created can be exported with all the related data. The file format of the exported project is an .XML control file.

Note

- This function is disabled in trial mode. Install a permanent license to enable export functions.

To export the content of the PDF project:

1. On the menu bar, select **[File]**.
2. Go to the **[Export]** section and select **[Control File]**.

   You are prompted with the **[Export control file]** window.

   - To save the project, insert the file name of the control file into the **[File name]** input field.
   - By default, the **[Save as Type]** drop-down menu contains only the `Control files (*.xml)` option.
3. Click **[Save]**.

Exporting a Single PDF File

Note

- This function is disabled in trial mode. Install a permanent license to enable export functions.

To export the current PDF file that was processed with PDFUA:

1. On the menu bar, select **[File]**.
2. Go to the **[Export]** section and select **[Control File]**.

   You are prompted with the **[Single PDF]** window.

   - To save the PDF, insert the file name of the PDF into the **[Export PDF file]** input field.
   - By default, the **[Save as Type]** drop-down menu contains only the `PDF files (*.pdf)` option.
3. Click **[Save]**.

Exporting Batch PDF

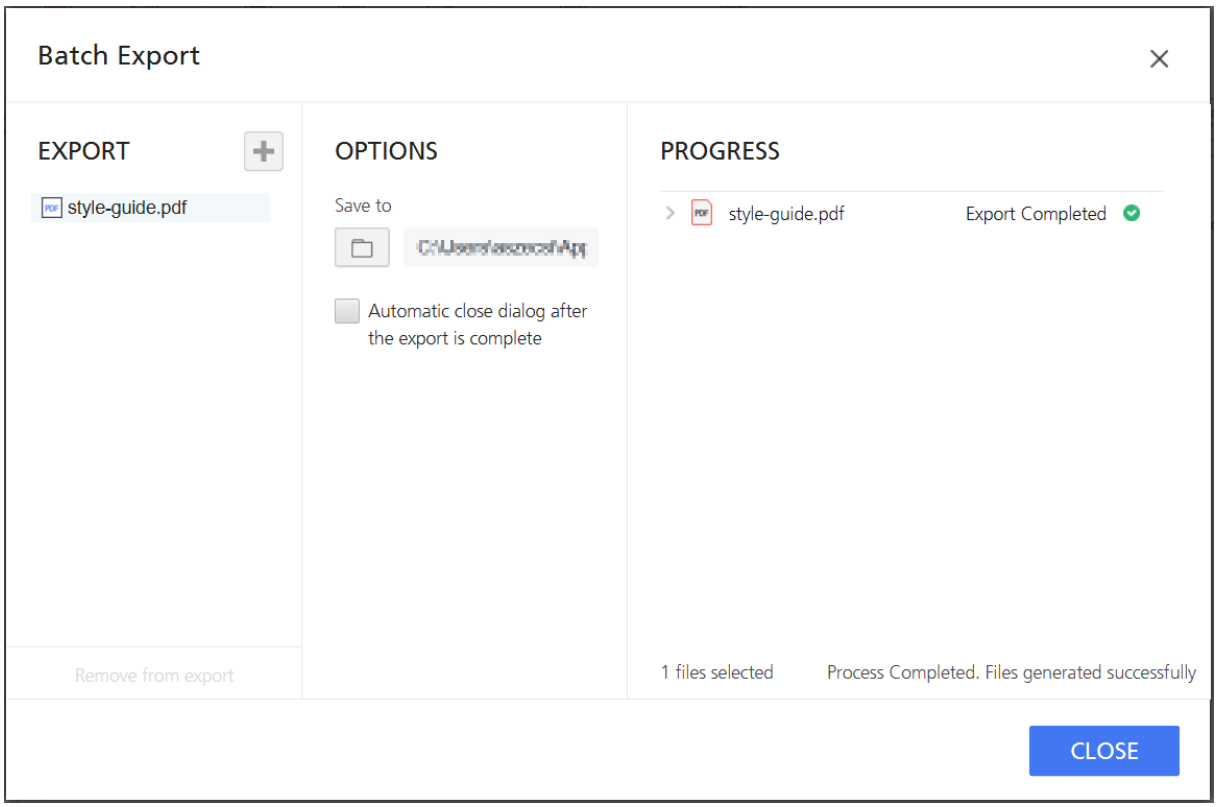
Note

- This function is disabled in trial mode. Install a permanent license to enable export functions.

To export a selection of PDF files that were processed with PDFUA:

1. On the menu bar, select **[File]**.
2. Go to the **[Export]** section and select **[Batch PDF]**.

   You are prompted with the **[Batch Export]** window.



- Click **[START]** to process the batch export.

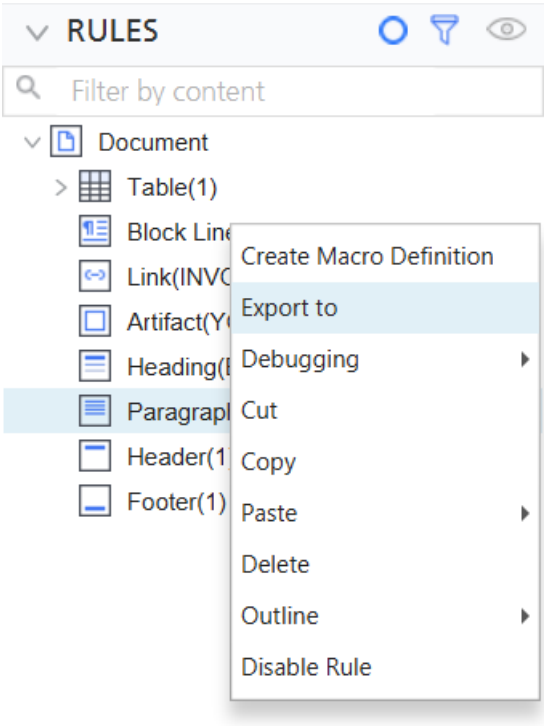
Exporting Rules

You can export rules as part of a control file to a desired location.

Note

- This function is disabled in trial mode. Install a permanent license to enable export functions.

1. Go to the **[RULES]** view on the left side of the screen.
2. Select the rules that you want to export.
3. Right-click the selected rules and select **Export to**.



4. In the **Export Control file** dialog box, browse and select the location where you want to save the selected rules.
5. Click **Save**.

4. Managing Rules

- **Creating Rules**
- **Positioning Rules Graphic in the Workspace Area**
- **Moving Rules in Document Hierarchy**
- **Built-in Macro Rules**
- **Editing Properties**
- **Copying, Cutting, and Pasting Rules**
- **Deleting Rules**
- **Adding Breakpoints**
- **Filtering Rules**
- **Configuring Advanced Filtering Criteria**
- **Adding Log Entries**
- **Adding and Exiting a Repeating Group**
- **Automatic Rule Creation**

This section explains how to create rules that when processed by the PDF/UA tool will mark PDF content such as document, text, list, objects, table or structure elements.

Creating Rules

1. On the menu bar, go to the **[Insert]** tab and select the rule from the toolbar. The currently active rule is highlighted in blue.



2. In the workspace area, select the section where you want to define to define the rule outline (box, graphics). A blue outline appears around the selected area with multiple anchor points. As a result, the new rule will be active and highlighted in the **[RULES]** section.



Note

- If you have set up a customized theme with a different color scheme, the rule is highlighted with that specific color while editing the rule. See Configuring, p. 89, for more information regarding rules styling.
- For more information regarding the use of elements, see the Insert Tab, p. 14 topic.
- To position the selected area, see Positioning Rules Graphic in the Workspace Area, p. 57

All defined rules are displayed into the **[RULES]** section, located on the left side of the screen. See Managing Rules, p. 31, for more information on how to manage rules.

Matching Document Elements

The **[Document]** section provides version information.

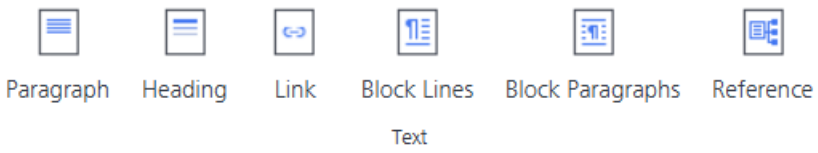
- **[Header]**: a rule that applies only on the first page of a PDF document.
- **[Footer]**: a rule that applies only on the last page of a PDF document.

Note

  - You should mark only one occurrence of identical header or footer, as they are not part of the reading-order of the document. The AT ignores the pagination information from other pages then the matched one, when the document is read aloud.

Matching Text Elements

The **[Text]** section contains text elements, such as paragraph or heading, and link element.



- **[Paragraph]**: indicates meaningful text content.
- **[Heading]**: specifies the title of a specific section, indicating the content of the section.

Note

  - The heading section is required for a PDF document to be fully accessible.
  - To differentiate different heading levels, use the **[Heading Level]** option from the **[PROPERTIES]** section, on the right side of the screen.
- **[Link]**: indicates a rule matching a text that represent a URL link.

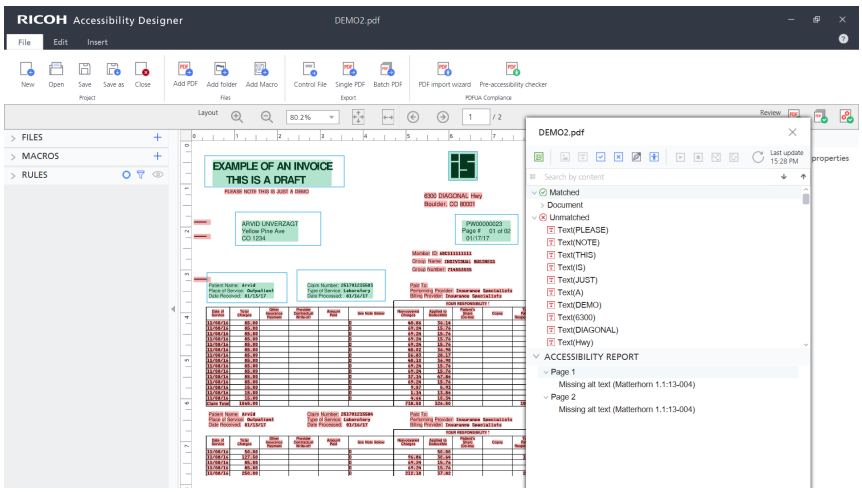
Note

  - **[Paragraph]**, **[Heading]** or **[Link]** have default **[Text Type]** set on **[Regular Expression]**.
- **[Block Lines]**: matches all lines in a region as separate paragraphs.

Note

– This rule can be used on different line and row sizes, or heights.

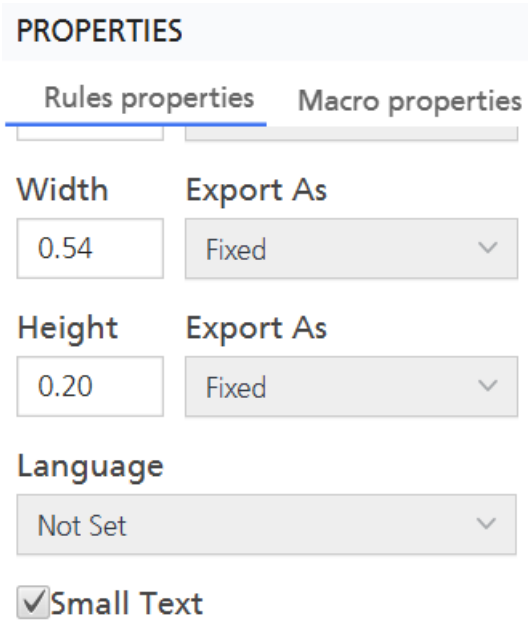
– The use of **[Block Lines]** becomes visible on the workspace area only when you validate the PDF.



- **[Block Paragraphs]**: indicates a macro that automatically creates paragraphs and lists, together with list items, from the selected area.
- **[Reference]**: matches the references or end notes on documents that contain such type of information.

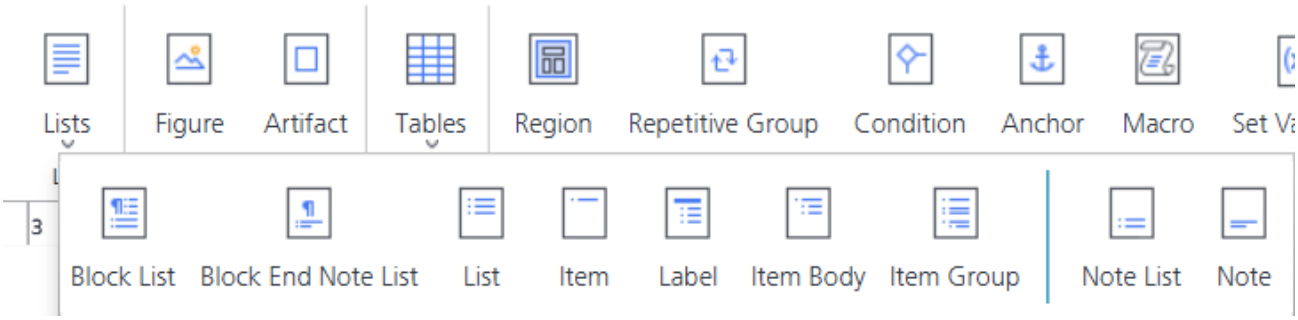
Note

If you only wish to match as reference the superscript from the selected area, use the **Small Text** check box within the **[PROPERTIES]** section of the rule.



Matching List Elements

The **[Lists]** section contains list structure elements.



- **[Block List]**: indicates an element that automatically creates lists, together with list items, items body, and item labels from the selected area.
- **[Block End Note List]**: indicates an element that automatically creates a set of list items in an end notes list. After the PDF Validation, the results from all the pages will be automatically joined in one list.
- **[List]**: contains a collection of related items.
- **[Item]**: indicates elements with markers, usually bullets or list numbering.
- **[Label]**: indicates elements with bullets.
- **[Item Body]**: contains the content information within an item.
- **[Item Group]**: specifies the shortcut that includes the group of **[Item]**, **[Item Body]** and **[Note]**.

  Note

  – The **[Item Group]** name is not visible into the **[RULES]** section. When you use this shortcut, **[Item Group]** is replaced by the **[Item]** hierarchy.

  – When you undo this action, the entire group of elements is removed from the **[RULES]** section.
- **[Note List]**: indicates an explanatory list of items.
- **[Note]**: indicates any explanatory content.

  Note

  – The **[Note]** element should only be used for footnotes or endnotes.

  – The default **[Text Type]** property is set on **[Regular Expression]**

Matching Object Elements

The **[Objects]** section specifies any graphic representation.

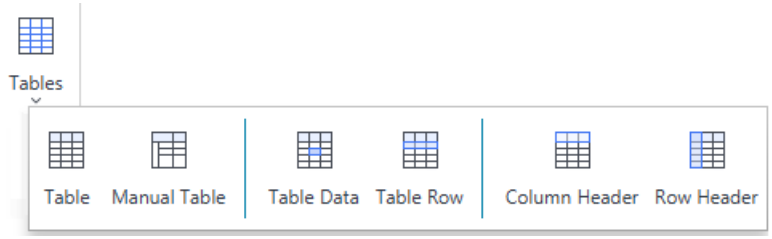
These object elements are available:

- **[Figure]**: indicates rules used to match raster images, such as logos.

- **[Artifact]**: indicates all types of image or text elements to be ignored by the Assistive Technology.

Matching Table Elements

The **[Table]** section indicates a list of elements used for structuring table data.



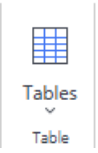
These element options are available:

- **[Table]**: shows information in a grid format, using rows and columns.
- **[Manual Table]**: shows entire table information, without matching rows or columns.
- **[Table Data]**: displays the data within a table cell.
- **[Table Row]**: indicates the row of the table.
- **[Column Header]**: indicates the header of a table column.
- **[Row Header]**: indicates the header of a table row.

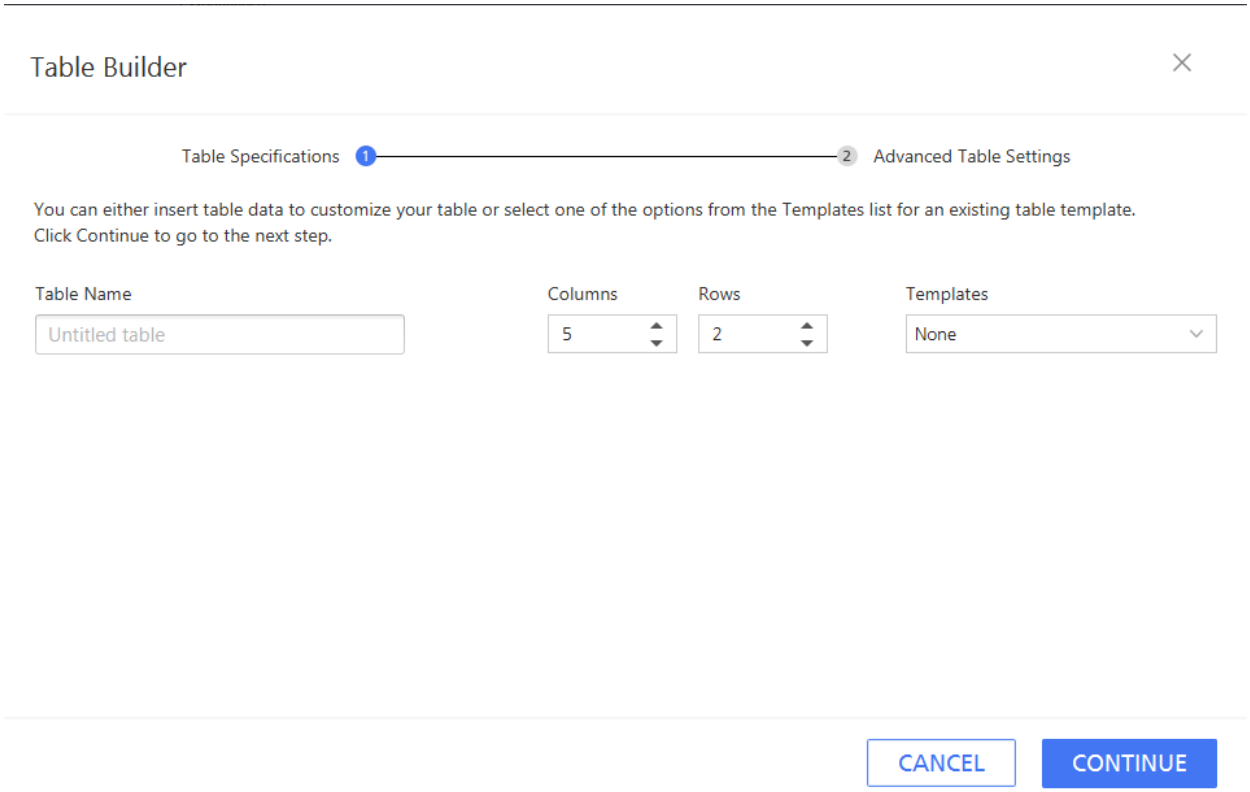
[Table Builder]

The **[Table Builder]** allows you to easily create and customize a table.

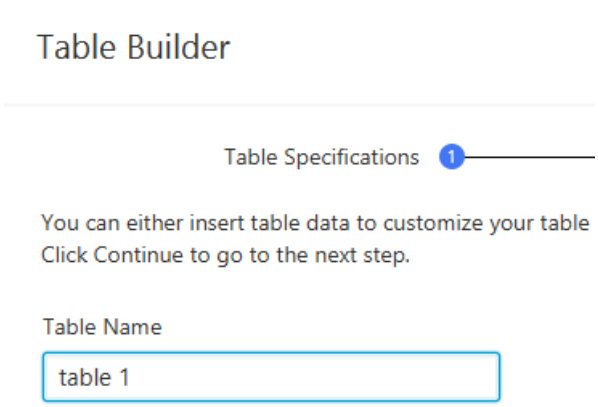
To create a table:

1. On the menu bar, go to the Tables section. 

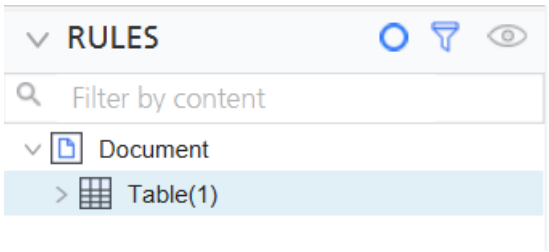
2. From the drop-down menu, click , the **[Table]** icon.
3. With your mouse, click a part of the document where you want to apply the table.
4. Hold the left button pressed while you drag your cursor to make the desired selection.
5. To create and customize a table, use the **[Table Builder]** dialog.



6. You can specify a name in the **[Table Name]** field:



This is the name of the rule corresponding to the table. It is displayed in the **[RULES]** section:

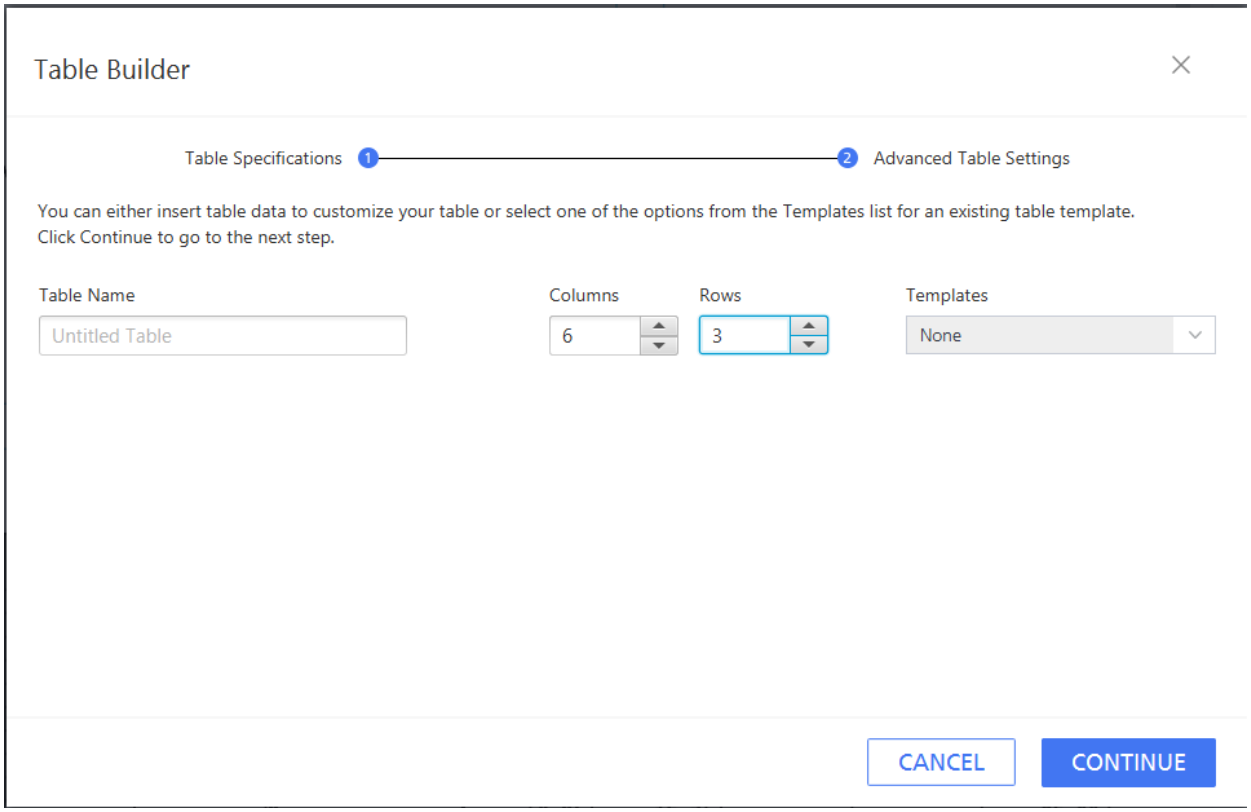


7. You can change the number of columns and rows by clicking , the up/down arrows next to the numbers under **[Columns]** and **[Rows]**.

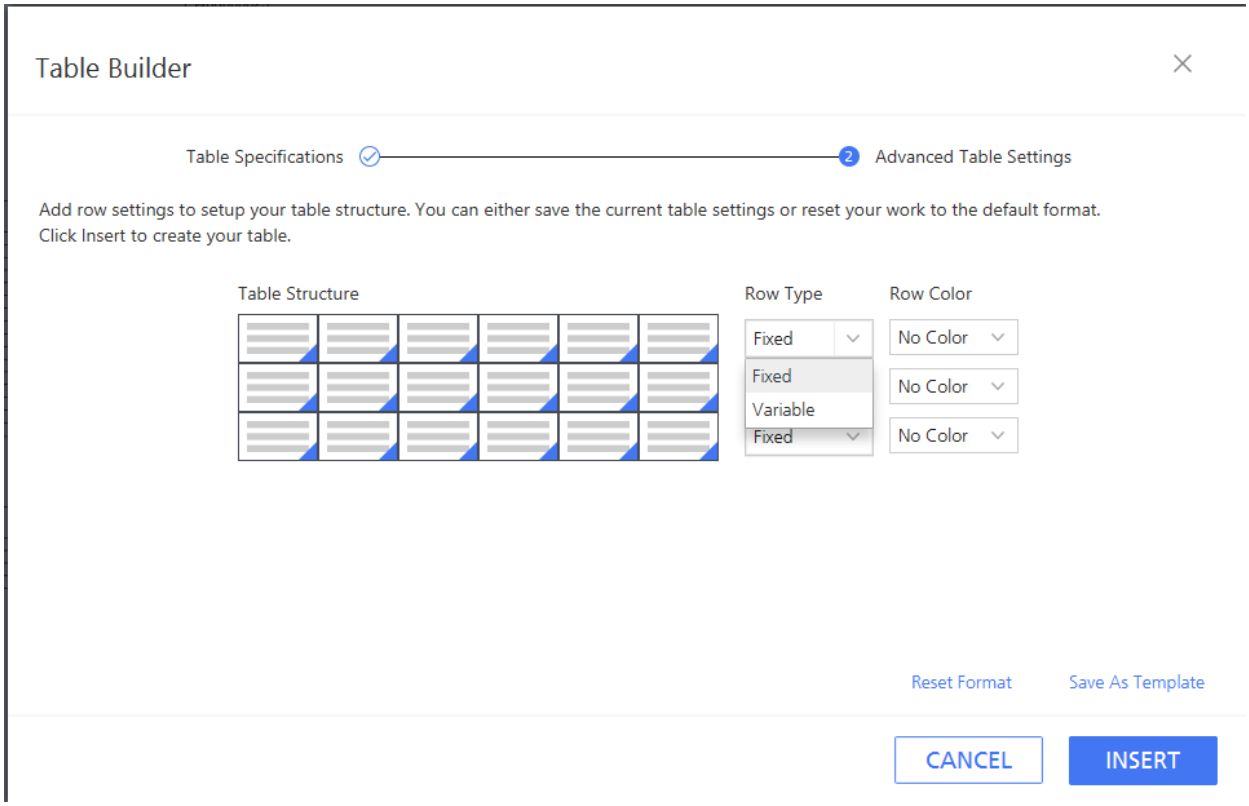
Note

- The default number of columns is 5 and the default number of rows is 2.

8. On the **[Table Builder]** dialog, after selecting the desired number of columns and rows, click **[Continue]**:

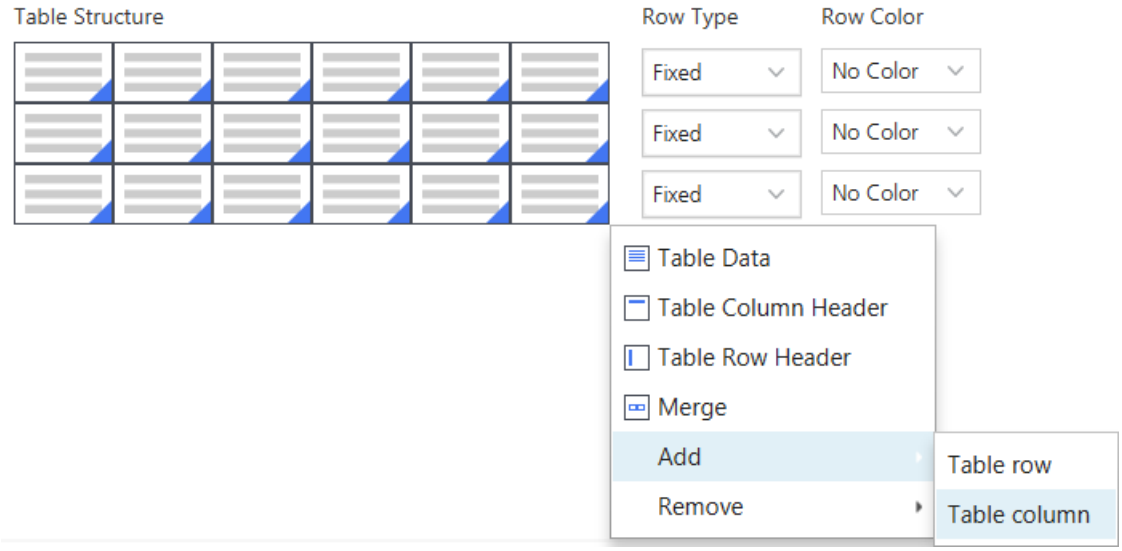


9. On the following window that opens, under **[Row Type]**, you can change the type of row to **Fixed** or **Variable**:

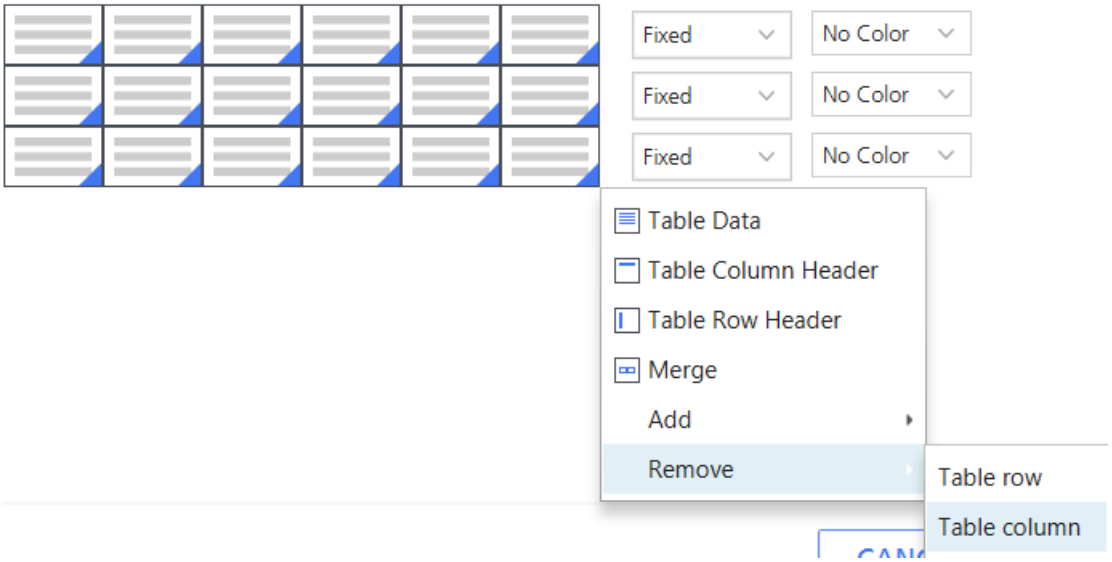


10. You can add or remove rows or columns by clicking the lower right corner of a cell:

1) You can add a row or a column by selecting **Add -> Table row/Table column** from the menu:

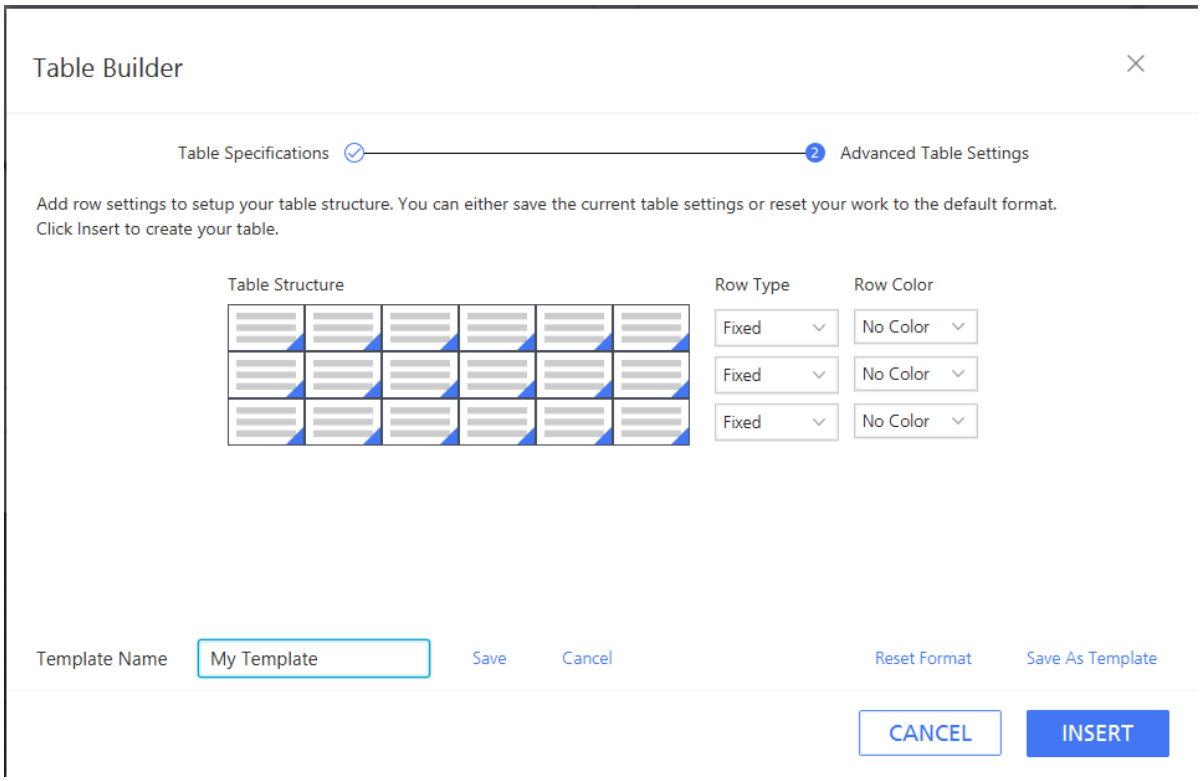


2) You can remove a row or a column by selecting **Remove -> Table row/Table column** from the menu:



11. You can save this table as a template. To save the table template:

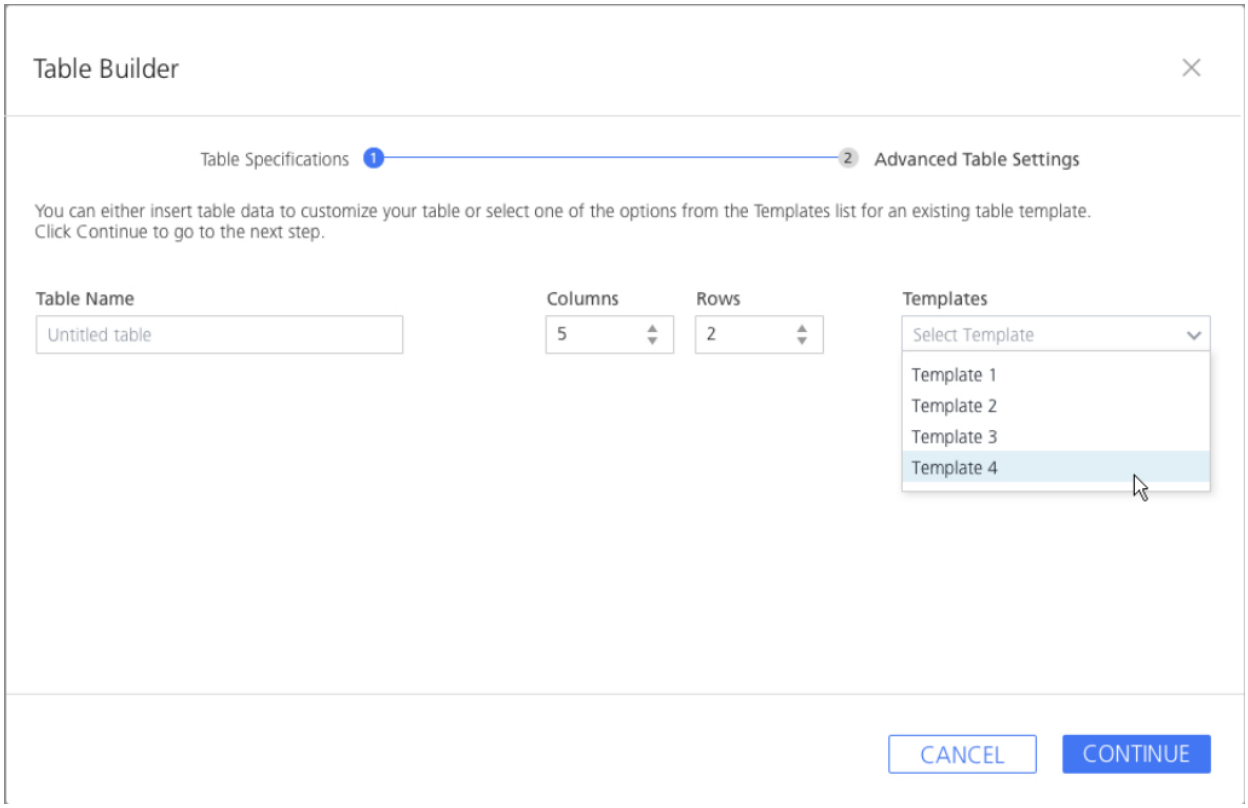
    1) Use the **Save As Template** button.
    2) Select a name for this table template and fill it in the **Template Name** field.



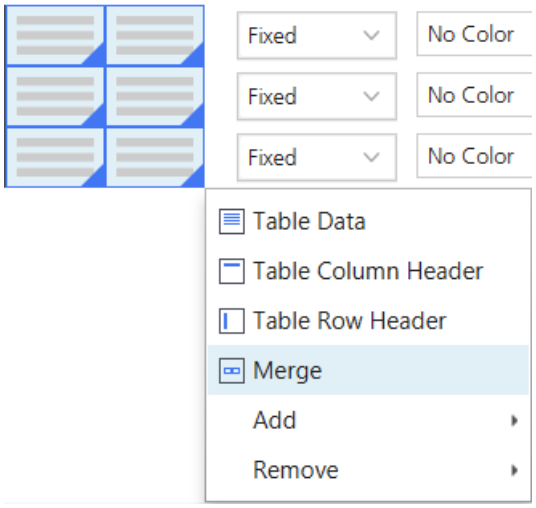
    3) Click **Save**. The table template is saved in the subfolder *templates* in the installation directory of the current version of the **RICOH Accessibility Designer**, for example: *rad_current_version\res\Config\templates*.

12. To use this table, click **INSERT**.
13. You also have to option to use one of the existing templates:

- On the **[Table Builder]** dialog, under the **[Templates]** section, select the desired template from the previously saved templates:



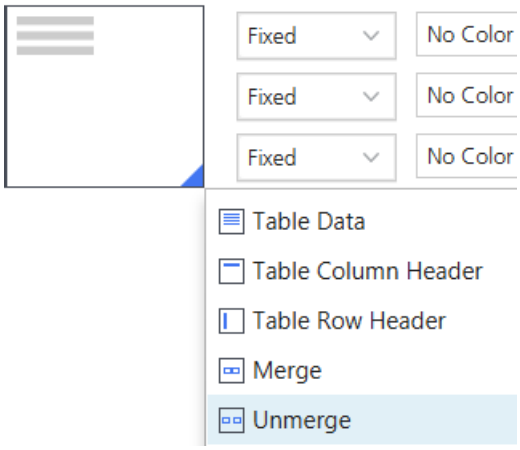
14. You also have the option to reset the table to the default format:
    - To do this, click **Reset Format**.
15. You also have the option to merge and unmerge cells. To use the merge and unmerge cells option:
    1) On the **[Table Builder]** window, in the **Table Structure** section, hold the **Shift** key and click each cell that you want to select.
    2) Click the lower right corner of your selection and a drop-down menu appears.
    3) From the drop-down menu, select **Merge**.



Note

- To avoid invalid table cases, the following cell merging rules have been set:
  - For variable rows, a cell should not have a row span >1 because it involves a dynamic set of rows that follow the same format. Having a cell with a row span means the cells for all the dynamic rows have overlapping incorrect cells.
  - For a fixed row that is the last row in the table or the last row before a variable row, it is also not feasible to have cells with a row span >1 because it involves a structure change for a variable row which cannot happen for a fixed set of rows (row span-1)
  - For fixed rows, the cells must have a row span greater than the number of rows preceding a variable row. For example: You can have a cell with a row span of 3 on row 2 if rows 2, 3 and 4 are fixed.

4) To undo the merge operation, click the lower right corner of the merged range and select **Unmerge**.



Note

- To select a single cell, click the respective cell.
- To select multiple cells, click a cell and hold the **Shift** key on your keyboard. While holding the **Shift** key, click another cell in the table. All the cells included in its range are selected.



16. After inserting the customized table in the file, you can make small adjustments to the table margins until the table is the size that you want.

Creating and Defining Structure Rules

The **[Structure]** section contains structure elements to configure rules based on conditions or repeating elements.

- **[Region]**: indicates the grouping of multiple rules within the same container that acts like a parent for the container elements.

  Note

  – The **[Region]** element is similar to the **Repeating Group** as structure, except that **[Region]** is only executed once.

  – **Repeating Group** indicates a repeating structure rule.

  When to use **[Region]**:

  – A list of rules matched within a **[Region]** rule allows the rules to be moved all at once by moving the **[Region]** rule.

  – A rule matched within a **[Region]** rule inherits the **[Region]** coordinate value if the **[Export As]** coordinate field of the rule is set on **[Absent]**.

- **Repeating Group**: indicates a repeating structure rule.
- **[Condition]**: defines conditions for a rule.
  See Condition Editor, p. 42 for information on how to work with the **[Condition Editor]**.
- **[Anchor]**: sets the current processing cursor pointer.
- **[Macro]**: creates a macro-based rule, that invokes of a macro definition.
- **[Section]**: allows you to organize rules into sections that are tagged as structural elements or containers. For example, you can use **[Section]** to tag multiple paragraphs into a section that uses a particular language.

  Note

  The difference between region and section is that region behaves as a logical unit and section behaves as a structural unit.
  For more information, see Adding Macro Rules to the Project, p. 99.

Adding Conditions

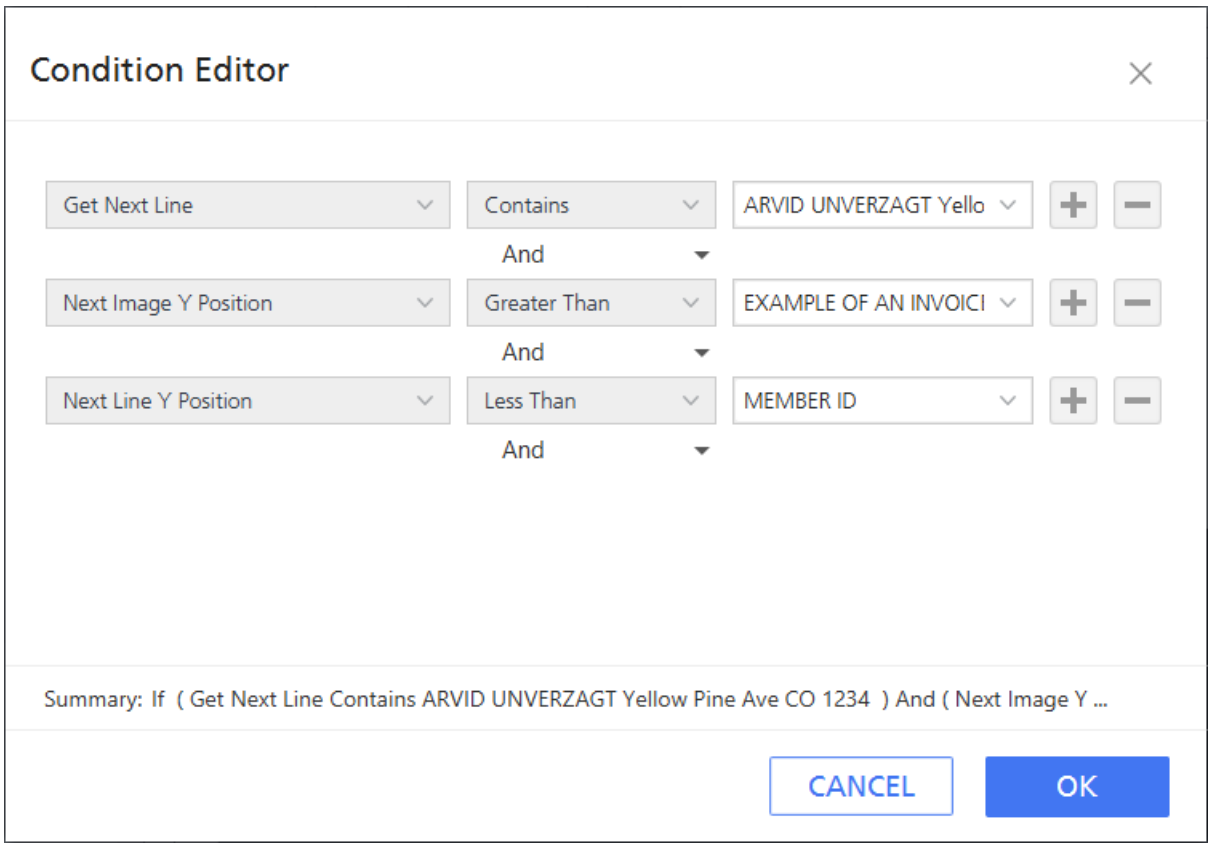
A condition rule controls the flow of processing logic. It evaluates a specific test and then executes one of two branches based on the result: *True* or *False*. These branches are automatically created as ConditionBranch(Action) rules whenever a Condition rule is added. Users cannot insert True/False branch rules independently.

To add conditions:

1. On the menu bar, go to **[Insert]** and select**[Condition]** from the **[Structure]** section.
2. In the **[RULES]** hierarchy, click on the condition rule.
3. Go to the **[Edit]** tab and click , the **[Edit]** icon, to add condition properties.

Condition Editor

Lets you define one or more condition entries for the condition rule. Each condition entry consists of a job property, a comparison, and a value.



Each condition entry consists of the following:

Property

Specifies the property to use for the condition, such as: **[Current Page Number]**, **[Get Next Line]**, **[Next Image X Position]**, **[Current Line Y Position]**.

Note

- This section is also populated with variable names, based on already created variables. For more information on how to set variables, see Setting Variables, p. 47.
- The comparisons for string properties, such as **[Get Next Line]** or **[Get Current Line]**, are case-sensitive.

Comparison

Select one of these:

Contains

A rule meets the condition based on a partial value of the property.

Equals

A rule meets the condition if its property value exactly matches the text or value in the Value field.

Not Equals

A rule meets the condition if its property value does not exactly match the text or value in the Value field.

Greater Than

A rule meets the condition if its property value is greater than the number in the Value field.

Less Than

A rule meets the condition if its property value is less than the number in the Value field or if the property has no value.

Matches Regex

A rule meets the condition if its property value matches the regular expression.

Not Matches Regex

A rule meets the condition if its property value does not match the regular expression.

Divisible By

A rule meets the condition if its property value is divisible by the integer number from the Value field.

Not Divisible By

A rule meets the condition if its property value is not divisible by the integer number from the Value field.

String Contains

A rule meets the condition if its property value indicates whether a specified string contains another string.

Not Contains String

A rule meets the condition if its property value indicates whether a specified string does not contain another string.

Value

Specifies the value that **RICOH Accessibility Designer** uses to decide whether a rule meets the condition.

Note

- If no value is specified into the **Value** input field, you are prompted with a message stating the condition is missing a value.

To define an additional condition, click **+** to the right of any condition. To delete a condition, click **-** to the right of the condition you want to delete.

Note

- While editing a condition entry using the **Condition Editor**, you can remove an existing condition entry. To remove a condition entry you need to have at least 2 condition entries created.

You can combine condition entries using these operations:

- **And**
- **Or**

The **[Condition Editor]** also contains a summary of all condition entries at the bottom of panel.

Editing Conditions

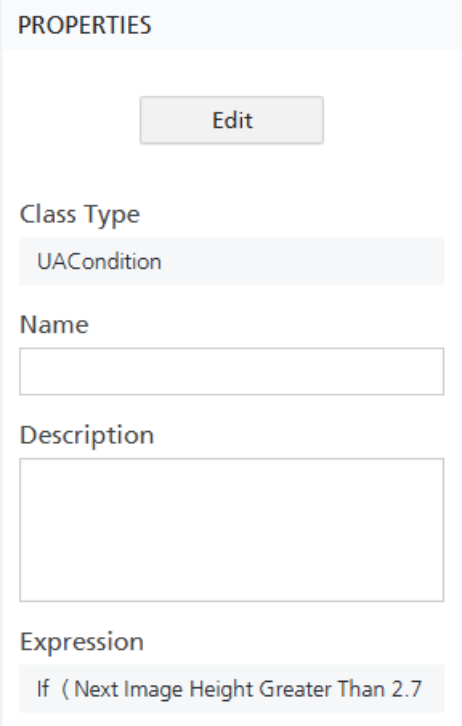
This option allows you to edit existing conditions.

To edit a condition:

1. Select the condition from the **[RULES]** section, on the left side of the screen.
2. Right-click and select **[Edit]** from the menu.
   The **[Condition Editor]** dialog is displayed in the workspace. For more information, see Condition Editor, p. 42.
3. Edit condition properties, comparison operators or values.
4. Click **[OK]**.

or

1. Select the condition from the **[RULES]** section, on the left side of the screen.
2. Go to **[PROPERTIES]**, on the right side of the screen, and click the **[Edit]** button.



   The **[Condition Editor]** dialog is displayed in the workspace. For more information, see Condition Editor, p. 42.
3. Edit condition properties, comparison operators or values.
4. Click **[OK]**.

Allowed children elements for rules

RICOH Accessibility Designer allows you to insert or drag and drop only certain rule elements for rules.

The following children elements are allowed when you create or define your rules:

Action

The **Action** rule represents the executable step within a condition branch. Although it functions as a ConditionBranch, you cannot insert it directly. Instead, **Action** rules are automatically created as part of the True or False branches whenever a Condition rule is added.

Page Header, Page Trailer, Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, ListItem, EndNoteList, Table, TableRow, TableData, TableColumnHeader, TableRowHeader, Note, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList, Label

Condition

Action

Document

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, PageHeader, PageTrailer, List, EndNoteList, Table, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList

EndNoteList

RepeatingGroup, Region, Section, Condition, ListItem, Cursor, Macro, SetVariable, Trace

Heading

Link, Macro, SetVariable, Trace, Figure

List

RepeatingGroup, Region, Section, Condition, ListItem, Cursor, Macro, SetVariable, Trace

ListItem

ListItemBody, Macro, Paragraph, Reference, Heading, Link, SetVariable, Trace, Label

ListItemBody

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, EndNoteList, Table, TableRow, TableData, TableColumnHeader, TableRowHeader, Note, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList

Note

Label

PageHeader

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, EndNoteList, Table, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList

PageTrailer

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, EndNoteList, Table, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList

Paragraph

Link, Macro, SetVariable, Trace

Reference

Macro

Region

Paragraph, Reference, Heading, RepeatingGroup, Region, Condition, List, ListItem, EndNoteList, Table, TableRow, TableData, TableColumnHeader, TableRowHeader, Note, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList, Label

RepeatingGroup

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, ListItem, EndNoteList, Table, TableRow, TableData, TableColumnHeader, TableRowHeader, Note, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList, Label

Section

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, ListItem, EndNoteList, Table, TableRow, TableData, TableColumnHeader, TableRowHeader, Note, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList, Label

Table

RepeatingGroup, Region, Section, Condition, List, EndNoteList, TableRow, Cursor, Macro, SetVariable, Trace

TableColumnHeader

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, EndNoteList, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList, Label

TableData

Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, EndNoteList, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList, Label

TableRow

RepeatingGroup, Region, Section, Condition, List, EndNoteList, TableData, TableColumnHeader, TableRowHeader, Cursor, Macro, SetVariable, Trace

TableRowHeader

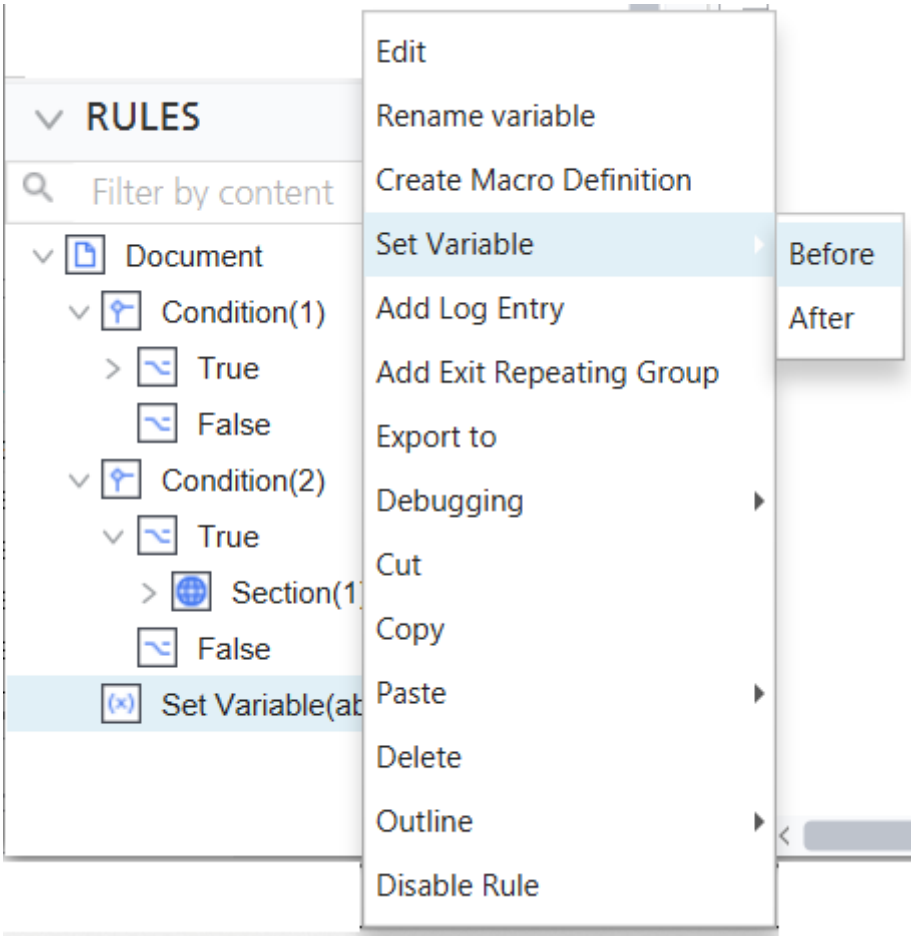
Paragraph, Reference, Heading, RepeatingGroup, Region, Section, Condition, List, EndNoteList, Image, Artifact, Link, Cursor, Macro, BlockLines, SetVariable, Trace, BlockParagraphs, BlockList, BlockEndNoteList, Label

Setting Variables

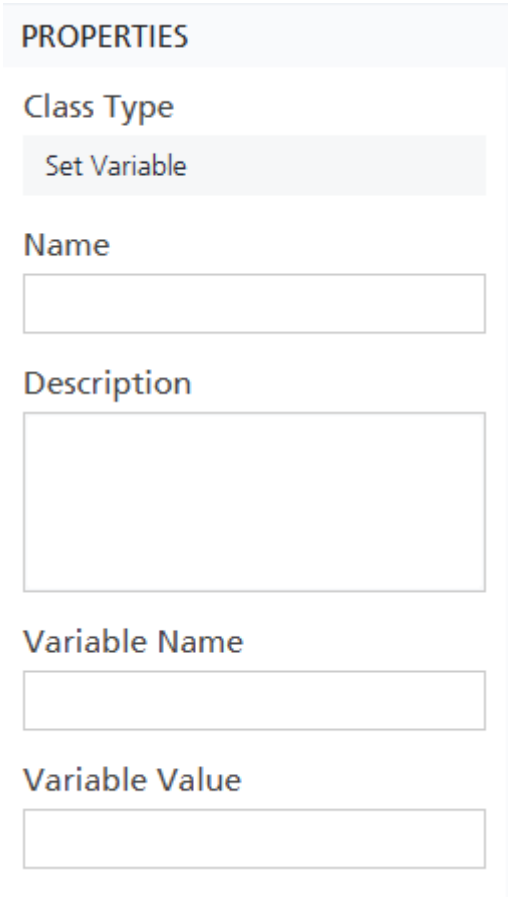
This option allows you to set variables that are used in the **[Condition Editor]**. Variables are displayed into the **[RULES]** or **[MACROS]** section.

To add variables:

1. Go to the **[RULES]** or **[MACROS]** section and select the rule from the list.
   For more information, see Creating Rules, p. 31.
2. Right-click on a rule and select **[Set Variable]** from the menu.
3. To add a variable for a rule that is not a container, select **[Set Variable]** from the menu and choose one of these options: **Before** or **After**. If your rule is a container, you can choose one of these options: **Before**, **After**, or **Into**.

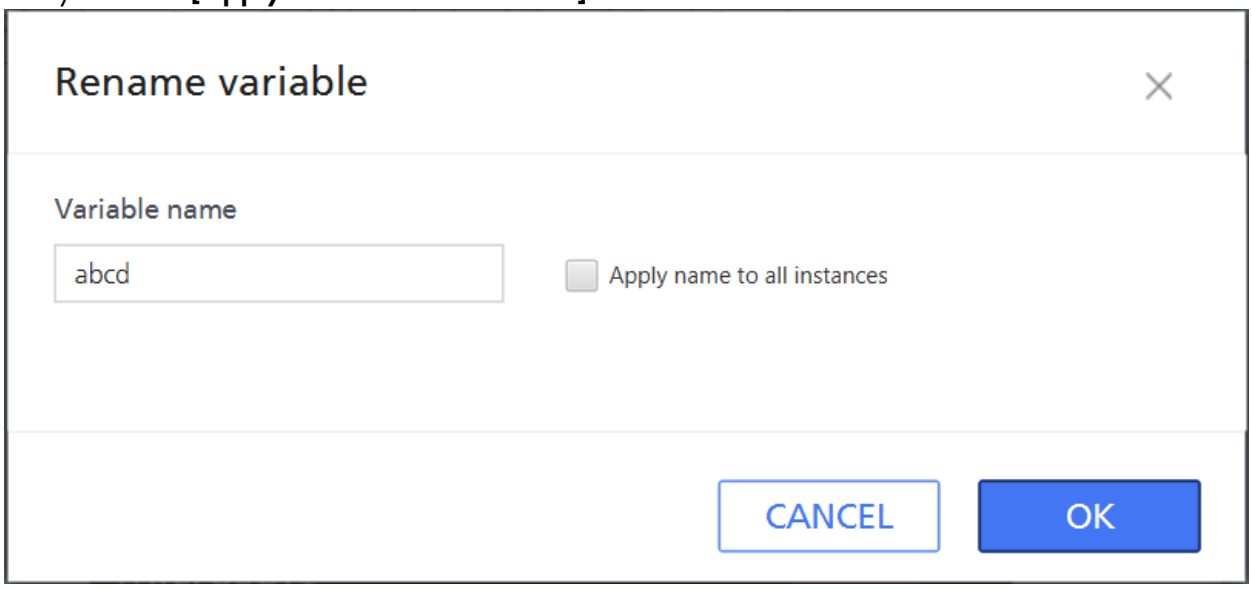


To display and edit the available variable properties, go to the **[PROPERTIES]** section, on the right side of the screen.



For better management of your rules you have the option of renaming any variable.

1. Go to the **[RULES]** section and select a rule from the list.
2. Select the variable that you want to rename, right-click and select **[Rename variable]** from the menu. If you want to apply this change in all the places where your variable appears, make sure that you select **[Apply name to all instances]**.

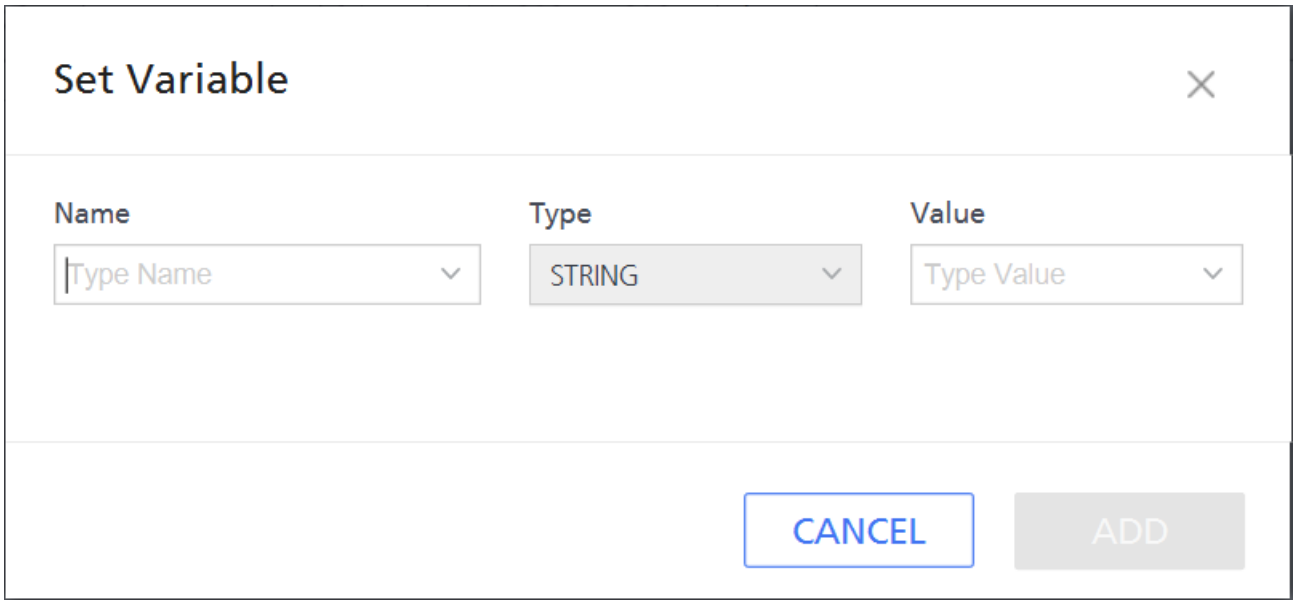


3. Click **[OK]**.

Variable values

In the **[Set Variable]** dialog box, use the options available:

- **[Name]**: the name of the variable. You can either insert a new name or select a previously used name.
- **[Type]**: the type of the variable: **[INT]**, **[DOUBLE]**, **[BOOLEAN]**, **[STRING]**.
- **[Value]**: the value of the variable.



These are the values that you can select for each type of variable:

INT

Current Page Number

Indicates the current page number.

Expression

Indicates a user-defined expression.

DOUBLE

Next Image X Position

Indicates the X position of the image.

Next Image Y Position

Indicates the Y position of the image.

Next Image Width

Indicates the width of the image.

Next Image Height

Indicates the height of the image.

Next Line Y Position

Indicates the Y position of a PDF matched line.

Next Line in Region Y Position

Takes the Y position of the Next Line in Region.

Current Line Y Position

Takes the Y position of the Current Line.

Current Line in Region Y Position

Takes the Y position of the Current Line in Region.

Get Next Row Y

Indicates the Y position of the next row on the PDF page. You can only use this input within a table.

Get Next Row Height

Indicates the height of the next row on the PDF page. You can only use this input within a table.

Line Before Cursor Y

Indicates the Y position of the current line on the PDF page.

Line Before Cursor in Region Y

Indicates the Y position of the current line within the defined box.

Next line Height

Indicates the height of a PDF matched line.

Next Line in Region Height

Indicates the height of the next line within the defined box.

Cursor X

Indicates the current X coordinate of the cursor. Where cursor is the center of the last matched text element within the page.

Cursor Y

Indicates the current Y coordinate of the cursor. Where cursor is the center of the last matched text element within the page.

Current Line Height

Indicates the height of a PDF matched current line.

Current Line in Region Height

Indicates the height of the current line within the defined box.

Expression

Indicates a user-defined expression.

BOOLEAN

STRING

Get Next Line

Indicates the next line on the PDF page.

Get Next Line in Region

Indicates the next line within the defined box.

Get Current Line

Indicates the current line on the PDF page.

Get Current Line in Region

Indicates the current line within the defined box.

Line Before Cursor

Indicates the current line on the PDF page.

Line Before Cursor in Region

Indicates the current line within the defined box.

Get All Text in Region

Indicates all the text in the current region.

Next Line Font Name

Returns the list of font names used in the next line separated by ",".

Next Line in Region Font Name

Returns the list of font names used in the next line within the defined box separated by ",".

Current Line Font Name

Returns the list of font names used in the current line separated by ",".

Current Line in Region Font Name

Returns the list of font names used in the current line within the defined box separated by ",".

Expression

Indicates a user-defined expression.

Customizing Mathematical Expressions

The **[Expression Builder]** allows you to create complex mathematical expressions for existing functions, either variables or constants, defined within the rules.

To create a mathematical expression:

1. Create a rule.
2. To add a variable to the defined rule, right click on **[Document]** and select **[Set Variable]**.

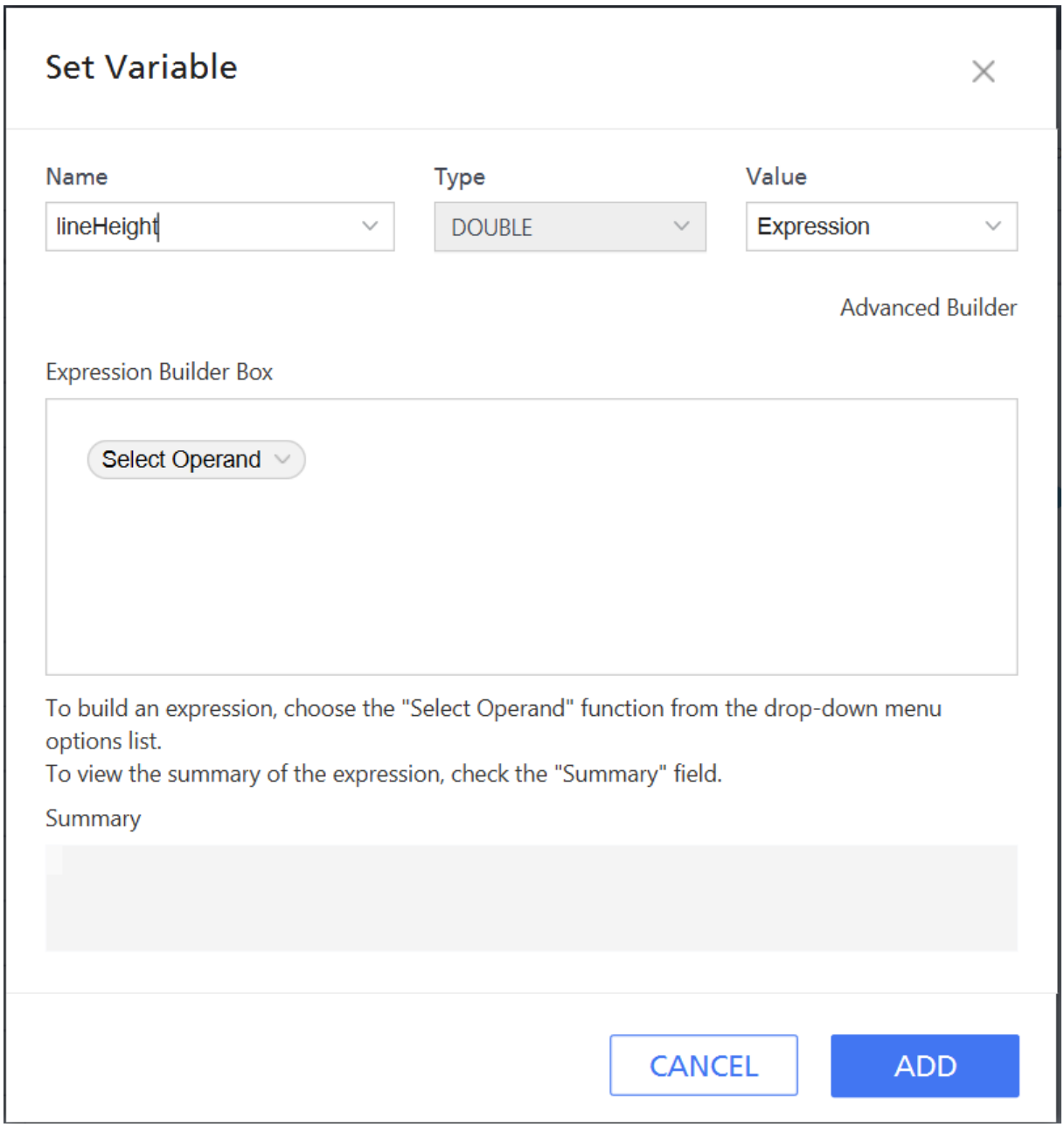
   You are prompted with the **[Set Variable]** dialog.

3. Fill out the required **[Name]** field and select the variable **[Type]**. From **[Value]**, make sure to select **[Expression]** from the drop-down menu list.

Note

- The **[Expression]** option is available when you select **[INT]**, **[DOUBLE]**, or **[STRING]** from the **[Type]** field.

The **[Set Variable]** dialog expends into an **[Advanced Builder]** dialog that allows you to create customized expressions.



Expression Builder Box

Indicates a user-defined complex expression.

Summary

Indicates an expression summary.

4. To build an expression, click on **[Select Operand]** and select one the options from the drop-down menu list:

   - **[Functions]** - list of available functions;
   - **[Variables]** - list of already created variables;
   - **[Constants]** - known values;
   - **[Expressions]**- operands and operators, grouped together to indicate a certain value:

     [2 operands]

     Indicates an expression that consists of 2 operands and 1 operator.

     [3 operands]

     Indicates an expression that consists of 3 operands and 2 operators.

     [Custom Operands]

     Indicates an expression that consists of customized operands and operators.

     [Inline]

     Enter an expression of your choice.

     You can use one of these functions when you create an expression:

     – `replaceFirstRegex(<Param1>, <Param2>, <Param3>)`: Replace first regex.
     – `replaceRegex(<Param1>, <Param2>, <Param3>)`: Replace regex.
     – `stringTrim(<Param1>)`: String Trim.
     – `substr(<Param1>, <Param2>, <Param3>)`: Substract String.
     – `stringLength(<Param1>)`: String Length.
     – `range(<Param1>, <Param2>, <Param3>)`: Value in range.
     – `concat(<Param1>, <Param2>)`: Concatenate Strings.

     These usage scenarios show possibilities of using the **[Inline]** option.

     – The expression uses numeric values: *`$x+$y`* or*`$x+1.0`*.
     – The expression uses string values: *`concat($a, "ABC")`* or *`concat($a, "1")`*.

     You can use these operators in an expression: "+", "-", "/", "*", "%", "idiv". Also, you can use these brackets in your expressions: "(", ")".

     Note

     Use the "idiv" operator for integer division.

5. Review the **[Summary]** section.

   Note

   - The **[Summary]** section is available only for expressions.

6. Click **[ADD]**.

The variable is added as a **[Set Variable]** rule under the **[RULES]** section.

To check the properties of the value, go to **[PROPERTIES]**, on the right side of the screen.

Creating an expression for the distance between 2 lines multiplied by a constant

1. Create a paragraph rule to which to assign the variable to.

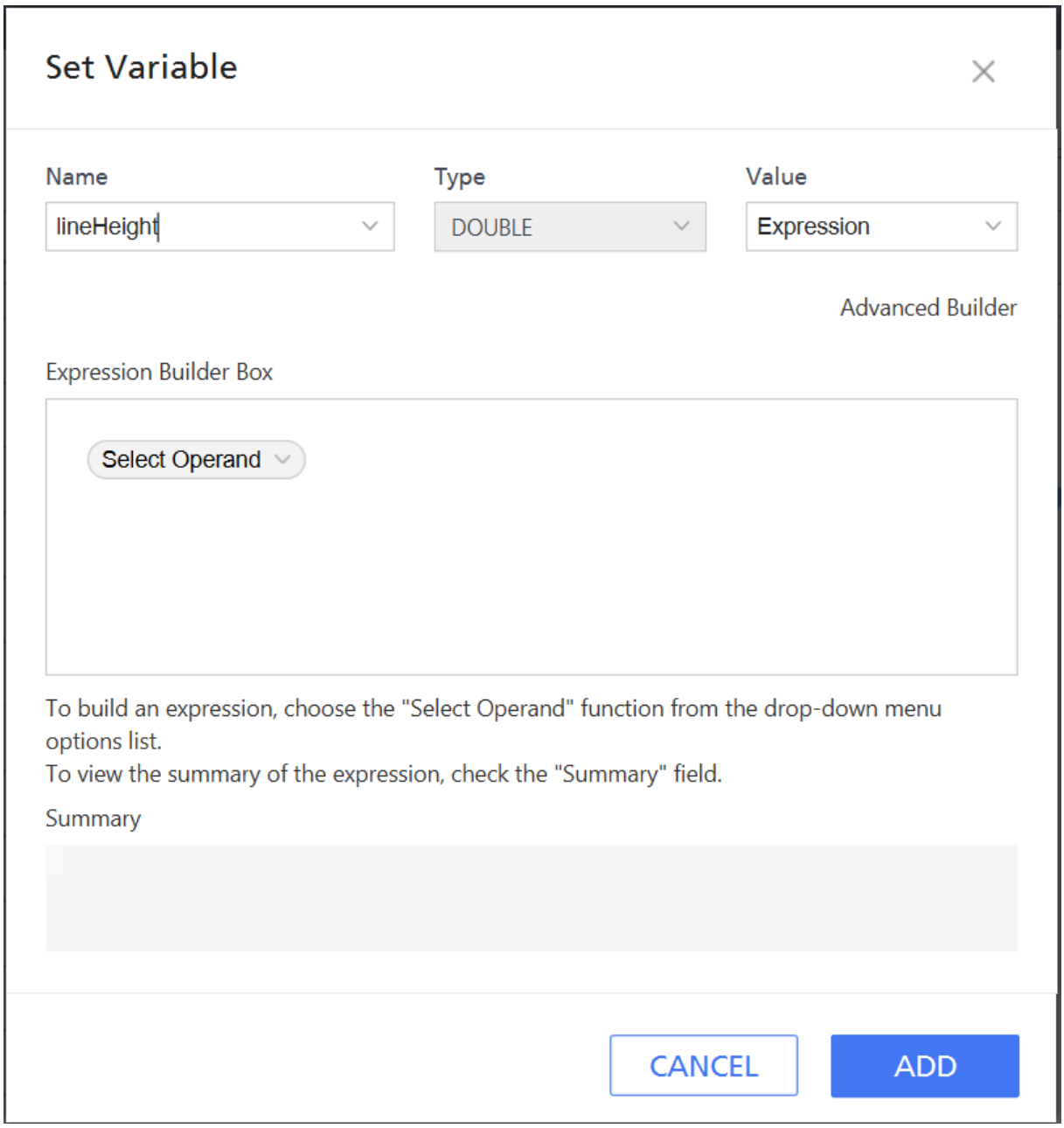
   Make sure the **[Export as]** field is set as **[Fixed]** for the **[Y]** coordinate.

2. Right click on **[Document]** and select **[Set Variable]** to add a variable to the defined paragraph rule.

   You are prompted with the **[Set Variable]** dialog.

3. Fill in the **[Name]** and select the **[Type]** of the variable, as highlighted below. Under **[Value]**, make sure to select **[Expression]** from the drop-down menu list.

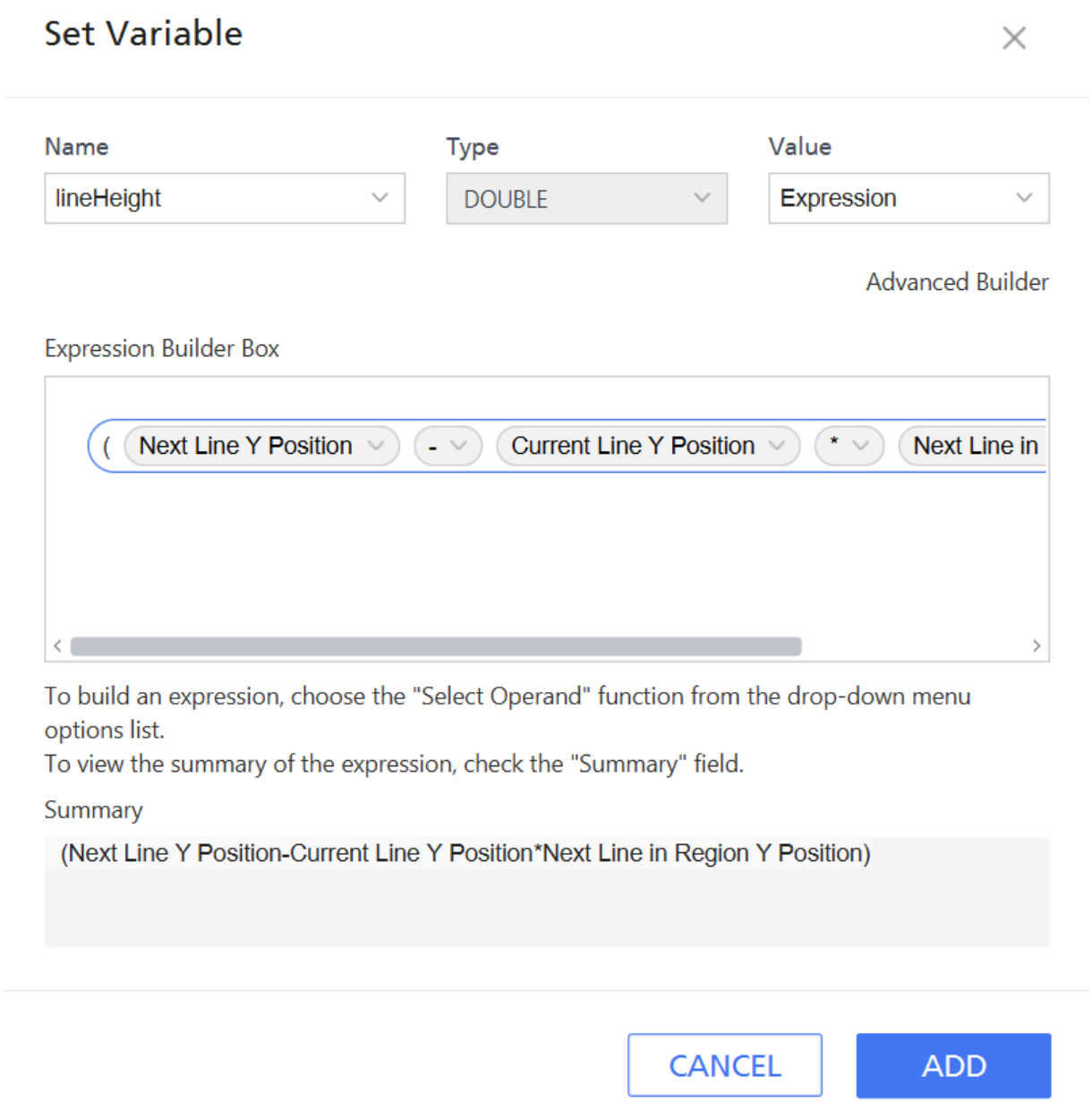
   The **[Set Variable]** dialog expends into an **[Advanced Builder]** dialog that allows you to create customized expressions.



4. To change the operand into an expression with 2 operands, click on **[Select Operand]** and select **[2 operands]** from the **[Expressions]** list.

   The first operand is converted into an expression by itself.

5. Click on **[Select Operand]** and select **[2 operands]** from the **[Expressions]** list.
6. For the first expression, select **[Next Line Y Position]**, the **[-]** operator and **[Current Line Y Position]**. For the second expression, select the **[*]** operator and for the last operand, go to **[Constants]** and type **2**.
7. Review the **[Summary]** section.



8. Click **[ADD]**.

Positioning Rules Graphic in the Workspace Area

You can position a rule graphic by manually selecting the rule area on the page or by entering coordinates in the **[X]**, **[Y]**, **[Width]**, and **[Height]** fields on the properties area.

Manually positioning

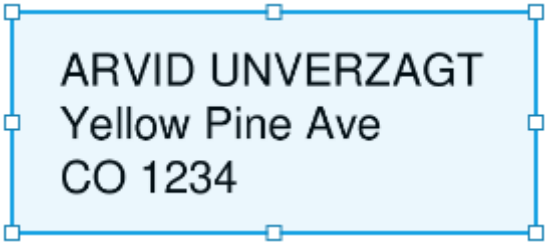
To position a rule manually:

1. Go to the **[Insert]** tab to add the content type to the selected rule.
   - If , the selection tool, is active, a blue highlight is applied to the selected area to help identify matched rules.

2. Select the content area to define a rectangular or square region.



The cursor becomes a position icon.



Positioning with [X], [Y], [Width] or [Height] Coordinates

To position a matched element with **[X]**, **[Y]**, **[Width]** or **[Height]** coordinates:

1. Select the rule graphic region.
2. On the right side of the screen, in the **[PROPERTIES]** panel, enter coordinates in the **[X]** and **[Y]** fields to position the rule on the page.

Moving Rules in Document Hierarchy

You can reposition document element rules in the PDF structure hierarchy.

To move document element rules:

1. On the left side of the screen, in the **[RULES]** or **[MACROS]** view, select the rule that you want to move.
2. Drag and drop the rule to the new location.

Built-in Macro Rules

This topic describes the built-in macro rules. The built-in macro rules are designed to run without requiring any direct user input.

Block End Note List

Specifies the rule used to mark the **[Block End Note List]** elements in a bounding box defined by the **[X]**, **[Y]**,**[Width]**, **[Height]** properties.

Note

You cannot set your export options to **Absent** or **Relative** for **Width** and **Height**.

Built-in Macro Name: **#ReadEndNotesListBlocks**

All the lines in the region or the box are processed one by one and added to an end note list or they are skipped. When the distance between two lines is greater than the **[Line Height]** property, then it marks the end of a **[Block End Note List]** element. The distance between two lines is defined as the distance between the top Y position of the lines. The **[Line Height]** property is used to split the entire text into blocks that resemble to lists or get skipped.

For advancing to the next line Y position in the text, the **[getNextLineInRegion]** and **[getLineBeforeCursorInRegion]** operators are used. A **[Block End Note List]** element contains a set of **[ListItem]** elements and start with the first **[ListItem]** element encountered while processing.

List Items can span multiple lines with the exception that if a line matches the regular expression from the **[Single Line Contains]** property, it is processed as a single-line item. A matched **[List Item]** element is split into a **[Label]** element and a **[ListItemBody]** element.

The condition for matching new list items or the start of a **[List Item]** element is defined by the regular expression value from the **[List Item Regex]** property. The **[Label]** element from the **[List Item]** element is matched using the regular expression value from the **[Label Regex]** property. The **[ListItemBody]** element from the **[List Item]** element is matched using the regular expression value from the **[Note Regex]** property.

Block List

Specifies the rule used to mark lists located in a bounding box defined by the **[X]**, **[Y]**,**[Width]**, **[Height]** properties.

Note

You cannot set your export options to **Absent** or **Relative** for **Width** and **Height**.

Built in Macro Name: **#ReadListBlocks**

All the lines in the region or the box are processed one by one and added to a list or they are skipped. When the distance between two lines is greater than the **[Line Height]** property, then it marks the end of a list. The distance between two lines is defined as the distance between the top Y position of the lines. The **[Line Height]** property is used to split the entire text into blocks that resemble to lists or get skipped.

For advancing to the next line Y position in the text, the **[getNextLineInRegion]** and **[getLineBeforeCursorInRegion]** operators are used. A **[List]** element contains a set of **[ListItem]** elements and starts with the first **[ListItem]** element encountered while processing.

List items can span multiple lines with the exception that if a line contains the string `. . .` it is processed as a single line item. A matched **[List Item]** element is split into a **[Label]** element and a **[ListItemBody]** element.

Condition for matching new list items or the start of a **[ListItem]** element:

Line starting with a bullet · that corresponds to the Unicode character U+2022 (Regex = \x{2022}.*).

The bullet is matched as a **[Label]** element and the rest of the line is matched as a **[ListItemBody]** element.

Line starts with one or two digits continuing with a period and a space (Regex = ^\d{1,2}\. .*).

The start digits and period are matched as a **[Label]** element and the rest of the line is matched as a **[ListItemBody]** element.

Line starts with one or two digits then followed by a) and a space (Regex = ^\d{1,2}\) .*)

The start digits and) are matched as a **[Label]** element and the rest of the line is matched as a **[ListItemBody]** element.

A **[List Item]** element ends when at least one of the following is true:

- The new line falls outside of the rule bounding box.
- The end of a list is encountered.
- The start of a new **[List Item]** element is encountered.

Block Lines

Specifies the rule used to mark each line as a paragraph located in a bounding box defined by the **[X]**, **[Y]**,**[Width]**, **[Height]** properties.

Note

You cannot set your export options to **Absent** or **Relative** for **Width** and **Height**.

Built-in Macro Name: **#ReadBlockLines**

All the lines in the region or the box are processed one by one and added as a separate paragraph. For advancing to the next line Y position in the text, the **[getNextLineInRegion]** operator is used.

Block Paragraphs

Specifies the rule used to mark paragraphs and lists located in a bounding box defined by the **[X]**, **[Y]**, **[Width]**, **[Height]** properties.

Built-in Macro Name: **#ReadParagraphBlocks**

All the lines in the region or the box are processed one by one and added to a paragraph or a list. When the distance between two lines is greater than the **[Line Height]** property, then it marks the end of a paragraph or a list. The distance between two lines is defined as the distance between the top Y position of the lines. The **[Line Height]** property is used to split the entire text into blocks that resemble into separate paragraphs or lists. You can set your **Export as** values to: **Fixed**, **Next Image X Position**, **Cursor X**. You can also select a previously added variable.

Note

You cannot set your export options to **Absent** or **Relative** for **Width** and **Height**.

For advancing to the next line Y position in the text, the **[getNextLineInRegion]** and **[getLineBeforeCursorInRegion]** operators are used. A **[List]** element contains a set of **[ListItem]** elements and starts with the first **[ListItem]** element encountered after the end of a paragraph or a list.

List items and paragraphs can span multiple lines with the exception that if a line contains the string . . . it is processed as a single line item.

List Items

A matched **[List Item]** element is split into a **[Label]** and a **[ListItemBody]** element.

Condition for matching new list items or the start of a **[ListItem]** element:

Line starting with a bullet · that corresponds to the Unicode character U+2022 (Regex = \x{2022}.*).

The bullet is matched as a **[Label]** element and the rest of the line is matched as a **[ListItemBody]** element.

Line starts with one or two digits continuing with a period and a space (Regex = ^\d{1,2}\. .*).

The start digits and period are matched as a **[Label]** element and the rest of the line is matched as a **[ListItemBody]** element.

Line starts with one or two digits then followed by a) and a space (Regex = ^\d{1,2}\) .*)

The start digits and) are matched as a **[Label]** element and the rest of the line is matched as a **[ListItemBody]** element.

A **[List Item]** element ends when at least one of the following is true:

- The new line falls outside of the rule bounding box.
- The end of a list is encountered.
- The start of a new **[List Item]** element is encountered.

[List Item Regex]

This regex value is used to check if a new list item begins.

[Note Regex]

This regex value is used to mark or tag the note part of a list item.

[Label Regex]

This value is used to mark or tag the label part of a list item.

[Single Line Regex]

This regex value is used to check if a line should be processed as a single tagged item.

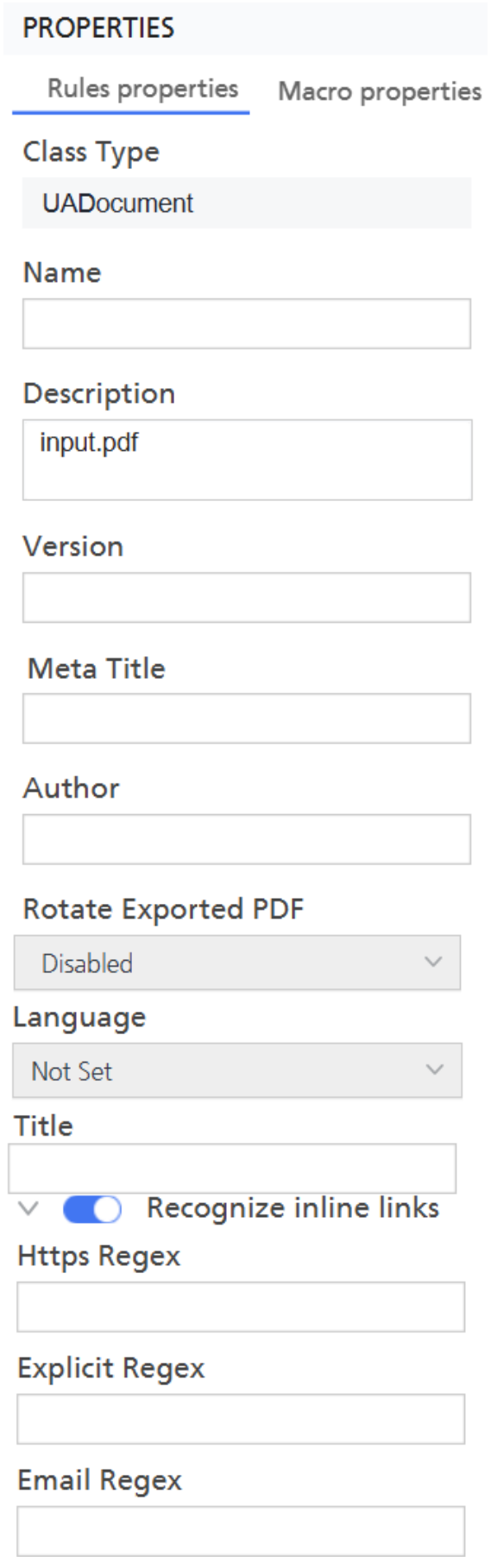
Paragraphs

If the line being processed in the defined region is not recognized as start or part of a **[List Item]** element, then it is processed as part of a **[Paragraph]** element. If the distance between the new line processed and the the previous line is greater than the **[Line Height]** property, then a new paragraph is started.

Editing Properties

Element Properties

This section contains properties than can be edited for the rules. You can edit the rule properties matched in the PDF document.


PROPERTIES
Rules properties
Macro properties
Class Type
UADocument
Name
Description
input.pdf
Version
Meta Title
Author
Rotate Exported PDF
Disabled
Language
Not Set
Title
Recognize inline links
Https Regex
Explicit Regex
Email Regex

[Class Type]

Specifies the class type of the element. Depending on the element type, the information under this field is auto-filled.

Note

- This field is not editable.

This element property can be used under the following rules: **Document**, **Header**, **Footer**, **Paragraph**, **Heading**, **Link**, **Block Lines**, **Block Paragraphs**, **Reference**, **Figure**, **Artifact**, **Region**, **Repeating Group**, **Condition**, **Anchor**, **Macro**, **Set Variable**, **Section**, **Table**, **Table Row**, **Table Data**, **Table Column Header**, **Table Row Header**, **Block List**, **Block End Note List**, **List**, **List Item**, **List Item Body**, **Label**, **Note**, **Note List**, **Exit Repeating Group**, **Action**, **Log Entry**.

[Name]

Use this field to add a name for a rule.

This element property can be used under the following rules: **Document**, **Header**, **Footer**, **Paragraph**, **Heading**, **Link**, **Block Lines**, **Block Paragraphs**, **Reference**, **Figure**, **Artifact**, **Region**, **Repeating Group**, **Condition**, **Anchor**, **Macro**, **Set Variable**, **Section**, **Table**, **Table Row**, **Table Data**, **Table Column Header**, **Table Row Header**, **Block List**, **Block End Note List**, **List**, **List Item**, **List Item Body**, **Label**, **Note**, **Note List**, **Exit Repeating Group**, **Action**, **Log Entry**.

[Description]

Use this field to add a description for an element.

This element property can be used under the following rules: **Document**, **Header**, **Footer**, **Paragraph**, **Heading**, **Link**, **Block Lines**, **Block Paragraphs**, **Reference**, **Figure**, **Artifact**, **Region**, **Repeating Group**, **Condition**, **Anchor**, **Macro**, **Set Variable**, **Section**, **Table**, **Table Row**, **Table Data**, **Table Column Header**, **Table Row Header**, **Block List**, **Block End Note List**, **List**, **List Item**, **List Item Body**, **Label**, **Note**, **Note List**, **Exit Repeating Group**, **Action**, **Log Entry**.

[Meta Title]

Use this field to add the meta title of the document. The **[Meta Title]** field is mandatory for the document to be PDF/UA compliant.

This element property can be used under the **Document** rule.

[Author]

Use this field to add the name of the document creator.

This element property can be used under the **Document** rule.

[Rotate Exported PDF]

Use this field to set the rotation for the exported PDF. Select **[Disabled]** so that your PDF pages are not rotated in **[Accessibility Designer]** nor in the exported PDF. Select **[Auto Rotation]** to enable the rotation in **[Accessibility Designer]** without enabling the rotation in the exported PDF. Select **[Preserve Rotation]** to enable the rotation in both **[Accessibility Designer]** and exported PDF. The auto rotation is done per page and the text is rotated so that text is oriented horizontally from left to right.

This element property can be used under the **Document** rule.

[Language]

Use this field to set the language for an element that differs from other elements.

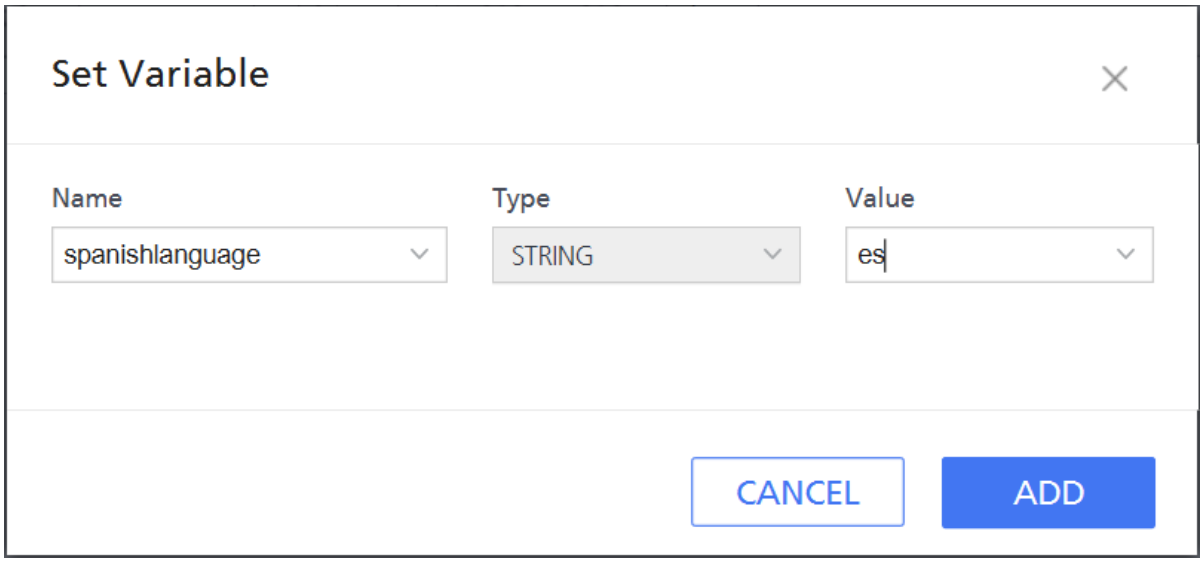
Note

- The default value for the **[Language]** field is **[Not Set]**.
- You can also set the language for the entire document if you select **[Document]** from the **[RULES]** section. On the right side of the screen, under **[Properties]**, go to the **[Language]** field and select one the available options.

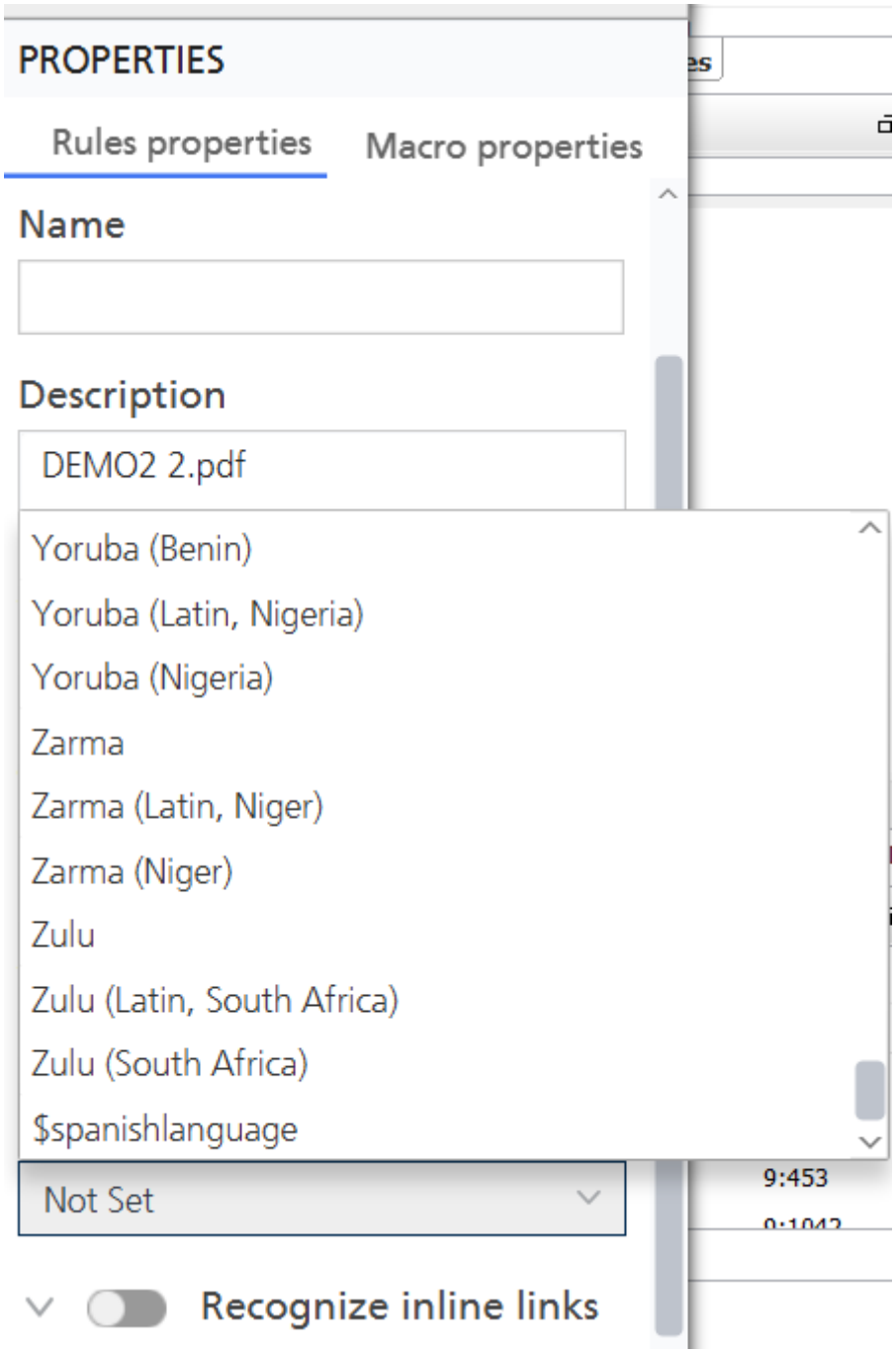
This element property can be used under the following rules: **Document**,**Paragraph**, **Heading**, **Link**, **Reference**, **Figure**, **Section**, **Table**, **Table Row**, **Table Data**, **Table Column Header**, **Table Row Header**, **Label**, **Note**.

You can also set the language as a variable by following these steps:

- Go to the **[RULES]** panel on the left side of the screen.
- Select a rule.
- Right-click the rule and select **[Set Variable]**.
- In the **[Set Variable]** panel enter a name for the variable, select **String** for **[Type]** and enter any IETF BCP 47 language tag, such as: "en" for English or "es" for Spanish.



- Click **[ADD]**.
- The new language variable is now displayed at the bottom of the language list in the **[Rules properties]** section on the right of the screen. You can easily identify the new language variable because it contains the "$" character in front of the name.



[Setting Position and Size Coordinates]

Use these input fields to manually set the **[X]**, **[Y]**, **[Width]** or **[Height]** Coordinates.

[X] is used by the rule logic for the matching items and by the rule graphic box. The **[Export As]** value defines how the **[X]** value is used in the control file.

[Y] is used by the rule logic for the matching items and by the rule graphic box. The **[Export As]** value defines how the **[Y]** value is used in the control file.

[Width] is used by the rule logic for the matching items and by the rule graphic box. The **[Export As]** value defines how the **[Width]** value is used in the control file.

[Height] is used by the rule logic for the matching items and by the rule graphic box. The **[Export As]** value defines how the **[Height]** value is used in the control file.

See Positioning Rules Graphic in the Workspace Area, p. 57 for more information.

This element property can be used under the following rules: **Paragraph**, **Heading**, **Link**, **Block Lines**, **Block Paragraphs**, **Reference**, **Figure**, **Artifact**, **Region**, **Repeating Group**, **Section**, **Table**, **Table Row**, **Table Data**, **Table Column Header**, **Table Row Header**, **Block List**, **Block End Note List**, **List**, **List Item**, **List Item Body**, **Label**, **Note**, **Note List**. Apart from the listed rules, **[X]** and **[Y]** can also be used under these rules: **Anchor** and **Macro**.

Use the **[Export As]** options to export position and size coordinates into the control file.

Note

- The options for **[Export As]** for each coordinate are listed as created into the XML control file.
- If you enabled the **[Set as default the last "Export As" values when creating new rules]** property as a rule preference when you edited your templates, each newly created rule will have the **Export As** values for **X**, **Y**, **Width**, **Height** copied from the most recent rule created with this setting enabled.

4

[Alternative Text]

Use this field to add an alternative text for all the rules mentioned below.

This element property can be used under the following rules: **Paragraph**, **Heading**, **Link**, **Reference**, **Figure**, **Label**, **Note**, **Table Data**, **Row Header**, **Column Header**.

Note

- By default, the **[Text]** field contains the text content of the paragraph.

[Title]

Use this field to add a title for structure elements in the PDF document.

This element property can be used under the following rules: **Document**, **Paragraph**, **Heading**, **Link**, **Block Lines**, **Block Paragraphs**, **Reference**, **Figure**, **Section**, **Table**, **Table Row**, **Table Data**, **Table Column Header**, **Table Row Header**, **List**, **List Item**, **List Item Body**, **Label**, **Note**, **Note List**.

[Summary]

Use this field to add a summary in the PDF document.

This element property can be used under the **Table** rule.

[Use metadata as alternative text]

Check this option if you want to use the metadata from the PDF as alternative text for the image.

Note

This option is valid only for image type elements.

[Text]

When the **TextType** is set to **Fixed**, this value matches a fixed text within the defined rule region or area.

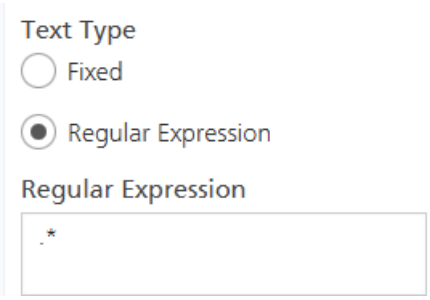
This element property can be used under the following rules: **Paragraph**, **Heading**, **Link**, **Reference**, **Artifact**, **Table Data**, **Table Column Header**, **Table Row Header**, **Label**, **Note**.

[Text Type]

Defines the method of matching text for a rule. You can select either **Fixed** or **Regular Expression**.

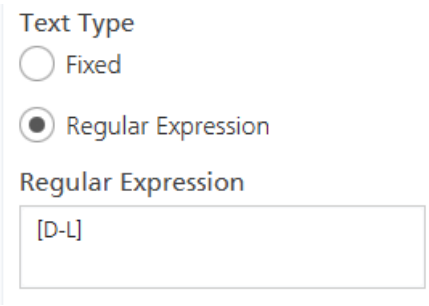
- **[Fixed]**: To identify a fixed text value.
- **[Regular Expression]**: To match a pattern to a given text.

The default regular expression option is **.*** that matches against any sequence of characters:

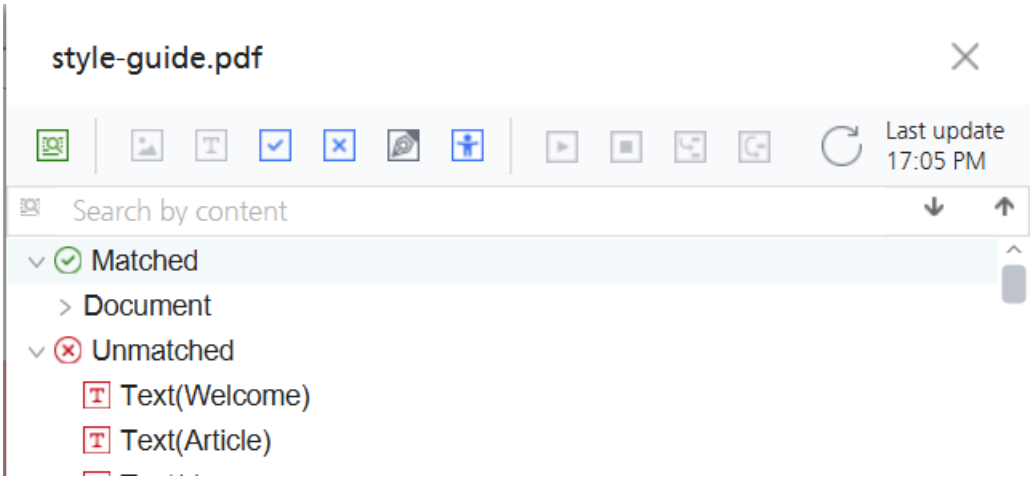


All regular expression options are available in the tool. For example, you can use the Regex option **[...]** to select a range of characters by specifying the first and last characters in the range.

When you specify the range **[D-L]**:

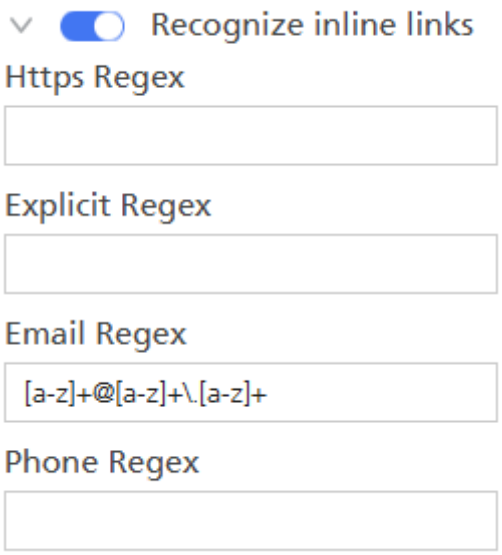


The text that matches this range is displayed as a matched element when you validate the PDF:



[Recognize inline links]

Use this option to automatically detect the links within the paragraph, list items, table data or header elements. You can use regular expressions to identify different types of links.

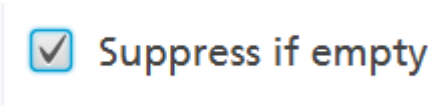


- **[Https Regex]**
- **[Explicit Regex]**
- **[Email Regex]**
- **[Phone Regex]**

This element property can be used under the following rules: **Action**, **RepeatingGroup**, **Section**, **Region**, **Table**, **TableRow**, **List**, **ListItem**, **ListItemBody**, **EndNoteList**, **Document**, **Paragraph**, **Heading**, **Table Data**, **Table Column Header**, **Table Row Header**, **Note List**.

[Suppress if empty]

Enable this option to not tag any empty elements when your rules are processed.

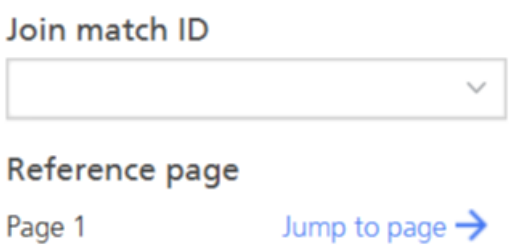


This element property can be used under the following rules: **Paragraph**, **Heading**, **Link**, **Reference**, **Section**, **List**, **List Item**, **List Item Body**, **Label**, **Note**, **Note List**.

[Join match ID]

Creates a single matched element output.

The two rules are joined by an ID that you set up in **Join match ID**, within the **[Properties]** and **Macros** sections:

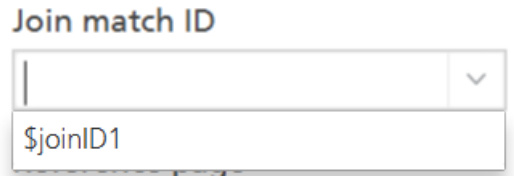


Note

For example: this option can be used for a Table element that is continued from one page to another.

Once you mark the first Table element and set up the ID, you need to match the second Table element with the same ID. This can be done by manually writing or choosing it from the drop-down.

The Join match ID field also allows you to set up a variable value. Once the variable is added in **[RULES]**, it shows in the **Join match ID** section of the element, from where you can select it:



This element property can be used under the following rules: **Paragraph**, **Table**, **Table Row**, **List**, **List Item**.

For more information, see: Setting Variables, p. 47.

[Reference page]

Indicates the page where the originating rule was defined.

This element property can be used under the following rules: **Paragraph**, **Heading**, **Link**, **Block Lines**, **Block Paragraphs**, **Reference**, **Figure**, **Artifact**, **Region**, **Repeating Group**, **Condition**, **Anchor**, **Macro**, **Section**, **Table**, **Table Row**, **Table Data**, **Table Column Header**, **Table Row Header**, **Block List**, **Block End Note List**, **List**, **List Item**, **List Item Body**, **Label**, **Note**, **Note List**.

[Font name]

Specifies the font name by defining the visual identity of the content.

This element property can be used only under unmarked text.

[Font style]

Defines the visual appearance of the text by applying stylistic variations.

This element property can be used only under unmarked text.

[Condition Result]

Condition Result element property is read only. It is set to **True** or **False** depending on the branch type.

This element property can be used under the **Action** rule.

[Row Span]

Defines the number of rows on which the Table cell spans.

This element property can be used under the following rules: **Table Data**, **Table Column Header**, **Table Row Header**.

[Column Span]

Defines the number of columns on which the Table cell spans.

This element property can be used under the following rules: **Table Data**, **Table Column Header**, **Table Row Header**.

[Page Break]

Defines a row part of a table that spans over multiple pages.

This element property can be used under the **Table Row** rule.

[Read Header]

For a table that spans on multiple pages, if a row is present on the next page, this property defines if the row is processed.

This element property can be used under the **Table Row** rule.

[Adjust Cell Cursor]

Defines how the cursor is changed when a table cell is processed.

This element property can be used under the **Table** rule.

[Variable Name]

Defines the name of a variable.

This element property can be used under the **Set Variable** rule.

[Variable Type]

Defines the type of a variable.

This element property can be used under the **Set Variable** rule.

[Variable Value]

Defines the value of a variable.

This element property can be used under the **Set Variable** rule.

[Macro Name]

Defines the name of the macro definition used for a particular macro rule.

This element property can be used under the **Macro** rule.

[Expression]

Represents a summary read-only description of the condition expression.

This element property can be used under the **Condition** rule.

[Artifact Type]

Defines the type of content to be artifacted: text, image, or any.

This element property can be used under the **Artifact** rule.

[Image Type]

Defines the type of supported image: raster, vectorial, or any.

This element property can be used under the **Figure** rule.

[Support Image Text]

If the value is **set**, text images are supported and matched.

This element property can be used under the **Figure** rule.

[Use Metadata as Alt Text]

Select this option to use the metadata from the PDF as alternative text for the image.

This element property can be used under the **Figure** rule.

[Small Text]

Mark the superscript from the selected area as reference.

This element property can be used under the **Reference** rule.

[Heading Level]

Defines different heading levels.

This element property can be used under the **Heading** rule.

[URI]

Defines a text that represents a URL link.

This element property can be used under the **Link** rule.

[Line Height]

Splits the entire text into blocks that resemble lists.

This element property can be used under the **Block List**, **Block Paragraphs**, and **Block End Note List** rules.

[List Item Regex]

This regex value is used to check if a new list item begins.

This element property can be used under the **Block Paragraphs** and **Block End Note List** rules.

[Note Regex]

This regex value marks or tags the note part of a list item.

This element property can be used under the **Block Paragraphs** and **Block End Note List** rules.

[Label Regex]

This value marks or tags the label part of a list item.

This element property can be used under the **Block Paragraphs** and **Block End Note List** rules.

[Single Line Regex]

This regex value checks if a line should be processed as a single tagged item.

This element property can be used under the **Block Paragraphs** rule.

[Single Line Contains]

Fixed value text that checks if a line should be processed as a single tagged item.

This element property can be used under the **Block End Note List** rule.

[Version]

Defines a value used as the control file version.

This element property can be used under the **Document** rule.

[Export]

If the value is **set**, the logging rule is also exported in the control file.

This element property can be used under the **Log Entry** rule.

[Log Entry]

Text used for logging into the console for debugging purposes.

This element property can be used under the **Log Entry** rule.

[Whitespace Recognition]

Defines the space width in a PDF. Select either **Revision 1** or **Revision 2** according to your needs.

This element property can be used under the **Document** rule.

[Actual Text]

Specifies the intended reading content for screen readers. It improves accessibility by ensuring screen readers interpret and read the text correctly, regardless of how it appears visually in the PDF.

Use this field to add an actual text for all the rules mentioned below.

You can enter any custom text that you want.

You can use variables values: specified with a "$" character in front (example: $myVariable).

This element property can be used under the following rules: **Paragraph**, **Heading**, **Note**, **Label**, **Reference**, **Link**, **Table Data**, **Row Header**, **Column Header**.

Inline Actual Text

This property allows you to insert a short, accessible replacement text within the content of a tagged PDF element. It overrides the visible text for accessibility purposes ensuring better understanding. Once you enable this option, you will be able to use these options:

Matching regex that refers to a regular expression pattern that is used to identify specific text elements within the content.

Text to replace that specifies the replacement text that will be used when a matching regular expression pattern is found.

New actual text that defines the replacement text that is assigned as the updated text for a tagged element.

Bookmarks from headings

Specifies the option of generating PDF bookmarks automatically based on the document's heading structure. It helps you navigate the exported PDF efficiently using a hierarchical outline.

To see the bookmarks created from the headings in an exported PDF, first insert a **Heading** rule on a specific location, then select your **Heading Level**. This operation indicates the rank of importance of a heading within a document's structure.

Operators

You can choose the operator type for each coordinate prior to export the project.

Next Image X Position

Indicates the X position of the image.

Next Image Y Position

Indicates the Y position of the image.

Next Image Width

Indicates the width of the image.

Next Image Height

Indicates the height of the image.

Next Line X Position

Indicates the X position of a PDF matched line.

Next Line Y Position

Indicates the Y position of a PDF matched line.

Next Line Height

Indicates the height of a PDF matched line.

Next Line in Region Height

Indicates the height of the next line within the defined box.

Current Line Height

Indicates the height of a PDF matched current line.

Current Line in Region Height

Indicates the height of the current line within the defined box.

Current Line Y Position

Indicates the Y position of the current line on the PDF page.

Current Line in Region Y Position

Indicates the Y position of the current line within the defined box.

Cursor X

Indicates the current X coordinate of the cursor. Where cursor is the center of the last matched text element within the page.

Cursor Y

Indicates the current Y coordinate of the cursor. Where cursor is the center of the last matched text element within the page.

Get All Text in Region

Indicates all the text in the current region.

Get Next Row Y

Indicates the Y position of the next row on the PDF page based on existing horizontal lines. You can only use this input within a table.

Get Next Row Height

Indicates the height of the next row on the PDF page. You can only use this input within a table.

Line Before Cursor

Indicates the current line on the PDF page.

Line Before Cursor in Region

Indicates the current line within the defined box.

Line Before Cursor Y

Indicates the Y position of the current line on the PDF page.

Line Before Cursor in Region Y

Indicates the Y position of the current line within the defined box.

Replace First Regex

Indicates a string that replaces the first sub string that fits the specified regular expression. This function contains three String type parameters.

Replace Regex

Indicates a string that replaces the substring that fits the specified regular expression. This function contains three String type parameters.

String Trim

Indicates a string with removed whitespace from both ends.This function contains one String type parameter.

String Length

Indicates the length of a given string.This function contains one String type parameter.

Sub String

Indicates a sub string between a start index (inclusive, the 2nd parameter) and an end index (exclusive, the 3rd parameter) from a given string (the first parameter).

Note

This function allows to create custom mathematical expressions in the Expression Builder Box. The **[Expressions]** option can be used starting with the second operand drop-down. For more information see Customizing Mathematical Expressions, p. 52.

Concatenate String

Indicates a new string containing two concatenated strings. This function contains two String type parameters.

Setting Coordinates to Position an Element

You can manually define the area of an element by entering X and Y coordinates and width and height values.

To set the element area:

1. Select the target rule from the **[RULES]** list.
2. To position the area on the page, enter coordinates in the **[X]** and **[Y]** input fields.
3. To set the size of the area, enter width and height values in the **[Width]** and **[Height]** input fields.

Use , the **[Undo]** button, to revert the area settings. Use , the **[Redo]** button, to reapply the area settings.

Exporting Coordinates in the Control File

These export options are available:

Fixed

Position

X or Y are absolute values, calculated from the top-left corner of the page and measured in inches.

Size

Width and Height are absolute values, measured in inches.

Absent

X or Y or width height values are not exported in the XML file for the element.

Note

- By definition of the control file, if a value is missing, the value of the parent is used. The top-most parent is the page.

Relative

X or Y values are relative to the parent of the element. So the X or Y values are calculated by adding the X and Y of the current document to the position of the parent element.

Values obtained from operations:

Takes the information from the next image (X or Y).

- **Next Image X Position**
- **Next Image Y Position**

Next Line Y Position

Takes the Y position of the Next Line.

Next Line in Region Y Position

Takes the Y position of the Next Line in Region.

Note

- In region refers to the position and size of the parent element, usually a repeating group.

Current Line Y Position

Takes the Y position of the Current Line.

Current Line in Region Y Position

Takes the Y position of the Current Line in Region.

Adding Name and Description

You can edit PDF rules to add name and descriptions to help you navigate through the structure tree of the document.

[Name]

Specifies a user defined name for a given rule.

Note

- If the name is set to a particular rule, it becomes the representative text displayed in the **[RULES]** view for that rule.

[Description]

Adds a description to the element.

Note

- Make sure to close and reopen the document hierarchy to refresh the rules updates.
- The rule description is not visible in the structure tree of the document.

Adding Alternative Text to Figures or Text Elements

Alternative text is associated with either a non-text element, like a figure, or a text element, like a paragraph, to provide the same essential information as the elements. The screen reader uses the text alternative accessibility requirement to render information on the meaning of the element content.

Alternative Text for Paragraphs

Indicates an additional text used to describe the function of a paragraph.

Alternative Text for Figures

Specifies the content and function of functional images for the screen reader to read the same information as the images to which it is attached.

Alternative Text for Table Data, Column Header, and Row Header

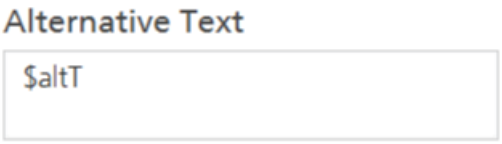
Specifies the content and function of functional images for the screen reader to read the same information as the images to which it is attached.

To add alternative text to a figure, a paragraph, a table data, column header, or row header:

1. On the left side of the screen, go to **[RULES]** and select the matched figure, paragraph rule, table data, column header, or row header from the document hierarchy.
2. Go to the **[PROPERTIES]** panel on the right side of the screen.
3. In the **[Alternative Text]** field, enter descriptive alternative text for the image or the paragraph.

Note

The **[Alternative Text]** field also lets you set up a variable value. To set up a variable value, make sure you **[Set Variable]** in **[RULES]**. Then manually add the variable name in the **[Alternative Text]** section of the element:



For more information see: Setting Variables, p. 47.

4. To use the metadata text as alternative text for a figure, select the figure in the **[RULES]** panel on the left and select the **[Use metadata as alternative text]** check box.

4

Copying, Cutting, and Pasting Rules

You can copy, cut, and paste document element rules in the **[RULES]** and **[MACROS]** view.

To copy or cut document element rules:

1. On the left side of the screen, in the **[RULES]** or **[MACROS]** view, select the rules that you want to copy or cut.
2. Right-click the selection and select **Copy** or **Cut**:
3. Right-click the region and select **Paste**:
4. Choose between the options to paste **Before**, **After** or **Into** the selected rule.

Note

- The name of a copied rule is `Copy of` *`initial_rule_name`*.
- The rule names of cut elements are not changed.
- Use Cut if you want to move the copied rule.
- Use Copy if you want to paste the selected rule multiple times.
- When pasting, the rule page is set to the current PDF page.

Deleting Rules

You can delete rules from the workspace area.

To delete a rule:

1. Select the rule to delete from the **[RULES]** or **[MACROS]** view, located on the left side of the screen.
2. In the menu bar, click **[Edit]**.
3. On the **[Objects]** section, click , the delete button.

Note

- You can also select the matched rule from the workspace view and click , the delete button.
- You can also delete rules in the macro view panel when editing macro definitions.

Rules can be deleted at any time. However, you can delete one rule at a time.

Deleting a header rule removes its associated element rules from the logical structure of the tagged PDF document.

To update the **[Validate PDF]** window information after removing a rule from the structure hierarchy, click , the **[Refresh]** button.

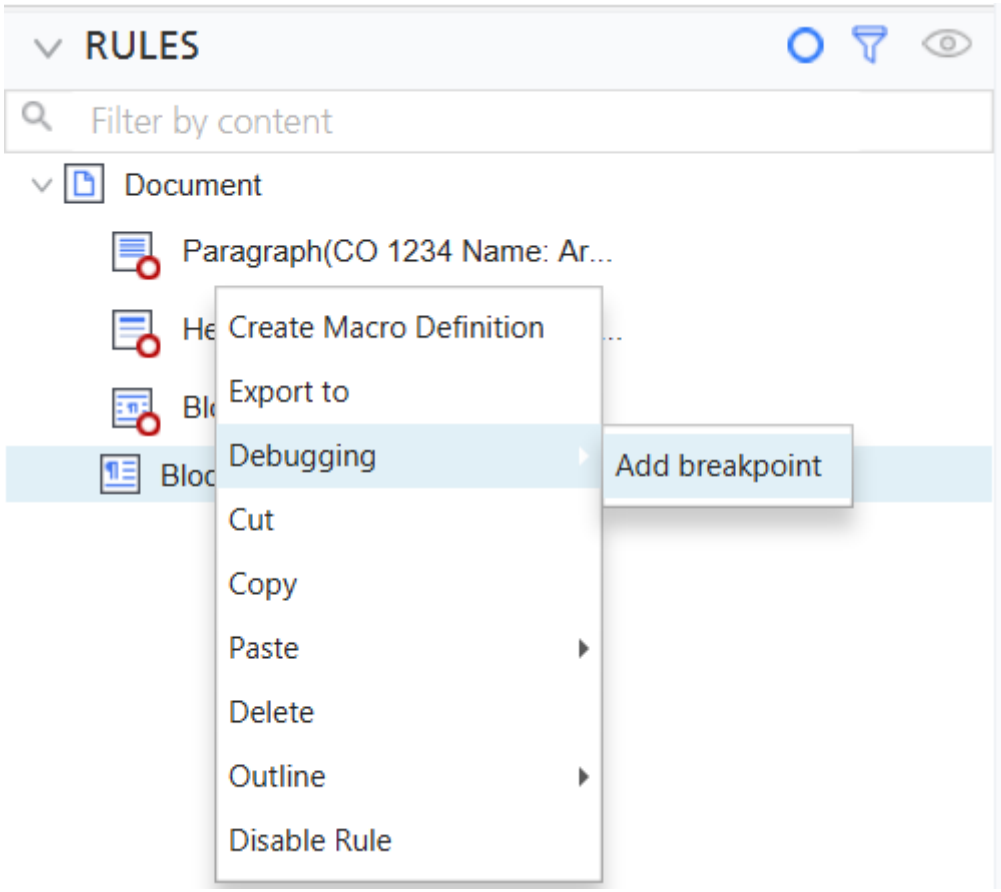
To undo a delete action, click , the **[Undo]** button.

Adding Breakpoints

RICOH Accessibility Designer allows you to customize the breakpoints for your rules so that the validation is temporarily stopped at that specific point. The breakpoints are used in the debugging process to identify the elements that are not matched correctly.

To add breakpoints:

1. Go to **[RULES]** or **[MACROS]** view, located on the left side of the screen.
2. Select a rule and from the right-click menu select **Debugging** → **Add breakpoint**.



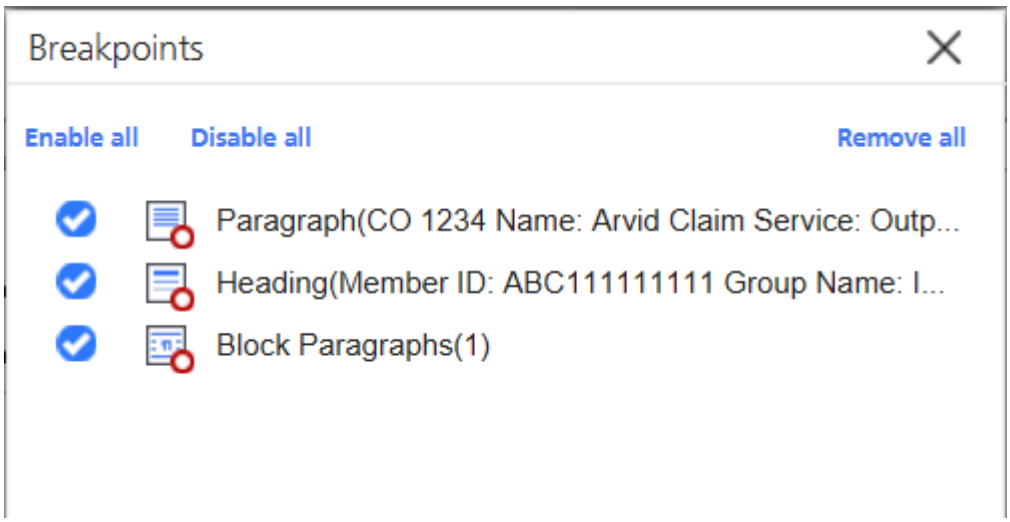
A red circle will be attached next to the property where you added the breakpoints.

Note

- You can also add breakpoints to rules in the macro view panel when editing macro definitions.

You can also verify your list of breakpoints by clicking the breakpoints icon, , located next to **[RULES]**.

A breakpoints panel is displayed and you can see all the breakpoints that you created. You can perform multiple actions from this panel. You can enable or disable one or more breakpoints or you can remove them.



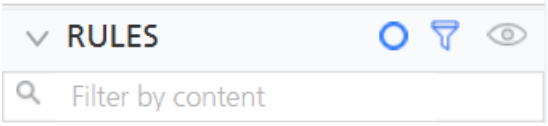
Filtering Rules

RICOH Accessibility Designer helps you organize your rules efficiently and allows you to display your search results depending on your filters.

You can control your search results directly from the **[RULES]** section, using the **Filters** dialog, or using the **[Advanced filtering]** option from the **Filters** dialog. You can use all these rule filtering options simultaneously. When you apply a filter, only rules that meet the specified criteria are displayed.

To filter rules:

1. Go to **[RULES]**, located on the left side of the screen.
2. In the search field, enter the content that you want to find.

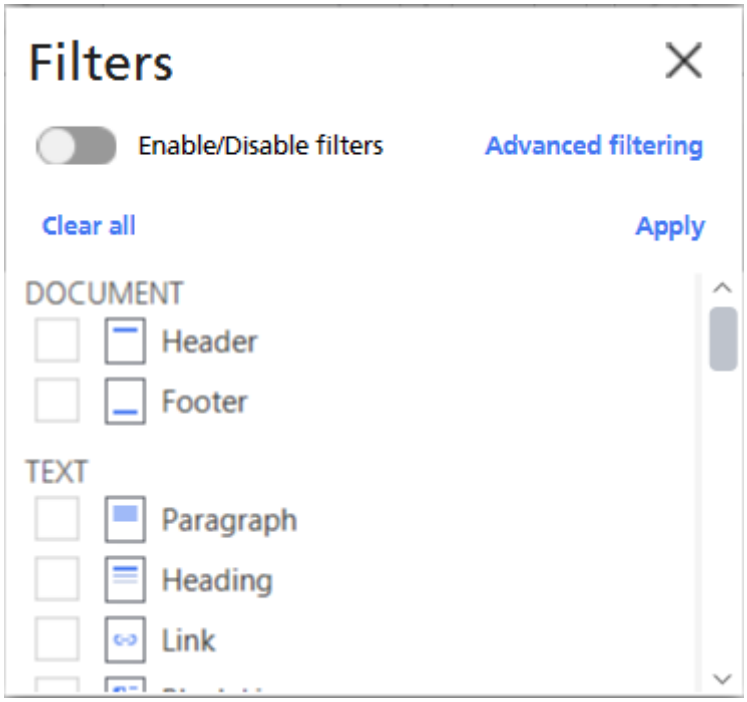


3. The list displays the search results.

   This search is not case sensitive and all possible results are displayed as you start entering the content that you want to find.

   The **[RULES]** list displays all the rules that result from your searches, but if you want to return to the **[RULES]** tree view, click **Clear all**.

4. Click , the **Filters** button.



5. Use the toggle button **[Enable/Disable rule]** to enable or disable advanced filters.
6. Select one or more rule types from the advanced filter dialog and click **Apply**.

   If you do not select any rule type, the entire list of rules is displayed.

Your filtering results is displayed in the **[RULES]** section.

Note

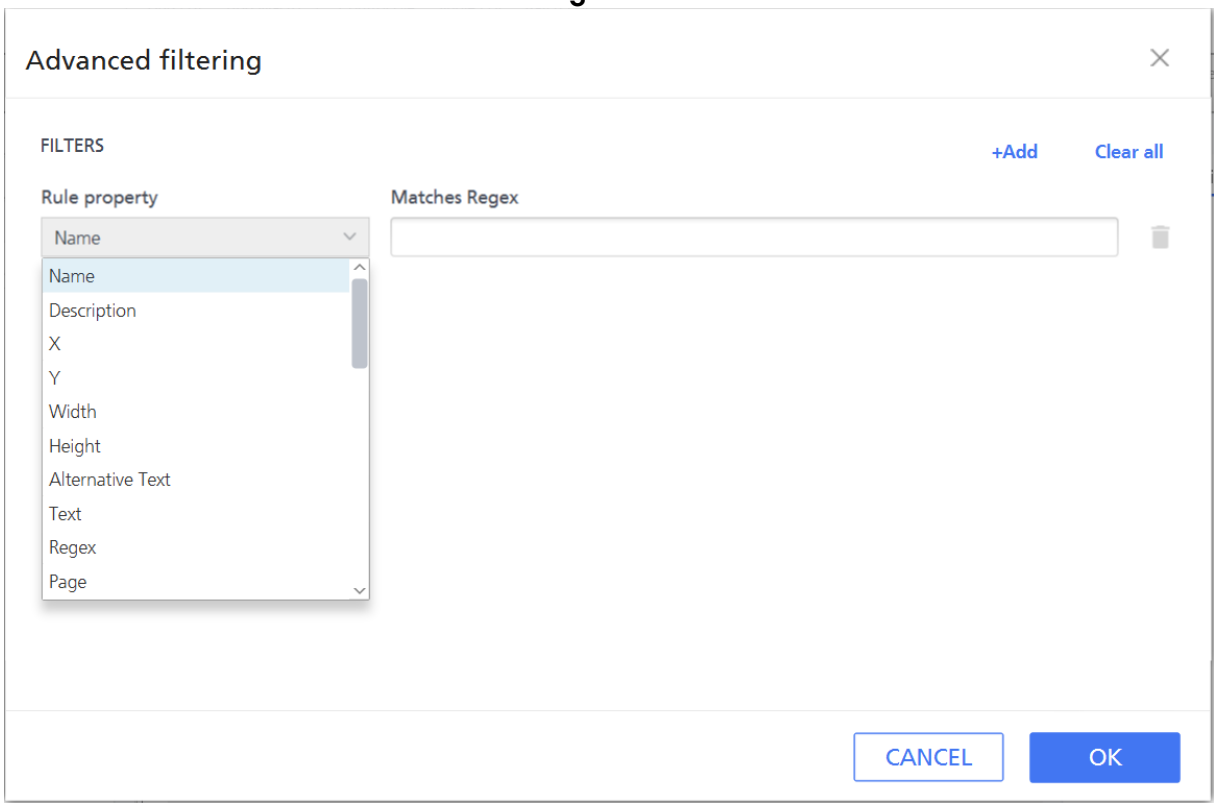
You cannot drag and drop rules from the filtered list of rules.

Configuring Advanced Filtering Criteria

RICOH Accessibility Designer allows you to find one or more rules where the property value matches the regular expression that you enter.

To define advanced filtering criteria:

1. Click **RULES** → **Filters** → **Advanced filtering**.



2. Select a **[Rule property]**, then enter a regular expression in the **[Matches Regex]** field.
3. Click **[+Add]**.
4. Click **[OK]**.

   If you want to delete a filter, click , the **[Delete]** button, next to the newly created filter. To delete all the filters at the same time, click **[Clear all]** in the upper right corner of the panel.
5. Click **[OK]** to save your changes or **[CANCEL]** to continue your advanced filtering configuration.

   Note

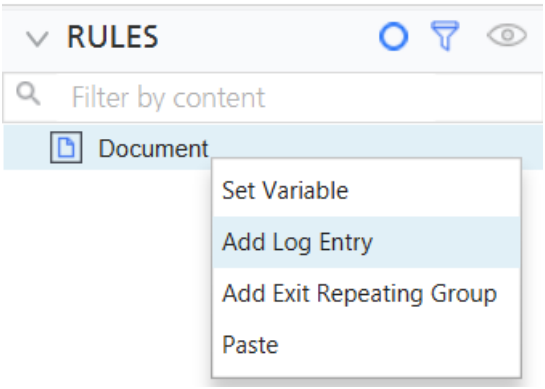
   If the searching algorithm finds a rules that complies with the filtering criteria, it does not continue to search in the substructure of that rule. For example, if a table is matching the filtering conditions, the algorithm does not search in the table rows and the search result will be the table with its substructure.

Adding Log Entries

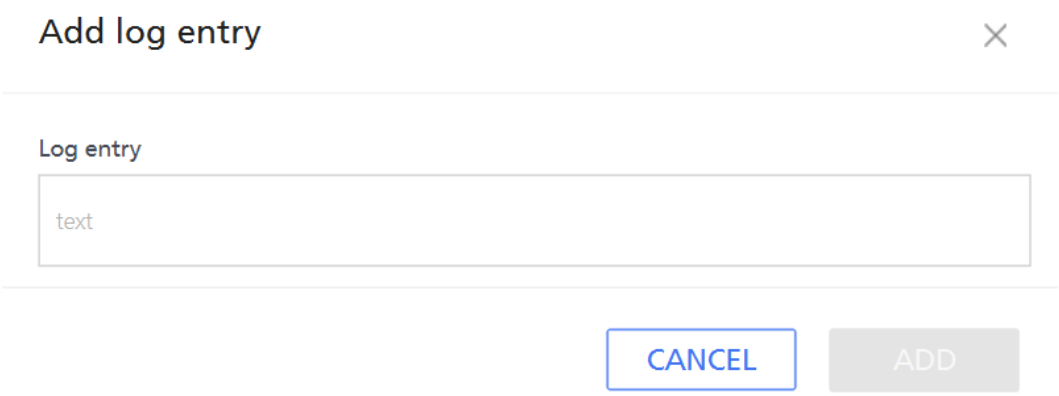
You can set up a log entry to generate enhanced debugging information for your project.

To add a log entry:

1. Go to the **[RULES]** view on the left side of the screen.
2. Right click on a container rule.
3. Select **[Add Log Entry]** from the list:



4. Enter a string as a description for the log entry in the **[Add Log Entry]** dialog:

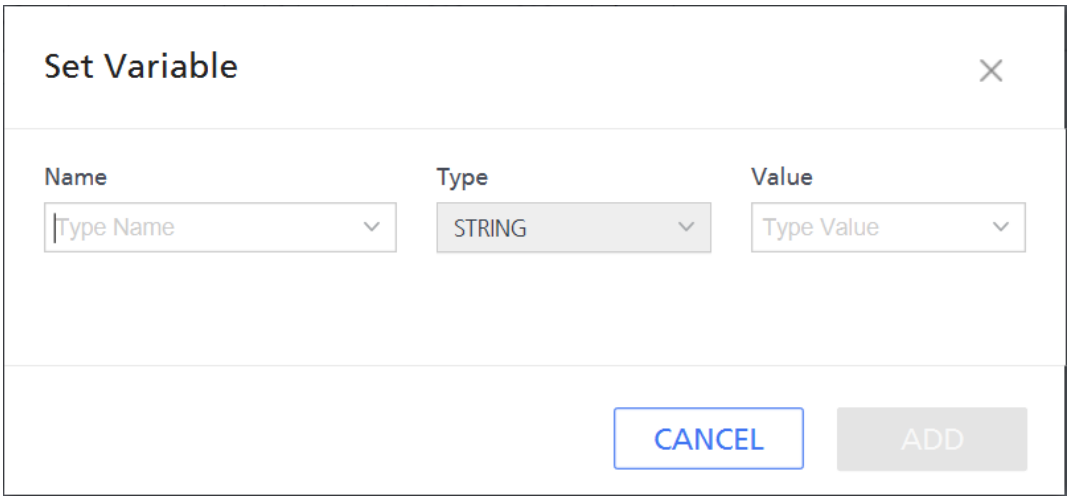


5. Click **[Add]** to add the log entry and close the **[Add Log Entry]** dialog.

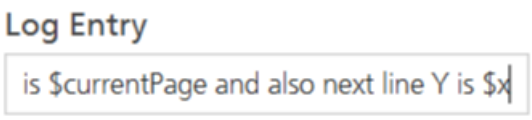
   Once you set up the log entry, the output is displayed in the **LOGGING INFORMATION** from the Validation Window.

6. For complex debugging cases, you can define variables to be added to the log entry:

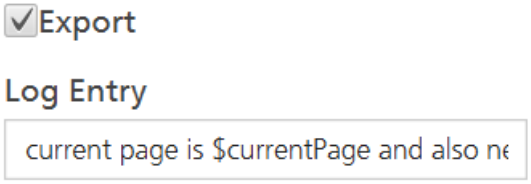
   1. Right click on **[Document]**.
   2. Select **[Set Variable]** to add variable.



7. Add the variable to the log entry by editing the field.



8. To show the logging information in the control file, check the **[Export]** option from **[Rules properties]**.



9. You can also see your logging information in the validation window when you validate your PDF.

The log string can consist of:

- Any custom text that you want.
- Variables values: specified with a "$" character in front (example: **$myVariable**).
- Variables with detailed info: specified with a "%$" string in front (example: **%$myVariable**).
- Special built in variables: current element box with "%box", the current cursor with "%cur" or the entire environment set of variables with "%printenv" (equivalent of <PrintEnv>).
- Any mathematical expression using the **<Expr>...</Expr>** tags .

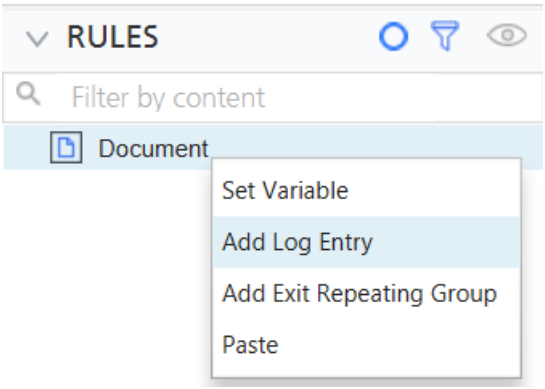
Adding and Exiting a Repeating Group

In a repeating environment where your PDF workflow does not change often, you can set up a repeating structure rule and disable it once you no longer need it. A logical repeating group is used when a set of rules must be executed multiple times based on a dynamic list of items rather than a fixed number of iterations. Instead of repeating the same logic manually, a logical repeating group evaluates a collection and automatically applies the rule sequence to each element in that collection.

The **Repeating Group** defines a logical rule that allows repeating processing of contained rules as long as the position of the cursor is not altered. The cursor not being modified is the only exit criteria from the repeating group unless the **Exit Repeating Group** rule is used in the logic of the rules contained in the **Repeating Group**.

You can exit the **Repeating Group** if the position of the cursor is not modified or if you use the **Exit Repeating Group** option.

1. To create a **Repeating Group** go to the **[RULES]** view on the left side of the screen.
2. Create the rules that apply to your use case and click **Insert** → **Repeating Group**.
   The rule will repeat for all the elements that are displayed under the **Repeating Group** listed in the **[RULES]** section on the left side of the screen as long as you do not change the position of your cursor.
3. To use **[ExitRepeatingGroup]**, select a **Repeating Group** child rule, right-click and choose **[Add Exit Repeating Group]** from the menu.



4. The **Exit Repeating Group** selection applies to the closest parent **Repeating Group**.

Automatic Rule Creation

RICOH Accessibility Designer includes a feature that automatically generates rules from the content of the currently open PDF, reducing the amount of manual rule creation.

To access automatic rule creation, click **[Autodetect rules]** on the menu bar.

Important

Automatic rule creation is still under development. Review its limitations carefully before you rely on the generated rules.

Supported rules

Automatic rule creation currently supports only these rules: **[Paragraph]**, **[Heading]**, **[Block Paragraphs]**, **[Figure]** (raster and vectorial), and **[Table]** with its child rules **[Table Row]**, **[Table Data]**, **[Column Header]**, and **[Row Header]**. Other rules are not yet supported.

Rule organization

All generated rules for a page are placed in a **[Condition]** rule named **Page** followed by the page number, for example **Page 3**. Every page condition rule is placed inside a **[Region]** rule named **[Autodetect]** followed by a sequential count, for example **[Autodetect 1]**.

Reading order

Rules on a page are sorted top to bottom by Y position. Rules that fall on the same line, meaning they have close Y positions, are then sorted left to right by X position. This order might not match the intended reading order. Verify the reading order and reorder rules if needed.

Position and size values

Every generated rule has **[Export As]** set to **[Fixed]** for X, Y, width, and height. The root **[Region]** rule has these values set to **[Absent]**. As a result, if a page contains variable-length content, for example paragraphs or tables, the rules that follow that content might be positioned incorrectly on other documents. Adjust these positions manually.

Images

- Vectorial lines, based on maximum X/Y size, do not generate rules.

- Raster images with overlapping centers are merged into a single **[Figure]** rule.
- Intersecting raster images are merged into a single **[Figure]** rule when the overlapping area exceeds the configured X/Y tolerance.

Tables

Tables are generated first using the vectorial algorithm, based on line intersections, and then using the table-text detection algorithm. Depending on the drawing style, some tables might not be recognized correctly.

Table-text detection requires every cell in the table to contain text. Empty cells prevent recognition, and in some cases non-table text might be misidentified as a table.

A table is generated only when both the row count and column count are 2 or greater. The first row becomes **[Column Header]** cells. The remaining rows become **[Table Data]** cells.

Table-text detection identifies consecutive rows whose cell centers are aligned on the Y axis, within a configured tolerance.

Headings and alternative text

Only bold text chunks are detected as **[Heading]** rules. The feature does not set a heading level. Correct heading levels manually.

The feature does not generate alternative text for any rule. Make sure you add alternative text to figures, including logos or text-only images, since the feature cannot recognize text or meaning within an image.

Text detection

Text items on a page are merged into text chunks by proximity and font-size tolerance. These chunks are used for **[Paragraph]**, **[Heading]**, **[Table Data]**, and **[Block Paragraphs]** rules.

Processing scope and behavior

- Detection priority: tables using vectorial lines, tables using tabular text, **[Block Paragraphs]**, **[Paragraph]** and **[Heading]**, raster images, vectorial images.
- Pages with no text, image, or vectorial content do not get a generated **[Condition]** rule.
- Each page is processed independently. The feature does not reuse structures detected on other pages.
- The feature processes only the currently open PDF.
- Running automatic rule creation regenerates rules for the entire document each time. It does not account for existing rules or previously matched items. Delete rules from a previous run if you no longer need them.
- Rotated text, rotated content, or a rotated page is not supported.

Keyboard shortcut

The **[Autodetect rules]** option has no keyboard shortcut and cannot be configured in the application settings.

5. Configuring

- **Styling**
- **Keyboard Shortcut Keys**

This section explains how to configure your application, such as setting styles and creating or customizing new themes.

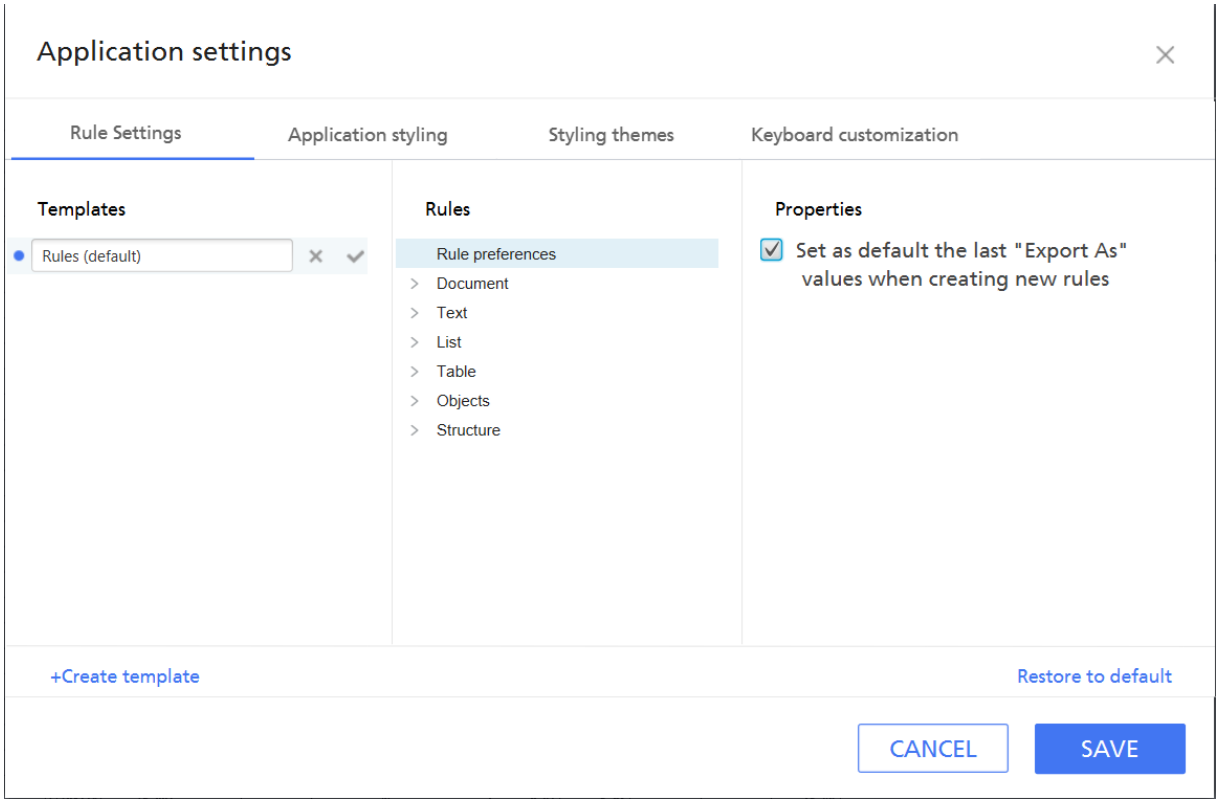
Styling

Customizing rule settings

Ricoh Accessibility Designer lets you customize your rules and create rule templates for better management of your data. You can define the default properties of rules when they are created and inserted into the project in the **[Rule Settings]** section.

To customize your rules and create rule templates:

1. 1. Click the **[Edit]** tab from the Menu bar.
2. Go to **[Application settings]**.



3. Under the **[Rule Settings]** tab, you can create your templates by clicking **+Create template,** . The newly created template is displayed in the **[Templates]** column.
4. To edit an existing template, select the template and click . You can rename templates and customize rule properties from the corresponding tables, then click and **[SAVE]**.

5. To ease your user experience, select a template from **[Templates]**, click  and enable the **[Set as default the last "Export As" values when creating new rules]** property as a rule preference. Each newly created rule will have the **Export As** values for **X**, **Y**, **Width**, **Height** copied from the most recent rule created with this setting enabled.

   To revert to initial rule settings for a template, select the template and click **[Restore to default]** and **[SAVE]**. All the rule properties are set to the default values.

6. To enable a template, right-click the template and select **[Apply]** from the menu.

    appears in front of your template. This means that your template is active. You cannot use several templates simultaneously. When you create a new rule, it will be attributed with the properties from the applied template.

7. To duplicate or delete a template, right-click the template and select **[Duplicate]** or **[Delete]** from the menu, then click **[SAVE]**.

   All your templates are saved in `C:\ProgramData\Rad\rules` as XML files. For example: `Rules (default).xml`.

   To see the active template, go to `rules_config.xml` in `C:\ProgramData\Rad`.

   Note

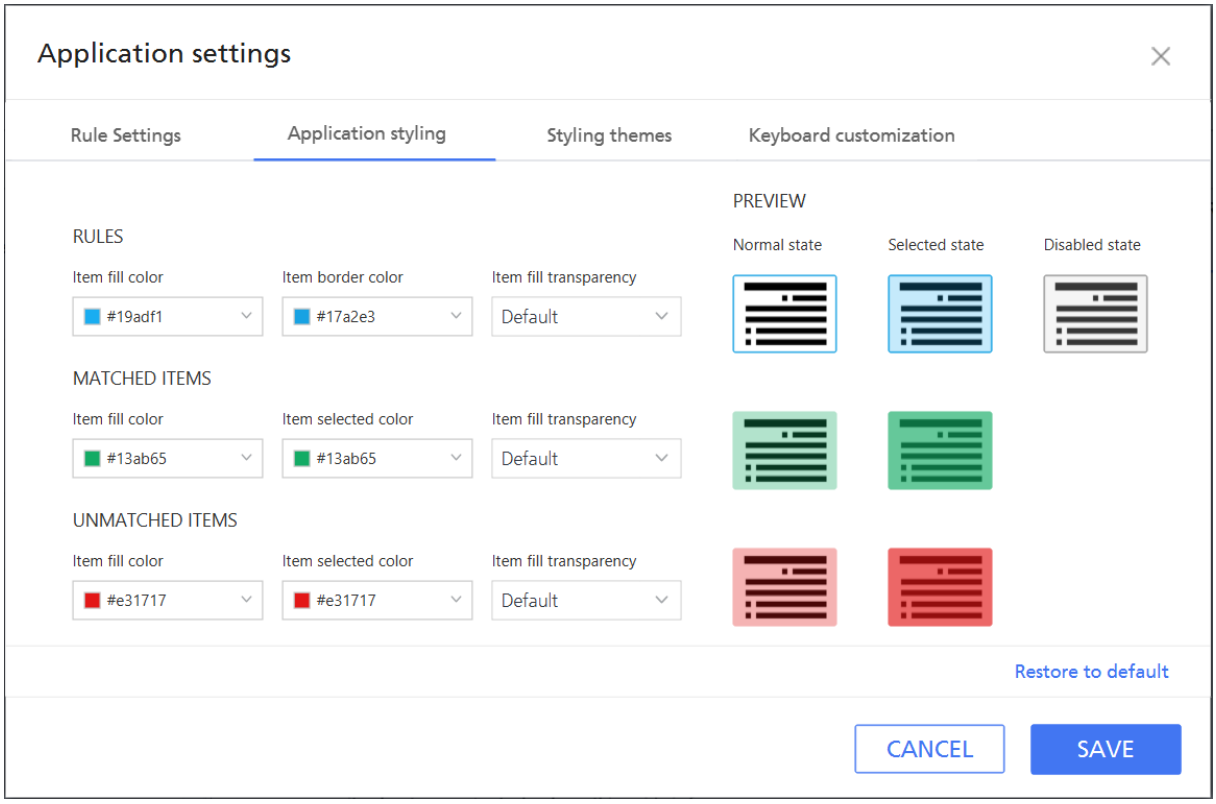
   When you create a new rule, the default values for x,y,width height are overwritten in rule settings. When you create a table with table builder, the rule properties x,y,width, height and export as: x,y,width height from the children rules are overwritten by the algorithm that defines the table.

Creating Styles

You can apply different styles to your rules and items. Use the existing themes or create your own customized theme. A customized theme is used as a default styling for all the rules.

To configure the styling settings:

1. 1. Click the **[Edit]** tab from the Menu bar.
2. Go to **Application settings**.



3. Under the **Application styling** tab, you can customize the item fill color, border/selected color and transparency for the rules, matched and unmatched items.

   Once you save your changes and apply the theme, the changes are visible in your document. For example, the image below shows the customized color for the background.

   Note

   This is a general customization for all the rules. If you wish to customize each rule separately, follow the steps from the **Styling themes** section below.

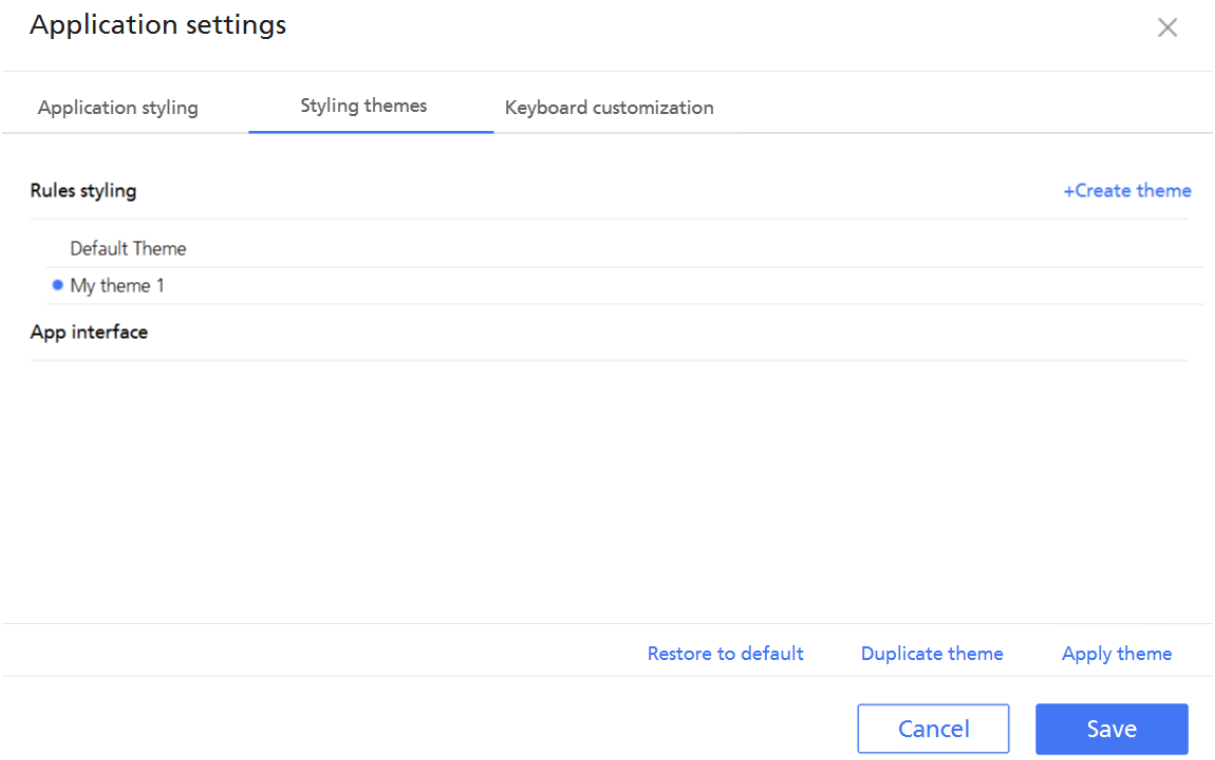
   You can return to the default settings by clicking **Restore to default** → **Save**.

Creating or Editing Themes

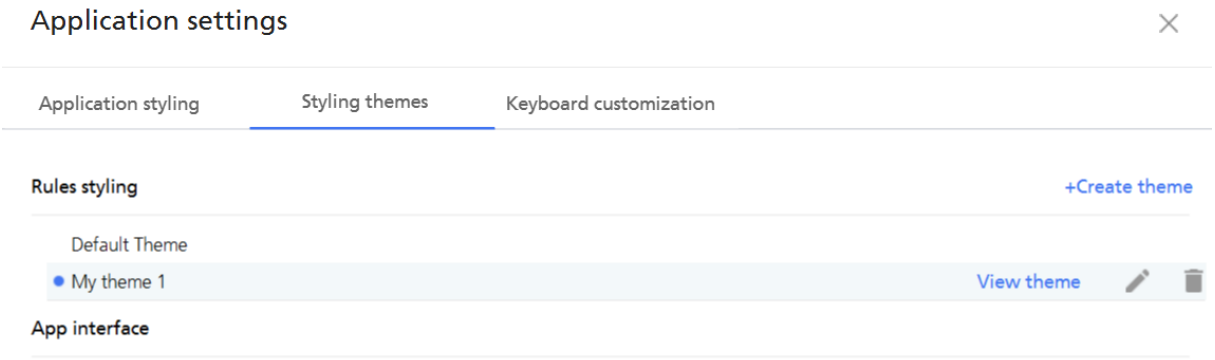
You can configure each rule individually and select the style of their graphical representation on the user interface. You can define how each rule behaves in the graphical view mode.

To customize your rules:

1. Go to the Menu bar and click the **[Edit]** tab.
2. Go to **[Application Settings]** and then click the **Styling themes** tab.

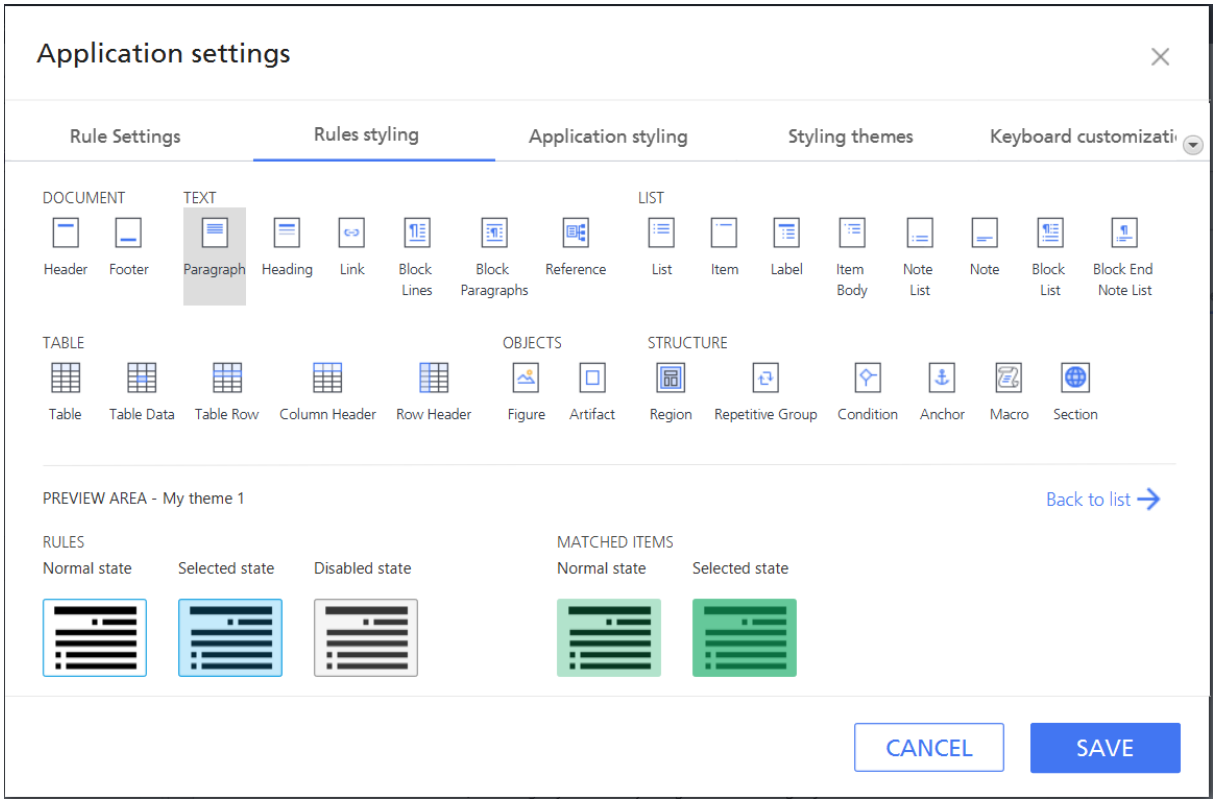


3. Click **Create theme** to create a new theme.
4. If you already have an existing theme, click , the **[Edit]**icon, to customize it.



5. To see the rules, go to **Rules styling** tab.
6. Right-click each rule to customize a rule, such as fill color, border color, or fill transparency. The rule you are editing will be highlighted in order to better view your selection.

   In the lower left corner, you can see the styling preview for each status of the rule, once you complete the customization.



7. Click **Save**.
8. From the **Styling theme** section, select the theme and click **Apply theme**.

   The theme in use is marked with a blue dot. The changes are applied to the current document.

   Note

   You can take further actions within the **Styling theme** section. For example you can delete a theme, restore the theme to the default one, or duplicate a theme.

Keyboard Shortcut Keys

You can use these keyboard shortcut keys to perform various operations:

File tab:

Description	Shortcut keys
[New]	Ctrl + N
[Open]	Ctrl + O
[Save]	Ctrl + S
[Save as]	Ctrl + Alt + S
[Close]	Ctrl + W
[Add PDF]	Ctrl + Alt + P
[Add folder]	Ctrl + Alt + Shift + P

Description	Shortcut keys
[Add Macro]	Ctrl + Alt + M
[Export control file]	Ctrl + E
[Export single PDF]	Ctrl + Shift + E
[Export batch PDF]	Ctrl + Shift + B

Edit Tab:

Description	Shortcut keys
[Undo]	Ctrl + Z
[Redo]	Ctrl + Y
[Delete]	Del

Insert Tab:

Description	Shortcut keys
[Add Header]	H
[Add Footer]	F
[Add Paragraph]	P
[Add Reference]	Ctrl + Shift + R
[Add Heading]	;
[Add Link]	L
[Add Block End Note List]	Ctrl + Alt + N
[Add Block List]	Ctrl + Alt + B
[Add BlockLines]	B
[Add BlockParagraphs]	[
[Add Figure]	]
[Add Artifact]	A
[Add Region]	R
[Add RepeatingGroup]	G
[Add Condition]	C
[Add Anchor]	W
[Add Macro rule]	M
[Add Set Variable (no outline)]	S
[Add List]	Q

Description	Shortcut keys
[Add List]	E
[Add List Item Body]	Y
[Add Label]	U
[Add List Item group]	I
[Add Note List]	O
[Add Note]	N
[Add standard Table]	T
[Add manual Table]	K
[Add Table Data]	D
[Add Table Row]	J
[Add Column Header]	Z
[Add Row Header]	X

Navigation Toolbar:

Description	Shortcut keys
[Show/Hide ruler]	Ctrl + R
[Show/Hide floating pane]	Ctrl + F
[Zoom in]	Ctrl + Numpad +
[Zoom out]	Ctrl + Numpad -
[Fit width]	Alt + W
[Fit page]	Alt + Shift + W
[Next page]	Ctrl + Right Arrow
[Previous page]	Ctrl + Left Arrow
[Validate single PDF]	F5
[Validate multi PDF]	F6

Application:

Description	Shortcut keys
[Help]	F1
[About]	Ctrl + A
[Minimize]	Ctrl + Shift + Numpad +

Description	Shortcut keys
[Maximize]	`Ctrl + Shift + Numpad -`
[Close]	Shift + ESC

Rules View:

Description	Shortcut keys
[Add Breakpoint]	Ctrl + F9
[Add Set Variable (outline)]	S
[Clear All Filter]	Alt + Shift + F
[Copy]	Ctrl + C
[Cut]	Ctrl + X
[Paste]	Ctrl + V
[Paste Rule After]	Ctrl + Alt + V
[Paste Rule Before]	Ctrl + Alt + Shift + V
[Rename variable]	Alt + Shift + R
[Enable/Disable rule]	Alt + E
[Show/Hide rule]	Alt + O
[Export to]	Ctrl + Shift + C
[Create macro]	Ctrl + M
[Edit variable]	Ctrl + Alt + R
[Add Set Variable (outline)]	S
[Edit condition]	Ctrl + Alt + C
[Show/hide rules filter]	Ctrl + Alt + Shift + F
[Show/Hide all rules]	Alt + S
[Toggle Enable Breakpoint]	F9

Macros View:

Description	Shortcut keys
[Export macro]	Ctrl + Alt + E
[Move macro]	Ctrl + Shift + M
[Edit macro]	Ctrl + Shift + Alt + E
[Delete macro definition]	Backspace

Description	Shortcut keys
[Show macro file settings]	Ctrl + Shift + S
[Remove macro file]	Ctrl + Shift + Alt + U

Files View:

Description	Shortcut keys
[Relink PDF]	Ctrl + Alt + F
[Relink PDF from folder]	Ctrl + Shift + F
[Show PDF settings]	Alt + Shift + S
[Remove PDF]	Ctrl + Shift + U

Validation Window:

Description	Shortcut keys
[Show/Hide matched elements]	Ctrl + 1
[Show/Hide unmatched elements]	Ctrl + 2
[Toggle Show Vectorial Images]	Alt + Shift + V

Validation Debugging:

Description	Shortcut keys
[Continue]	Ctrl + F11
[Step into]	F8
[Step over]	Shift+F8
[Stop]	Shift+F11

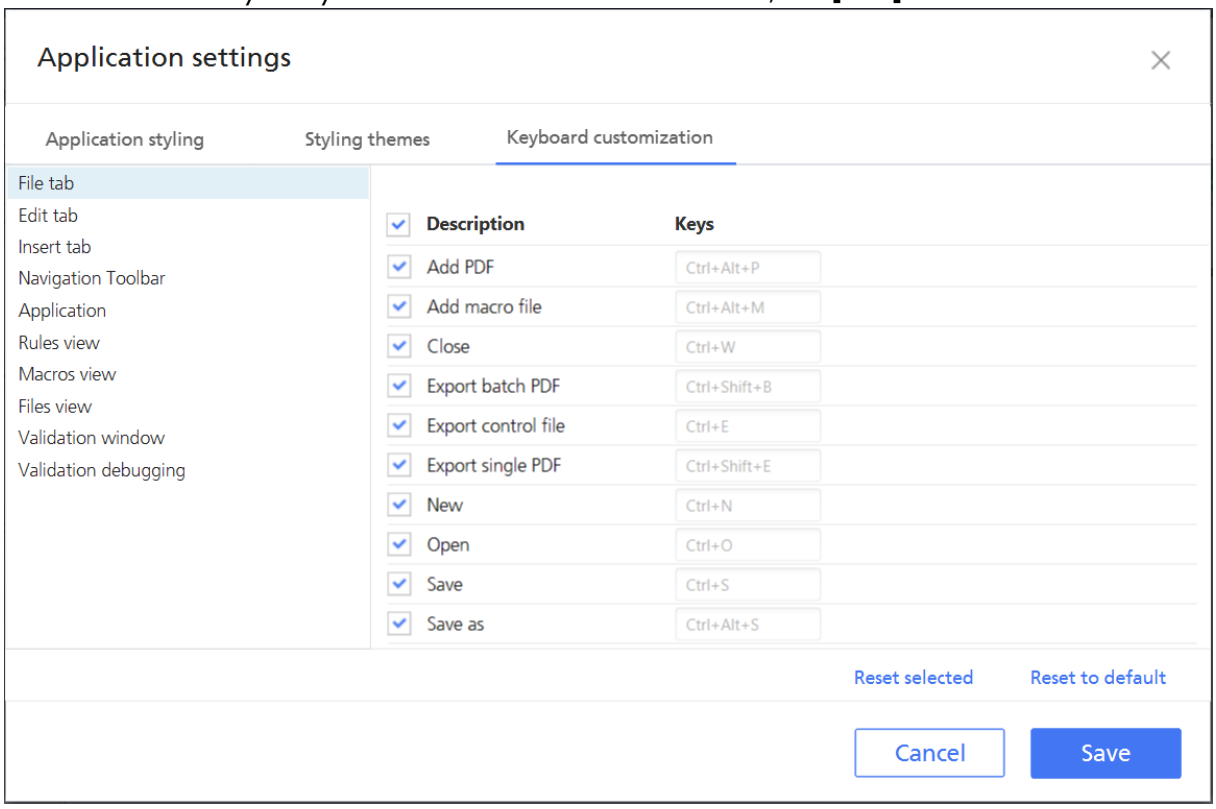
Customizing the Keyboard Shortcut Keys

If you want to use other keyboard shortcut keys than the default shortcuts keys, you can customize the combination of keys for a particular operation. You can also enable or disable one or more keyboard shortcut keys.

To customize a shortcut key:

1. Go to the **[Edit]** tab from the Menu bar.
2. Go to **[Application Settings]** and click **[Keyboard customization]**.
3. Select a tab or a view from the left navigation pane.

4. Select a shortcut key that you want to customize and click , the **[Edit]icon**.



5. Enter a combination of keys for the selected operation.
6. To reset one or more shortcut keys to the default settings, make sure that only the shortcuts you want to reset are checked and click **[Reset selected]**.
7. To reset all shortcut keys to the default settings, click **[Restore to default]**.
8. Click **[Save]**.

6. Working with Macro Files

- **Adding Macro Rules to the Project**
- **Creating Macro Definitions**
- **Validating Macros**

You can import a macro file located on your computer to an existing project. A macro definitions list is an XML file that stores rules to be used multiple times within the same control file or a different control file.

To import a macro file into a project:

1. On the menu bar, go to **[File]**.
2. In the **[Files]** section, click , the **[Add Macro]** icon.
3. In the **[Add Macro]** dialog box, browse for the macro file that you want to add, select it, and click **[Open]**.

or

You can also add macro files by clicking +, located at the top of the **[MACROS]** section, on the right side.

See Macros, p. 20 for more information.

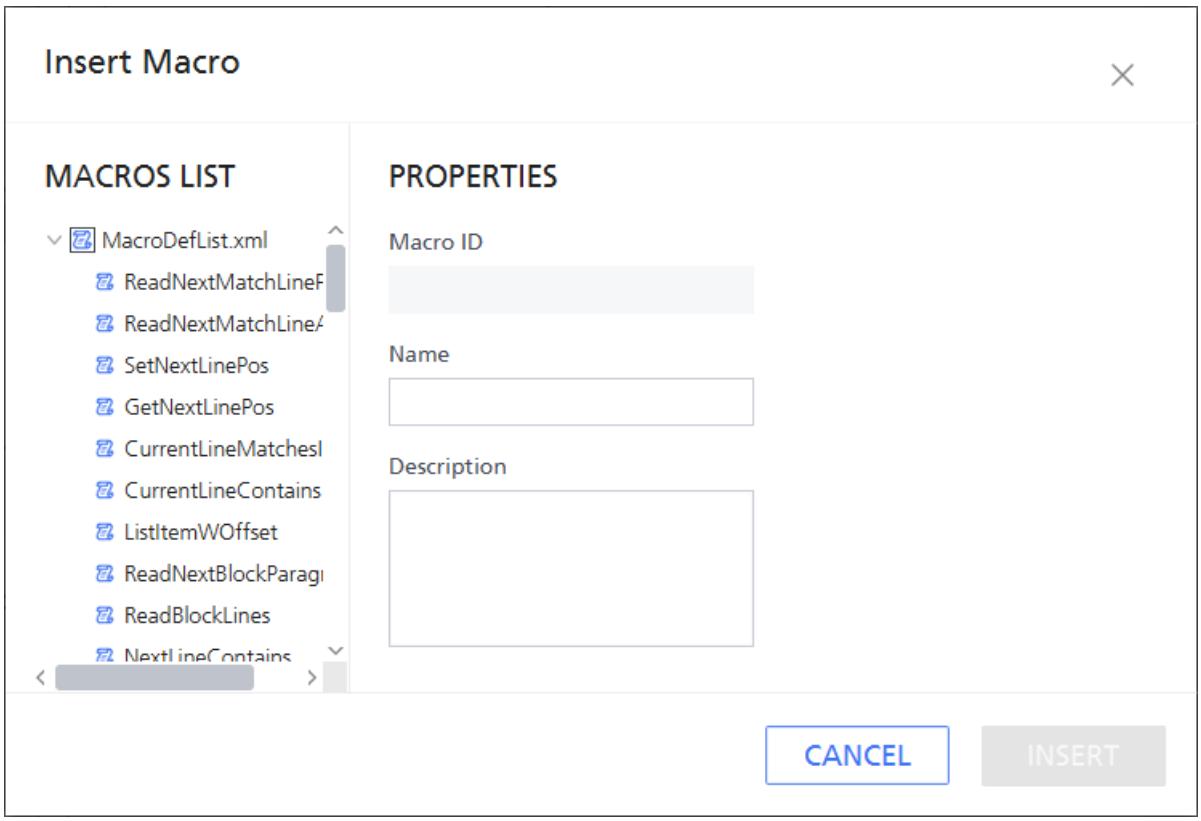
Adding Macro Rules to the Project

To add macro rules to a project:

1. Go to the **[Insert]** tab and select **[Macro]** from the **[Structure]** category to insert macros into the project.
2. Select the content area to define a rectangular or square region.



3. Edit the properties from the **[Insert Macro Rule]** dialog.



The **[MACROS LIST]** from the left side of the dialog box displays the macro definitions list from the imported macro XML, while the **[PROPERTIES]** section of the dialog lets you configure the properties for each macro definition.

To configure a macro definition property:

1. On the left side of the dialog box, in the **[MACROS LIST]** section, browse for the macro definition you want to add and select it.
2. Edit the property for the macro rule.
   The properties on the left side of the **[PROPERTIES]** section, **Macro ID**, **Name**, and **Description**, are available for all macro definitions, while the properties on the right side change, based on the macro definition you select.
   - **Macro ID**: read-only field.

     Note

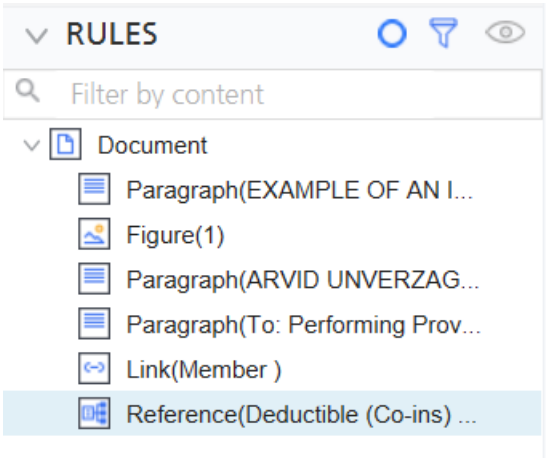
     – **Macro ID** is filled automatically, based on the macro definition you select.
   - **Name**: optional field.
   - **Description**: optional field.

     Note

     – The **Name** and **Description** information is not displayed into the control file.
3. Click **[INSERT]**.

Macro Rules

After you add macro rules to the project, you can access them from the **[RULES]** section.



Note

- To move a macro rule to a new rule location, you can drag and drop the macro rule.
- You can also select multiple rules and then add the macro rule to the selected rules.
- Multiple macro rules can be added under the same rule.
- To move a macro rule under another rule, select the macro rule and drag and drop it to the new location.

Editing Macro Definition Properties

You can edit macro definition properties, once the macro definition was created, by using the **[PROPERTIES]** section on the right side of the screen.

The **[PROPERTIES]** section displays the same customized information as the **[Insert Macro Rule]** dialog.

PROPERTIES

Class Type

Macro Definition

Name

Description

Macro Name

ReadNextMatchLineParagraph

6

Macro Parameters

MatchText

PositionX

ExtentW

Workspace Selection

X

6.23

Y

1.80

Width

1.33

Height

0.68

Read-only fields:

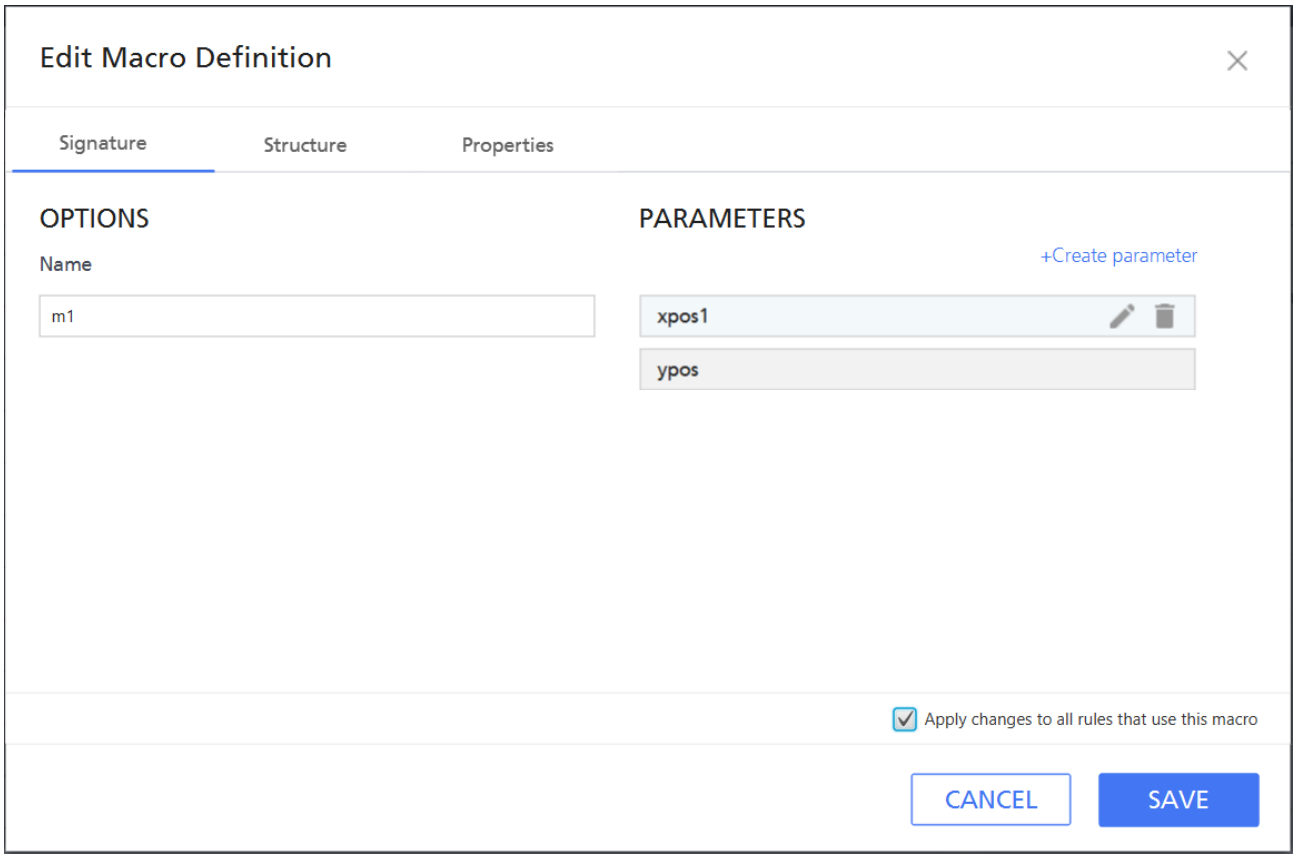
- **Class Type**: sets automatically on **Macro Definition**.
- **Macro Name**: inherits the macro definition name selected on the **[Insert Macro Rule]** dialog.

Note

- Macro properties list may vary depending on the macro definition.

You can also edit macro definition properties by following these steps:

1. On the left side of the dialog box, in the **[MACROS LIST]** section, browse for the macro definition you want to edit.
2. Right-click the macro definition and choose **[Edit]**.
3. If you change one of the parameters in the macro you have the possibility of applying this change to all the rules that use that particular macro by enabling the option **[Apply changes to all rules that use this macro]**.



Creating Macro Definitions

The **[Create Macro Definition]** dialog allows you to manually create macro definitions for specific rules.

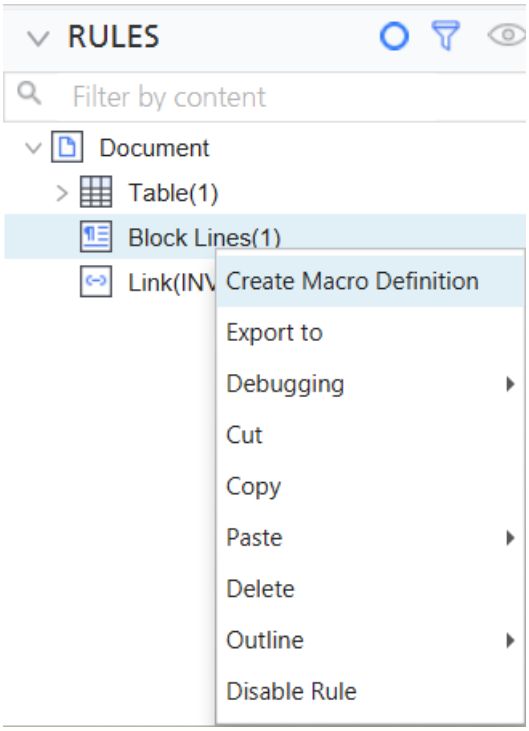
To create macro definitions:

1. Go to the **[RULES]** panel and select the rule you want to apply macro definitions to.

Note

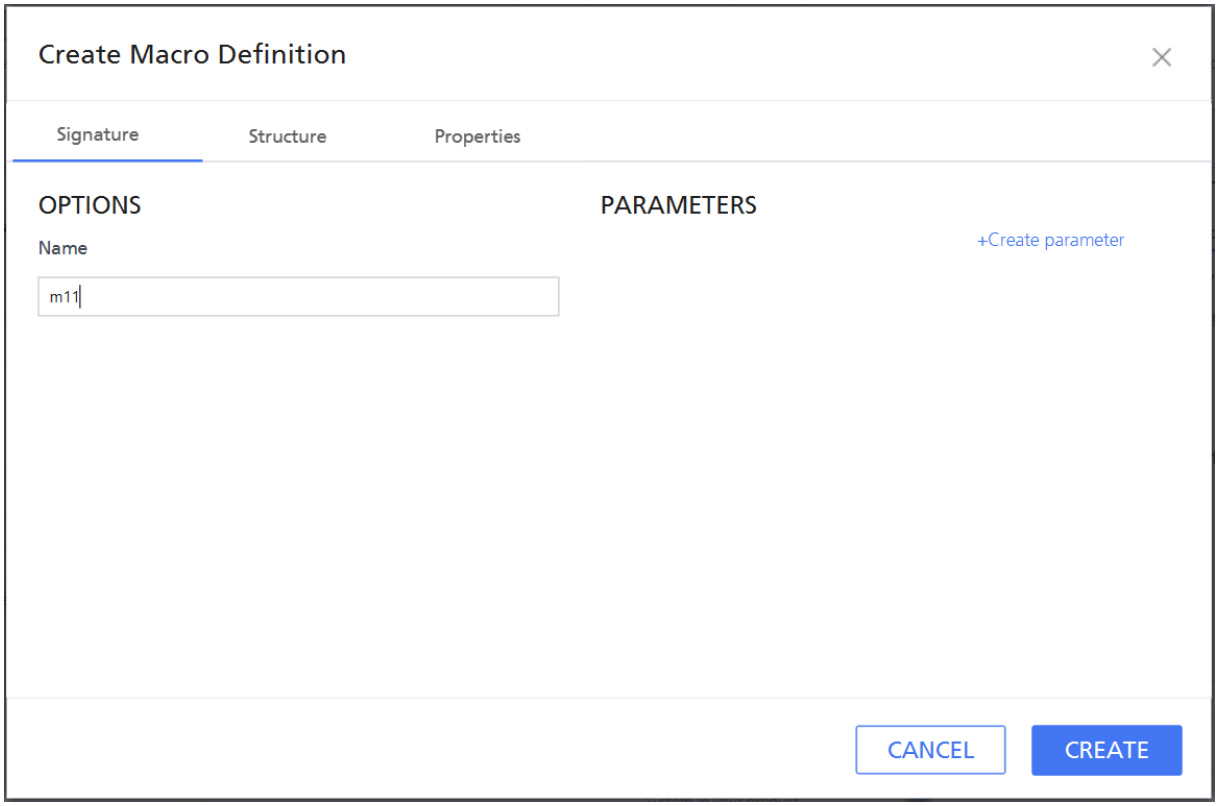
- To select multiple rules, hold the **Ctrl** key and click each rule that you want to select.

2. Right click on the rules and select the option **[Create Macro Definition]** from the list.



3. Edit the **[Create Macro Definition]** dialog.

Signature



In the **[OPTIONS]** section, enter a display name for the macro definition into the **[Name]** field. Enter up to 64 characters.

- If no name is added, you are prompted to add a name before you can create the macro definition.
- If you enter the same name as one of the existing macro definitions, you are prompted to select a different name as the current name is already in use.

Note

  - The name for the macro definition is displayed into the **[Macro Rules]** section, located on the right side of the screen. See Macros, p. 20 for more information.

In the **[PARAMETERS]** section, click **[+Create parameter]** to customize parameter names. Enter up to 64 characters.

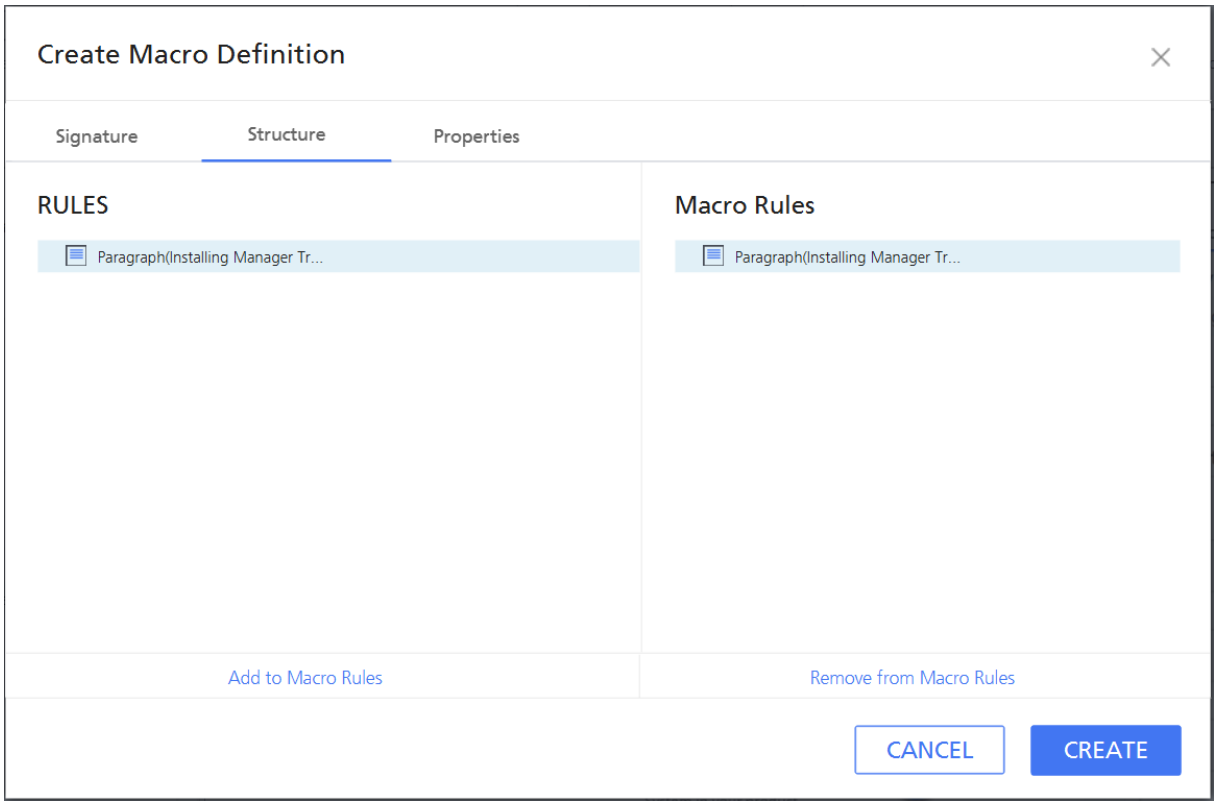
The resulting parameters are displayed in the **[PARAMETERS]** field on the right side of the screen. To edit a parameter, select it and click , then you can save your changes by clicking . To delete your changes, click . Also, you can delete a parameter by selecting it and clicking .

Note

If you rename a parameter, the change will apply to all the macro rules that use that parameter.

If you delete a parameter, it will be deleted from all the macro rules where it was assigned.

Structure



[Add to Macro Rules]: moves a rule from the **[RULES]** section to the **[Macro Rules]** section.

You can also move a rule from the **[RULES]** section to the **[Macro Rules]** section by using the **[Add to Macro Rules]** option from the right-click menu. You can move a rule several times depending on your needs.

[Remove from Macro Rules]: deletes a rule from the **[Macro Rules]** list.

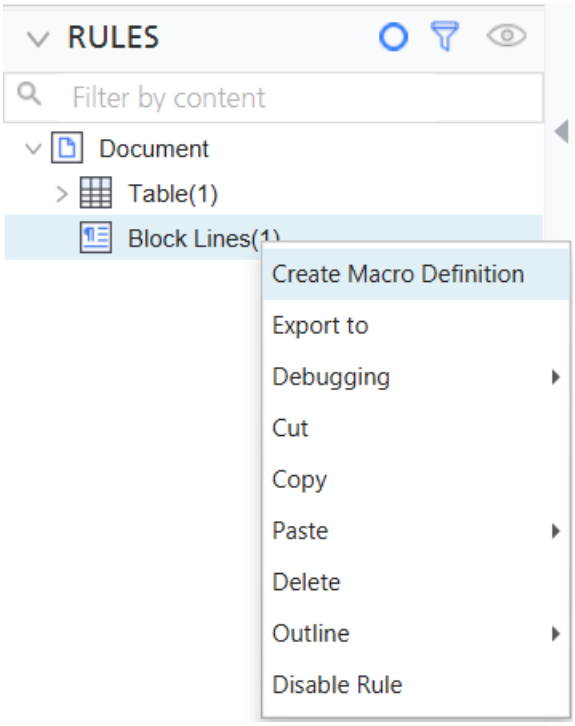
You can also delete a rule from the **[Macro Rules]** section by using the **[Remove from Macro Rules]** option from the right-click menu.

The right-click menu also allows you to enable or disable a rule.

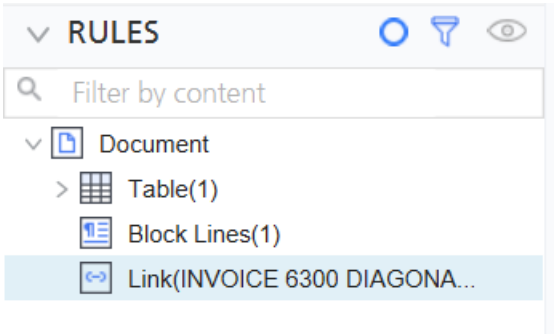
Select the rule for the macro definition from the **[RULES]** section.

- If you select a parent rule to create a macro definition, the parent rule and all the children are automatically moved into the **[RULES]** section.

  Selection from the [RULES] section, located on the left side of the screen

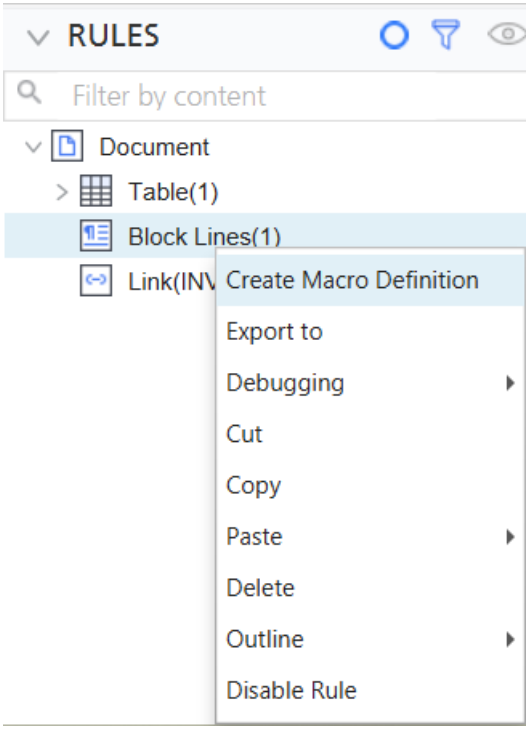


Display on the [RULES] section from [Create Macro Definition] dialog

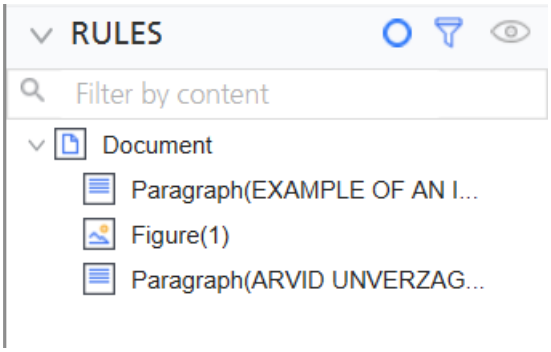


- If you select both parent rule and children, the **[RULES]** section will display the parent rule together with the children hierarchy, and the children selected.

  Selection from the [RULES] section, located on the left side of the screen

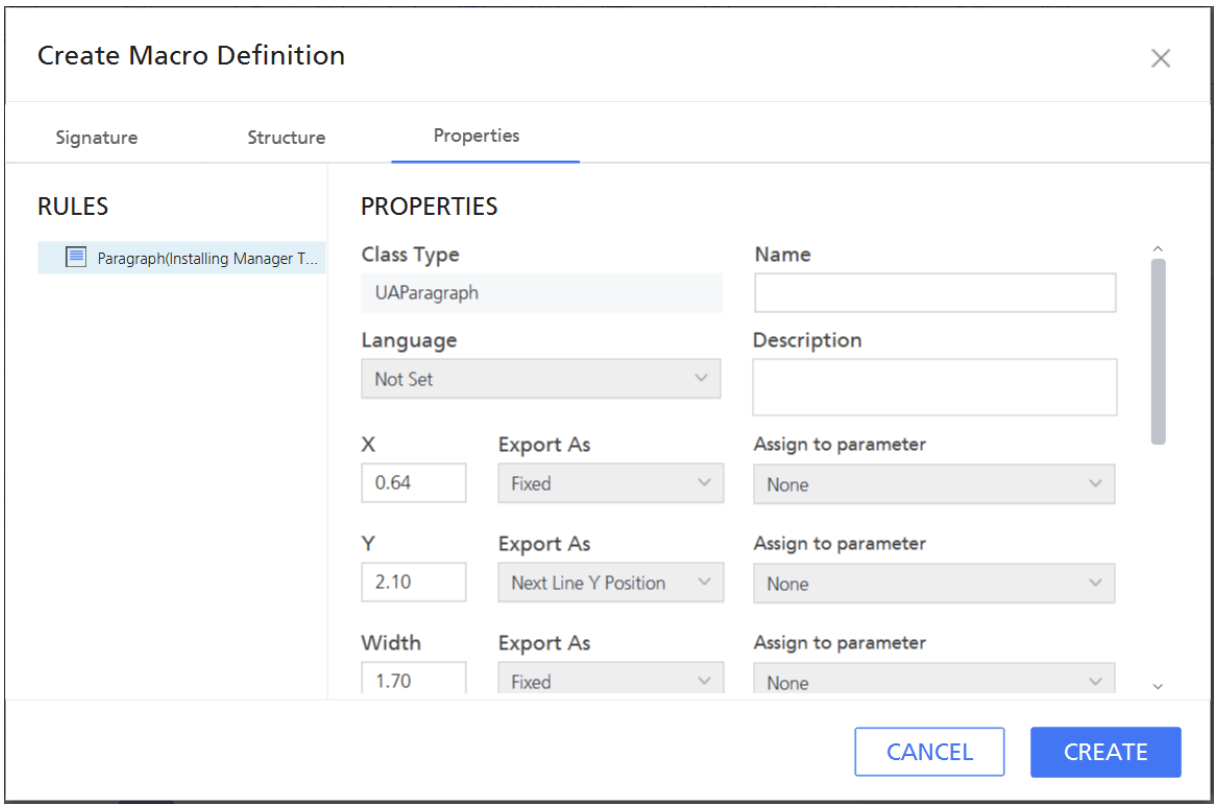


Display on the [RULES] section from [Create Macro Definition] dialog



The selected rule name matches the **[Name]** field from the **[PROPERTIES]** section.

Properties



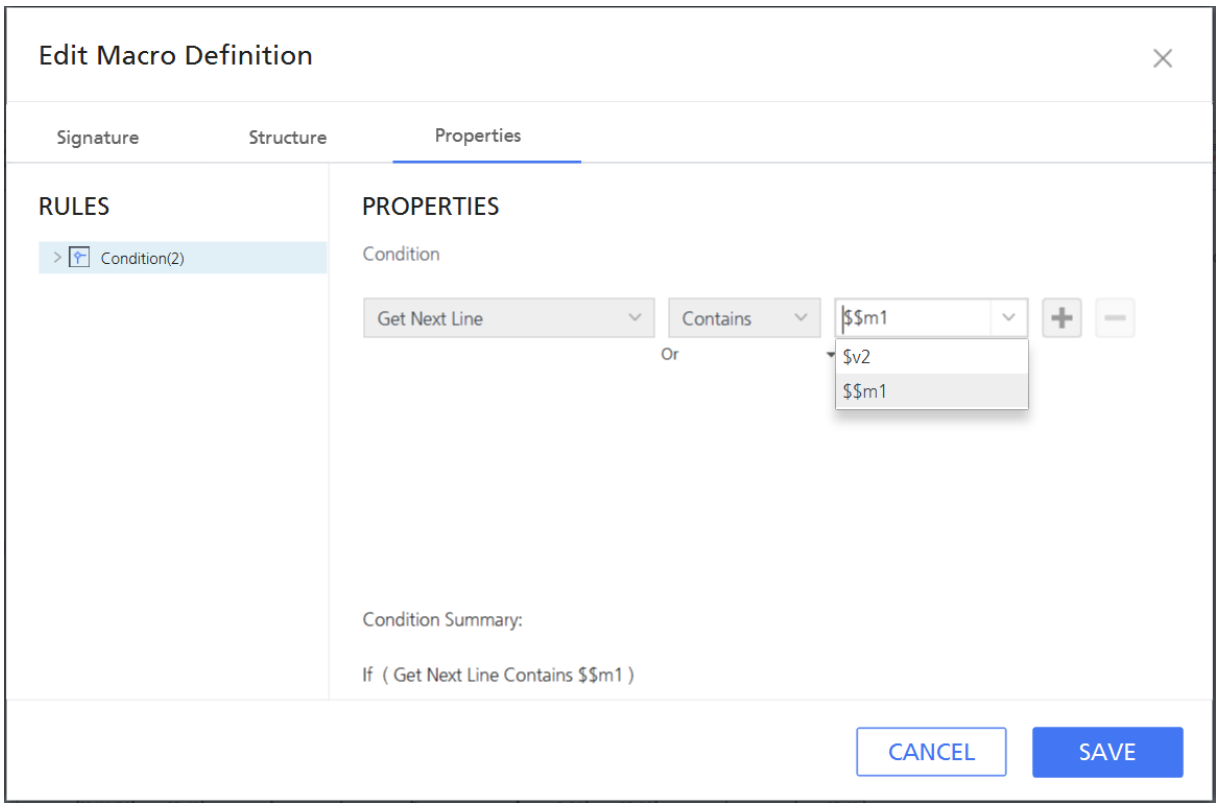
Configure the **[Assign to parameter]** options from the **[PROPERTIES]** section.

Note

- The list of properties may vary depending on the properties of the selected rule.
- The left side properties from the **[PROPERTIES]** section are read only.

To use a macro parameter inside a condition, use $$ followed by the parameter name.

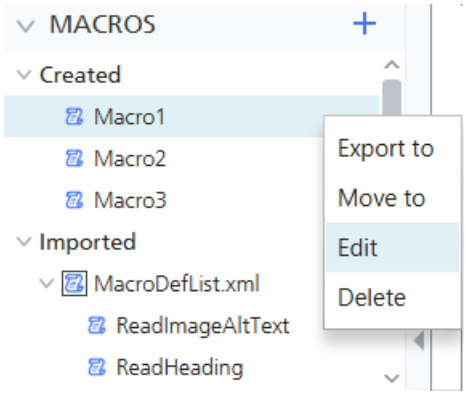
To use a variable inside a condition, use $ followed by the variable name.



To save all changes click **[SAVE]**.

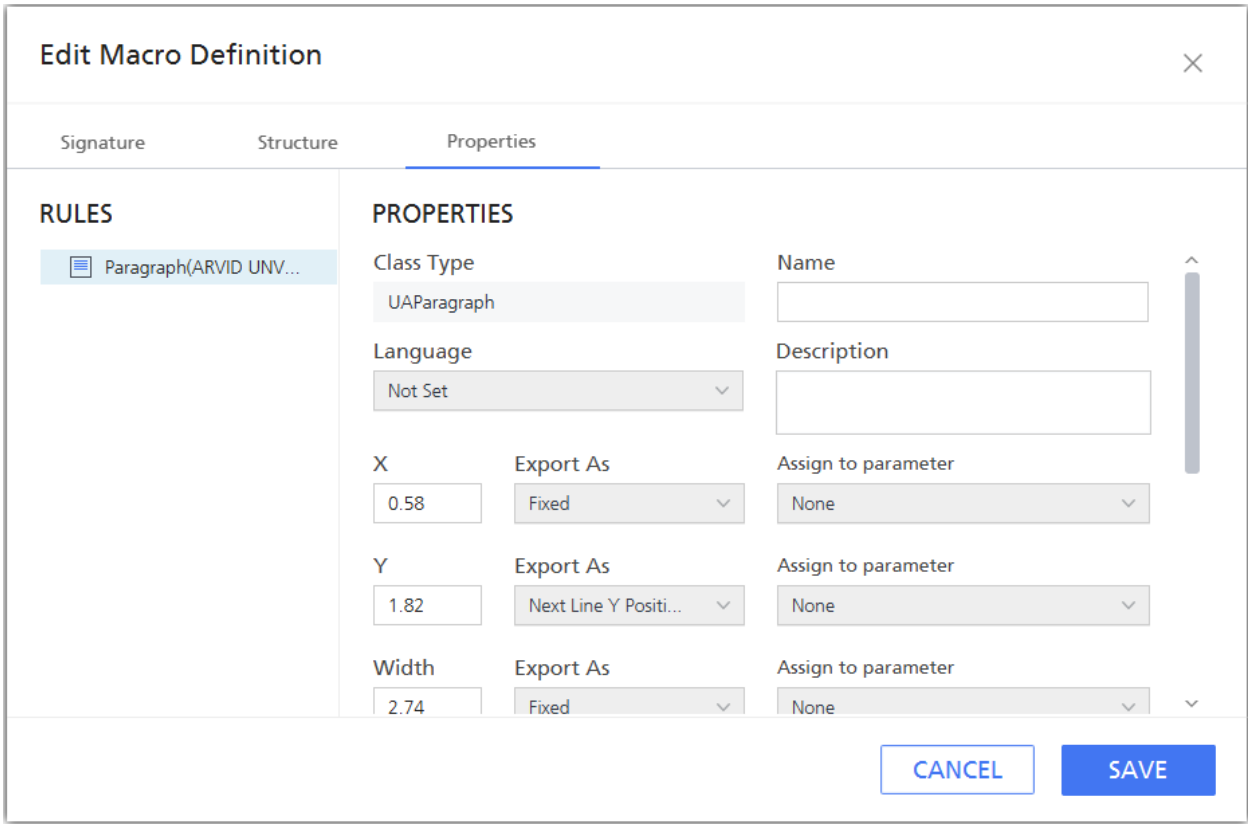
Editing Macro Definitions

You can edit the parameters and properties for macro definitions.



To edit a macro definition:

1. On the **[Created]** section, hover over the macro definition you want to edit.
2. Right-click the macro definition and select **[Edit]** from the menu to edit parameters and properties.

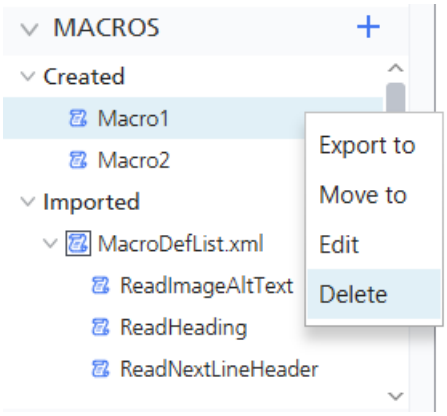


See Creating Macro Definitions, p. 103 for more information on macro definition parameters and properties.

3. Click **[SAVE]**.

Deleting Macro Definitions

You can remove macro definitions from the **[Created]** section.



To delete a macro definition:

1. On the **[Created]** section, hover over the macro definition you want to delete.
2. Right-click the macro definition and select **[Delete]** from the menu.

You see a warning message.

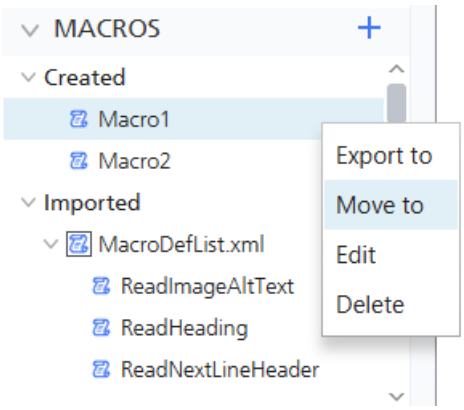
3. Click **[OK]**.
   The selected macro definition is deleted from the **[Created]** section.

Note

- After you remove the macro definition, you can no longer use the deleted macro definition to create new macros.
- All the macro rules created using that macro definition will not function correctly.
  When you delete a macro definition referenced in a macro rule, you are prompted with a warning message when validating the PDF.

Moving Macro Definitions

1. On the **[Created]** section, hover over the macro definition you want to move.
2. Right-click the macro definition and select **Move to**.



Note

- You can select multiple macro definitions prior to saving them.

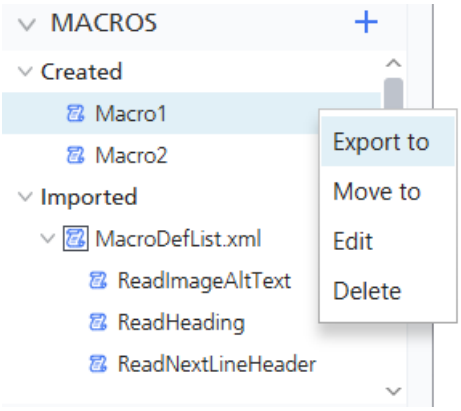
3. In the **Save Macro File** dialog box, browse and select a location from the left pane, and click **Save**.
   The macro definition file is automatically moves under **Imported**, together with all the macro definitions.

Exporting Macro Definitions

Note

- This function is disabled in trial mode. Install a permanent license to enable export functions.

1. On the **[Created]** section, hover over the macro definition you want to export.
2. Right-click the macro definition and select **Export to**.



Note

- You can select multiple macro definitions to be exported within the same macro definitions file.

3. In the **Export Macro File** dialog box, browse and select a location from the left pane, and click **Save**.

Exporting Macro Parameters

Use macro definition parameters as **[Export As]** coordinate values for rules in that macro.

When you create parameters on the **[Signature]** tab of the **[Create Macro Definition]** dialog, those parameters become available in the **[Export As]** dropdown lists on the **Properties** tab. The parameters are displayed with a `$$` prefix (for example, `$$xPos`). This lets you assign dynamic, parameter-driven values to the X, Y, Width, or Height coordinates of rules within the macro definition.

1. Go to the **[RULES]** section and select the rules you want to include in the macro definition.
2. Right-click the selection and select **[Create Macro Definition]**.
   The **[Create Macro Definition]** dialog opens.
3. On the **[Signature]** tab, enter a name for the macro definition in the **Name** field.
4. In the **[PARAMETERS]** section, click **[+Create parameter]** and enter a parameter name for each coordinate value you want to make dynamic (for example, `xPos`, `yPos`).
5. Click the **[Properties]** tab.
6. In the **[RULES]** section of the dialog, select the rule whose coordinates you want to configure.
7. In the **[PROPERTIES]** section, click the **[Export As]** list for the coordinate you want to assign (**[X]**, **[Y]**, **[Width]**, or **[Height]**).
8. Select the macro parameter from the list.

   Parameters created on the **[Signature]** tab appear in the dropdown with a `$$` prefix. For example, a parameter named `xPos` appears as `$$xPos`.
9. Click **[CREATE]**.
   The macro definition is saved. The **[Export As]** values assigned to the rules are visible in the **[PROPERTIES]** panel on the right side of the main interface.

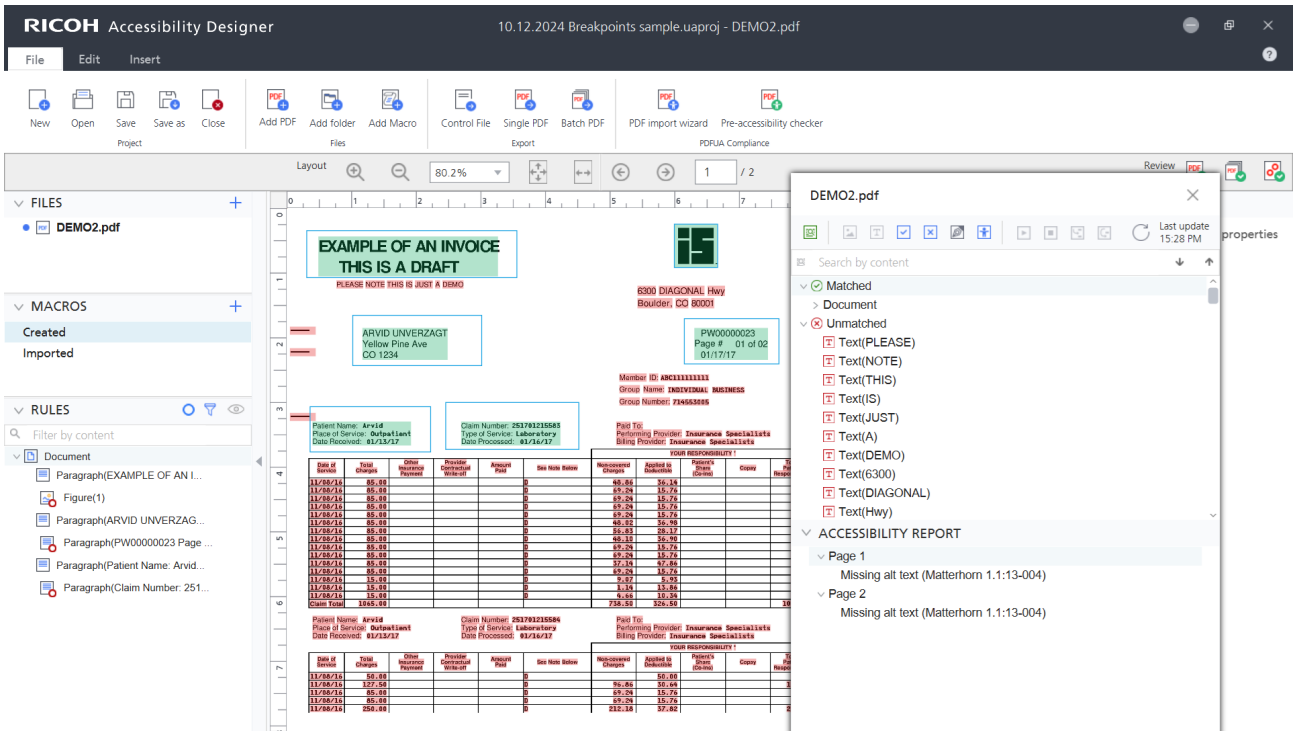
When you export the project as a control file, the rule coordinates use the macro parameter values instead of fixed positions. This allows the same macro definition to be reused with different coordinate values across multiple macro rules.

Note

- You can also select macro parameters from the **[Export As]** list in the **PROPERTIES** panel when a macro rule is selected.

Validating Macros

Macros are not listed into the **[Validate PDF]** window, as the validation checks only for PDF elements. However, the validation displays a name replacement based on the macro name from the **[PROPERTIES]** section.



For more details about the PDF validation, see Validating PDF, p. 121.

7. Tutorials

• Creating a Macro Rule

Creating a Macro Rule

This tutorial provides step-by-step instructions that you can follow to better understand the functions of macros.

Functions used in this tutorial:

- **Create a new project**
- **Add a PDF file**
- **Add folder**
- **Add a macro definitions file**
- **Create a macro rule**
- **Edit the macro rule properties**
- **Delete a macro rule**
- **Validate a macro rule**

1. Create a new project

In this step, you will create the new project you want to use.

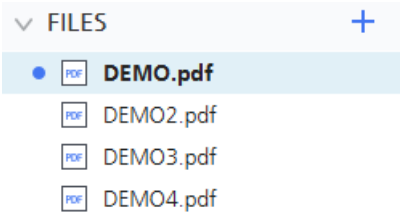
1. Go to the **[File]** tab.
2. To create a new project, select **[New]** from the **[Project]** section. To open an existing project, select **[Open]**.

The default project name generated by the system is Project 1.

2. Add a PDF file or a folder

In this step, you will insert the PDF file or folder into the project you created.

1. Go to the **[File]** tab.
2. Select **[Add PDF]** or **[Add folder]** to add a PDF file or a folder to the project.
3. In the **[Add PDF]** or **[Add PDF folder]** dialog box, browse for the PDF file or folder that you want to add, and then click **[Open]** or **[Select Folder]**.
   The list of PDF files and folders is displayed into the **[FILES]** section, on the left side of the screen.

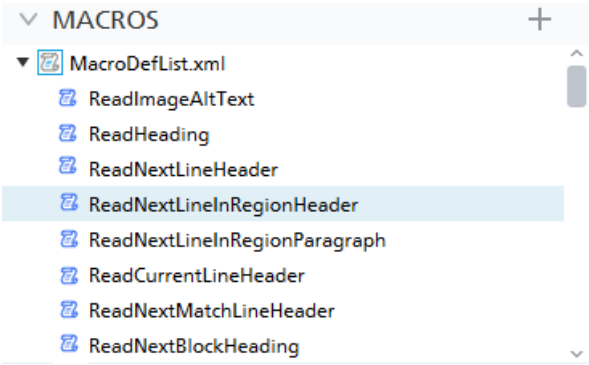


3. Add a macro definitions file

In this step, you will add a macro XML definitions file to the project.

1. Go to the **[File]** tab.

2. Select **[Add Macro]** to add a macro file to the project.
3. In the **[Add Macro]** dialog box, browse for the macro definitions file that you want to add, and then click **[Open]**.
   The structure of the macro definitions file is displayed into the **[MACROS]** section, on the left side of the screen.



4. Create a macro rule

In this step, you will create a macro rule.

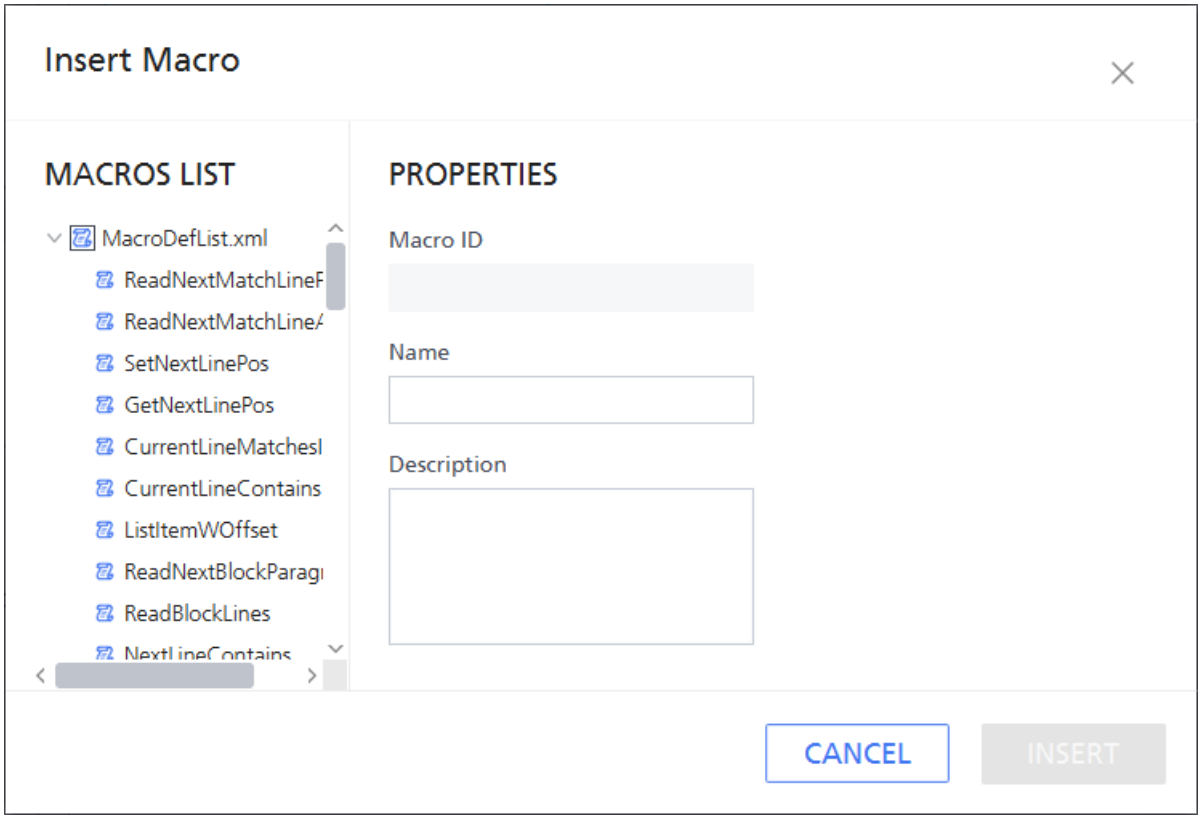
1. Select the content area to define a rectangular or square region.



2. Go to the **[Insert]** tab and select **[Macro]** from the **[Structure]** category to insert macros into the project.
3. In the **[Insert Macro Rule]** dialog box, select the macro definition from the **[MACROS LIST]** on the left side of the dialog box.
4. Configure macro properties for the selected macro definition and click **[INSERT]**.

Note

- The macro definitions list may vary depending on the information included in the macro XML file.



For more information on macro definitions, see the topic Macros, p. 20.

5. Edit macro rule properties

In this step, you will adjust the properties for macros already created.

1. Select the macro rule from the **[RULES]** section on the left side of the screen.
2. Go to the **[PROPERTIES]** section to edit macro properties.

PROPERTIES

Class Type

Macro Definition

Name

Description

Macro Name

ReadNextMatchLineParagraph

Macro Parameters

MatchText

PositionX

ExtentW

Workspace Selection

X

6.23

Y

1.80

Width

1.33

Height

0.68

For more information on macro properties, see Editing Macro Definition Properties, p. 101.

6. Validate a macro rule

In this step, you will validate the entire PDF document to check for any matched or unmatched macros.

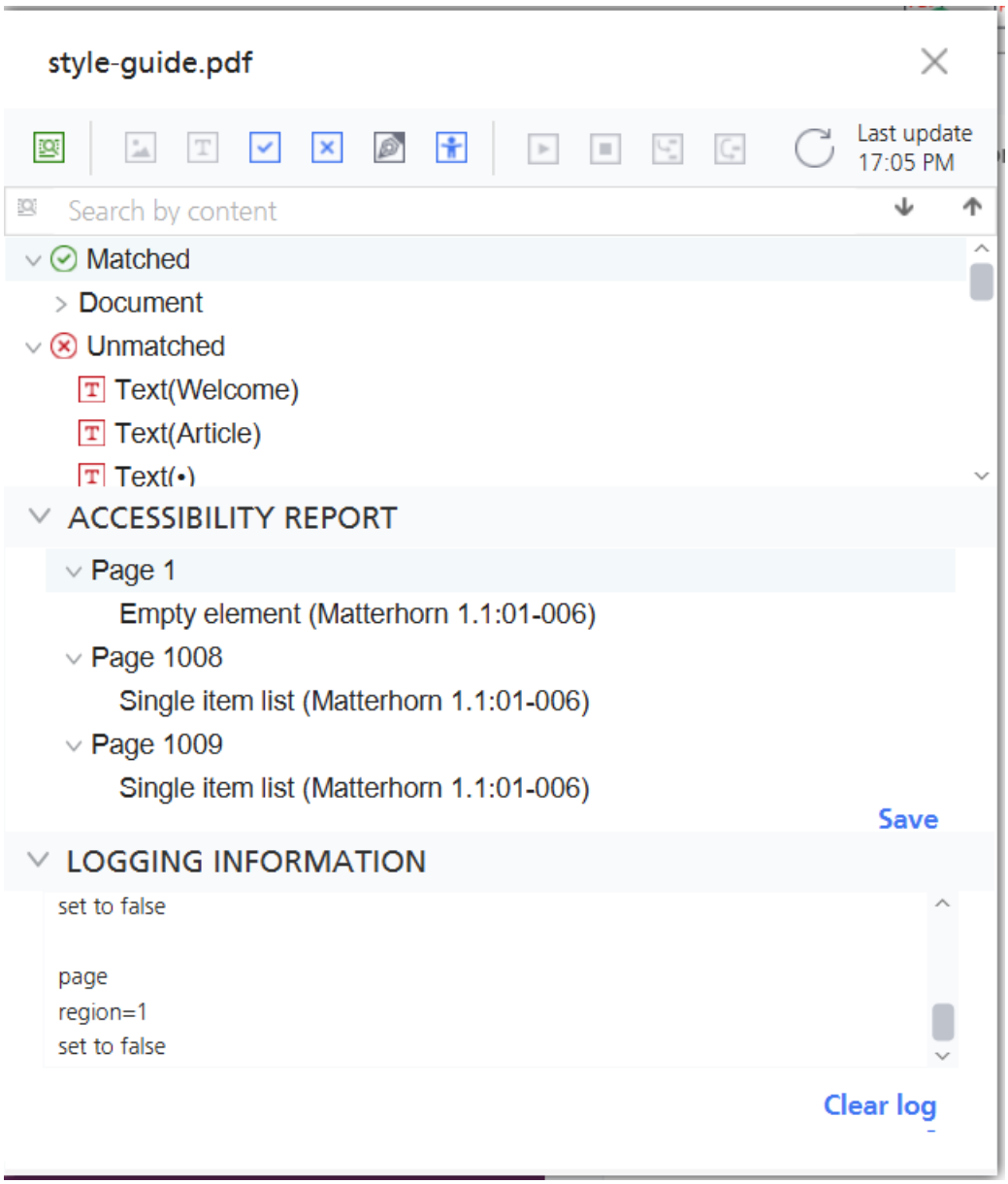
1. Go to the **[Review]** tab.
2. Select **[Validate PDF]** from the **[Actions]** structure. A separate dialog box opens for validation results.

For more information on PDF validation, see Validating Macros, p. 114.

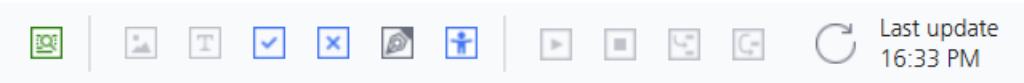
8. Validating PDF

- **Single PDF Validation**
- **Multiple PDF Validation**
- **Debugging PDF Elements**
- **Identifying Rule Errors**
- **PDFUA compliance**

The **[Validate PDF]** window allows you to check whether all PDF elements have been matched.



Toolbar



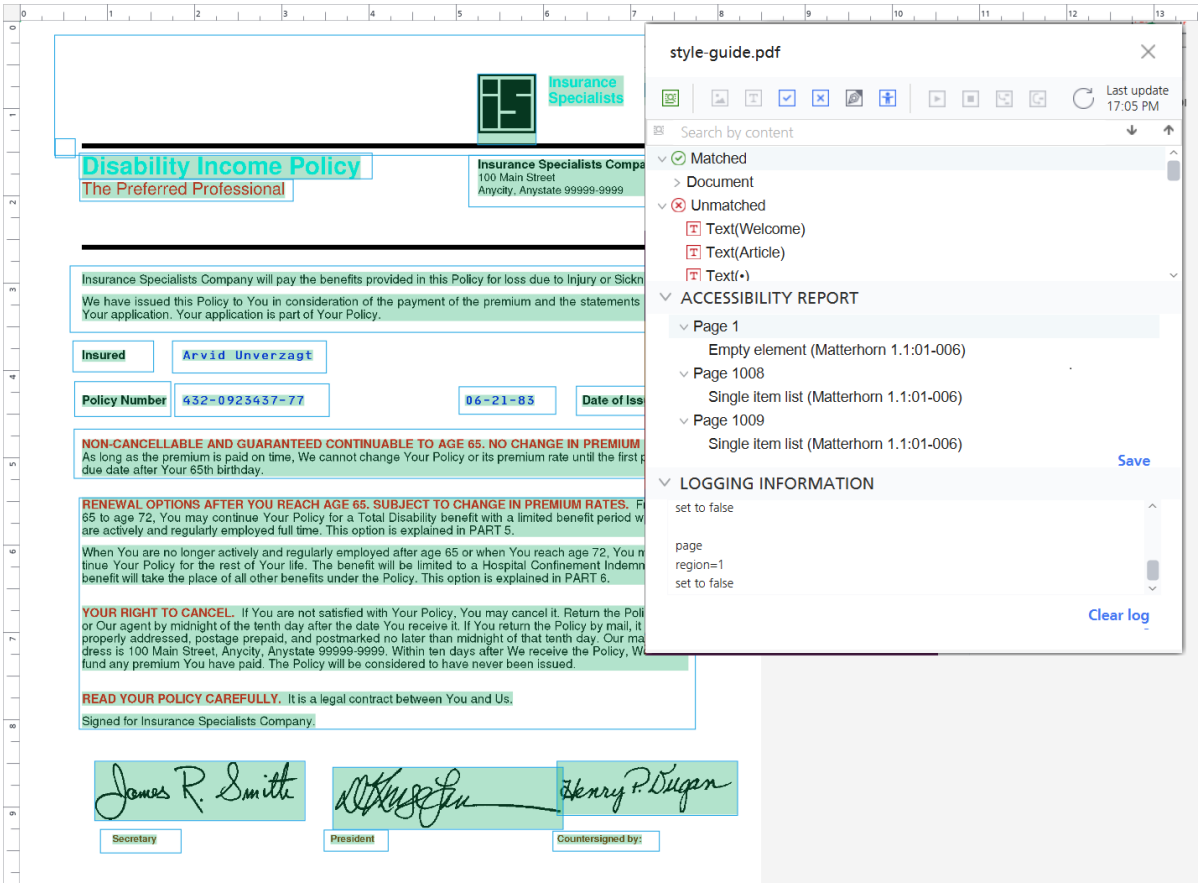
Available review options are displayed on the toolbar. These options are available:

- **Search/Filter**
  Toggles between search and filter content functions. The default option is **Search**.

- **Filter figure**
  Shows only figure matched elements.
- **Filter text**
  Shows only text matched elements.
- **Filter matched elements**
  Shows only the elements matched on the PDF document. Matched elements are highlighted in green.
- **Vector image**
  Shows or hides vector images in the **[Unmatched]** section.
- The filter field allows you to find relevant information or narrow down results. The results are displayed in the **[Matched]** or **[Unmatched]** lists. The filtering is not case sensitive and all possible results are displayed as you start entering the content that you want to find.
- In the search field, enter the content that you want to find. You can search for particular words from your PDF file. The results are displayed in the **[Matched]** or **[Unmatched]** lists and you can scroll up and down using the navigation arrows. The first matching element is selected and you can use the navigation arrows to select the next or the previous element that matches the entered pattern. This search is not case sensitive.

  Note

  Search/Filter option applies only to the **[Matched]** and **[Unmatched]** sections.
- **[ACCESSIBILITY REPORT]**
  Displays the **[ACCESSIBILITY REPORT]** section in the **Review** panel.



-

  Important

  – The **[PROPERTIES]** related to any matched on unmatched elements from the **[Validate PDF]** window are read only.

  – Macros are not listed into the validation window.

- **Filter unmatched elements**

  Shows only the elements unmatched on the PDF document. Unmatched elements are highlighted in red.

  Note

  – By default, the **Filter matched elements** and **Filter unmatched elements** buttons are enabled.

- **Refresh button**

  Updates the **[Validate PDF]** view with the most recent changes.

- **[Last update]**

  Shows the time of the latest update.

Review area

The **[Validate PDF]** review area is divided into 2 sections:

[Matched]

Displays matched elements.

Note

- **Repeating Group**, **[Condition]**, and **[Anchor]** are not shown in the review panel.

[Unmatched]

Displays only text and figure unmatched elements.

To check if a specific element is matched on unmatched:

1. Go to the **[Matched]** or **[Unmatched]** section.
2. Click on the element.
   Matched element is highlighted in dark green when clicked, while unmatched element becomes dark red.

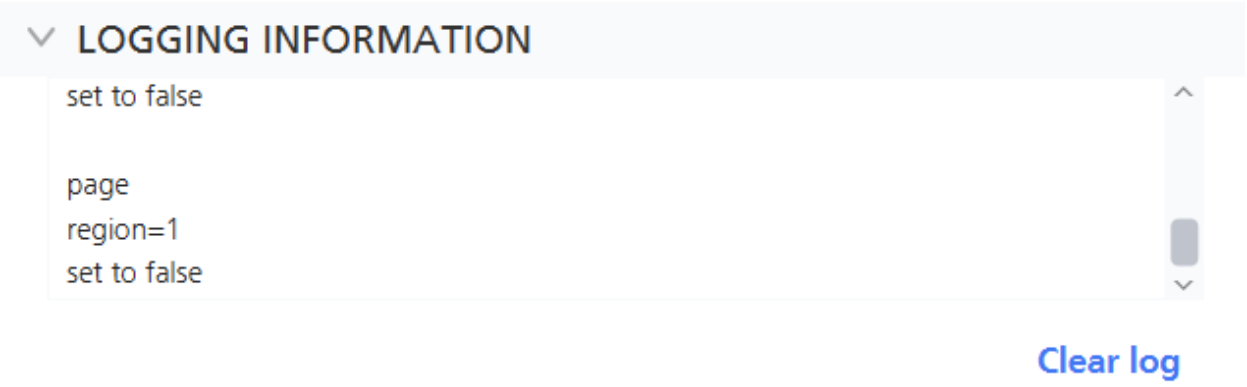
[ACCESSIBILITY REPORT]

The accessibility report displays if your PDF is PDF/Universal Accessibility compliant. If your PDF is not PDF/Universal Accessibility compliant, the validator generates warnings that can refer to specific indexes from the PDF associations Matterhorn Protocol 1.1. Click one of the warnings that are displayed in the **[ACCESSIBILITY REPORT]** to find the rule that generates that error.

Click **[Save]** to save the generated report and to see all the warning details.

[LOGGING INFORMATION]

You can use the logging information option for debugging. You can see your logging information in the validation window when you validate your PDF only after adding a log entry on a rule that allows you to use this option. For more information on adding a log entry and editing element properties for rules, go to Adding Log Entries, p. 83 and Element Properties, p. 62.



Important

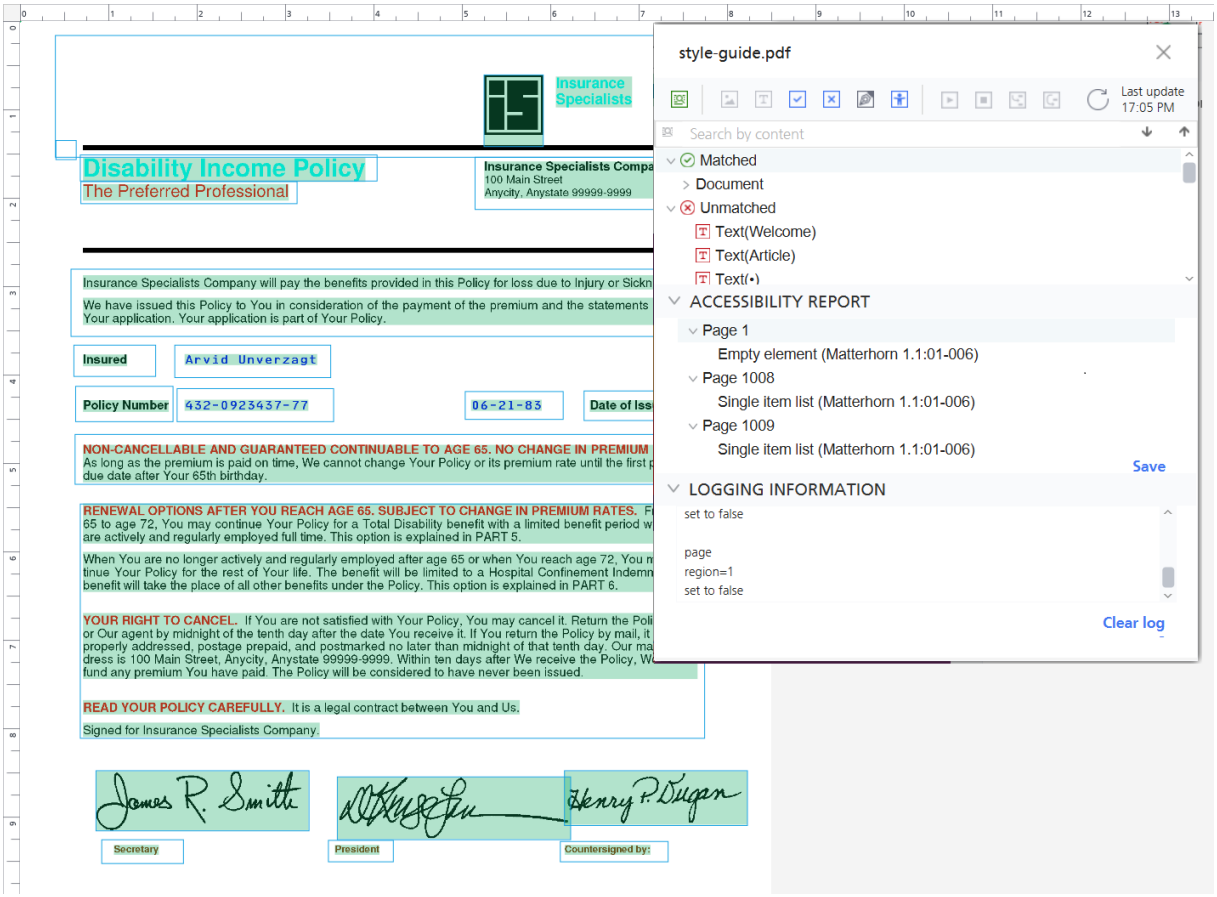
- The **[Validate PDF]** window displays matched or unmatched elements from all PDF pages.
- Multiple PDF file validation is not supported.

Single PDF Validation

To validate the content of a PDF document:

1. On the toolbar, click , the **[Single PDF]** validate icon.

   The review options and results are available in a separate review panel.



See Validating PDF, p. 121 for more information on PDF content review.

Multiple PDF Validation

Note

- Validation is disabled in trial mode because it saves a control file to disk.

To validate the content of multiple PDF documents:

1. Select the PDF files for review from the **[FILES]** section, on the left side of the screen. For multiple selection of PDF files, hold the Ctrl key and select the files from the list.

   Note

   - Make sure to select at least one PDF file prior to batch validation. Otherwise, you are prompted with a validation failed error.

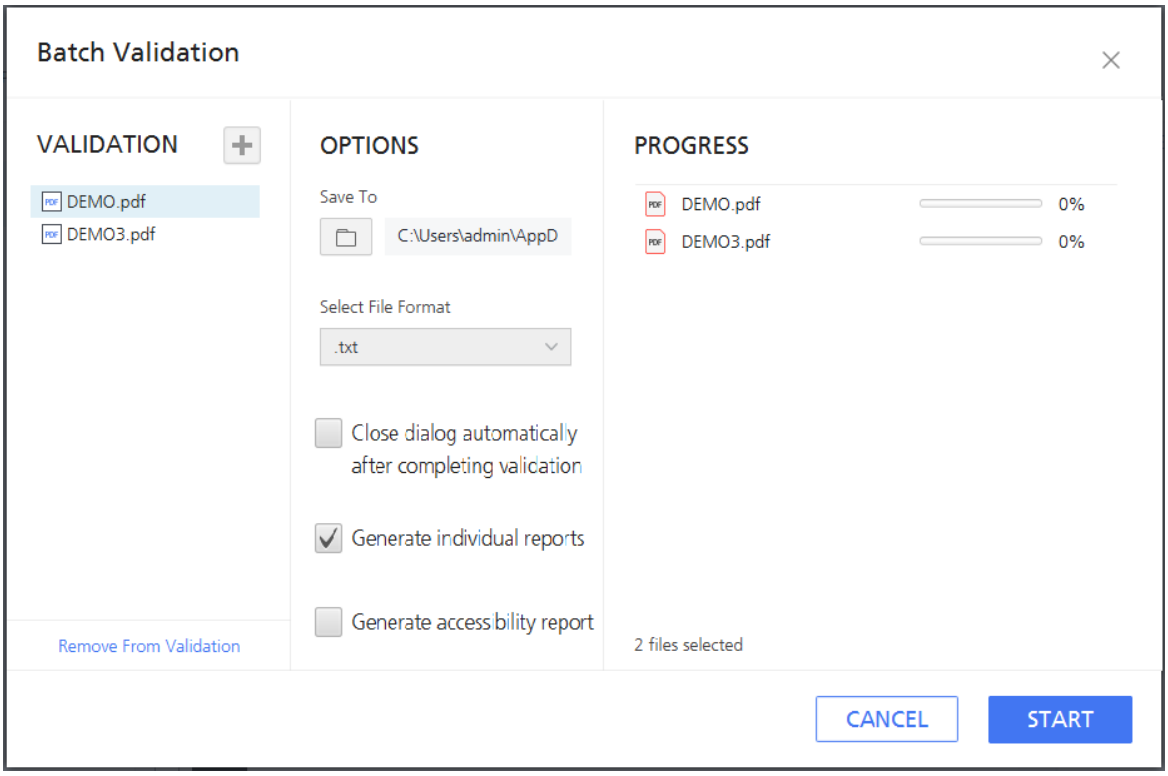
2. On the toolbar, click , the **[Multiple PDF]** review icon.

   You can also select **[Batch Validation]** from the drop down list, after selecting the PDF files to be validated from the **[FILES]** section.

3. Customize the options from the **[Batch Validation]** dialog.

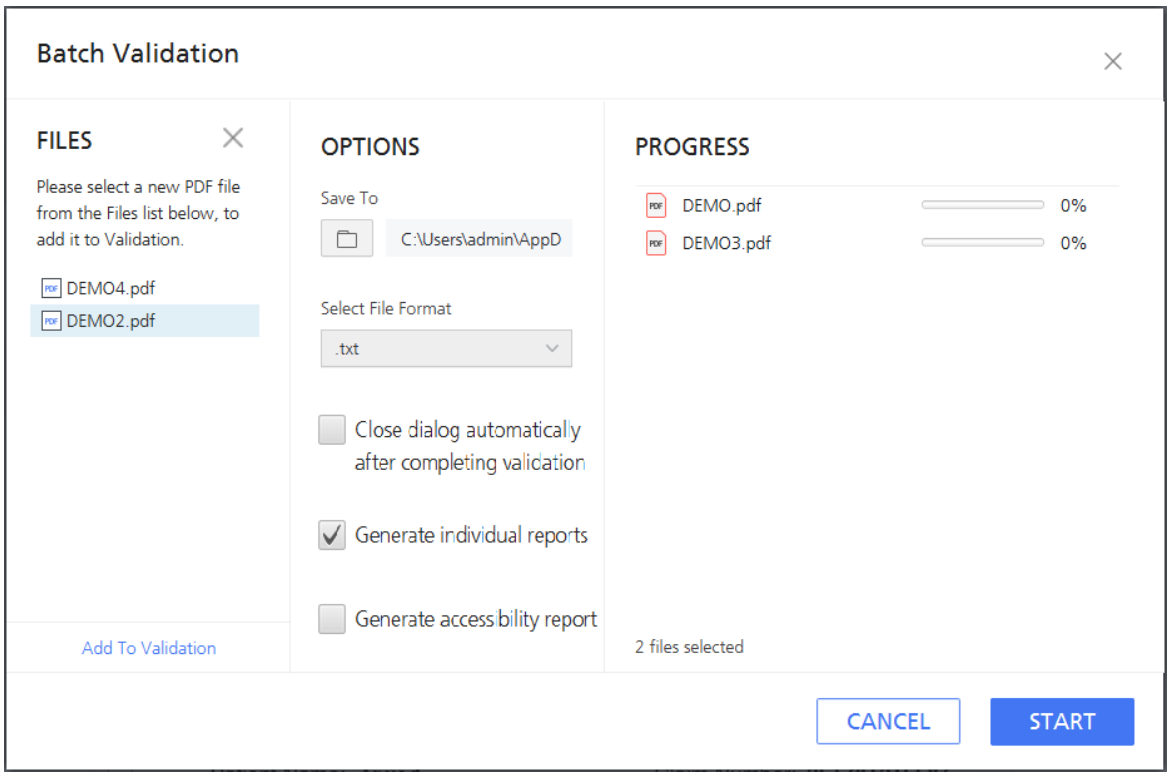
The **[VALIDATION]** section displays selected PDF files prior validation.

- To remove a PDF file from the validation list, select the file and click on **[Remove from validation]**, at the bottom of the **[VALIDATION]** section.
  For multiple PDF files removal, hold the Ctrl key, select the files from the list and click on **[Remove from validation]**.



- To add additional PDF files from the project to the **[VALIDATION]** section:

  1. Click , on the right corner of the section.
  2. Select the PDF file from the **[FILES]** list and click on **[Add to validation]**, at the bottom of the section. If your PDF files are available in a folder, you can expand the folder and select the PDF files that are available inside the folder.
     For multiple selection of PDF files, hold the Ctrl key and select the files from the list.
     The files are automatically moved into the **[PROGRESS]** section.



Available options:

[FILES]

Indicates the selected PDF file for review.

[OPTIONS]

[Save To]: Indicates the directory path of the report file. The default directory is a system folder used to store temporary files.

Note

When running Batch Validation, RICOH Accessibility Designer will remember the last save location directory.

[Select File Format]: Indicates the format of the report file, either with the `.txt` or the `.dat` extension file.

[Close dialog automatically after completing validation]: Indicates that the **[Batch Validation]** dialog closes automatically once the validation process is finalized.

[Generate individual reports]: Indicates that individual reports are generated for each PDF validation.

Note

- If this option is not selected, a single report will be generated for all PDF files.

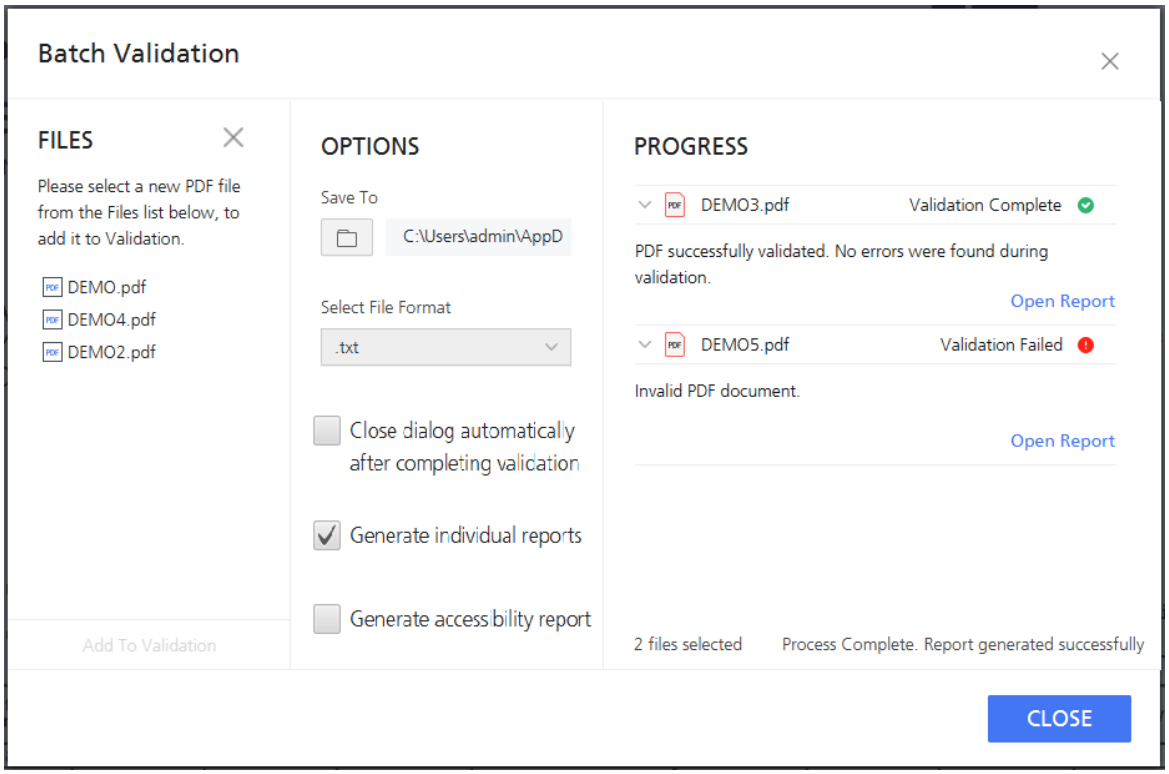
[Generate accessibility report]:An accessibility report where it is specified if your document is a PDF/Universal Accessibility compliant file is added to the validation report.

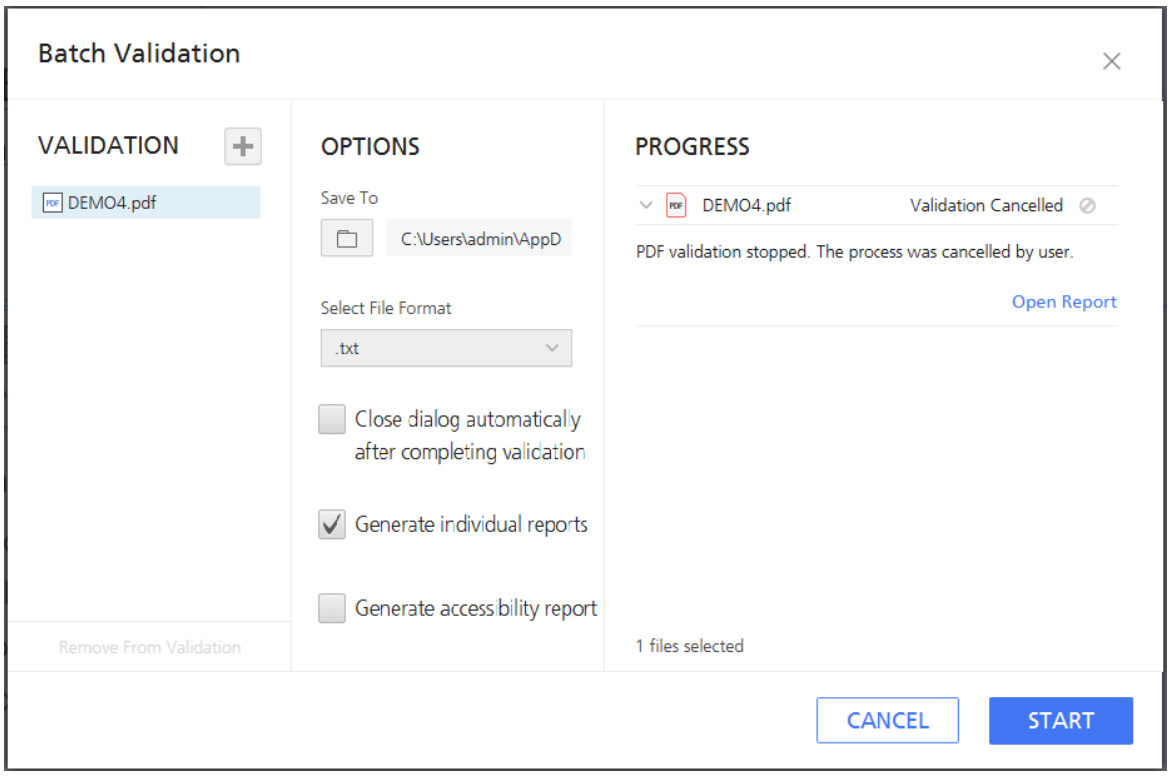
[PROGRESS]

Indicates the progress of the selected PDF files to be validated.

Note

- By default, the **[PROGRESS]** section is loaded with the selected PDF file from the **[FILES]** section, on the left side of the graphical user interface.
- To remove any PDF files from the **[PROGRESS]** list, click on **[Remove from validation]**, at the bottom of the **[FILES]** section.





Progress status:

- **[Validation Complete]** - Indicates that the validation process was successfully completed.
- **[Validation Failed]** - Indicates that the validation process failed due to PDF errors.
- **[Validation Canceled]** - Indicates that the validation process was stopped by the user.

Note

- Individual reports with validation results are generated, regardless the progress status of the validation.
- If **[Generate individual reports]** is not selected, a report for all validated PDF files will be generated.

4. Click **[START]**.

Debugging PDF Elements

The sequential validation option lets you debug the elements in a document at rule execution level. You can either debug the entire document or insert breakpoints for the rules so that the validation is temporarily stopped at that specific point. The breakpoints are used in the debugging process to identify the elements that are not matched correctly.

To run a sequential validation and debug the document:

1. Right-click an element where you want to insert a breakpoint and select **Debugging** → **Add breakpoint**

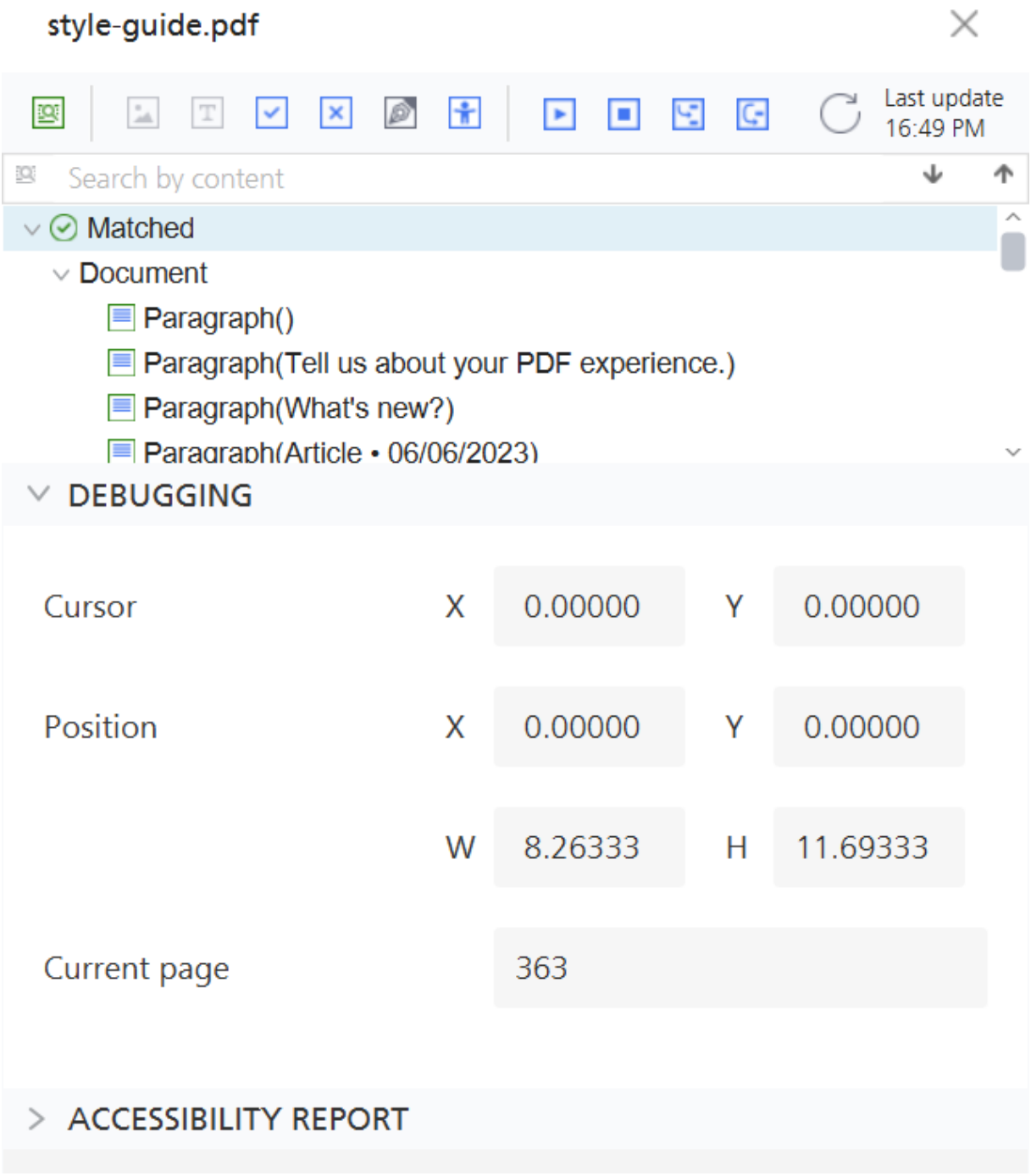
   When an element has an active breakpoint, it is matched with , a red circle icon.

2. To disable a breakpoint, right-click an element that contains an active breakpoint and select **Debugging** → **Disable breakpoint**.

   When an element has a disabled breakpoint, it is matched with , a gray circle icon.

3. Click , the **[Debug Preview]** icon to start debugging the matched elements.

   The validation stops at the first element matched with a breakpoint and the review panel is displayed.



4. In the review panel, go to **[DEBUGGING]** to see information about the matched element.
5. To execute all the rules until the next breakpoint, click , the **[Next]**/**[Run]** icon.

   If execution is finished for a page, the process continues on the next page.
6. To execute all the rules until the next child rule or subsequent rule, click , **[Step Into]** icon.

   If execution is finished for a page, the process continues on the next page.

   Example: When a breakpoint is set on a table, the **[Step Into]** option executes until first row, then it goes to the first cell, and then the second cell, if there is no child in first cell.

7. To execute all the rules until the next subsequent rule, click , the **[Step Over]** icon.

   If execution is finished for a page, the process continues on the next page.

   Example: When a breakpoint is set on a row, clicking **[Step Over]** executes until next row, then it goes to the next row, and so on.

8. To stop the debugging process, click , the **Terminate** icon.

Identifying Rule Errors

This feature highlights the rules errors occurred after the validation process completion.

To identify rule issues:

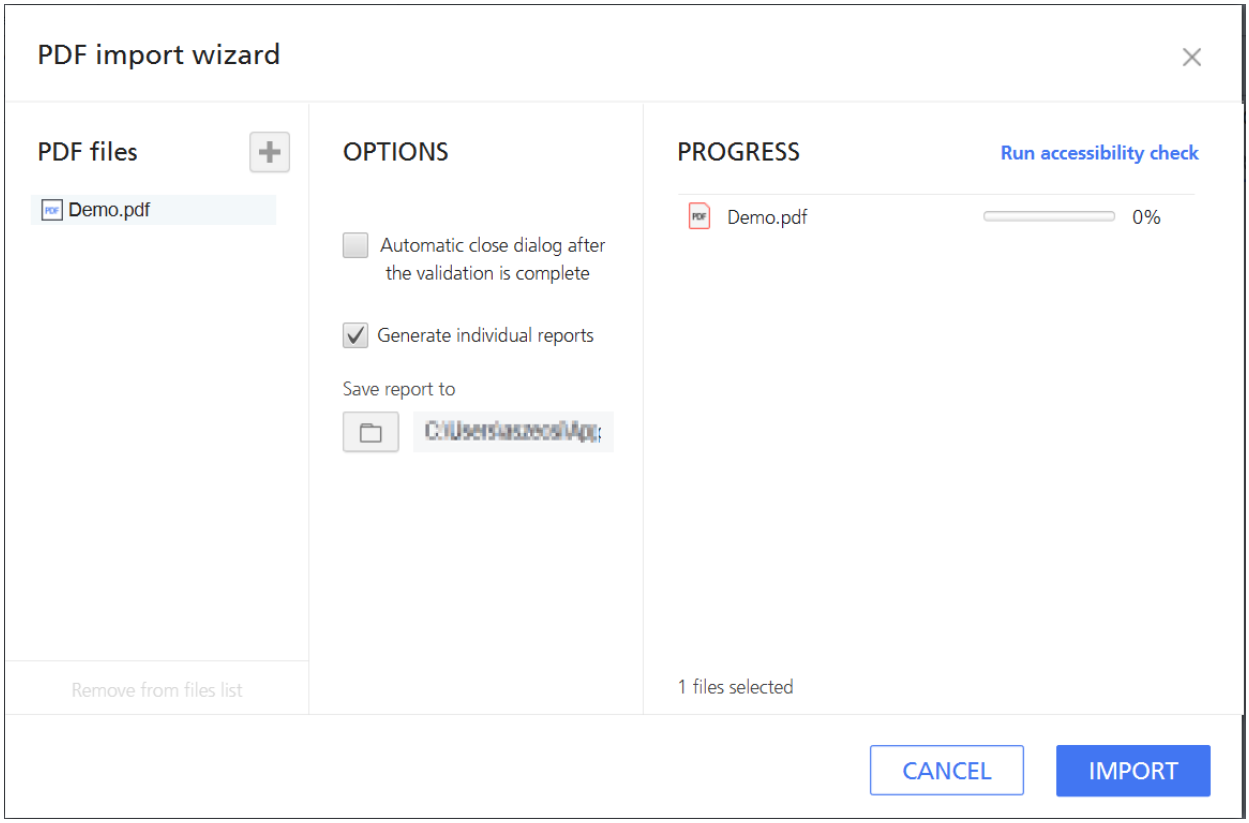
1. Make sure you first validate the PDF file. See Validating PDF, p. 121 for validation steps.
   A **Validation failed** dialog is displayed to underline the items and a short summary to help you solve them.
2. To open the rule , go to the **[RULES]** section and select the rule highlighted with , the error icon.
3. Click on the rule.

PDFUA compliance

The **[PDFUA Compliance]** option located on the Menu bar allows you to check if your document is a PDF/Universal Accessibility compliant file.

[PDF import wizard]

To import and check one or more PDF files, click **[PDF import wizard]** from the Menu bar, select one or more PDF files from your work station and click **[Open]**, then **[Import]**. Your document or documents will be added in the **[FILES]** list.



To check if your PDF files are PDFUA compliant, click **[Run accessibility check]**. If the validation fails, you are informed that your document does not meet the accessibility requirements and will be marked with a red label, such as , in the **[FILES]** list.

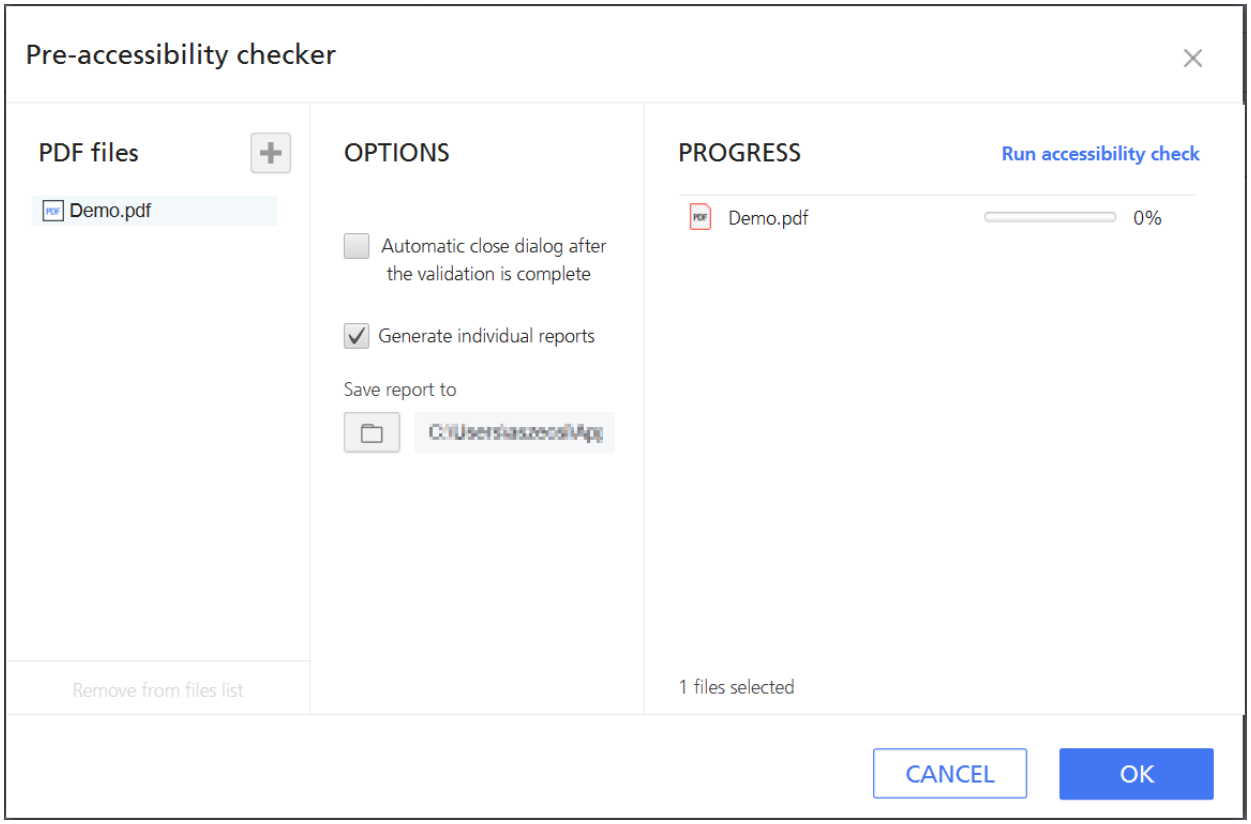
The validator generates warnings that can refer to specific indexes from the PDF associations Matterhorn Protocol 1.1. The pre-validator checks some of the conditions mentioned in chapter *Input file requirements* from the *PDF2PDFUA Tool: Development User Guide*.

To find more information about the displayed errors, search for the error ID in the Marterhorn protocol document.

Contact your PDF producer to investigate and solve this PDF error to obtain a PDF/UA file compatible output.

[Pre-accessibility checker]

If you want to check the PDFUA compliance for one or more existing PDF files, select the files from the **[FILES]** list and click **[Pre-accessibility checker]**.



You can also verify the PDFUA compliance by using the right-click menu in the **[FILES]** list. Right-click one or more PDF files and select **[Pre-accessibility checker]** from the menu.

9. Troubleshooting

If you encounter problems while you are working with **RICOH Accessibility Designer**, you might be able to solve them by using the information in this section.

If a message appears

This section explains essential messages. If you encounter a message that is not explained in this section, follow the instructions in the message.

Validating PDF

Message	Action and Reference
The condition has no branch action.	Make sure you set condition rules for either the **True** or **False** branch.
The element needs to be part of a table.	The matched table row element should be part of the table structure.
Missing fixed text value in element.	Make sure matched elements such as paragraph, heading, link, note, table data, column header, row header are not empty when the element property is set on **Fixed**. See Exporting Coordinates in the Control File, p. 76 for details on exporting options.
The Anchor must have at least one coordinate.	Make sure at least one of X and Y anchor properties is not set to **Absent**.

If RICOH Accessibility Designer stops working or throws an error, run the installer again. See Installing RICOH Accessibility Designer, p. 25 for more details.

10. Glossary

This glossary defines technical terms and abbreviations used in RICOH Accessibility Designer.

A

AFP

Advanced Function Presentation

AT

Assistive Technology

C

control file

XML file that records content for further reuse on multiple documents with identical or similar content.

E

element

Section of content used for matching purposes in order to create rules.

M

macro definition

Used to create macro rules.

macro definitions file

An XML file that stores rules to be used multiple times within the same control file or a different control file.

macro rule

Rule with specific properties created to be used several times across the PDF file.

match

The action used to select PDF elements.

Synonym for *tag*.

P

PDF

Portable Document Format

An Adobe PostScript data format that can be viewed or printed.

PDF/UA

PDF/Universal Accessibility

Project

Structured tagged PDF content, exported as control file.

R

rule

Matched PDF semantic grouping.

T

tag

Standardised content marker.

Synonym for *mark*.

V

validation

In RICOH Accessibility Designer, the process of checking whether all PDF elements have been matched.

Synonym for *review*.

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