


# Formpipe.

Lasernet

Lasernet 9  
Form Editor



Lasernet 9 – Form Editor [Revision 8 – May 2020]

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# 1 INTRODUCTION

## 1.1 Who Should Use This Guide

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This guide is written for Lasernet system administrators and Lascript developers, who work with forms. It is intended primarily as a reference to the various functions within Lascript.

## 2 TERMS OF USE

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## 3 DESIGNING FORMS

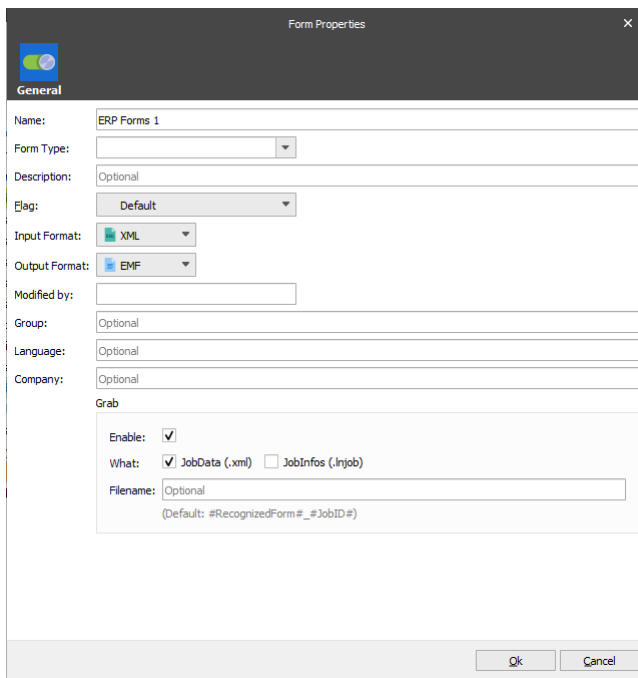


## 3.1 Getting Started

### 3.1.1 Creating a Form

When you have added a Forms Engine (see the Form Engine chapter in the Developer Manual) to your project, you are ready to start creating forms. You create a new form by following these simple steps:

1. Select the **Forms** developer tool in the main window of the Lasernet Developer.
2. Select your Form Engine on the left side list view, and then click the **Add** button in the toolbar.
3. Provide a name and a description for your new form in the **Form Properties** dialog, and then select the appropriate input and output formats.



**Note:** It is important that you choose the correct Input and Output Format for your new form. The format settings define the input type expected by Lاسernet (CSV, EDI, Text, XLS or XML<sup>1</sup>) and the output format it should deliver report contents as (CSV, EDI, EMF, PDF, TIFF, XHTML, XML, Rich Text (DOCX and PDF) or XLSX). You cannot change the properties for the form once it has been created, but it is possible to add new sheets and remove old ones to change the output.

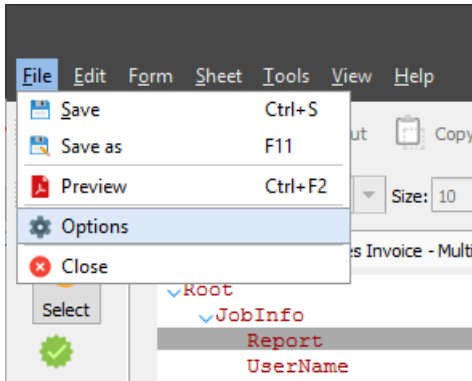
4. You can now start editing your new form by double-clicking it or by right-clicking it and selecting **Edit** from the context menu.

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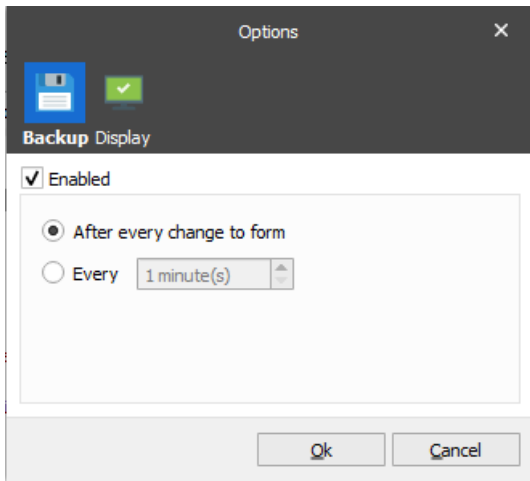
<sup>1</sup> eXtended Markup Language

### 3.1.2 Editor Options

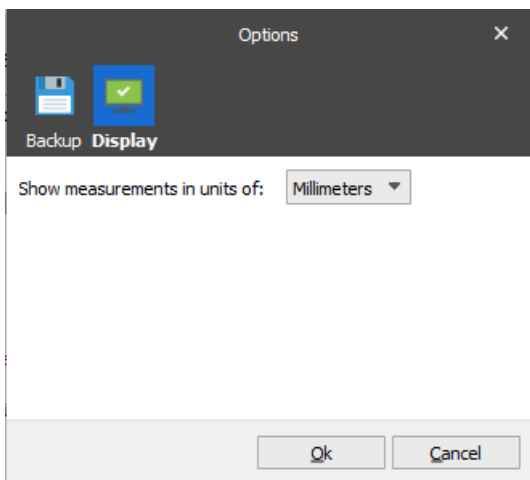
Once you have created at least one form, ensure that the Editor options are set as needed. You can access the Editor options by clicking **Options** on the **File** menu. Defined options affect all forms on the configuration. You can change these options at any time while working with the application.



You can define the **Backup** and **Display** options:



In the **Backup** options, you can enable or disable a continuous backup. If enabled, you can also define when the backup process occurs: after every change to a form or every specified point in time (e.g.: every 1-60 minutes).



In the **Display** options, you can specify measurement units (inches or millimeters) that the output layout settings are defined and displayed in. The measurement settings are effective for the following output types: EMF, PDF, and TIFF.

### 3.1.3 General Form Properties

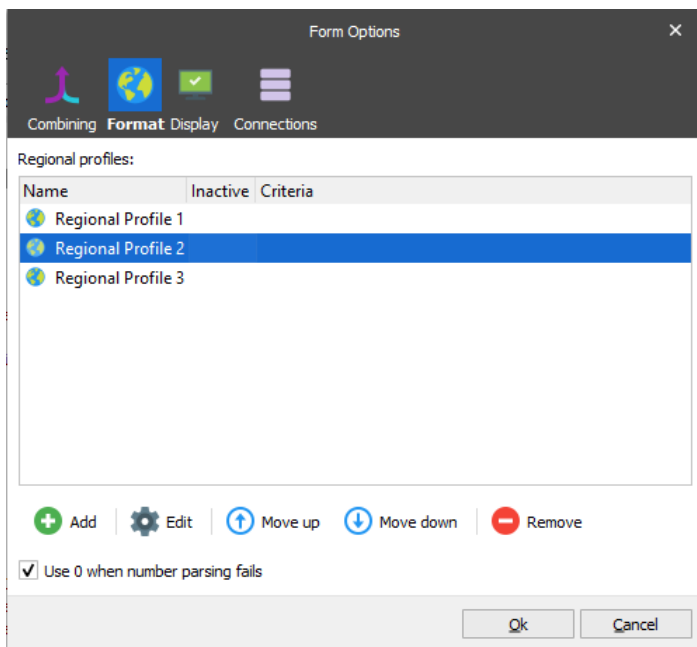
When editing your form in the Lasernet Form Editor, ensure that the general form properties are set correctly. Access the general form properties by clicking **Form Options** on the **Form** menu. This allows you to change format properties for the input data. You can change these properties at any time during your form design.

#### 3.1.3.1 Combining

Only selectable in forms with TXT (text) as input format. More information about combining settings is available in the Combining (Page to Job mode) section.

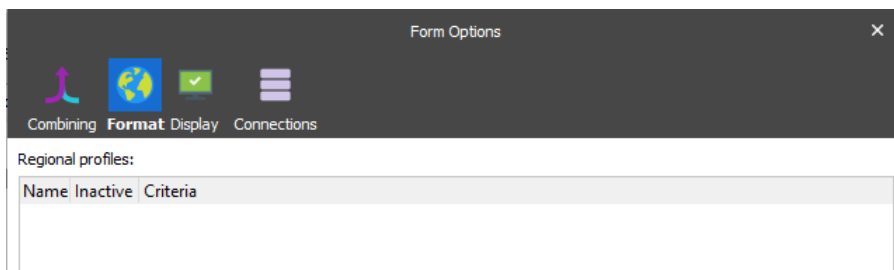
#### 3.1.3.2 Format (Regional Profiles)

You can select one of the existing profiles from the grid:

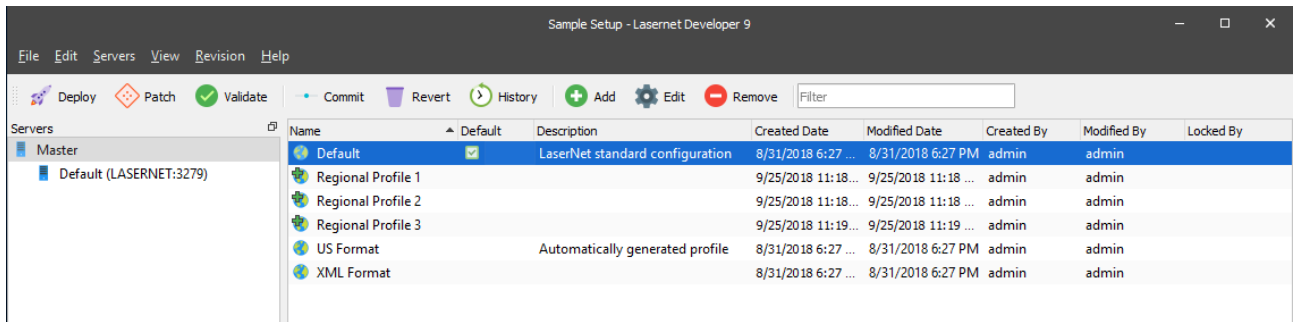


If no regional profile is added in the **Input format** tab, the regional profile which is set in the form options is then applied.

If the grid in **Form Options** → **Format** → **Regional Profiles** is empty:

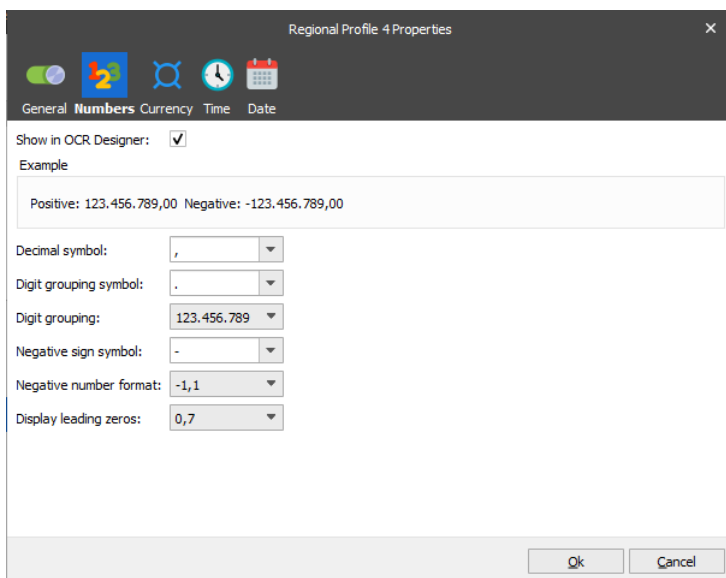


the default selected profile, defined in Lasetnet Developer and illustrated with , is then applied:



In addition, you can add a new element to the grid by clicking the **Add** button. The next step gives you an option to select one of the existing regional profiles or create a new one. If required, you can assign a criterion for each profile in the list to run specific profiles for individual jobs. The profile where the first matching criteria is met, which is also true, will be executed.

Moreover, you can create a profile by selecting **Regional Profiles** → **Add** in Lasetnet Developer (for more details, see *Regional Profiles* in the *Developer* manual):

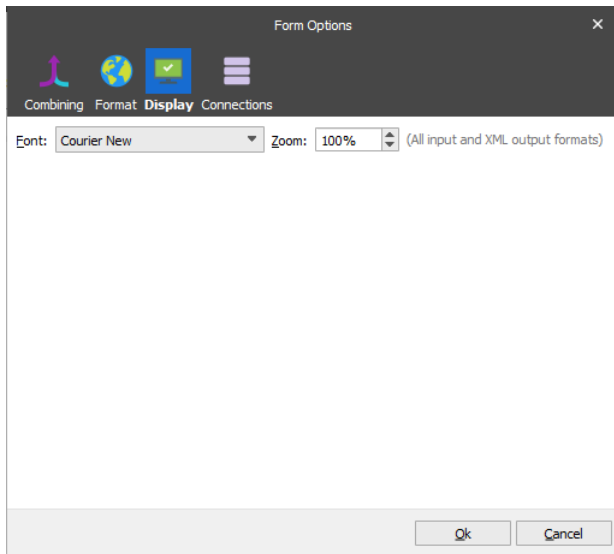


In the **Regional Profile Properties** dialog, you can define the general form properties for numbers, currency, time and date.

When adding a new regional profile, you can specify criteria for a definite object (for more information, see Chapter 3.3.6.2.2 *Editing Rearranges*). If no regional profile is specified within the **Form Options** dialog, the regional profile which is set as default for the current setup is then applied.

### 3.1.3.2.1 Display

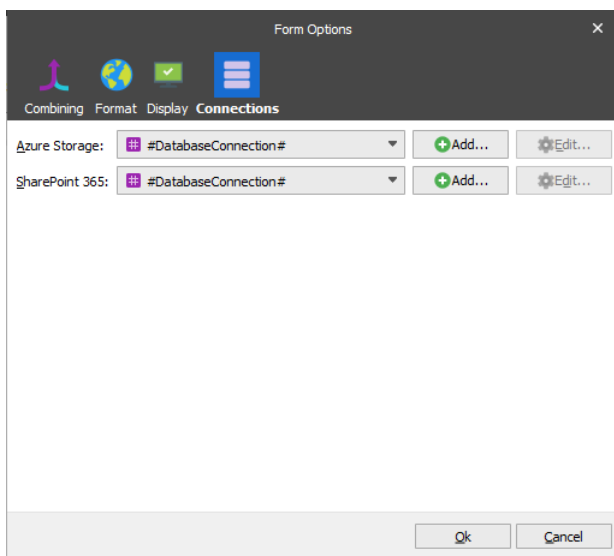
Use the **Display** tab to control the size and type of the input font as well as that of the XML output font. Changes to the font are typically used for supporting the Pacific-Asian character sets.



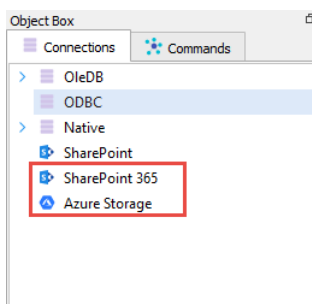
### 3.1.3.2.2 Connections

Use the **Connections** tab to set a connection to MS Azure Storage and SharePoint 365. Once the connection is set, you can retrieve images from Microsoft Azure Storage or SharePoint 365 and insert them in your form design.

Lasernet connects to the Microsoft Azure Storage Blob and allows retrieving an image as a BLOB.



Created **Azure Storage** and **SharePoint 365** connections are added to the list of global connections in the configuration.



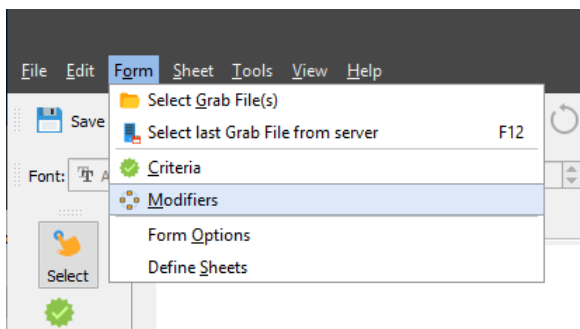
They are also available for the other forms and module objects. For more information about **Azure Storage** and **SharePoint 365**, see the Lasernet Azure and Lasetnet SharePoint manuals.

### 3.1.4 Form Modifiers

In a form, modifiers, database commands, scripts and XML Transformer forms can be connected to the following types of event points:

- Form
- Sheet
- Page (only for the EMF, TIFF, PDF output sheet types)

You can access and manage form modifiers for all sheets available in the application from the main menu **Lasetnet Developer** → **Form** → **Modifiers**:



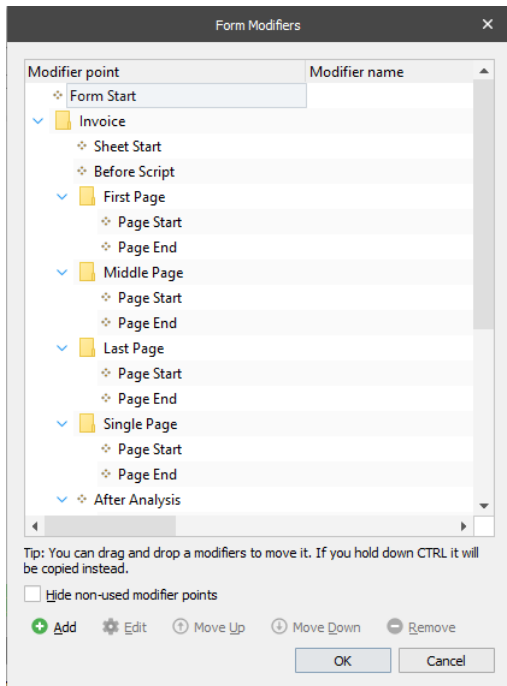
When processing a form, the modifiers, database commands, scripts or XML Transformer forms are run in the following order:

**Form Start** modifier point:

- **Sheet Start** modifier point
- Definition of all JobInfos contained in the sheet
- **Sheet Before Script** modifier point
  - *NumberOfPages* JobInfo contains the number of pages in the document produced
  - *CurrentPage* JobInfo is updated\*
  - **Page Start** modifier point\*
    - Rearrange scripts in the Conditional Area\*
  - **Page End** modifier point\*
  - Scripts attached to rearranges
- **Sheet After Analysis** modifier point
- **Sheet End** modifier point

**Note:** Steps marked with an asterisk (\*) are repeated for each page.

**Form End** modifier point:



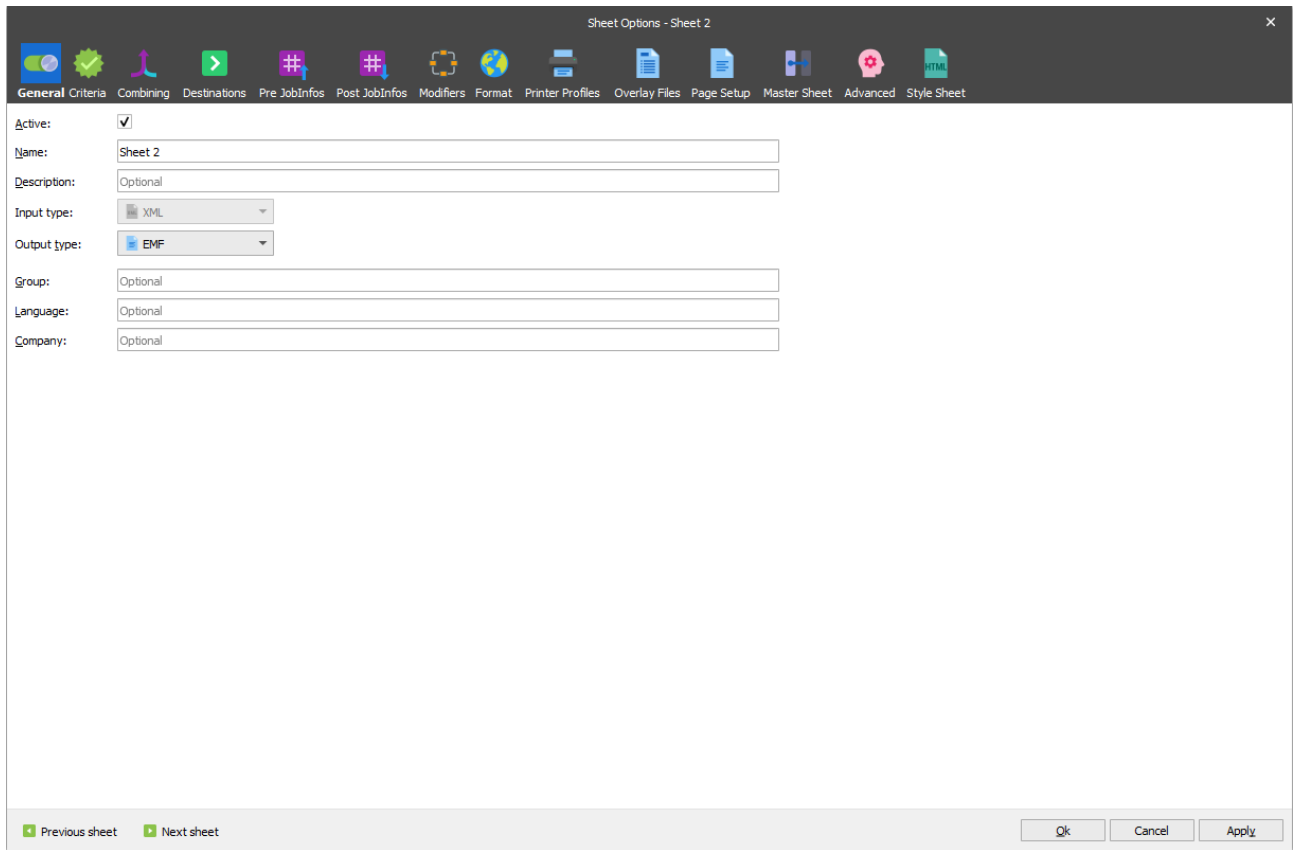
### 3.1.5 Sheets

When you add a new form to a Lasernet project, a blank sheet for handling incoming data is automatically created and named *Sheet 1*. You can rename the sheet in the **Sheet Options** dialog (see 3.1.5.1 *Sheet Options*).

The sheet is initially empty, so you need to open a grab file by clicking **Select Grab File(s)** from the **Form** menu. The grab file contains the output from your administrative system that you wish to process through Lاسernet. You can read more about grab files in *Chapter 3.3.2 Grab*.

#### 3.1.5.1 *Sheet Options*

You can manage sheet properties by right-clicking the sheet tab and selecting **Sheet Options**. Alternatively, on the **Sheet** menu, click **Sheet Options**.



### 3.1.5.1.1 General

Properties	Description
Active	Enable or disable the sheet.
Name	Change the name of the sheet.
Description	Add a sheet description (optional).
Output type	Specifies output type for the sheet. After a sheet has been created with a given output type, the setting cannot be changed.
Group	Add a group name for the sheet (optional).
Language	Add the language of the sheet (optional).
Company	Add the company name for the sheet (optional).

### 3.1.5.1.2 Criteria

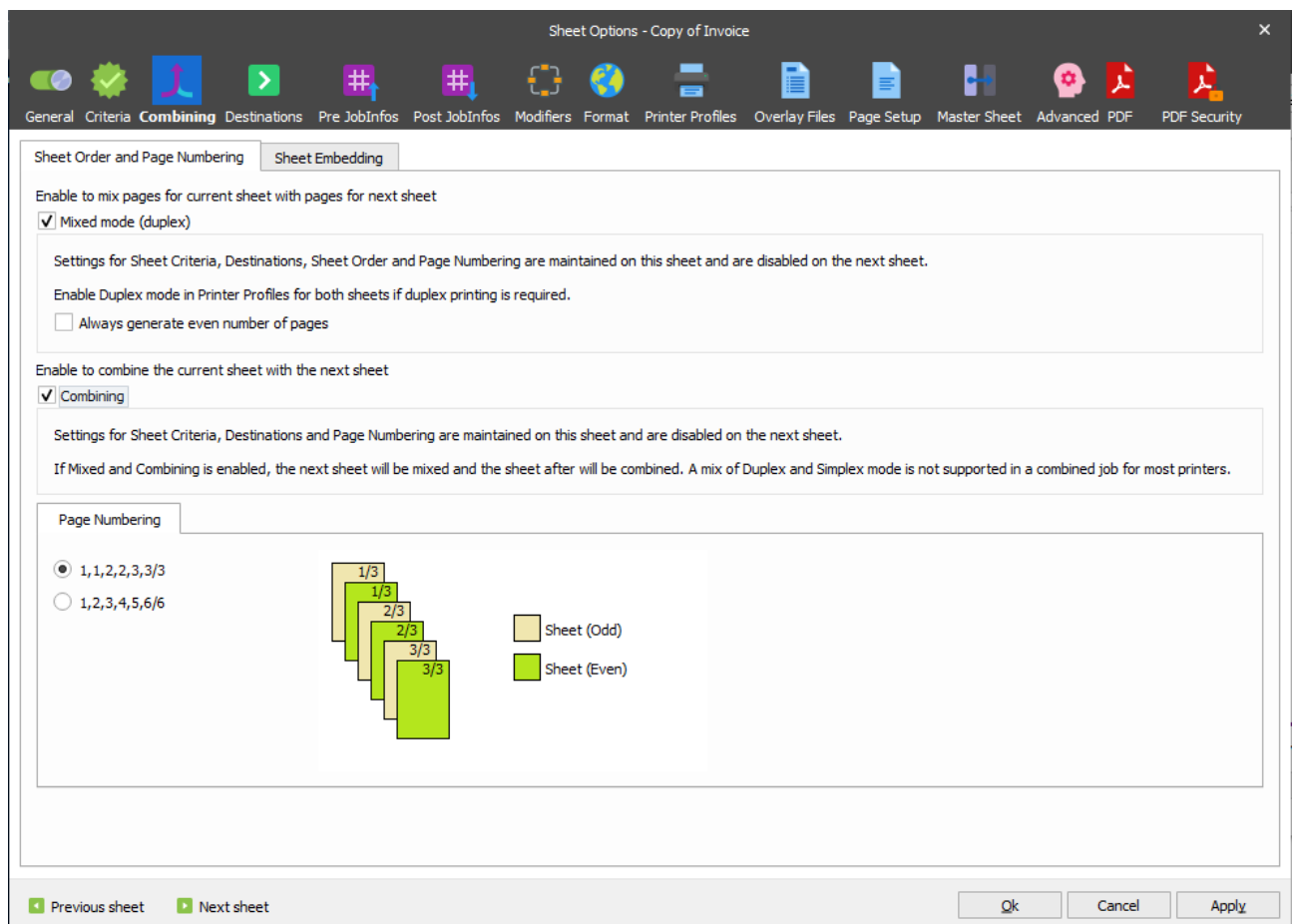
Properties	Description
Add Sheet	Add a Sheet Criterion (see 3.3.3 Form, Sheet, Link and Stop Criteria).
Add JobInfo	Add a JobInfo Criterion (see 3.3.3 Form, Sheet, Link and Stop Criteria).
Edit	Edit the selected criterion.



Properties	Description
Remove	Remove the selected criterion.
Move Up	Move the selected criterion up in the list.
Move Down	Move the selected criterion down in the list.
Sheet Expression	Can be used for defining a set of criteria which must be true (or false). Further information about expressions can be found in <i>Chapter 3.3.2 Grab</i> .
Allow further sheet matching	Uncheck to stop processing sheets to the right of this sheet if the criteria for this sheet match.

### 3.1.5.1.3 Sheet Order and Page Numbering

On the **Combining** tab of the **Sheet Options** dialog, you can set the required sheet order option. The page numbering template depends on the selected option.



The *Mixed Mode (Duplex)* option enables duplex printing (or mixed mode) where pages are printed on both sides (only to be used if you have more than one sheet). To enable duplex mode in a printer, a printer profile must be created with duplex mode turned on. The printer profile containing the duplex mode must be activated for both sheets.

Select the **Always generate even number of pages** check box to ensure documents are created with an even number of pages. The option takes an effect if the following conditions are met:

- 1) The current sheet contains fewer pages than the next sheet does.
- 2) The total number of pages for both sheets is odd.

As a result, pages are mixed and a blank page is added to the end of the generated document.

Two page numbering templates are available in this mode (this setting automatically changes output for the **Page x of y** type of insert text):

- 1) Total number of pages is specified separately for each sheet:



- 2) Total number of pages is calculated for both sheets. The generated document has continuous numbering:



When you enable *Mixed Mode* for the current sheet by selecting the **Mixed Mode (Duplex)** check box, you are not allowed to change the following settings which are disabled on the next sheet:

- 1) Sheet Criteria
- 2) Destination
- 3) Reference printer
- 4) Use temporary Files for storing pages
- 5) Only line-break after space
- 6) Sheet Order
- 7) Page Numbering

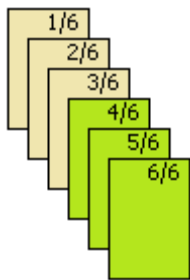
The *Combining* option enables a consecutive combining of several sheets into one document.

Two page numbering templates are available in this mode (this setting automatically changes output for the **Page x of y** type of insert text):

- 1) Total number of pages is specified separately for each sheet:



- 2) Total number of pages is calculated for all combined sheets. The generated document has continuous numbering:



When the *Combining* option is enabled for the current sheet by selecting the **Combining** check box, you are not allowed to change the following settings which are disabled on the next sheet:

- 1) Sheet Criteria
- 2) Destination
- 3) Reference printer
- 4) Use temporary Files for storing pages
- 5) Only line-break after space
- 6) Page Numbering

You can enable both options at a time. In this case, the same settings as *Mixed Mode* are disabled. As a result of the mix and combining procedures, the generated document contains the current sheet 'mixed' with the next sheet and then combined with the sheet after.

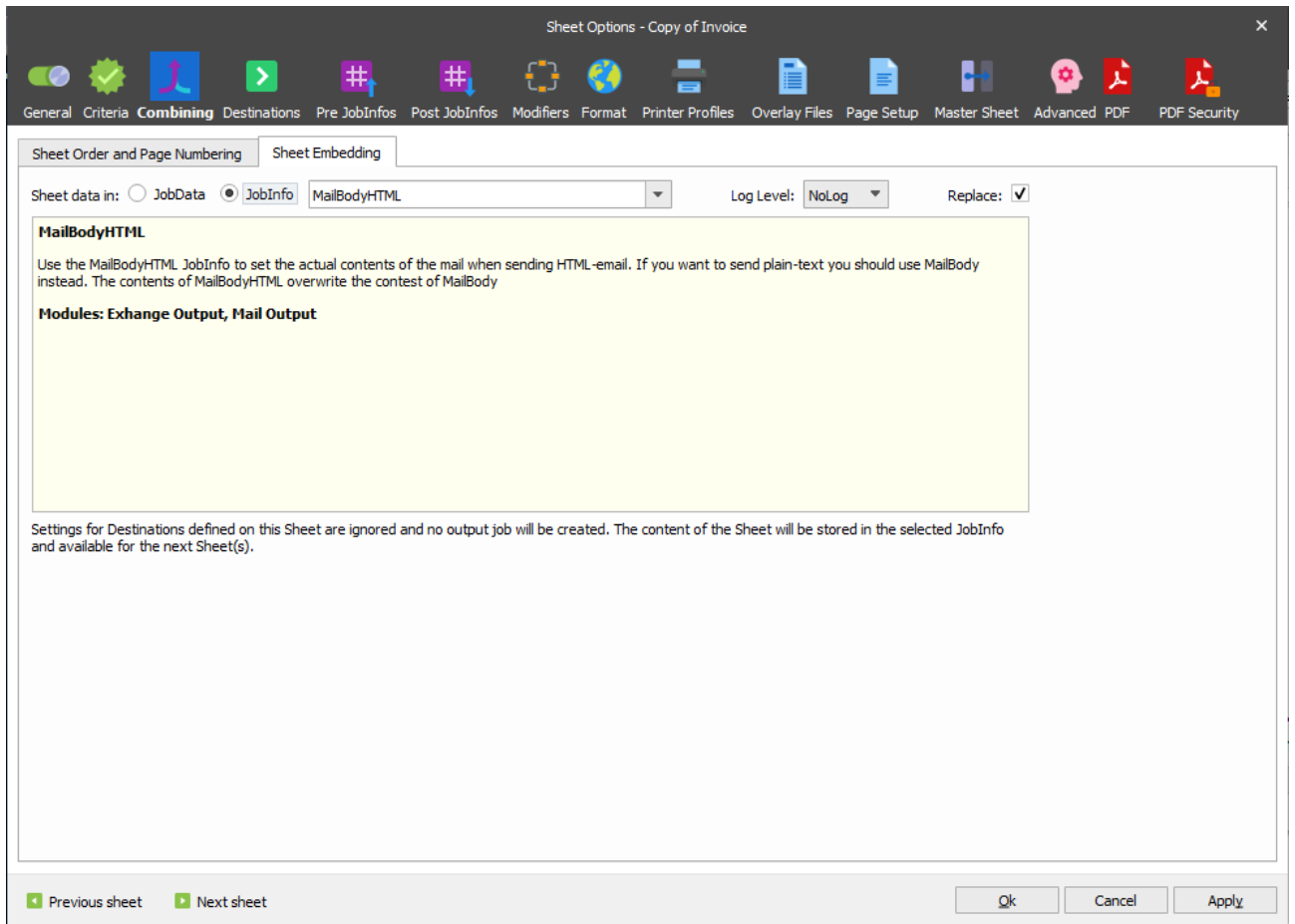
**Note:** A combination of the Duplex and Simplex modes is not supported in a combined job for the most printers.

#### **3.1.5.1.4 Sheet Embedding**

When embedding a sheet by specifying the required settings on the **Sheet Embedding** tab, settings for destinations (see *3.1.5.1.5 Destinations*) are ignored and no output job is created. The content of the sheet is stored in the selected JobInfo and available for the next sheet(s).

Inserting the contents of a sheet into a specified JobInfo, is often used to create an HTML mail body on one sheet whilst storing the sheet data in the MailBodyHTML, which is then available afterwards for the next sheet(s) when the data is processed through the Form Engine.

Other solutions are to create arrays of documents in the same form, where each sheet is stored in a JobInfo that represents a unique output format/document. The jobs are delivered afterwards as multi-part documents in a single job via a web service



Properties	Description
Log Level	Select a message type for the event log.
Replace	Select the check box to replace any other JobInfo with the same name. Some JobInfos can contain a list of several values for example, an email distribution list.

### 3.1.5.1.5 Destinations

Properties	Description
Add	Add a destination.
Edit	Edit the selected destination.
Remove	Remove the selected destination.
Move Down	Move the selected destination down in the list.
Move Up	Move the selected destination up in the list.

A single sheet can have multiple destinations e.g. a copy can be emailed whilst another copy goes to the Archive. If you require different designs for each of the output destinations, you need to create a separate sheet for each.

### 3.1.5.1.6 Pre JobInfos

Here you can add custom JobInfos as well as define values for system variables.

JobInfos added and managed on the **Pre JobInfos** tab are to be run at the **Sheet Start** event point.

### 3.1.5.1.7 Post JobInfos

Here you can add custom JobInfos as well as define values for system variables.

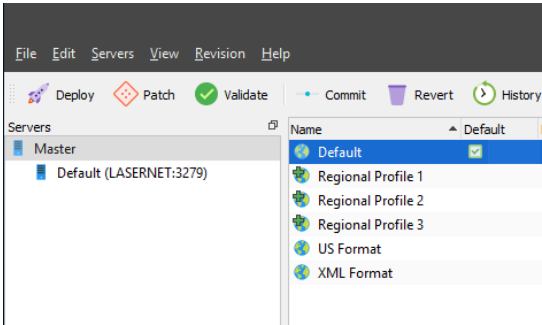
JobInfos added and managed on the **Post JobInfos** tab are to be run at the **Sheet End** event point.

### 3.1.5.1.8 Modifiers

Here you can add and manage modifiers for the current sheet (for more information, see Chapter 3.1.4 *Form Modifiers*).

When adding a modifier, the current sheet is defined in the **Container** control, and the control itself is disabled.

### 3.1.5.1.9 Format

Properties	Description
Add/Select Regional Profile	<p>Create a new regional profile or select one of the existing profiles from the drop-down list (for details, see <i>Lasernet Developer, Chapter 1.27 Regional Profiles</i>). Adding a new regional profile, you can make the value active as well as specify criteria for a definite object (for more information, see Chapter 3.3.6.2.2 <i>Editing Rearranges</i>). The profile which meets the first criteria, which is also true, will be executed. If no regional profile is added, the regional profile which is set as default in Lasernet Developer (shown with <input checked="" type="checkbox"/>) is then applied.</p> 
Rounding	<p>Specify how the system should process extra decimals.</p> <p><b>Truncate</b>      Discard the extra decimals.</p> <p><b>Round</b>            Round the extra decimals.</p> <p><b>Ceiling</b>          Map the extra decimals to the smallest following number.</p>
Number of decimals	Specify the number of decimals to be displayed.
Show NaN as	Specify how NaN (Not a Number) should be displayed.
Color negative value	Specify the color for the values which are negative.
Remove trailing zeroes	Select to discard the trailing zeroes.

Properties	Description
Show only decimals	Select to show only decimals.
Absolute value	Select to show the absolute value.
Hide if zero	Select to hide the value if it equals zero.
Hide if invalid date	Select to hide the value if date is invalid.
Hide if invalid time	Select to hide the value if time is invalid.

#### 3.1.5.1.10 Printer Profiles

Here you can manage the printer profiles created in Lasernet Developer (for details, see *Lasernet Developer, Chapter 1.17 Printer Profiles*).

#### 3.1.5.1.11 Overlay Files

For more details, see 3.3.5.4 *Import Printed Overlays to the setup* and 3.3.5.5 *Adding Overlays to the Sheet*.

#### 3.1.5.1.12 Page Setup

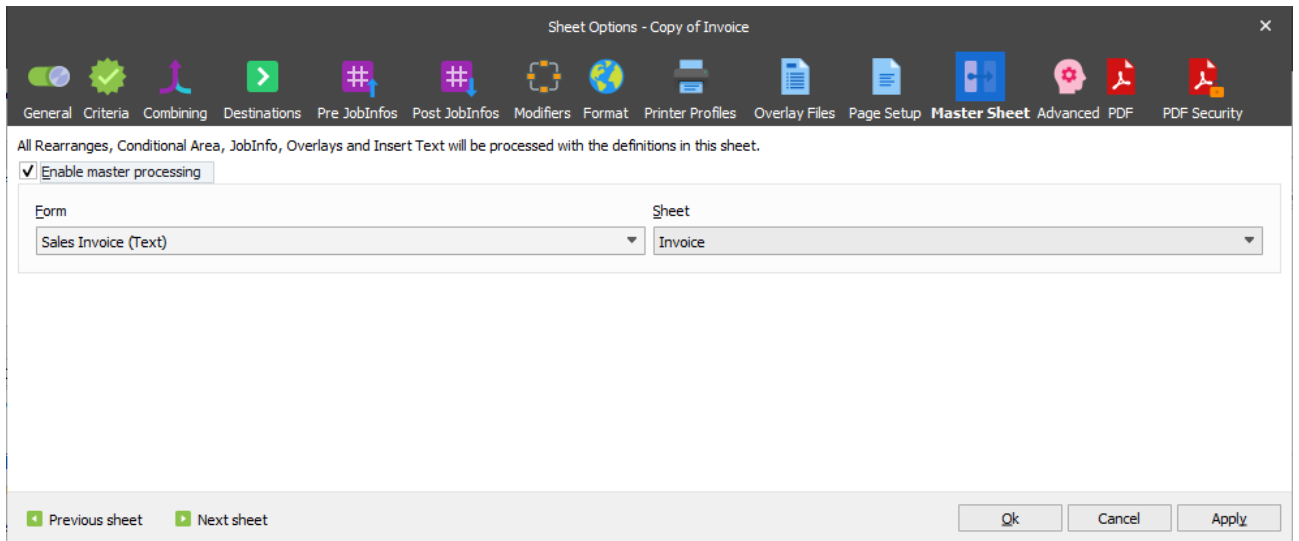
Properties	Description
Reference printer	Select the reference printer for the sheet. <b>Caution:</b> If Lاسernet cannot connect to the reference printer while processing a form, the job fails. The reference printer is essential for rendering the job.
Paper Size	Allows selecting a pre-defined size format from the drop-down list.
Width	Allows typing custom width in millimeters.
Height	Allows typing custom height in millimeters.
Orientation	Switch between <b>Portrait</b> and <b>Landscape</b> page orientation.
Set JobInfos to control the Paper Format in the Printer Devices(s)	If selected, allows to define values of the <b>PaperWidth</b> , <b>PaperHeight</b> and <b>Orientation</b> JobInfos based on the corresponding Paper settings. The values will overwrite the device modes settings defined in the Printer Profiles for output printers.

#### 3.1.5.1.13 Master Sheet

Lاسernet supports master sheet processing which is a technique used for populating rearranges, conditional areas, JobInfos, overlays and text inserts from one sheet to another in a project. For example, a form could have two sheets, Original and Copy, where the only difference is that an extra overlay is required on the Copy sheet. Rather than manually duplicating all the settings from one sheet to another, the Copy sheet can be instructed to use the Original one as the Master sheet, leaving only the overlay to be configured.

You access the master form processing dialog via the menu **Sheet → Sheet Options → Master Sheet**.

Only forms and sheets compatible with the selected input and output formats are available in the selection list.



The Select Rearrange Master dialog has the following properties.

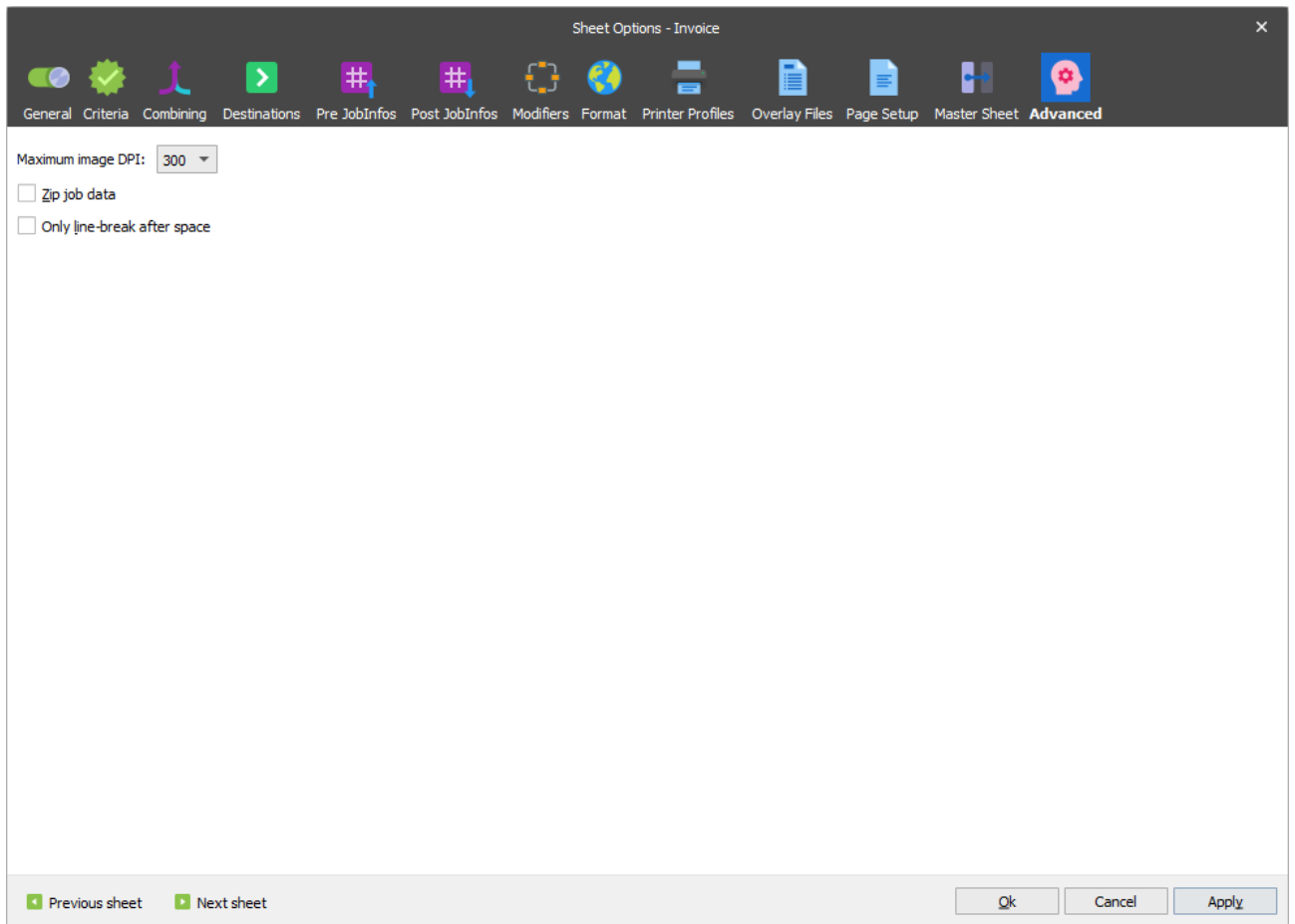
<b>Form</b>	Choose the form which contains the master sheet.
<b>Sheet</b>	Choose the sheet to serve as the master sheet.
<b>Enable master form processing</b>	This check box is used for enabling master sheet processing.

#### 3.1.5.1.14 *Advanced*

On the **Advanced** tab of the **Sheet Options** dialog, you can manage the memory usage and quality for images as well as for processing jobs with many pages.

When processing sheets, temporary files can be written to a disc for optimizing memory usage in Lasernet. This feature is only recommended if you have jobs which are too big to be handled by memory. Please note that temporary files are not deleted by the system after the job has been processed. The reason is that jobs which are scheduled or failed must be available as temporary files for Lasetnet until they can be processed.

A user-defined process for deleting files must be defined in the setup, otherwise the files take up unnecessary disc space.

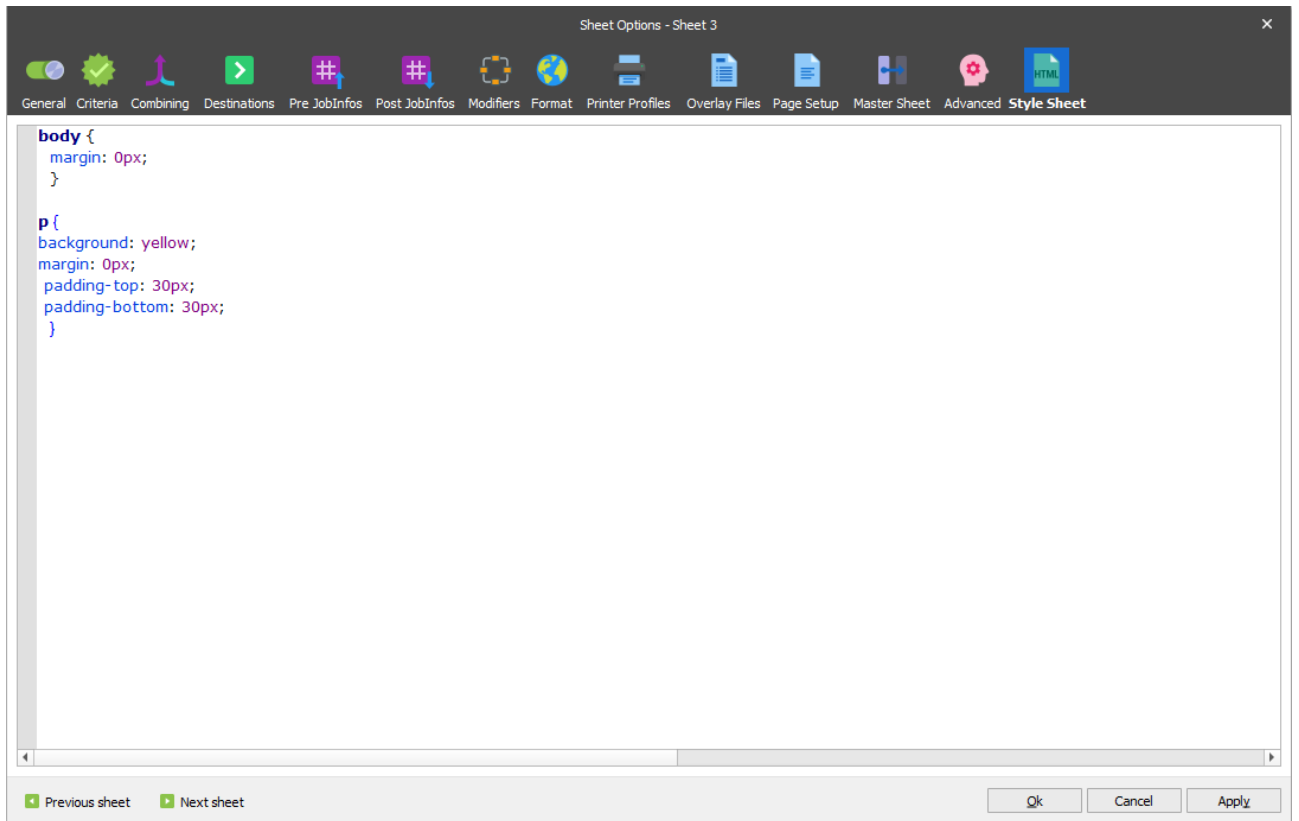


Properties	Description
Maximum image DPI	Specify the maximum image resolution for image(s) added to the output.
Zip job data	Select if the JobData size is expected to be approx. 2 GB or more. This allows to correctly process JobData.  <b>Note:</b> Selecting to zip JobData can cause a slight system performance degradation.
Only line-break after space	Select to allow line-breaks only after a space.

### 3.1.5.1.15 Style Sheet

Use the **Style Sheet** tab to add CSS (Cascading Style Sheets) for all XHTML rearranges available on the sheet using the internal way which stands for a `<style>` element.

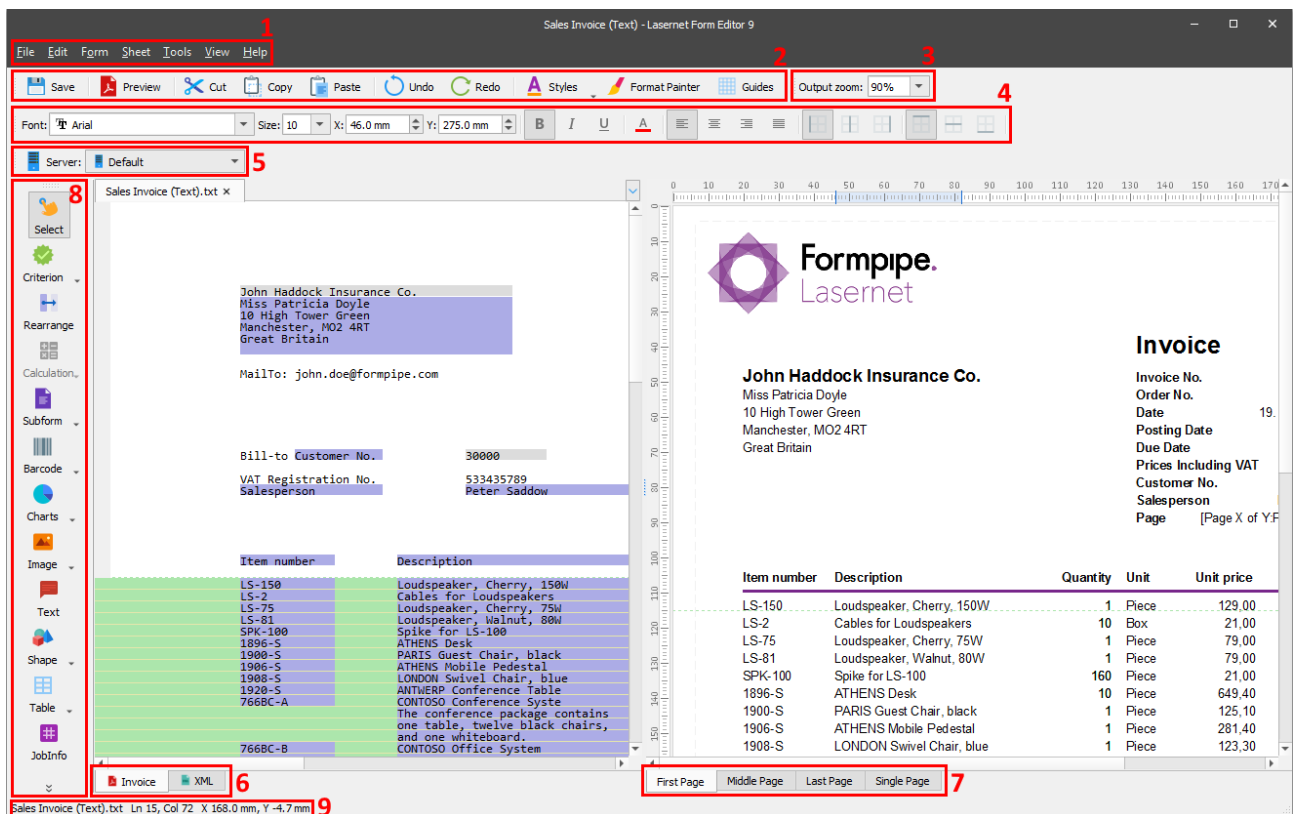




The style added here can be overwritten for a particular XHTML rearrange using the **Style Sheet** tab of the **Edit Rearrange** dialog (for more details, see [3.3.6.2.2.1 Properties](#)).

## 3.2 User Interface Overview

Lasernet Developer provides an easy to use environment for designing and maintaining great looking forms and reports, using data from any platform or administrative system capable of generating an ASCII file with a fixed font, or an XML document. Lasernet Developer can enrich this data by applying graphical overlays, rearranging text, changing font type, generating barcodes and much more. The result will be a professional form in full compliance with your design standards – ready to be distributed throughout your business channels in a variety of different formats.



The window where you design your forms is split in two, with a data input side on the left and the actual form design on the right. The user interface is laid out as follows:

### 3.2.1 Left side

The left side contains the original data received from the administrative system. The original data is viewed as ASCII text in rows and columns, or as an XML tree structure.

### 3.2.2 Right side

The right side contains the actual form design with overlays and the ability to place text/data, change fonts and font sizes.

### 3.2.3 Menu bar (1)

File Edit Form Sheet Tools View Help

You can access all application functions and options through the various menu items.

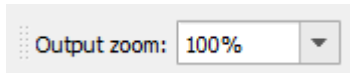
### 3.2.4 Toolbar (2)



The toolbar provides easy access to useful tools such as **Save**, **Print**, **Cut**, **Copy**, **Paste** and **Undo/Redo**, as well as **Guides**, **Styles** and **Format Painter**. You can drag the toolbar to another location in Lasernet Developer.

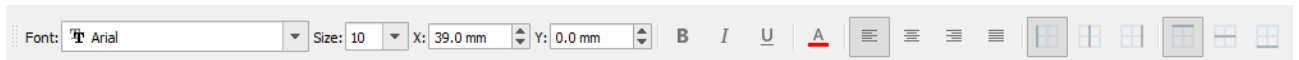
You can use the **Styles** and **Format Painter** tools to work in the output with objects such as rearranges and shapes. On top of it, use the **Format Painter** tool to apply and further manage formatting of tables in the output.

### 3.2.5 Output zoom bar (3)



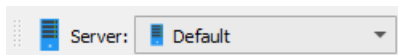
The output zoom bar lets you control the zoom level for viewing your design. Zoom in for greater detail or zoom out to get an overview of your page. You can drag the output zoom bar to another location in Lasetnet Form Editor.

### 3.2.6 Property bar (4)



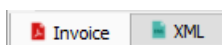
The property bar contains tools and settings for changing font type, size, color and typeface. It also contains tools for changing the justification and positioning of text boxes. You can drag the property bar to another location in Lasetnet Developer.

### 3.2.7 Server bar (5)



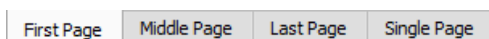
The server bar allows selecting a server instance added in the configuration. As a result, JobInfos created for that server instance become available in the Form Editor application for the testing purpose.

### 3.2.8 Sheet tab (6)



The sheet tabs are available in the bottom left hand corner. The number of sheets shown depends on the number of copies made. The sheets can have different destinations. As can be seen above, there are three more sheets in addition to the original, these are Copy, Mail and Archive. Sheets are opened by clicking the relevant tab. You can add, copy or access sheet options by right-clicking the sheet bar. The first ten sheets can also be selected by using CTRL+1, CTRL+2, etc.

### 3.2.9 Page tab (7)



On the bottom right hand corner there are four tabs: First Page, Middle Page, Last Page and Single Page. These tabs allow the user to create a form which has different designs according to the number of pages generated for a specific report.

**First Page** The first page of the finished print

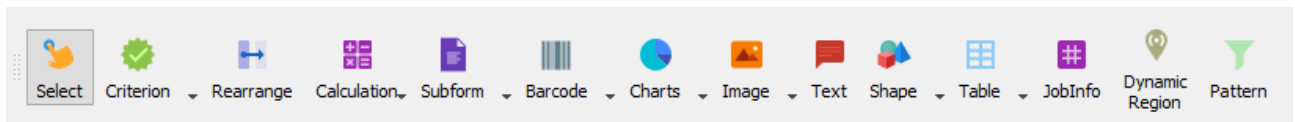
**Middle Page** All pages between the first and the last page of the finished print

**Last Page** The last page of the finished print

**Single Page** The first and only page. This design is used if the finished print only consists of one page.

Pages are opened by clicking the relevant tab. Right-clicking the page tab allows access to additional page options. Pages can also be selected using ALT+1, ALT+2, ALT+3 and ALT+4.

### 3.2.10 Developer toolbar (8)



The developer toolbar provides easy access to various tools for: defining criteria, creating JobInfos, rearranging input texts, defining conditional areas, patterns, inserting static text, lines, shapes and images into the form design.

### 3.2.11 Status bar (9)

Sales Invoice - Multi Pages.xml Ln 1, Col 1 X 112.2 mm, Y -2.5 mm

The status bar is located in the bottom left-hand corner of the window and provides information about rows and columns in the input sheet and the X and Y co-ordinates in the form design.

### 3.3 Text to EMF Forms

TEXT to EMF Forms work based on input derived from a grab file exported by any system on any platform. The Forms Engine retrieves data from the input grab file, processes it and maps it to fields in a form.

#### 3.3.1 Splitting Input Jobs

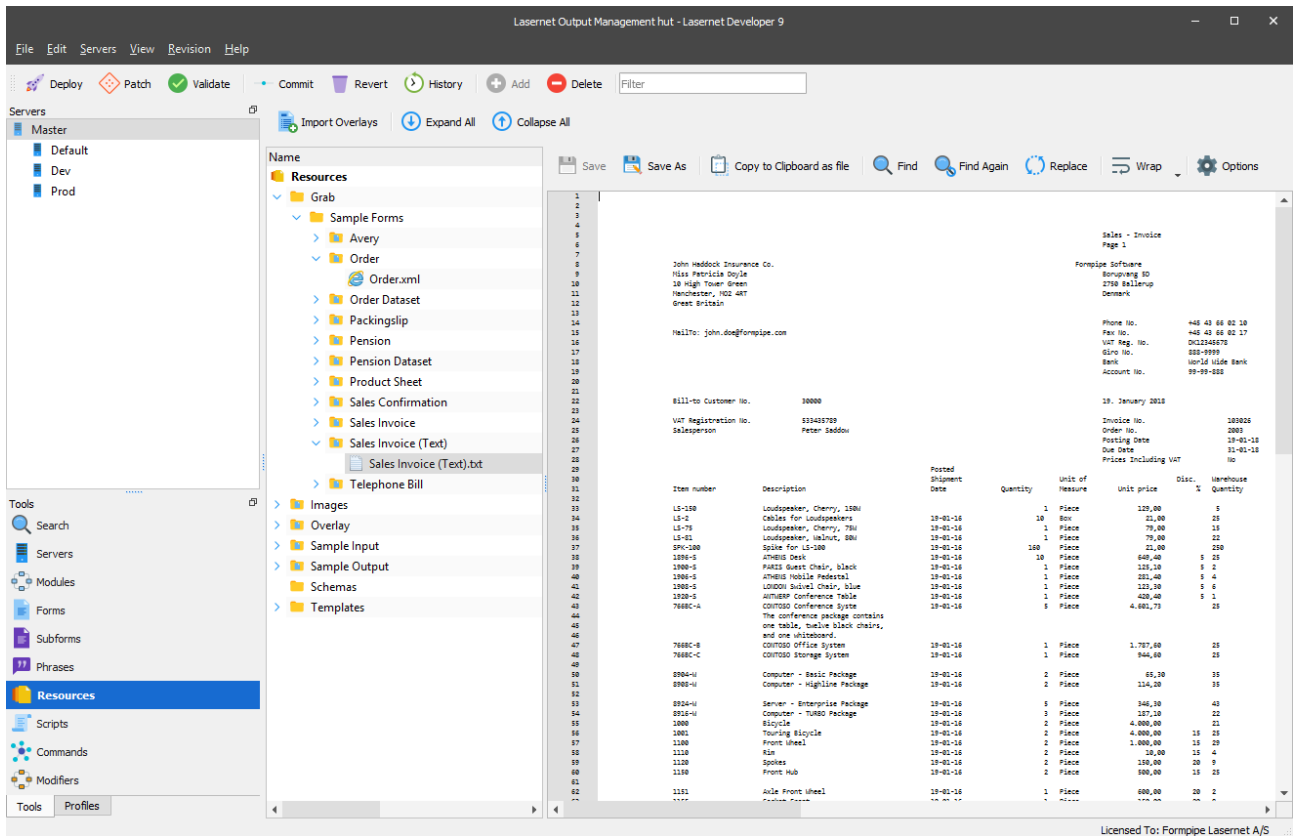
The **Split input job at** setting available on the **Form Setup** tab of the **Forms Properties** dialog for the Form Engine, provides the control for splitting pages into individual text forms/jobs. The most common character used for page separation is a form feed which is represented as ASCII character 12 (HEX 0C).

The screenshot shows the 'Form 1 Properties' dialog box with the 'Form Setup' tab selected. The 'Split input job at' section is expanded, showing three radio button options: 'Nothing', 'Form Feed character' (which is selected), and 'Custom expression'. Below these options is a 'Match:' text field with a dropdown arrow. Underneath, there are several checkboxes: 'Regular Expression' (unchecked), 'Dotall' (unchecked), 'Multiline' (unchecked), 'Greedy' (checked), 'Extended' (unchecked), 'Case Sensitive' (checked), and 'Keep Match' (unchecked). Below this section, the 'JobInfo Scanning' checkbox is checked, and the 'Log Level' is set to 'JobInfo' in a dropdown menu. At the bottom of the dialog, there is a progress bar with tabs for 'Input Grab', 'Pre JobInfos', 'Enter Modifiers', 'Processing' (which is highlighted in blue), 'Job Events', 'Post JobInfos', 'Exit Modifiers', 'Output Grab', 'Pause', 'Schedule', and 'Destinations'. 'Ok' and 'Cancel' buttons are located at the bottom right of the dialog.

Please note that changing the **Split input job at** setting affects all forms included in the list for the current Form Engine. You are able to setup several Form Engines, where each Form Engine contains the exact list of forms with the required splitting character.

#### 3.3.2 Grab

A grab file is created when an ASCII text file is processed by the Lasernet Service. The grab file represents a unique copy of all the data contained in an invoice or any another kind of report. The variable fields are typically structured in rows and columns making it possible to quickly identify their position within the grab file. Since the grab file is an ASCII file, it can be opened in Microsoft Notepad or Lاسernet Grab Editor.

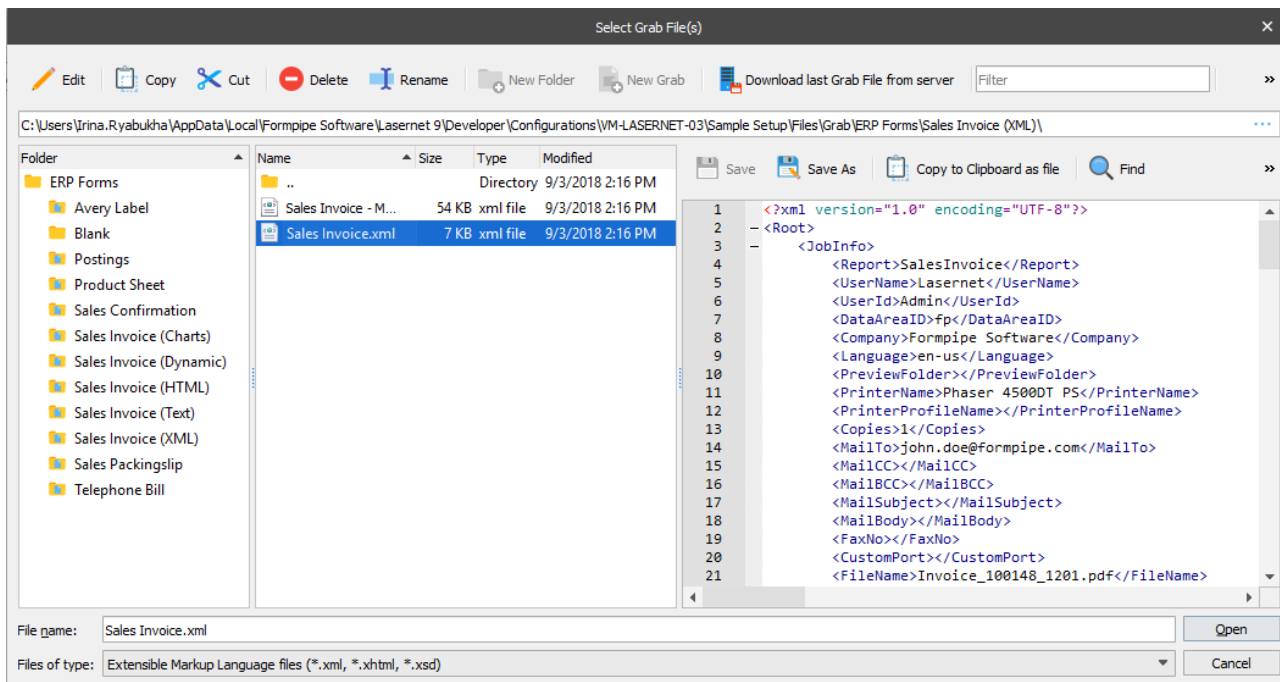


In this case, the grab file contains invoice data. The header of the file contains the customer name and address followed by the fields: Supplier, Vat NO. and Buyer. The body of the file contains invoice lines; each line specifies a product number, product text and price per item. The footer contains total price, payment terms etc.

### 3.3.2.1 *Selecting a Grab File*

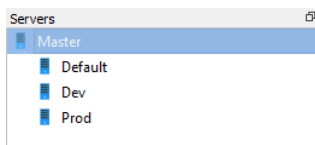
Before you can set up a new form, a grab file needs to be open in the left window of the Lasetnet Developer. Information about how to generate grab files is available in the manual for the Lasetnet Developer *chapter 1.6.2 Grab*.

Choose the **Form → Select Grab File** menu and browse to the directory on your computer, where the relevant grab file is located. This is usually the Grab subdirectory of your configuration.

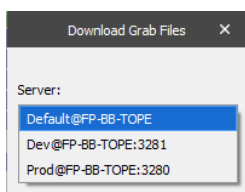


When you have located the correct grab file, press the **Open** button and it is displayed in the left-hand window of the Lasetnet Form Editor. You can open several grab files simultaneously by clicking them with the **Shift** or **Ctrl** key pressed. They are displayed as tabs in the left-hand pane of the Form Editor window.

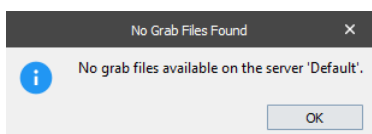
You can also download the last saved grab file, that belongs to the open form, from the server using the F12 key. When using this functionality, you must be able to connect to a Lasetnet server listed in the main configuration.



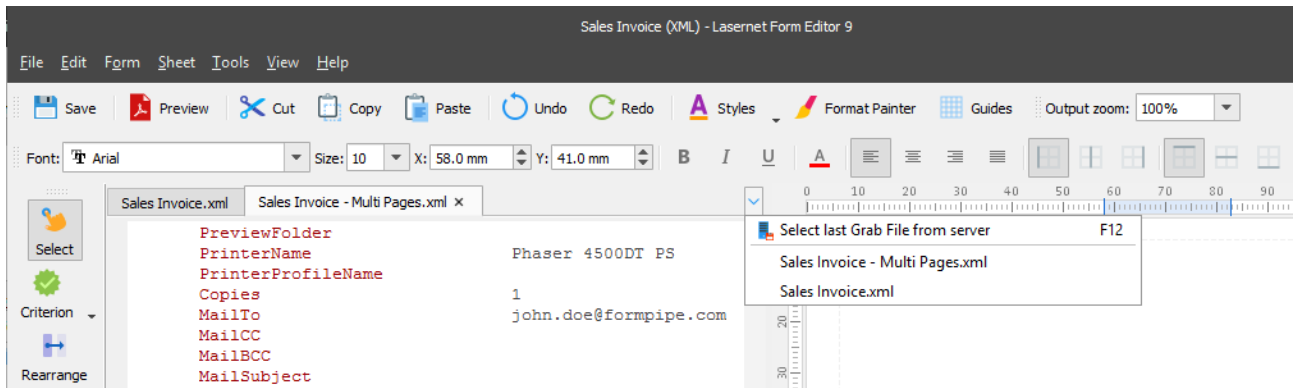
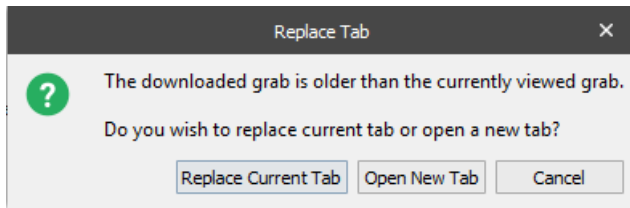
If more than one server is available, you will be prompted to choose which of the servers you want to download the grab file from. When a grab file has been downloaded, it is deleted from the directory containing the grab files on the server.




If no new grab files exists for the current form, you will receive a warning that no grab files are available for the current form on the server.



If the grab file found is older than the currently open one in the selected grab tab, it can be downloaded and replaced in the current tab or opened in a new tab.



You can also click the  button to select the last grab file from server for the open form, or select a specific grab file for one of the already loaded grab files.

You can also load an additional grab file (.Injob). This is an additional setting that must be activated when configuring the grab mode. The grab file contains the following information:

- JobData (.grab)** Contents of the JobInfo 'JobData'. No JobInfos are available.
- JobInfos (.Injob)** Full Job including all JobInfos.

For your convenience, there is also an option to drag and drop a file from Windows Explorer or equivalent file manager.

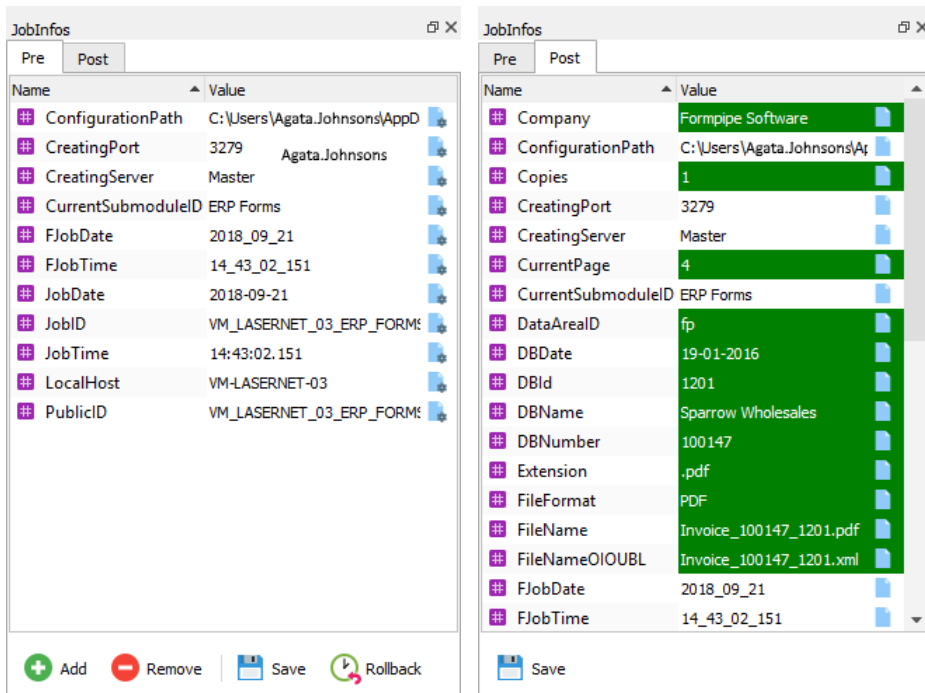
### 3.3.2.2 View Grab JobInfos

To view the Grab JobInfos activate **View → Grab JobInfos** (Ctrl+Shift+G).

If a JobInfo grab file (.Injob) does not exist, the JobInfos view only shows the system JobInfos generated by the Form Editor.

The JobInfo view contains a **Pre** tab and a **Post** tab. The **Pre** tab shows the loaded JobInfos and the **Post** tab shows the result of JobInfos created by the system and by the user in the current sheet.





You can **Add** and **Remove** JobInfo from the list for testing purposes, **Save** the result into the grab file or **Rollback** the changes added to the list. You can only **Rollback** until the last **Save** event.

Working with a JobInfo grab file allows you to use the values of grabbed JobInfos during form design. This is a powerful feature when testing scripts, modifiers and database commands that retrieve and change the value of JobInfos. The result of the JobInfos will often have an effect on the final design. It will also show the result of the design when processed through the Form Engine on the Lasernet Server.

### 3.3.3 Form, Sheet, Link and Stop Criteria

You can define various criteria for your forms to enable the Form Engine to recognize the form input data files. Lasetnet supports the following types of criteria:

- Form**      The Form Engine uses the form criterion to look for key data in specific locations in a data input file to ensure that the right input file type has been received.  
**Note:** If no criteria are specified for a form, the form is not processed.
- Sheet**     The Form Engine uses the sheet criterion to look for key data in specific locations in a data input file. If no matches are found the sheet is not processed.
- Link**       The link criterion is used for defining how a series of print jobs are connected that belong to the same output form. A link criterion can only be defined in forms with TEXT as input format.
- Stop**       The stop criterion is used to look for key data in specific locations in a data input file, which marks the stop point of the received file. Lasetnet will continue to combine all print jobs until it reaches a stop criterion, providing **Enable Job combining** is selected. Stop criteria are only defined in forms with TEXT as input format.

For more information about link and stop criteria, see Chapter 1.21 Combining Jobs of Lasetnet Developer.

JobInfo criteria can also be added to provide the user with additional methods for recognizing input data files.

Criteria are defined in the left-hand window of the Lasetnet Form Editor by using the Criteria tool and marking an area with the mouse. It is also possible to manually add Criterion from within the Criteria dialog accessed via the **Form → Criteria** menu.

The picture below shows a defined start criterion. Link and Stop criteria tabs are only visible in forms defined with TEXT as input format.

Sales - Invoice  
Page 1

The start criterion tells Lasetnet to look for the word “Invoice” in a specific location in an input data file to indicate that the file contains invoice data. When the form criterion has been defined, it is highlighted in grey. You can now double-click the criterion and edit it manually in the **Form Criterion** dialog.

As mentioned earlier, the easiest way to define a new criterion is by using the **Criterion** tool. If you click on the arrow to the right of the **Criterion** tool a pop-up menu is displayed.

In the pop-up menu, you can choose which type of criterion you wish to define. After you have chosen the type of criterion, the mouse cursor changes, and you can now mark a criterion area in the grab file on the left-hand side of the Lasernet Form Editor.

It is possible to define several different criteria within the same form. To this end, use the **Criteria** dialog while defining a criterion, or later by choosing **Form → Criteria** to see a list of all the defined criteria.

From the **Criteria** dialog, you can also manually add additional criteria, add JobInfos, edit or remove existing criteria and change the priority of the criteria.

### 3.3.3.1 **Form Expressions**

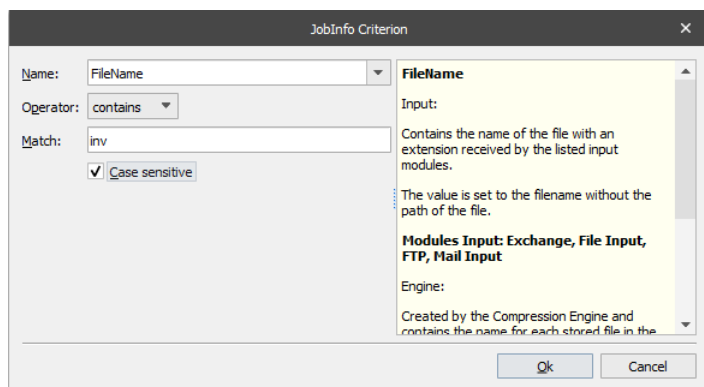
In the Criteria dialog you can define a form expression as a logical expression. The following are examples of possible expressions:

- A and B and C and D
- (A or B) and (C or D)
- (A or B) and not (C or D)

By default, all criteria are true if no form expression has been defined. The form expression field allows for a high degree of flexibility when defining rules for the Lasetnet Form Engine to use when recognizing data input files.

### 3.3.3.2 **JobInfo Criteria**

You can include JobInfos in the list of criteria for a form. A JobInfo criterion can only be added manually by clicking the **Add JobInfo** button.



In the **Edit JobInfo Criteria** dialog you define the following values:

**JobInfo Name** Select the JobInfo that you want to work with from the dropdown list. In the example the JobInfo 'FileName' is chosen. You can also write the name of one of your own custom JobInfos.

**Operator** Define the type of operator. In the example, the physical filename of the input data file must contain the string 'inv'.

**Match string** Write the value to match for the specified JobInfo.

### 3.3.3.3 **Criteria Master Form**

Criteria added to a form which is specified by a user as a criteria master form are inherited by the current form.

NewInvoice1.0 Criteria = Invoice

NewInvoice1.1 (Criteria = Invoice) and (Company = 10)

NewInvoice1.1.1 (Criteria = Invoice) and (Company = 10) and (Amount > 200)

NewInvoice1.2 (Criteria = Invoice) and (Company = 20)

NewInvoice1.2.1 (Criteria = Invoice) and (Company = 20) and (Amount > 200)

NewInvoice1.2.2 (Criteria = Invoice) and (Company = 20) and (Customer = 1000)

NewCreditNote1.0 Criteria = CreditNote

The master form cannot be executed if a child form matches the criteria.

### 3.3.3.4 Link and Stop Criteria

It is possible to combine a series of print jobs as a single job. This is done by defining either a link criterion or a stop criterion.

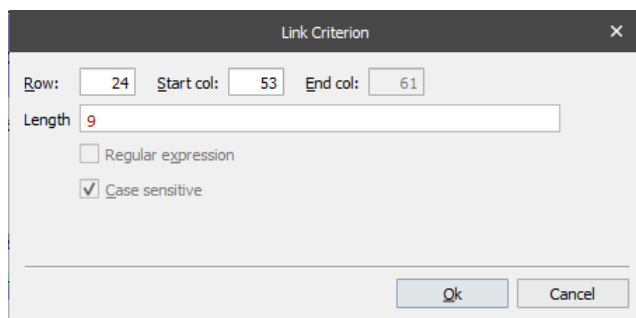
Link and stop criteria are created using exactly the same method for Form criteria as described earlier in this chapter. You choose the link or stop criterion from the toolbar and mark the text that is used for combining multiple forms.

The following sample illustrates a defined link criterion in an input data file.

```
Bill-to Customer No.      30000
VAT Registration No.     533435789
Salesperson              Peter Sadow
```

In the example the Vat No. is defined as a link criterion.

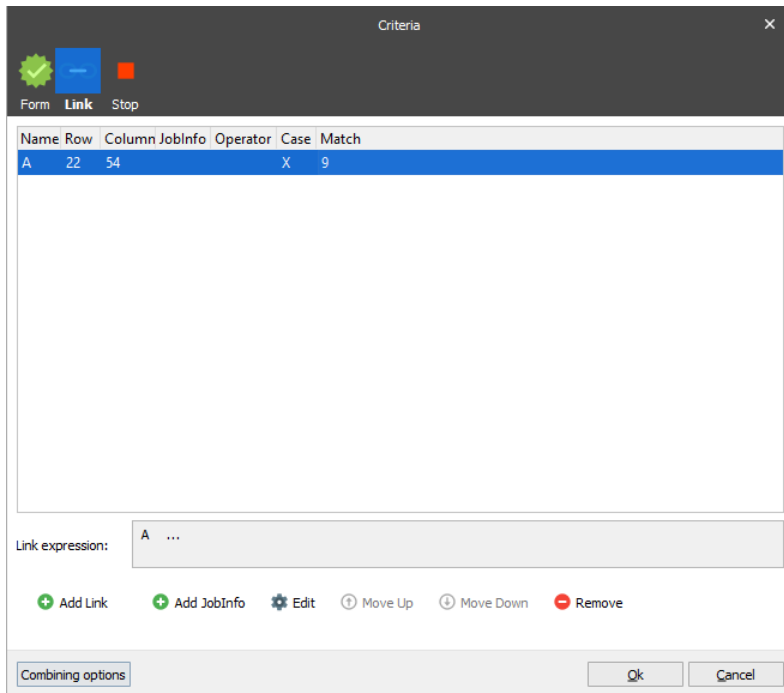
You can double-click the link criteria, which opens the edit dialog.



If a Link Expression containing one or more Link Criteria is defined for a matching form, the Lasernet Form Engine analyzes the positions referenced in the link criteria, to see if they have the same value as for the previous job. If the link criterion is true and the Link Expression is also true, the two jobs are recognized as sub jobs of the same job.

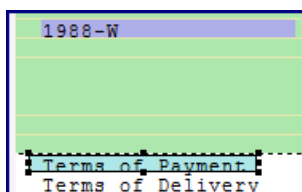
In the example, the link criterion is recognized by an exact match of 9 alphanumeric characters located in a specific row and column. If the next job contains the same 9 characters in the same position (e.g. an identical VAT No.), they are combined as subjobs in one job.

Link criteria can be viewed by clicking **Form** → **Criteria** and then switching to the **Link** tab.

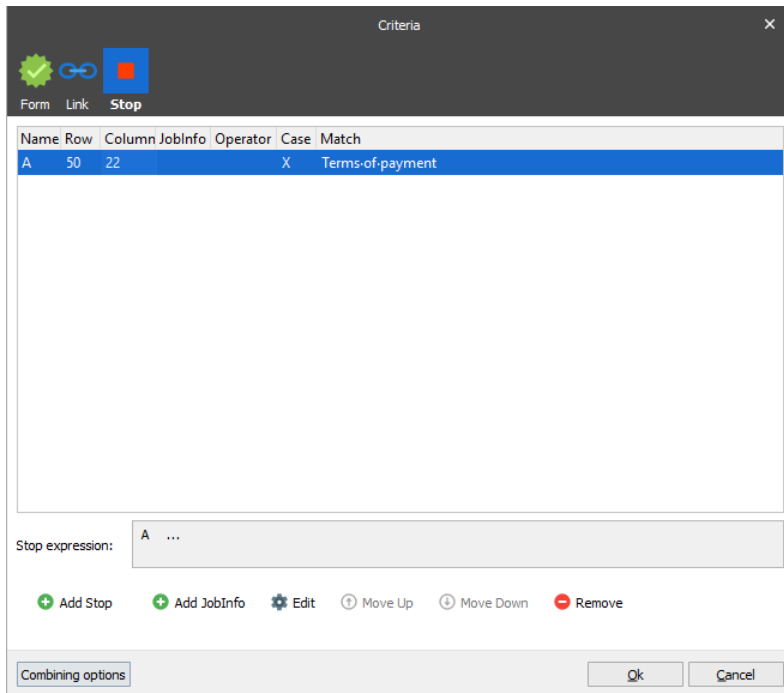


It is possible to Add, Edit, Remove and Sort link criteria manually, as well as create further Link Expressions to define more advanced rules for identifying pages that belong to each other.

A stop criterion is created in exactly the same way as form or link criterion.



In this example, 'Terms of payment', has been marked as a stop criterion, indicated by the blue color. The following picture shows the details of the stop criterion in the Criteria dialog (**Form** → **Criteria** menu).



Here we look for a match in the input data file which indicates that this is the end of a series of print jobs and stops combining print jobs when it locates the “Terms of payment” text in row 50, column 22 of an input file.

### 3.3.3.5 *Page and Job Oriented Forms*

It is possible to processes both Page and Job oriented forms. To mix between Page and Job oriented forms in a batch of jobs you need to define Link or Stop criteria. The following sections illustrate the different ways to process data and the elements of form design.

#### 3.3.3.5.1 *Page to Page Oriented Forms*

Print jobs are processed as single pages and produce single pages in response (one input page corresponds to one output page). The length of the page (body) is defined in the administrative system producing the print and there is an exact (one-to-one) relationship between the amount of pages printed and the amount of pages received.



This is normally used for enriching the input data by formatting font types and sizes, controlling the printer setup and adding graphical overlays etc. Data contents such as subtotal, totals and page numbering are typically defined within the administrative system.

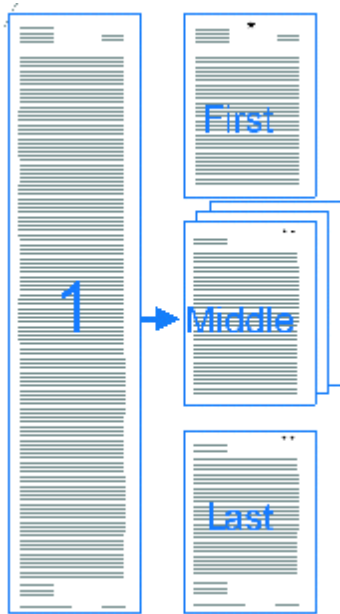
#### 3.3.3.5.2 *Important settings*

- Form Criteria: Yes
- Job Combining: No
- Link Criteria: No
- Stop Criteria: No
- First Page: No
- Middle Page: No

Last Page: No  
Single page: Yes

### 3.3.3.5.3 Job to Job oriented forms

Job to Job oriented forms are characterized by the receipt of all input data as one single page in the Lasernet Form Engine, which is subsequently split into multiple output pages. The difference between “Page to Job” and “Job to Job” is how the data from the administrative system is printed. In “Job to Job” a five-page invoice is received as a single page. Input data can be freely positioned on the first, middle or last page of the final print. Data such as subtotal, totals and page numbering are typically defined in the Lasetnet Form Editor.

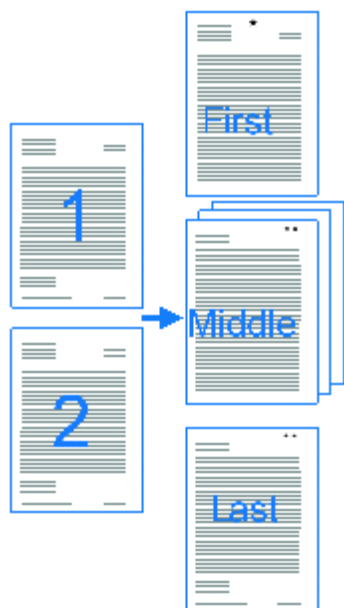


### 3.3.3.5.4 Important settings

Form Criteria: Yes  
Job Combining: Yes  
Link Criteria: No  
Stop Criteria: No  
First Page: Yes  
Middle Page: Yes  
Last Page: Yes  
Single page: Yes

### 3.3.3.5.5 Page to Job oriented forms

Input consisting of one or more pages can be split into multiple output pages. For Page to Job forms a five-page invoice would be received as five individual pages numbered consecutively from 1 to 5. By default, when managing a Page to Job form, Lasetnet Form Engine will create the header of the output based on the header of page 1, the footer based on page 5 and the bodylines from the pages in between (in the example page 2-4).



Input data can be freely positioned on the first, middle or last page of the final print. For this type of job the page length is defined inside Lasernet Form Editor and the size of the body can vary from page to page. Data such as subtotal, totals and page numbering are also typically defined in Lasernet Form Editor.

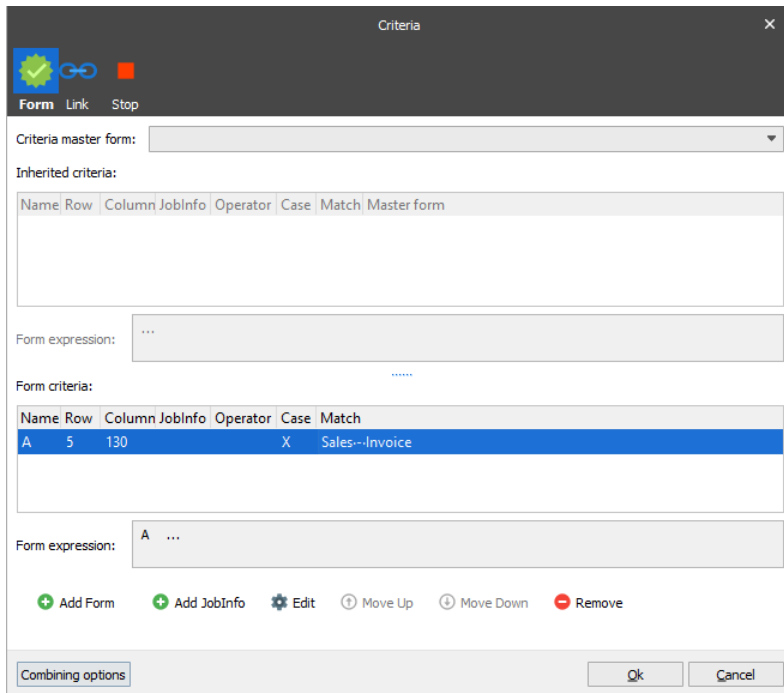
#### 3.3.3.5.6 *Important settings*

- Form Criteria: Yes
- Job Combining: Yes
- Link Criteria: Yes
- Stop Criteria: Yes
- First Page: Yes
- Middle Page: Yes
- Last Page: Yes
- Single page: Yes

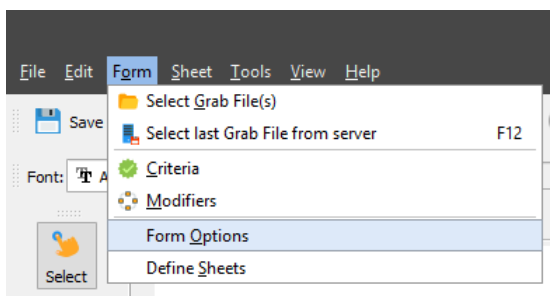
#### 3.3.3.6 *Combining (Page to Job mode)*

In order to achieve a well-defined text structure when formatting text files in page to job mode, you must define the structure of the header, footer and body of your incoming form. On the Criteria menu, click **Combining options**. Combining is only possible for forms running in the page to job mode since this is a feature for formatting jobs which contain several incoming pages, but must be processed as one outgoing job.





The settings for combining can also be reached by opening **Form** → **Form Options** → **Combining** tab.



### 3.3.3.6.1 Enable Job Combining

First, you must select the **Enable Job Combining** check box for combining incoming pages into one job.

When printing a document from your ERP system in text mode, it often contains several pages because the number of article lines cannot fit on a single page. Each page typically contains a header, body and footer. Very often the number of printed text lines for the header and footer are exactly the same size.

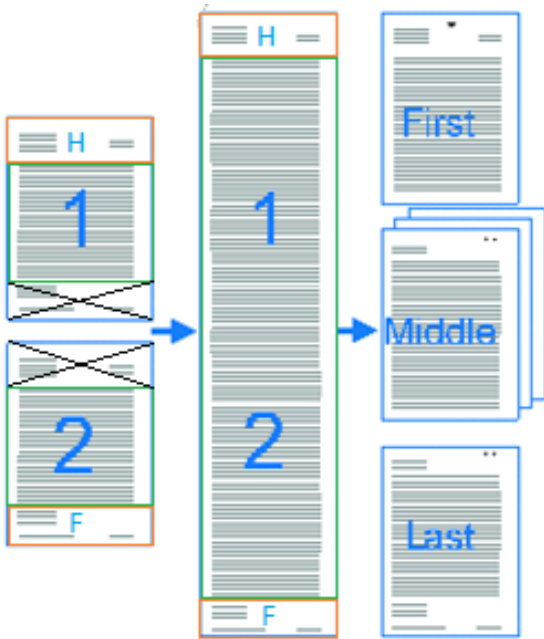
If the number of lines in the header is exactly the same for all the pages you want to combine, you can add it to the 'Header Size' field.

If the number of lines in the footer is exactly the same for all the pages you want to combine, you can add it to the 'Footer Size' field.

The net result can be a combination of:

- the header for the first incoming page
- the body lines for all incoming pages
- the footer for last incoming page

is/are combined/converted into one grab file/job, as per the elongated document in the second column of the illustration below. This is the data structure used for setting up the final form design for first, middle, last and single pages in the Lاسernet Form Editor.



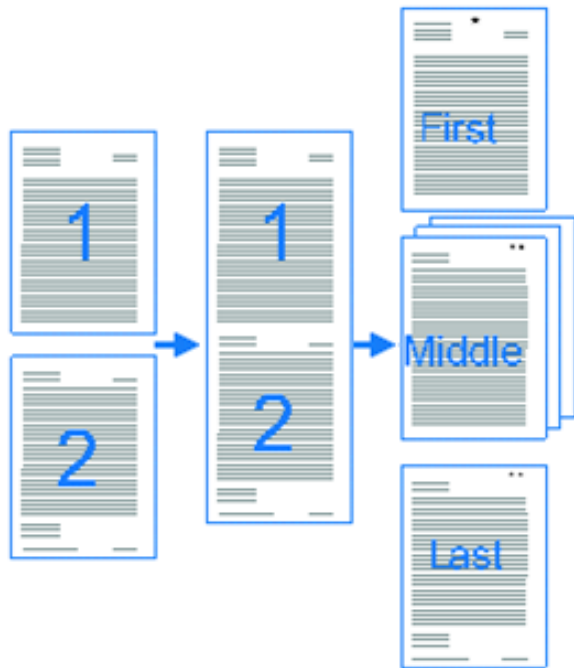
In some cases, the size of the header and footer for an incoming TEXT document are not always the same for page 1, 2, 3 etc.

To prevent the loss of data through accidental removal of the header and footer lines, you can turn on “Keep Header For All Pages” or “Keep Footer For All Pages” or both, if the size of the header and the footer varies for both areas.

The net result can be a combination of:

- the header for all incoming pages
- the body lines for all incoming pages
- the footer for all incoming pages

is/are combined/converted into one grab file/job, as per the elongated document in the second column of the illustration below. This is the data structure used for setting up the final form design for first, middle, last and single pages in the Lasernet Form Editor.



When activating both “Keep Header For All Pages” and “Keep Footer For All Pages”, the effect is equivalent to removing all of the page breaks and merging everything into one long page, containing all of the headers and footers between the body lines.

### 3.3.3.6.2 Time Out

A time out is defined to prevent the form from not keeping pages together during heavy processing of simultaneous jobs. The time out is only required in the Page to Job mode and only if the form has a link criterion or several link criteria for combing pages. The form always analyzes the next page in the spool job, to find out if the page should be linked to the current one or not. If the time out has been reached for a job, no further combining takes place, and the job is closed. The time out is defined in seconds and default setting is 5 seconds, which is the recommend value in most cases.

Please note that as the last page in a batch is processed, there will be a delay before the page is sent to the printer or another output module, especially if only operating with a link criterion and a time out. In many cases this is not a problem, since a delay of X seconds is generally harmless when printing or mailing the last document in a batch. However, we would recommend that you set a stop criterion in the form to signal the end of the combining and avoid the final timeout at the end of the document. This means that any output actions (such as printing and email) will be executed without delay.

### 3.3.3.6.3 Fixed Number of Lines

Sometimes a page splitter is not available. This happens if each page in the print job is generated with a fixed page length. By activating the “Fixed number of lines” setting, you can define at which line number the Lasernet Form Engine has to force a page break, for successfully splitting up pages to the correct length.

### 3.3.4 Sheets and Pages

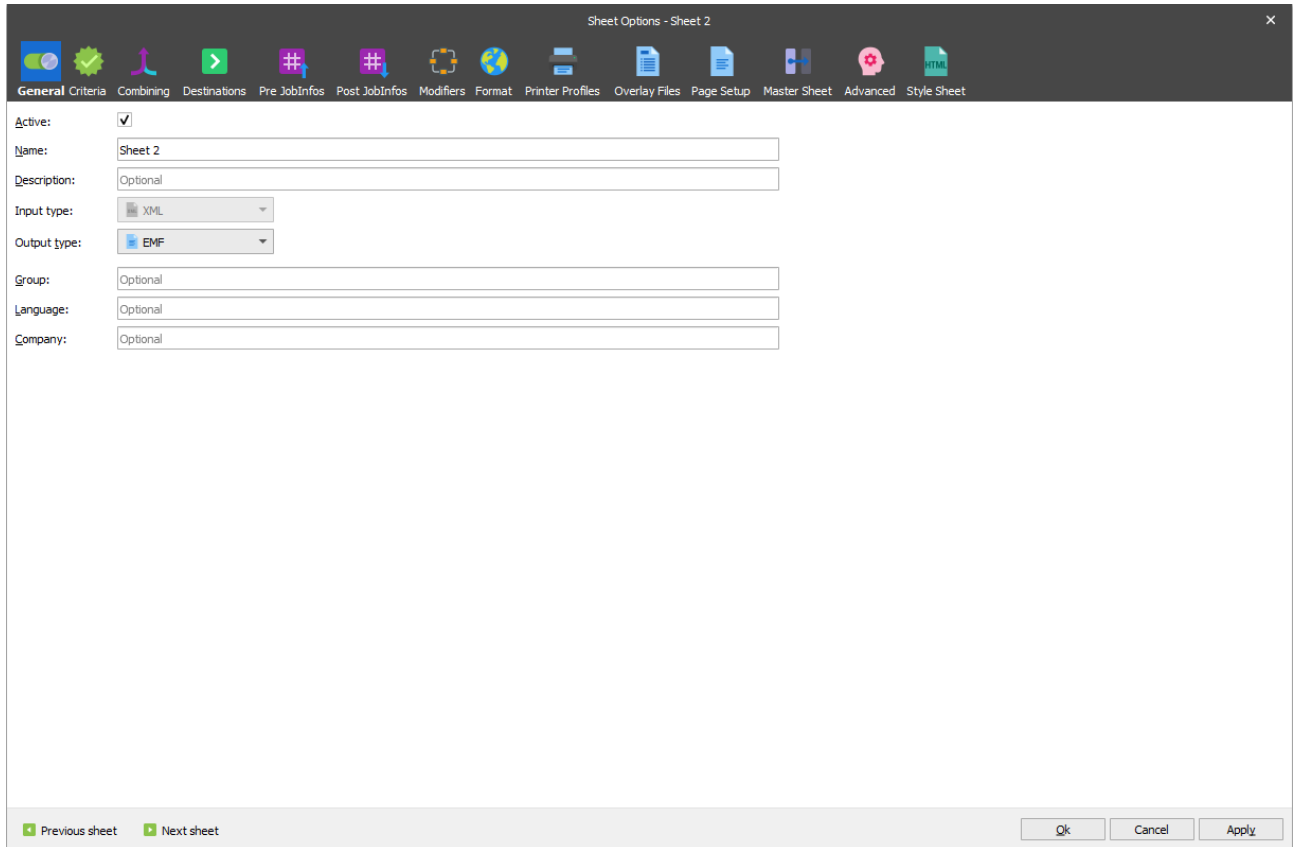
The Lasetnet Form Engine can generate multiple copies of an incoming print job. Each copy is represented as a sheet with the four pages First Page, Middle Page, Last Page and Single Page. In the example below an incoming print job is distributed in four copies: the original invoice, a copy, an email and one for the archive.



In the dialog 'Define Sheets' accessed via the menu **Form** → **Define Sheets** you can manage your sheets, target destinations and output types.

### 3.3.4.1 *Sheet Properties for EMF Output Type*

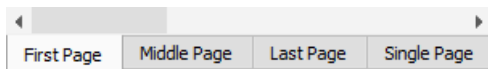
You can edit the sheet properties by selecting the sheet in the **Define Sheets** dialog and clicking the **Edit** button.



Sheet options are maintained from this dialog.

### 3.3.4.2 *First, Middle, Last and Single Page*

Each sheet has a corresponding First, Middle, Last and Single page for formatting output. These pages can contain overlays defining the graphical look of the form, rearranges representing the actual printed data, fixed texts and scripts.



You can access the page setup of each one by right-clicking the tab and choosing the menu item **Paper format**.

In the **Paper Format** dialog, you can define a pre-defined paper format or enter a custom width and height in millimeters. The page orientation can also be changed between 'Portrait' or 'Landscape' styles.

The four different page layouts are used to handle forms of varying length. If the conditional area only fills one page, then the Single page layout is used. If the data fills two conditional areas, then the First and Last page layouts are used. For jobs filling more than two conditional areas the First, Middle and Last layouts are used. This provides true flexibility in designing your output pages.

A default reference printer is defined automatically when adding a new form/sheet. The sheet retrieves the following settings from the printer driver used as a reference printer:

- Margins
- Form names (supported paper size)
- Fonts (printer specific fonts)

Lasernet automatically creates a Lasernet Reference Printer as a Windows printer with a Lasernet EMF driver attached.

**Note:** The Lasernet Reference Printer works for Lasernet in the same way as the Default Printer in Windows works for other Windows applications when retrieving settings.

### 3.3.5 Overlays

Overlays represent the graphical design elements of your final forms. They are designed and maintained outside Lasernet Form Editor using one of the applications listed below (amongst others). This approach not only allows for the rapid creation of new overlays from existing marketing materials, but also ensures a clear separation between the graphical design and data retrieval aspects of form building.

To get an overview and maintain a list of overlays and templates added to a configuration go to: **Lasernet Developer → Resources → Overlay.**

#### 3.3.5.1 *Designing Overlays*

The overlays represent all the graphical elements of a form such as company logo, borders, boxes, fixed text, images, lines etc. You can use a single overlay for a form or create separate overlays for each individual graphical element, for easier maintenance.

You design and maintain overlays outside of Lasernet Developer using any Windows application that can print to the Lasernet Print Capture printer, which is an integral part of the Lasernet installation. The following is a list of recommended Windows applications to use when creating overlay files for your Lasernet forms:

- Microsoft Word
- Microsoft Publisher
- Adobe InDesign

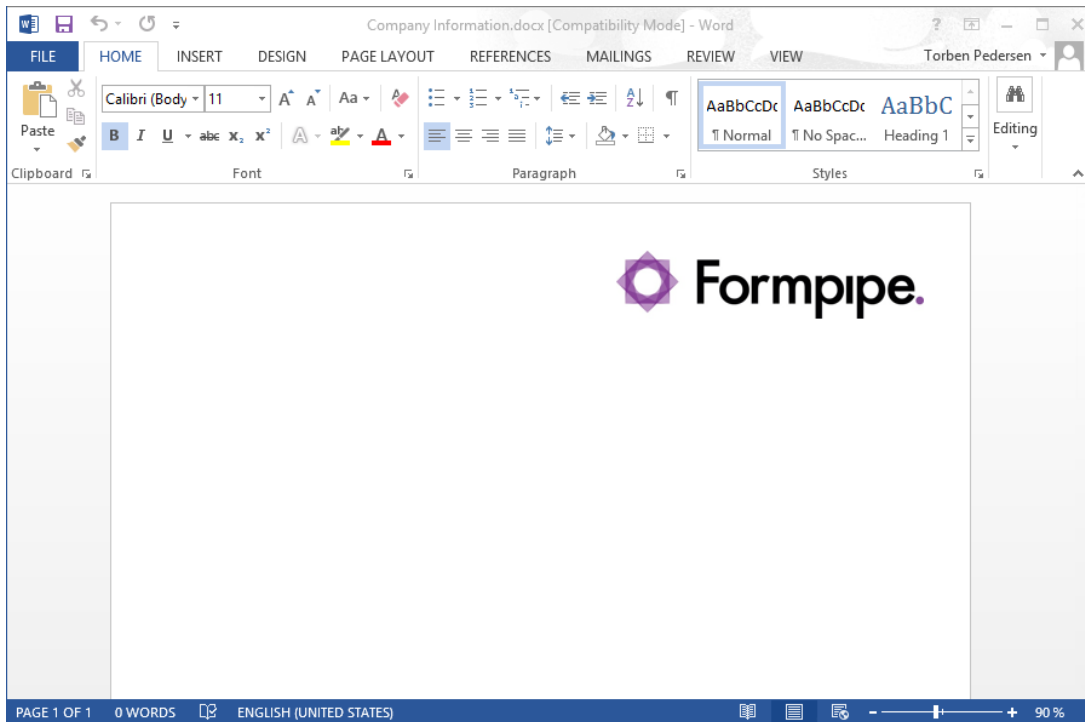
Overlay files are created in Lasernet EMF format and are generated via the Windows printer queue named Lasernet Print Capture.

We recommend that you split up all of your graphical elements for a form into separate overlays. For example:

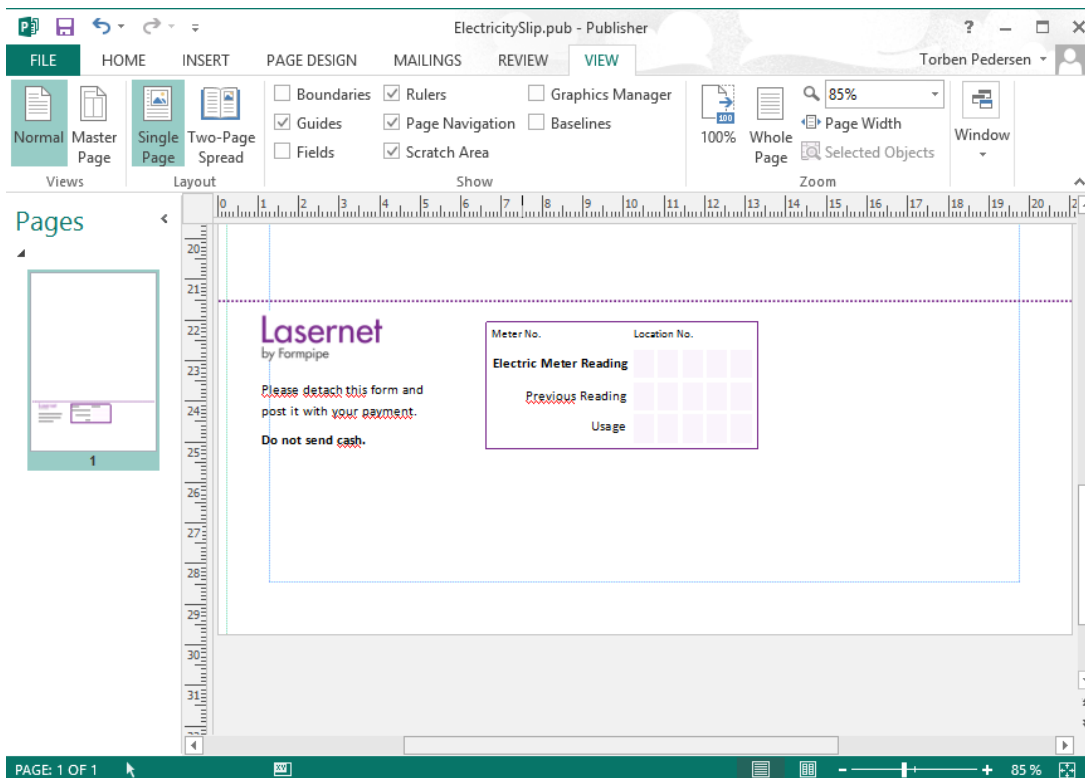
- An overlay file containing your company logo and company address
- An overlay file containing the text 'COPY' to be used on all of your printed copies
- Separate overlay files for each of your form types: e.g. one for invoices, one for credit notes, one for a statement of accounts, one for payroll statements etc.

#### 3.3.5.2 *Example of Overlay Design*

The following example shows how to create a simple overlay designs for your forms.



An overlay designed in Microsoft Word. The overlay contains the company logo.

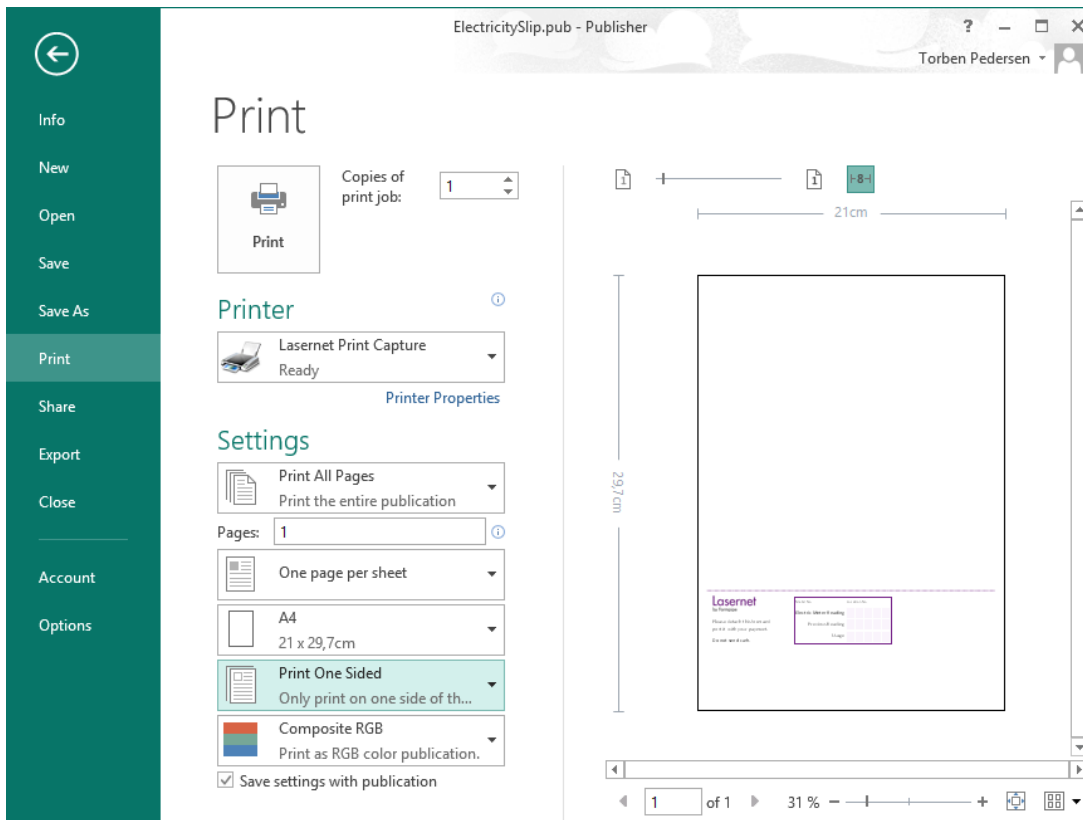


An overlay designed in Microsoft Publisher. A payment slip to be used as a part of a form layout.

### 3.3.5.3 Generating Overlays

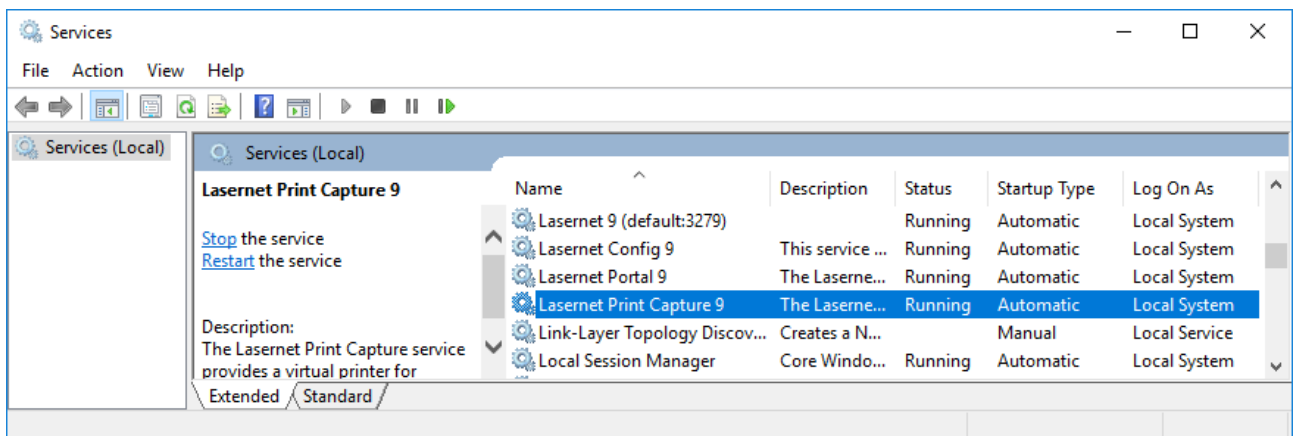
The Lasernet Print Capture printer is added to your list of printers in Windows.

When you have finished creating an overlay file, in your design application, select **File** → **Print** from the menu and the printer page displays (see below).



Select the **Lasernet Print Capture** printer and click **Print**. An overlay file is now exported and ready to be imported into your Lasernet configuration. The overlay file retains the same name as the one given by the application that printed it, with an .nemf file extension.

*Tip on troubleshooting:* Make sure that the **Lasernet Print Capture** Windows service is running.



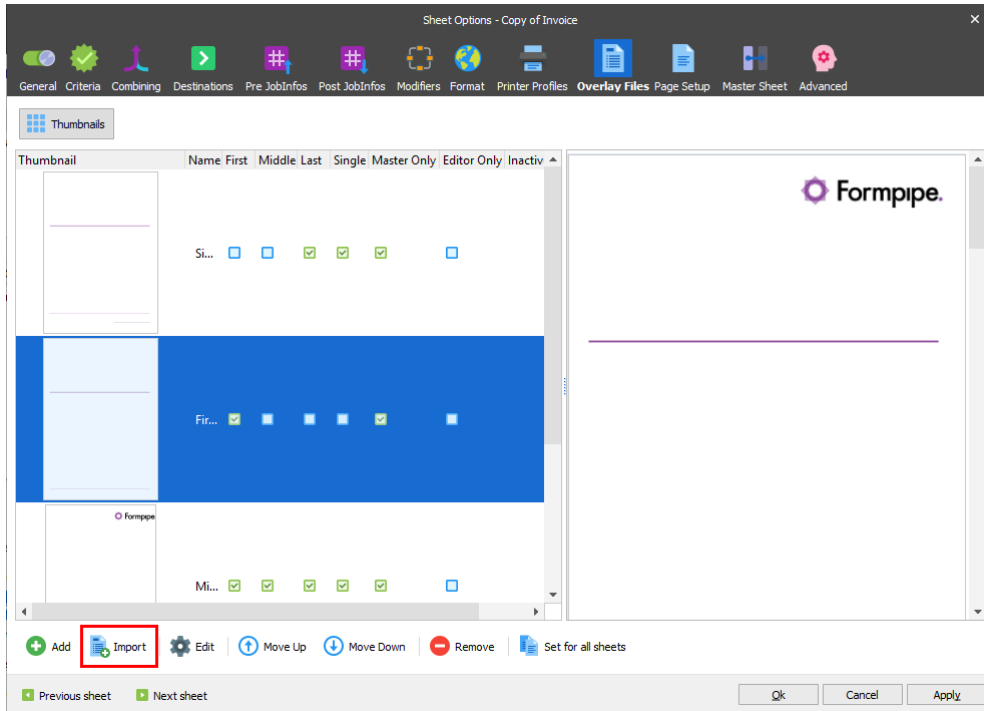
#### 3.3.5.4 Import Printed Overlays to the setup

Overlays files printed to the Lasernet Print Capture are temporarily stored on disk and are not available to the Lasernet Form Editor until they have been imported into the configuration via the Lasernet Developer or via the **Overlay Files** tab of the **Sheet Options** dialog in the Lasernet Form Editor.

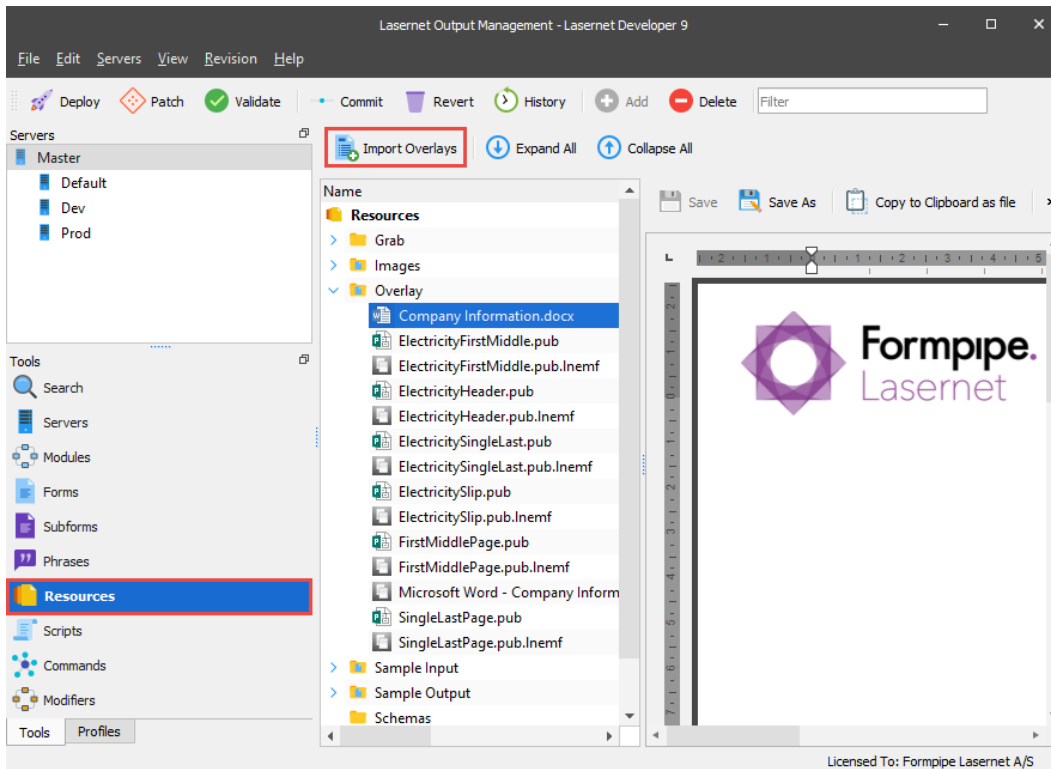


**Note.** Lasernet Developer must be running on the same machine as the Lasetnet Print Capture. Once imported, the configuration can be sent to any Lasetnet machine over the network as normal. Any overlays are then transferred with the configuration.

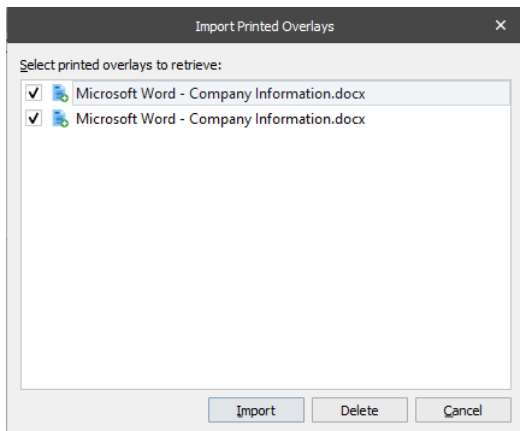
Open the **Sheet Options** dialog on the Overlay **Files** tab in the Lasetnet Form Editor, click **Import**, and all the overlays, which have been created since last import are available to be imported into the currently open configuration.



Alternatively, overlays can be imported from the main menu **Lasetnet Developer** → **Resources** section by clicking the **Import Overlays** button.

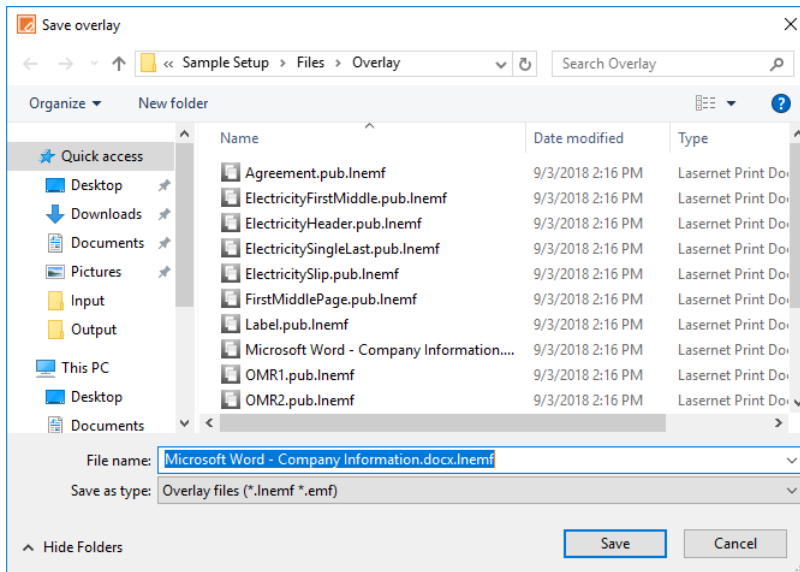


Activate the overlay(s) to add them into your current project.



Click **Import**. As a result, the overlays are removed from the list and moved to your project.

During the import, you can change the temporary file names given for each document in the list.



Please note that you are only prompted to rename files if the feature is turned on. To change this setting, go to **Lasernet Developer** → **View** → **Prompt for Overlay Capture File Name** to toggle this feature on/off.

The **Import overlay** function is also available from the **Sheet** → **Sheet Options** → **Overlay Files** menu in the **Lasernet Form Editor**.

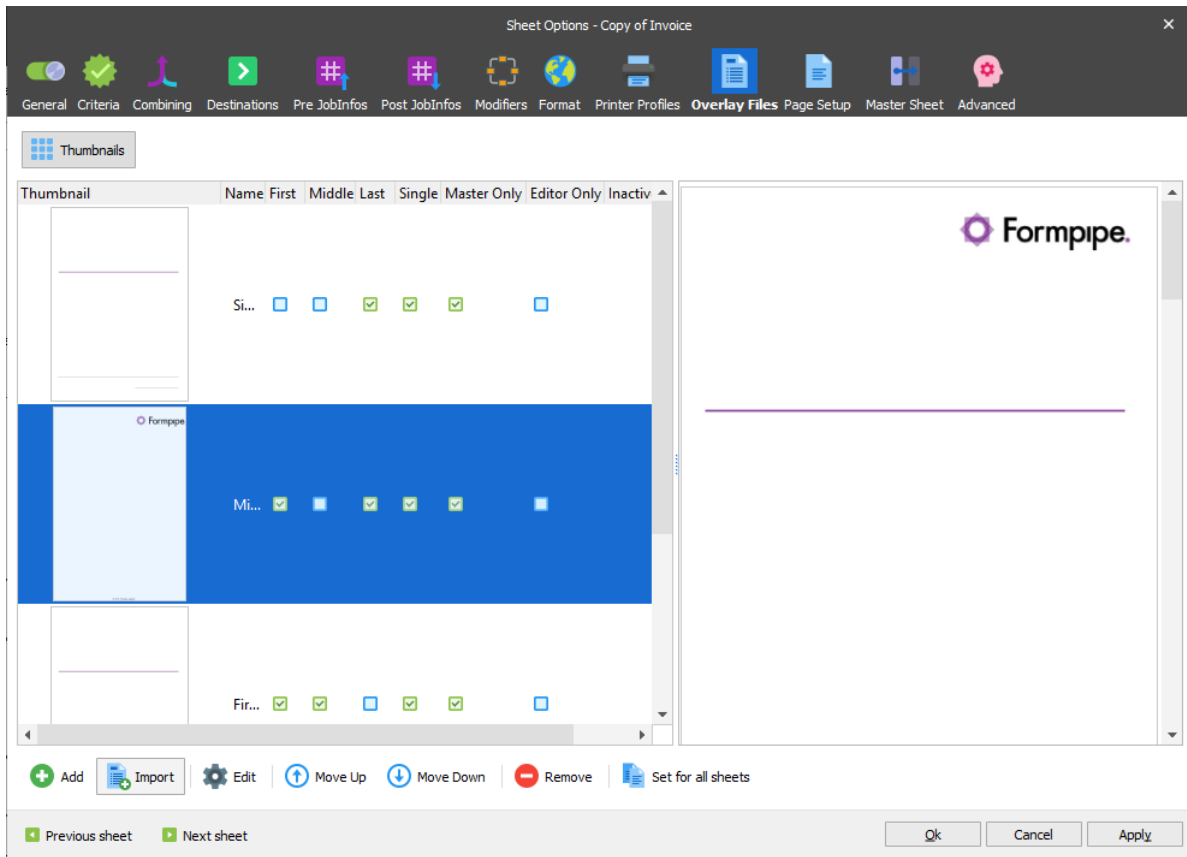
When you have imported the overlays, they become available in your project from the Lasernet Form Editor application.

The result of importing overlays via the Lasernet Developer or Lasernet Form Editor is exactly the same. In both cases, all the imported overlays become available for all the forms created in the configuration.

One of the advantages of importing overlays directly from the Overlay dialog is that a little wizard can help you to easily insert a range of overlays into the first, middle, last and single page(s) of the sheet you are currently working on.

### 3.3.5.5 **Adding Overlays to the Sheet**

You can access and manage the list of overlay files in your form via the **Sheet** → **Sheet Options** → **Overlay Files** menu (the same dialog where you can import your overlays from).



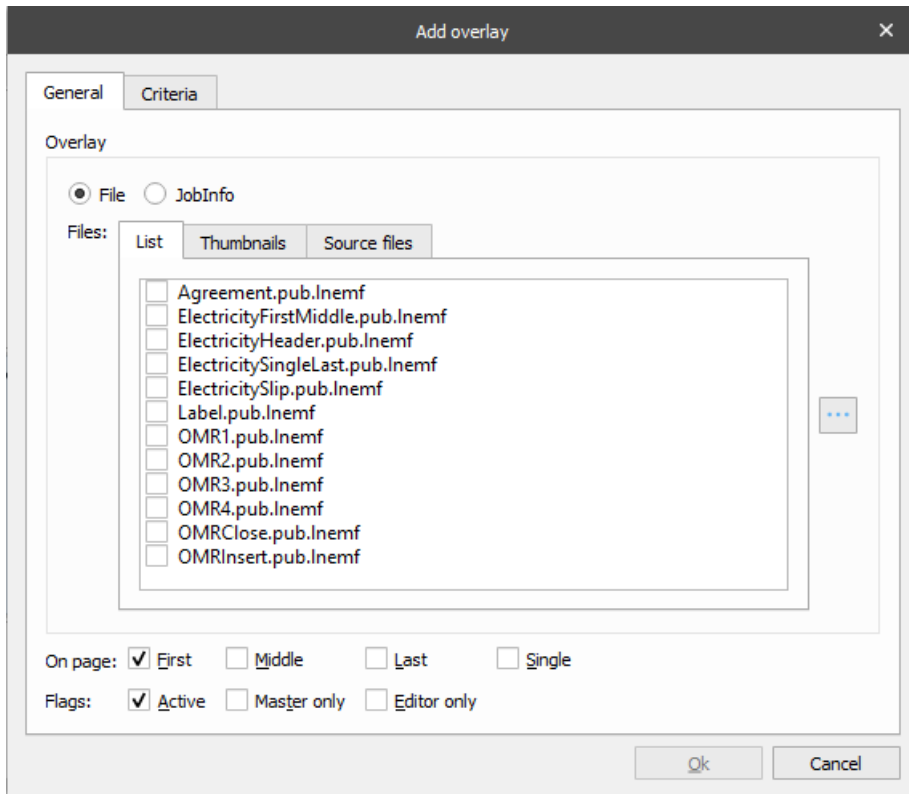
On the left-hand side of the **Overlay Files** tab, the overlays that you have added to the First Page, Middle Page, Last Page and Single Page are shown. To the right of the box is the Preview area where you can see a representation of the selected overlay.

By default, overlays are shown as thumbnails. To show overlays as a list, click the **Thumbnails** button.

#### 3.3.5.5.1 Add overlay

You can add additional overlay files to a page by clicking the **Add** button. As a result, a dialog for viewing available overlays files listed in the **Files → Overlay** folder appears.

In this dialog box you can browse to the directory containing your overlay files with the .Inemf extension and activate a single or multiple overlays. On the **Thumbnails** tab, you can also preview overlays before adding them. From the **Source files** tab you can open an overlay in a corresponding graphics editor and edit it, if needed.



Select/activate the appropriate overlay file and then choose what page it should be added to. Click the **Ok** button to include it in your form.

Apart from files, you can also add JobInfos. A JobInfo contains a name of the overlay file stored in the default directory of the current setup.

#### 3.3.5.5.2 **Overlay properties**

**Criteria** Form or JobInfo criterion can be defined to look for key data in specific locations in a data input file to validate if the overlay file should be added to the final layout.

**On page** Activate **First**, **Middle**, **Last** or **Single** to add the overlay to the individual pages.

**Flags** Set **Active** to activate the listed overlay file.

Activate **Master only** to prevent the overlay file from being inherited on child sheets.

To prevent only the Form Editor from showing the overlay file during processing **Editor only** must be disabled (the default setting).

#### 3.3.5.5.3 **Sequence of overlays**

You can change the sequence of the overlay files using the **Move up** and **Move down** buttons. The sequence is important because it describes the order of the layers. The last drawn overlay is placed at the top. Rearranges, Insert Text etc. will be added afterwards and will always stay on top of the overlay.

#### 3.3.5.5.4 **Remove overlay**

You can remove an overlay from a page by selecting it and clicking the **Remove** button.

### 3.3.5.5 Import Overlays

Click the **Import** overlays button and select an overlay file from the import overlay dialog.

All of the overlay management functions are also available from a pop-up menu that can be accessed by right-clicking in the output design view of the Form Editor.

### 3.3.5.6 Summary

Overlay files can be created and used by following these simple steps:

1. Design the overlay files representing your form's graphical elements in your favorite Windows design application.
2. Open your Lasernet project in Lاسernet Developer.
3. Print the graphical design files to the Lاسernet Print Capture printer.
4. Import the overlay to make it available in the configuration.
5. Add the overlay files (.lnemf files) to the relevant pages in your form.

## 3.3.6 Rearranging Text

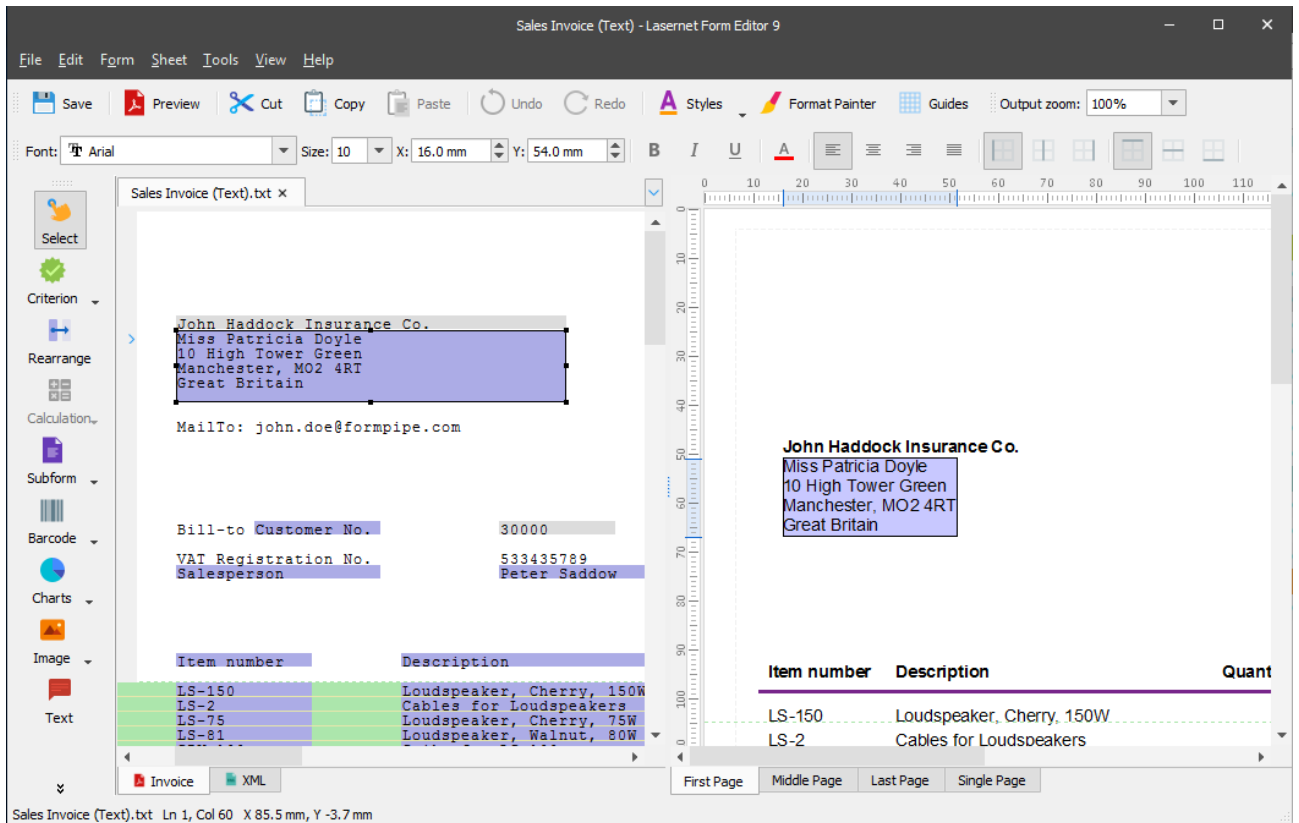
The term rearranging text refers to the process of defining how data contained in the input grab file will be represented/manipulated in the final form.

### 3.3.6.1 Select Tool




You activate the **Select** tool by clicking the **Select** button in the toolbar.

When active, you can select previously defined objects (areas) in the sheet view (left) and the form view (right). When you have selected an object in either of the windows the connected object in the opposite window will be automatically selected as well. It is now possible to change the properties of the object by right-clicking it or using the toolbar.



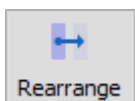
### 3.3.6.1.1 Changing the position of an object

An object can be moved to another position in several different ways. First, highlight the object(s) using the Select tool. The mouse cursor will then change to  and you can drag the object to a new position by keeping the left mouse button held down and releasing it when the object has been relocated. You can also use the arrow keys on the keyboard or type in specific X/Y coordinates in the property bar or the properties dialog (accessible by double-clicking the object).

Alt + arrow moves in smaller steps (so does Alt + mouse).

Shift + mouse moves in one direction (horizontal or vertical).

### 3.3.6.2 Rearrange Tool



You activate the **Rearrange** tool by clicking the **Rearrange** button in the toolbar.

The rearrange tool is one of the most important functions in Lasetnet Form Editor. It is used to define input variables in the input data files and map them to output fields in forms.

Activate the rearrange tool and select an area in your input data file by drawing a box around the text. The selected area will be highlighted in blue symbolizing a rearrange and a corresponding field will be added to your form on the right side of the Lasetnet Form Editor for the EMF output. For XML output you must manually drag to a node.

#### 3.3.6.2.1 Several patterns matching the lines

If there is one or more patterns matching the lines you wish to select after clicking the **Rearrange** tool, you can press Shift prior to releasing the mouse. A context menu is then displayed showing all patterns matching the selected line. Select the desired pattern to create conditional rearrange or select Sheet to create absolute rearrange. For more information about patterns, see 3.3.8 Conditional Area, Regions and Patterns.

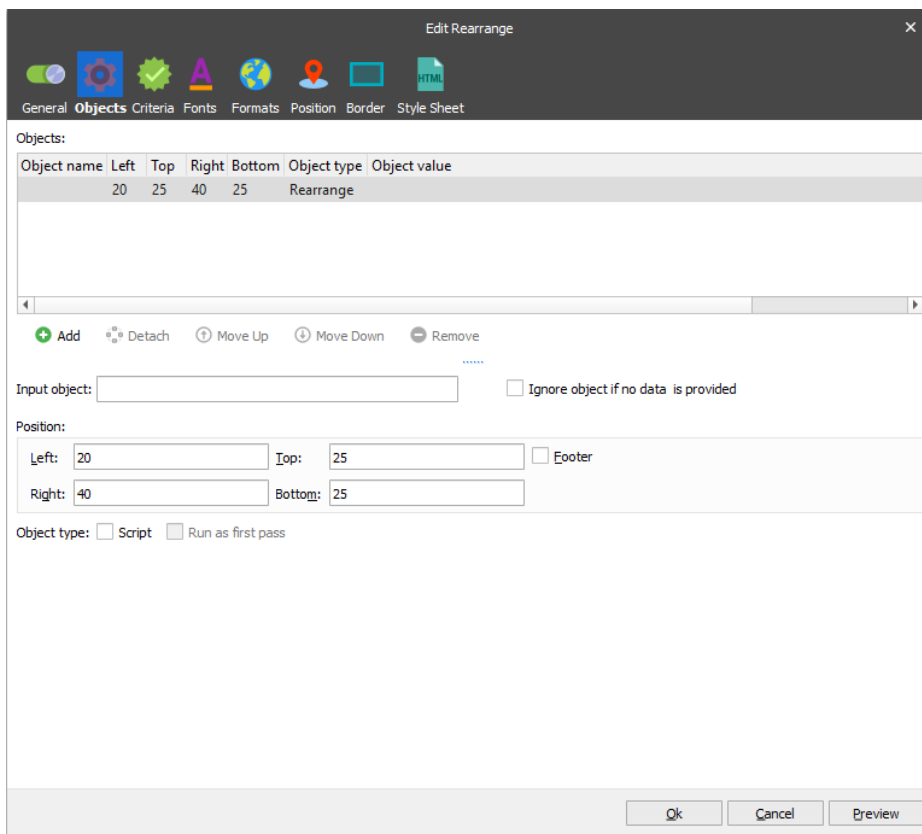
### 3.3.6.2.2 Editing Rearranges

You can edit the properties of any rearrange by double-clicking it either in the left or right side of Lasernet Form Editor. You can also right-click it and choose the property you want to edit from the context menu.

It is possible to merge several rearranges into one single object on the output page (form). To this end, you can select several rearranges by holding down **CTRL** while selecting the rearranges with the mouse. You can then right-click one of the rearranges and select **Merge Output**. All combined rearranges are shown in the objects list of the **Edit Rearrange** dialog. Each of the rearranges has its own definable font type, font size, formatting and color on the output page. This gives the user full flexibility in controlling how the contents of a rearrange field is presented on the final form.

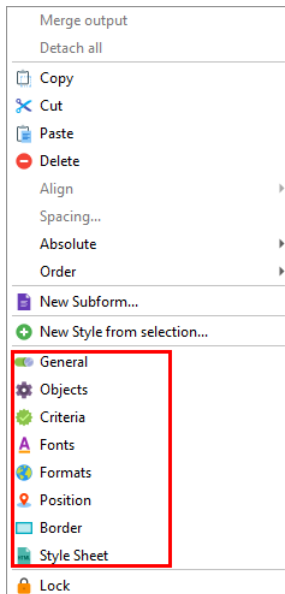
You can undo a merge of several rearranges by choosing **Detach All** from the context menu of a merged rearrange. Alternatively, you can select one or more input rearranges belonging to the same output rearrange in the input view and choose **Detach** from the context menu. You can also select the rearrange(s) you want to detach and click **Detach** in the **Edit Rearrange** dialog.

The following image shows you the **Edit Rearrange** dialog.



The dialog is presented with several tabs. When calling a dialog by double-clicking the object, it opens with the **Objects** tab by default. Otherwise, it opens on the tab corresponding to the property you select in the context menu:





### 3.3.6.2.1 Properties

Property	Description
<b>GENERAL</b>	
<b>Active</b>	Toggles rearranges into active/inactive state. If a check box is selected, the rearrange is active and is normally processed. If the check box is cleared, the rearrange becomes inactive and, as a result, it is not processed or shown in the input or output. <b>Note:</b> Even if a rearrange is hidden and not shown in the output, it is still listed in the <b>Pattern and Rearranges</b> dialog which you can access via <b>Sheet → Patterns and Rearranges</b> .
<b>Output object</b>	The logical name of the rearrange on the output page and the combined contents for all values of the input objects assigned to the same rearrange. This name can be used for referencing the rearrange in a criterion assigned to the other absolute rearranges or to conditional rearranges belonging to the same pattern or even for JavaScripts.
<b>Description</b>	A descriptive representation of an object.
<b>Master only</b>	If selected, the rearrange is only applied to the Master sheet and not on the child sheets (sheets inherit data from a Master sheet).
<b>Locked</b>	Select the check box to prevent moving and resizing a rearrange.
<b>XHTML</b>	When selected, Lasernet assumes input as XHTML code and uses it to interpret the content of the document to display it in output (for details, see 3.3.6.9 XHTML). As a result, the <b>Style Sheet</b> tab becomes available in the <b>Edit Rearrange</b> dialog.
<b>OBJECTS</b>	
<b>Objects</b>	Several input rearranges can be combined into one single object on the output page. <b>Add</b> Add a fixed text, current time, current date, current date and time,

	<p>JobInfo, Page x of y or Script to the rearrange.</p> <p><b>Remove</b> Delete the current rearrange</p> <p><b>Detach</b> Detach the selected input rearrange(s) and copy the output settings to the new rearrange(s), including position</p> <p><b>Up/Down</b> Sort rearranges by moving them up or down.</p>
<b>Input object</b>	A logical name can be assigned to a rearrange. This name can be used for referencing the rearrange in a criterion assigned to the same/other absolute rearranges or conditional rearranges belonging to the same pattern or even for JavaScript; rearrange in a criterion assigned to other absolute rearranges or conditional rearranges belonging to the same pattern.
<b>Position</b>	<p>Exact position of a rearrange on the input page defined by left/right columns and top/bottom rows (note: positioning can be carried out much faster by dragging-and-dropping).</p> <p>Selecting the <b>Footer</b> check box provides the possibility to position a rearrange in the footer of the input page; i.e. positioned relative to the end of the input conditional area. This is enabled by default when rearranges are created below a defined input conditional area and is only available for forms with text as input format.</p>
<b>Script</b>	<p>JavaScript to be executed within the rearrange e.g., data conversion, text trimming or more advanced functions.</p> <p>Once the check box is selected, more <b>Script</b> controls become available.</p>
<b>Ignore object if no data is provided</b>	If the check box is active and there is no data (defined XPath is not present in the input data or value is empty), the rearrange is not processed and shown neither in the output, nor in the input. If the check box is not selected (default value), the rearrange is processed with an empty value. Note: Even if a rearrange is hidden and not shown in the output, it is still listed in the Pattern and Rearranges dialog, which you can access via <b>Sheet &gt; Patterns and Rearranges</b> .
<b>Run as first pass</b>	Has an effect on the event point execution time. By default the setting is turned off, which is the recommended setting in most scenarios, but by turning the setting on, you are able to accelerate execution time to run as the first pass in the processing of a form. The output result of the script will then be used when analyzing the number of pages and calculating text positioning on pages in the final form.
<b>FONTS</b>	
<b>Style name</b>	Select to apply one of the predefined styles.
<b>Formatting</b>	Define font type, font size, color and formatting of the field on the output form.
<b>Formatting Substitution</b>	<p>Shows a list of formatting substitution elements which you can include using the <b>Add</b> button. The rest of the command buttons allow you to manipulate the elements in the list: <b>Edit</b>, <b>Move up</b>, <b>Move down</b>, and <b>Remove</b>.</p> <p>For more details about formatting substitution elements, see the description below the table.</p>
<b>FORMATS</b>	
<b>Format category</b>	Select one or more regional profiles and specify other format parameters. When several regional profiles are added at a time, you can define which regional profile

	<p>is applied by setting criteria based on the JobInfo and/or Input data values. If the criteria are true for several regional profiles in the list, the first of the regional profiles is used. If no regional profile is added, the regional profile which is set in the form/sheet options is applied.</p> <p>If the <b>Override form input format</b> check box is not selected, the format set for the form is then applied (for more details, see Chapter 3.1.3); if the <b>Override sheet output format</b> check box is not selected, the format set for the sheet is then applied (for more details, see Chapter 3.1.5.1.9).</p> <p>Both tabs become enabled when any value is selected from the <b>Format category</b> drop-down list, except <b>String</b> value.</p> <p>Selecting the <b>Override form input format</b> check box enables, in its turn, the <b>UTC Date and Time</b> check box. Select the latter to define the format of input data as UTC Date and Time.</p>
<b>Newline</b>	Choose to insert a new line before or after the rearrange text on the output form. The option of substituting line breaks with spaces is also available.
<b>Trim Spaces</b>	Trim spaces either before or after the rearrange text. In contrast to this, "Whitespace on edges" trims the output (see below).
<b>Maximum value length</b>	Specify a maximum number of characters to be included in the output. Linefeeds are counted as characters for strings that contains multiple lines.
<b>POSITION</b>	
<b>Absolute</b>	Defines on what page(s) the rearrange appears. Note. Rearranges in the output conditional area have no selected boxes since the page is automatically determined by Lasernet.
<b>Position size type</b>	<p>This property supports the following settings: Auto XY, Auto X, Auto Y and Manual.</p> <p>If you choose the Auto XY the text box on the output page will be generated automatically depending on the font type and font size and Lاسernet will not insert any line breaks.</p> <p>In Auto X mode it is possible to define a maximum height. If the input contains more lines than will fit, Lاسernet will hide any lines that would overflow the height.</p> <p>Auto Y lets you specify a width. Lاسernet will add line breaks automatically to create as many rows as is needed.</p> <p>The Manual setting provides the ability to create a custom sized text box on the output page by defining a maximum height and width.</p>
<b>Position X/Y</b>	The exact position of the rearrange text field on the output page. You can manually adjust the position by entering values in the fields.
<b>Position Width / Height</b>	The width and height of the text box on the output page. These values cannot be changed when Lاسernet is set to automatically calculate them i.e. Auto X/Y/XY.
<b>Rotation (degrees)</b>	The rotation angle of the text box on the output page. You can set the value in degrees.
<b>Relative to</b>	<p>This property allows you to set the position of a rearrange (both absolute and conditional) relative to other entities such as a conditional area, a region and a group (see 3.3.8 <i>Conditional Area, Regions and Patterns</i>).</p> <p>The following options are available in the drop-down list:</p>

	<p><b>Current conditional area progress</b> (for conditional rearranges only) – locates the selected rearrange depending on settings of the conditional area and the pattern to which it belongs. Check boxes of the Absolute group box are disabled. It is the default option for conditional rearranges.</p> <p><b>Top of page</b> – locates the selected rearrange to the page top. It is a fixed position. Check boxes for the Absolute group box are enabled. It is the default option for absolute rearranges. The Y position of rearrange is automatically set to 10 mm.</p> <p><b>Top of cond. area</b> – sets the rearrange position relative to the top rearrange available in the conditional area. Check boxes of the Absolute group box are enabled. Once the option is selected, the Conditional Area field is available. The Y position of the rearrange is automatically set to -10 mm. You can adjust the distance between the selected rearrange and the top conditional area rearrange by modifying the Y setting of the selected rearrange.</p> <p><b>Bottom of cond. area (Absolute)</b> – sets the position of the rearrange relative to the last instance visible on the page and belonging to the current conditional area. Check boxes for the Absolute group box are enabled. Once the option is selected, the Conditional Area field is available. The Y position of rearrange is automatically set to 10 mm. You can adjust the distance between the selected rearrange and the last instance of the conditional area rearrange by modifying the Y setting of the selected rearrange.</p> <p><b>Bottom of cond. area (Last row)</b> – sets the position of the rearrange relative to the last instance of the conditional area. Check boxes of the Absolute group box are disabled. Once the option is selected, the Conditional Area field is available. The Y position of rearrange is automatically set to 10 mm.</p> <p><b>End of cond. area (Absolute)</b> – locates the rearrange relative to the end line of the conditional area on the selected absolute page(s). Check boxes for the Absolute group box are enabled. Once the option is selected, the Conditional Area field is available. The Y position of rearrange is automatically set to 0 mm.</p> <p><b>End of cond. area (Last row)</b> – locates the rearrange relative to the end line of the conditional area. Check boxes for the Absolute group box are disabled. Once the option is selected, the Conditional Area field is available. The Y position of rearrange is automatically set to 10 mm.</p> <p><b>Top of region</b> – sets the rearrange position relative to the top rearrange available in the region. Check boxes for the Absolute group box are disabled. Once the option is selected, the Conditional Area and Region fields are available. In addition, the All pages check box appears. If the check box is selected, the rearrange is located relative to the top rearrange of the region on each page where the region is presented. The Y position of rearrange is automatically set to -5 mm.</p> <p><b>Bottom of region</b> – sets the rearrange position relative to the bottom rearrange available in the region. Check boxes of the Absolute group box are disabled. Once the option is selected, the Conditional Area and Region fields are available. The Y position of rearrange is automatically set to 5 mm.</p> <p><b>Top of group</b> – sets the rearrange position relative to the top rearrange available in the group. Check boxes for the Absolute group box are disabled. Once the option is selected, the Conditional Area, Region and Group fields are available. The Y position of rearrange is automatically set to -5 mm.</p> <p><b>Bottom of group</b> – sets the rearrange position relative to the bottom rearrange available in the group. Check boxes for the Absolute group box are disabled. Once the option is selected, the Conditional Area, Region and Group fields are available. The Y position of rearrange is automatically set to 5 mm.</p> <p><b>Hide output</b> (for conditional rearranges only) – hides the rearrange from the output view.</p> <p>If all check boxes in the Absolute group box are cleared for an absolute rearrange,</p>
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	<p>the Relative to setting is changed to HIDDEN. Unhide by selecting absolute and it is disabled. To enable the Relative to setting, select at least one check box in the Absolute group box.</p> <p>If you locate conditional rearranges relative to a conditional area or a region, you do not have the option to specify these entities as these rearranges already belong to them. Otherwise, you are allowed specifying these entities for absolute rearranges. The group entity can be selected for both absolute and conditional rearranges as an entity relative to which you are going to locate rearranges.</p> <p>Hide if no output on page – selecting the check box allows hiding rearranges located relative to a conditional area in the output. The setting is useful if conditional data is distributed between several conditional areas. You can hide odd rearranges when data (patterns) within a conditional area in the output is not located on a page.</p> <p>The check box becomes available only if one of the following values are chosen from the 'Relative to' drop-down list:</p> <ul style="list-style-type: none"> <li>• Top of cond. area.</li> <li>• Bottom of cond. area (Absolute).</li> <li>• End of cond. area (Absolute).</li> </ul>
<b>Box vertical alignment</b>	The vertical alignment of the text box on the output page relative to the X/Y position. You can choose between Top, Middle and Bottom.
<b>Box horizontal alignment</b>	The horizontal alignment of the text box on the output page relative to the X/Y position. You can choose between Left, Center and Right.
<b>Text horizontal alignment</b>	The horizontal alignment of the text within the text box. The text can be aligned as Left, Center, Right and Justified.
<b>Text vertical alignment</b>	The vertical alignment of the text within the text box. The text can be aligned as Top, Middle or Bottom.
<b>Line height</b>	The line height can either be set as Absolute or Relative. In Absolute mode it is possible to define a specific line height in millimeters. In Relative mode the line height will be defined automatically based on the chosen font type and size.
<b>Absolute empty line height</b>	Allows you to define a specific line height in millimeter for empty lines. Select the check box and type in the height. Tip: Set this value to 0 to remove any empty lines and make the output compact.
<b>Overflow</b>	<p>How instances are handled when letters do not fit within the rearrange box in the horizontal direction. This happens in Auto Y and Manual mode when a word is too long that it cannot fit alone on a line.</p> <p>Force Line Break cuts the word as late as possible and then inserts a new line with the rest of the word.</p> <p>Truncate cuts the word as late as possible and hides the rest of the word.</p> <p>Overflow (default) allows the word to continue outside of the box.</p> <p>In all cases outside overflow handling, the word is placed on a new line first to give it as much space as possible.</p> <p>Tip: Vertical overflow is handled by Auto XY/Auto Y (allowing any height) or Auto X/Manual (restricting height)</p>
<b>Keep rows together</b>	<p>When the check box is selected, Lasernet keeps all the lines of the selected column of rearranges for a pattern together on the same page.</p> <p><b>Note:</b> the option is only available for conditional rearranges.</p>

<b>No word wrapping</b>	<p>When the check box is selected, Lasernet does not add line breaks at spaces, hyphens, etc. when formatting the text. This setting has no impact on Auto X and Auto XY modes since these do not add implicit line breaks.</p> <p>The actual appearance of the text in the rearrange, if Prevent implicit line breaks is checked, depends on what is selected in the Overflow control:</p> <ul style="list-style-type: none"> <li>• Force Line Break cuts the input line at the edge of the rearrange box and inserts as many new lines as required to fit the rest of the input line into the box.</li> <li>• Truncate cuts the input line at the edge of the rearrange box and hides the rest of the line.</li> <li>• Overflow allows the input line to continue outside of the box.</li> </ul>
<b>Widow/orphan control</b>	<p>When the check box is selected, Lasernet avoids putting one or more paragraph-ending lines at the top of a page (widows) and leaving one or more paragraph-starting lines at the bottom of a page (orphans). You can set the number of lines to be considered widow/orphan.</p> <p><b>Note:</b> the option is only available for conditional rearranges.</p>
<b>Whitespace on edges</b>	<p>How whitespace is handled on the left and right edges of the output rearrange. The Before and After columns refer to the left and right rearrange edge respectively.</p> <p>Trim (default) removes all edge whitespace, shrinking the output rearrange box as much as possible.</p> <p>Pad inserts one or more characters, usually periods or hyphens from the rearrange contents to the edge.</p> <p>Keep makes sure that no whitespace is removed, making the output more accurately reflect the input.</p> <p>Tip: This option retains whitespace introduced by automatic new-lines and can be useful when used in conjunction with background and border (see below). When merging several rearranges of the input to the same output line, use the trim setting (described above) to remove any extra spaces.</p>
<b>BORDER</b>	
<b>Background and border</b>	<p>These options make it is possible to add an optional background color or surrounding rectangle to the text. A margin can be specified (in millimeters) from the text to the edge of the rectangle.</p> <p><b>Note:</b> When selecting, positioning, and resizing the rearrange, the normal (inner) box must be used rather than the surrounding (outer) margin.</p> <p><b>Note:</b> When multiple rearranges with defined background colors overlap, the order in which they are layered is important. The last rearrange to be created is drawn on the top, hiding the rearrange below. The order can be changed by right-clicking a rearrange and selecting an option from the <b>Order</b> submenu.</p> <p>In addition, it is possible to add a border to the selected rearrange. To do this, select the <b>Border</b> check box to activate the other controls. You are allowed setting border thickness, color, as well as show borders (Left, Top, Right, Bottom) by selecting the required checkboxes.</p>
<b>STYLE SHEET</b>	
	<p>Use the tab to add CSS (Cascading Style Sheets) for the current XHTML rearrange using the internal way which stands for a <code>&lt;style&gt;</code> element.</p> <p>The style added here for the current XHTML rearrange overwrites the one defined for all XHTML rearranges on the <b>Style Sheet</b> tab of the <b>Sheet Options</b> dialog (for more information, see <i>3.1.5.1.15 Style Sheet</i>).</p>

	The style defined on this tab is overwritten by CSS added to HTML elements inline, if any.
--	--

3.3.6.2.2.2 *Criteria*

Using the **Criteria** tab on the **Edit Rearrange** dialog, you can define one or more criteria to allow the showing or hiding of rearrange(s) in the output.

Criteria: .....

Name	JobInfo / Object	Operator	Case	Match
A	Page	=	X	P
B	FileID	=	X	3
C	Number	<=	X	5

Expression: A AND B AND C ...

It is possible to add two various types of criteria: *Object* and *JobInfo*.

When adding an object, both input and output names can be defined for the object. If both the current object and the object value (used as a criterion) are scripts, it is reasonable to use the output object name. The only exception to this is when the [Run as first pass](#) check box is selected for the object and the value is used as a criterion. In this situation, all the objects are arranged first in the output while applying output values, and only then are scripts processed.

3.3.6.2.2.3 *Instance Qualifiers*

When you work with conditional rearranges, you can use the **Instance(s) qualifiers** option. It allows you to extend pattern expressions with the ability to specify:

1. All instances (the option is selected by default),
2. First instance,
3. Middle instance(s) which are all non-first and non-last,
4. Last instance,
5. Single instance which is the only one existing line of the pattern

of:

1. All instances of the pattern (the option is selected by default),
2. All consecutive instances of the pattern,
3. All instances of the pattern within a region,
4. All instances of the pattern within a group.

**Note:** the controls for the **Instance(s) qualifiers** group box are disabled if the settings are already specified for the pattern to which the rearrange(s) belong.

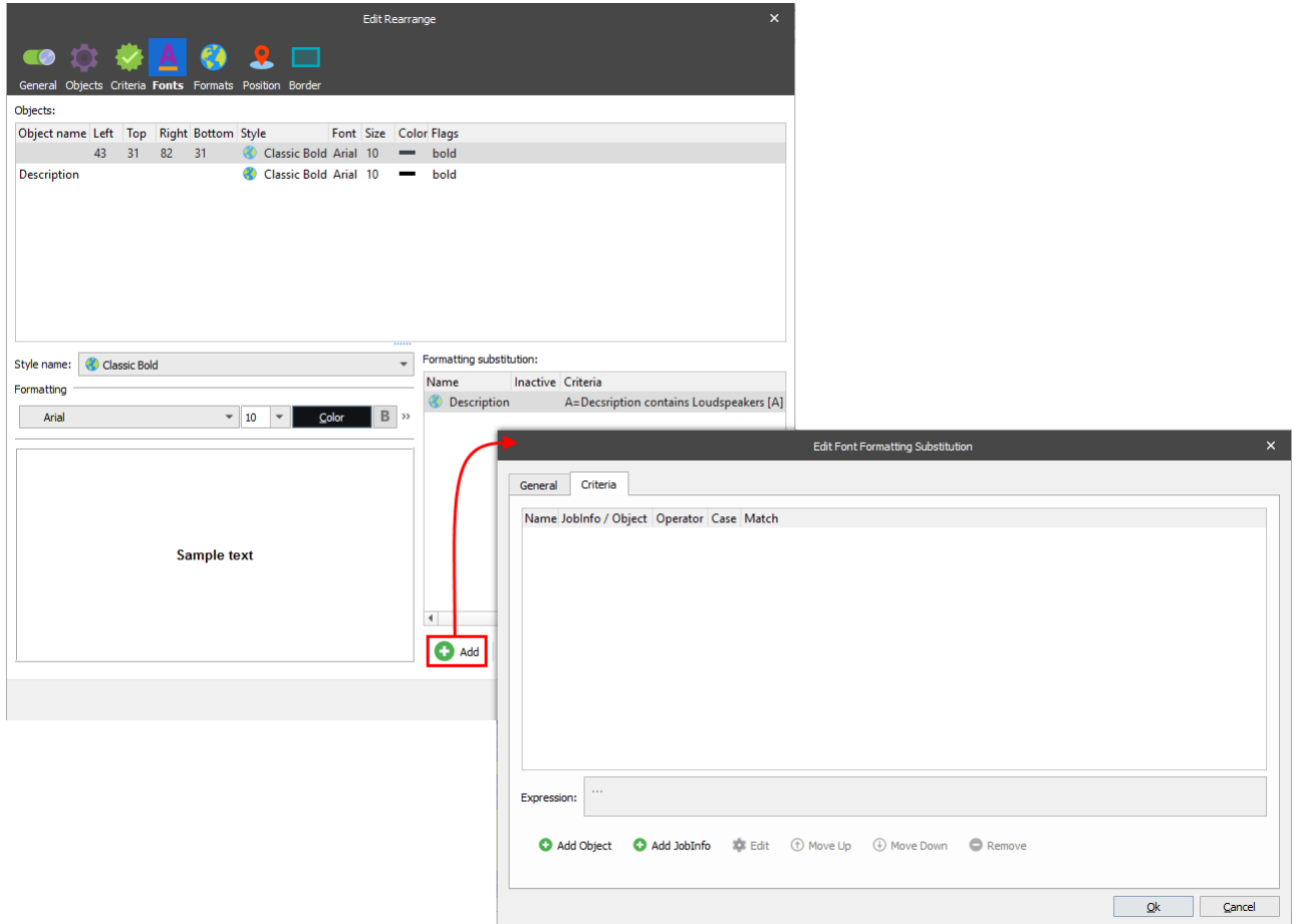
Instance(s) qualifiers:

Position(s):	<input type="checkbox"/> All	<input checked="" type="checkbox"/> First	<input type="checkbox"/> Middle	<input type="checkbox"/> Last	<input type="checkbox"/> Single
Scope:	<input checked="" type="radio"/> All	<input type="radio"/> Sequence	<input type="radio"/> Region	<input type="radio"/> Group	

### 3.3.6.2.2.4 Font Formatting Substitution

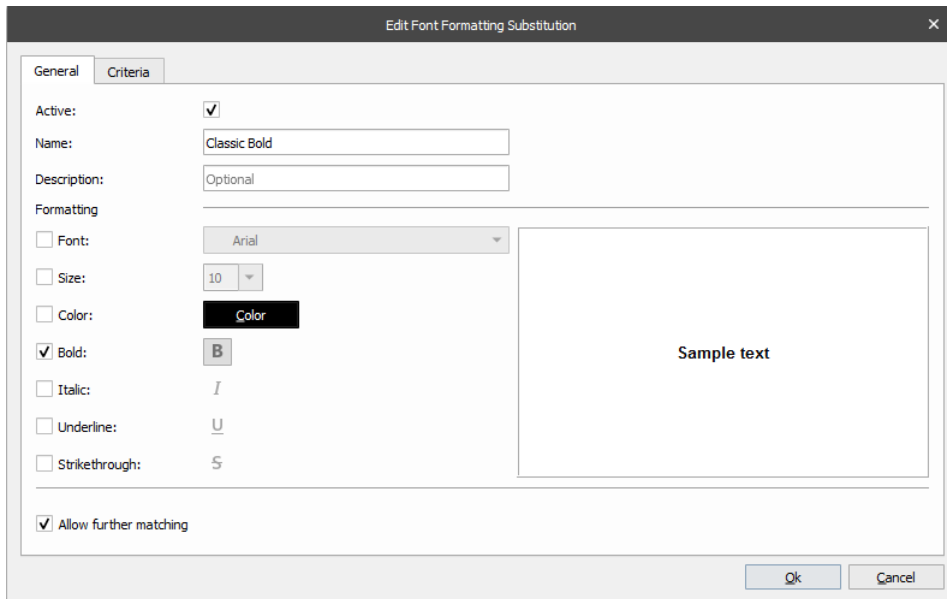
Use the **Formatting substitution** section on the **Fonts** tab of the **Edit Rearrange** dialog box to add one or more formatting substitution elements based on the specified criteria (objects and/or JobInfos).

You can define and further manipulate criteria using the command buttons on the **Criteria** tab of the **Edit Font Formatting Substitution** dialog box.



Use the **General** tab controls to specify font settings for criterion/criteria you have defined. A font setting becomes available for editing when a corresponding font setting check box is selected.

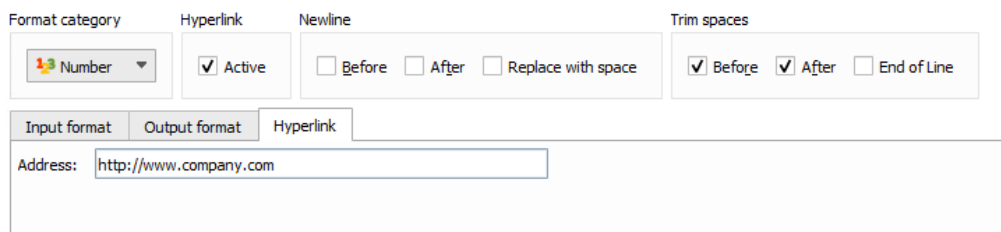




The **Allow further matching** check box allows you to make the process of font formatting substitution more flexible. When you have more than one formatting substitution element in the **Formatting substitution** list, and those elements have certain criteria which are matched, the font substitution settings can be applied or ignored depending on the status of this check box. The topmost formatting substitution element that possesses matching criterion/criteria is processed and the specified font settings are applied. After this, if the **'Allow further matching'** check box is selected, then the next element which has matching criterion/criteria will be processed, and so on until the end of the list.

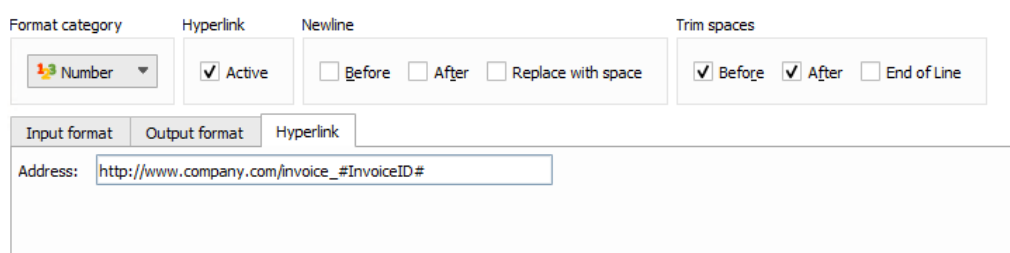
### 3.3.6.2.2.5 Hyperlinks

Select the **Formats** tab to create a hyperlink. Once the **Active** check box is selected, the **Hyperlink** tab becomes enabled, and you can enter any URL into the **Address** field.



This functionality is useful only if you are going to generate a PDF document as a result of processing of the current sheet.

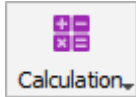
You can insert an embedded JobInfo as a part of the hyperlink to include a dynamic value as a part of the URL.



To insert the value of the current rearrange as a part of the hyperlink, activate script and type on the **Objects** tab:

```
setJobInfo("InvoiceID", CurrentRearrange.text);  
CurrentRearrange.text;
```

### 3.3.6.3 Calculation Tool



You activate the **Calculation** tool by clicking the **Calculation** button in the toolbar.

The **Calculation** tool allows you to perform simple calculations with the data.

The available operations are:

- For conditional rearranges

**Sum** Generates a script rearrange in the output calculating the sum of all values of the conditional rearrange. The rearrange is inserted below the end of the conditional area enabled for the current page type.

**Subtotal Current Page** Generates a script rearrange in the output calculating the sum of all values of the conditional rearrange on all pages up to and including the current page. The rearrange is inserted below the end of the conditional area enabled for the current page type.

**Subtotal Previous Page** Generates a script rearrange in the output calculating the sum of all values of the conditional rearrange on all pages except the current page. The rearrange is inserted above the beginning of the conditional area enabled for the current page type.

**Sum Group** Generates a script rearrange in the output performing the sum of all values of rearranges selected within a group. The script rearrange is inserted relative to the last instance of the group.

**Sum Region** Generates a script rearrange in the output performing the sum of all values of rearranges selected in one or more regions. You have the following options to insert the script rearrange:

- Insert sum after any selected region.
- Insert sum after any region containing selected object names

- For multiple absolute and conditional rearranges

**Add** Generates a script rearrange in the output calculating the result of the addition of all selected rearranges. The rearrange is inserted just below the bottom-most of the selected absolute rearranges and to the right of the selected conditional rearranges.

**Subtract** Generates a script rearrange in the output calculating the result of subtracting all selected rearranges from the first selected rearrange.

**Multiply** Generates a script rearrange in the output calculating the result of multiplying all selected rearranges.

**Divide** Generates a script rearrange in the output calculating the result of dividing the first selected rearrange by all selected rearranges.

The generated script rearrange can be edited and further calculations can be added.

To run Java Script, on the **View** menu, click **Run JavaScript**. Alternatively, press SHIFT+F5.

**This rearrange has a specific format** and **Name** properties are set automatically for selected rearranges if they have not been set before. The generally defined input format (see *3.1.3 General Form Properties*) is used for parsing

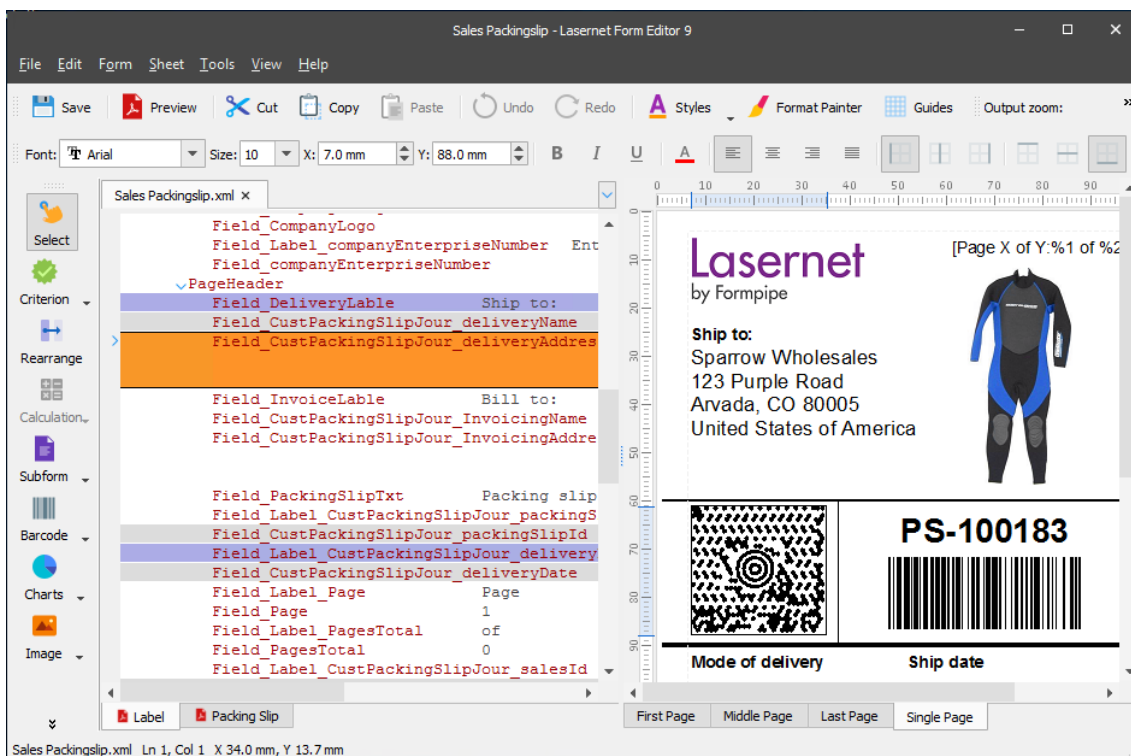
input, and generally defined output format (see 3.1.5.1 Sheet Options) is used for parsing output. It is also possible to override these settings on a rearrange basis, if needed.

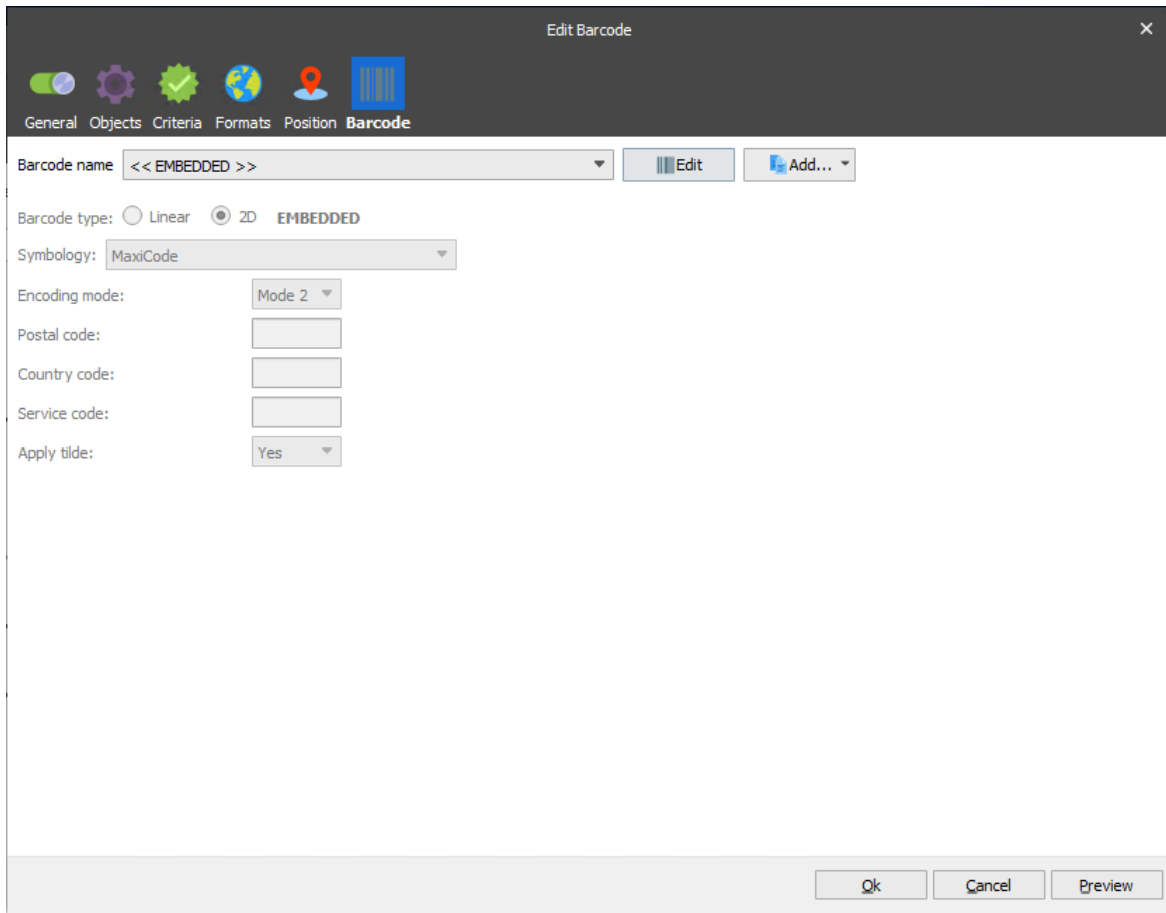
### 3.3.6.4 Barcode Tool



You activate the **Barcode** tool by clicking the **Barcode** button in the toolbar.

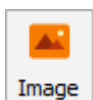
The **Barcode** tool works in the same way as the **Rearrange** tool. When selected, it is possible to mark an area in the input data file that represents a barcode. The barcode object will now be visible in the form on the right-hand side and can be positioned accordingly.





More detailed information about barcodes can be found in this manual, chapter 5 *Barcodes*.

### 3.3.6.5 *Insert Image Tool*



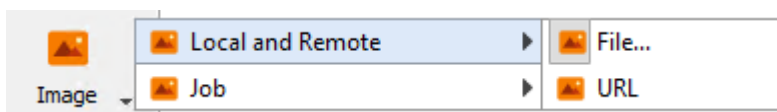
Use the **Insert Image** tool to add an image. To activate the tool, click the **Image** button in the toolbar.

By default, images you want to insert into the output should be stored in the **Images** folder (see **Lasernet Developer** → **Resources** → **Images**). However, you can manually set the path to the required image file as a fixed text on the **Input** tab of the **Edit Image** dialog, when adding an image rearrange. You can specify any alternative in the corresponding field of the **Fixed text** tab:

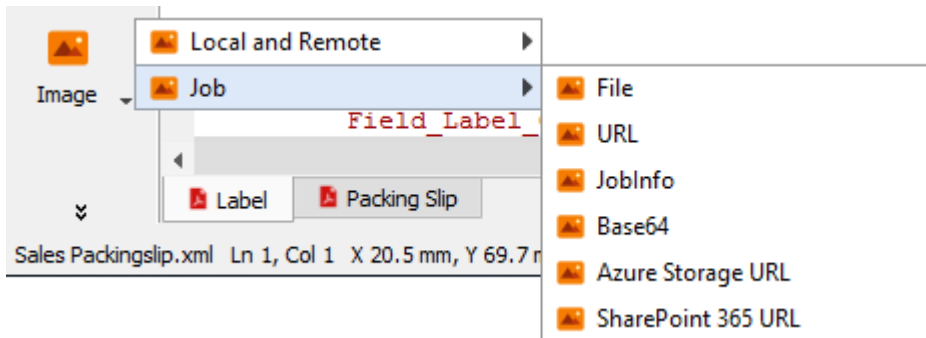
- a full path to the image file;
- an URL to the image file;
- a filename (only for the files located in the **Images** folder of the current configuration).

These are the following options for inserting an image:

- to the output directly, not based on the input data:



- to the output based on the input data:



For your convenience, you can also drag in an image file from a file manager, e.g., Windows Explorer.

#### 3.3.6.5.1 Image from external file

Use this option to insert an image into the output from an external file.

To insert an image from an external file, follow the steps listed below:

1. On the toolbar, click the **Image** button, and then click the down arrow next to it.
2. From the menu that appears, click **Local and Remote**, and then click **File**.
3. When the pointer becomes a cross, mark the area on the input pattern where you want to add the image or where you want to insert it directly in the output.
4. Once marked, the **Choose an image file** dialog opens and you can select the image file to use. The selected file is copied to the **Images** folder and an image rearrange with its filename as input is created.

If there is already a file with the same filename in the **Images** folder, a dialogue box is displayed asking whether you want to replace the file. Click **Yes** to replace the file and create the image rearrange or click **No** to cancel the image insertion.

5. Once you are done, click **Open**. The image is then inserted to the output.

#### 3.3.6.5.2 Image from URL

Inserting an image from a URL is similar to inserting an image from an external file (see 3.3.6.5.1 *Image from external file*), the only difference is that you need to specify an URL to the image file.

#### 3.3.6.5.3 Image from file name in input

Use this option to insert an image to the output by defining a file name in the input. The function recognizes the filename of a graphic file in any of the following formats: *WMF, PNG, JPG, TIFF* and *LnEMF*.

To insert an image from a filename in the input, follow the steps listed below:

1. On the toolbar, click the **Image** button, and then click the down arrow next to it.
2. From the menu that appears, click **Job**, and then click **File**.
3. When the pointer becomes a cross, select the string containing the name of the image file in the input that you want to insert into the output.

**Note:** The image file you select should be stored in the **Images** folder of the current configuration.

4. Once selected, the image file is inserted to the output.

#### 3.3.6.5.4 Image from URL in input

Inserting an image from a URL in the input is the same as inserting an image by defining a file name in the input (see 3.3.6.5.3 *Image from file name in input*), the only difference is that you select the string containing the URL to the image file.

#### 3.3.6.5.5 *Image from image embedded in JobInfo*

Use this option to insert an image embedded in a JobInfo. This option is recommended if you want to use the same image in the output for multiple targets or to use JobInfos based on definite criteria to select different images.

**Note:** To use the **JobInfo** option, the File Retriever modifier must be configured (for more details see *Lasernet Developer*, Chapter 1.16.8 *File Retriever*).

Please note: You have to specify the image file when creating a JobInfo using the File Retriever modifier, prior to setting the embedded image in the JobInfo.

To insert an image from the one embedded in JobInfo, proceed through the steps listed below:

1. On the toolbar, click the **Image** button, and then click the down arrow next to the button.
2. From the menu that appears, click **Job**, and then click **JobInfo**.
3. When the pointer becomes a cross, mark the area on the input pattern where you want to add the image or where you want to insert it directly in the output
4. Once selected, the **Edit Rearrange** dialog opens (for more information see Chapter 3.3.6.5.9 *Image Properties*). Specify a JobInfo name in the corresponding field of the **Fixed text** tab.
5. Once you are done, click the **Ok** button in the **Edit Rearrange** dialog. The image is then inserted into the output.

#### 3.3.6.5.6 *Interpret as Base64*

If an image is presented as a Base64 string, you can add an image rearrange using the **Base64** option.

This option is only available for XML input (for more details, see 3.4.1 *XML*).

#### 3.3.6.5.7 *Retrieve images from Microsoft Azure Storage*

If configured, you can retrieve images from Microsoft Azure Storage (for more details, see 3.1.3 *General Form Properties*).

This option is only available for XML input (for more details, see 3.4.1 *XML*).

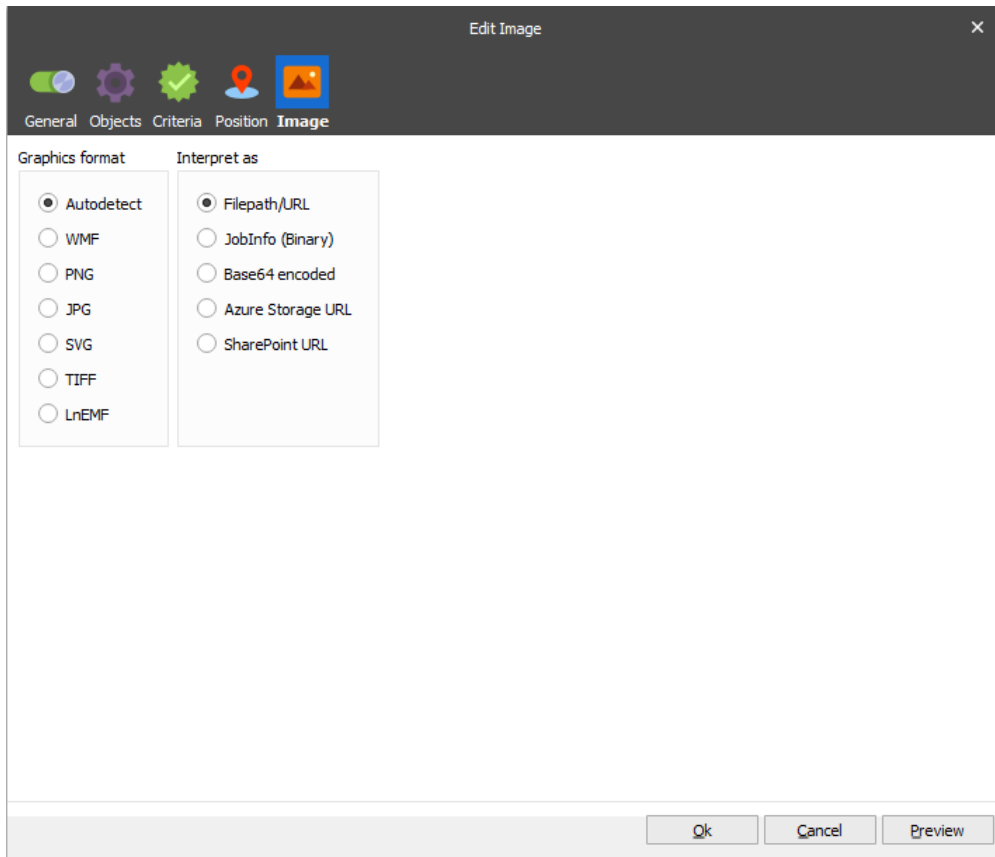
#### 3.3.6.5.8 *Retrieve images from SharePoint 365*

If configured, you can retrieve images from SharePoint 365 (for more details, see 3.1.3 *General Form Properties*).

This option is only available for XML input (for more details, see 3.4.1 *XML*).

#### 3.3.6.5.9 *Image Properties*

You can access the image properties via the **Edit Image** dialog. To open the **Edit Image** dialog, right-click the image you have inserted to the output and then click a required property command on the context menu, or just double-click the image.



The table below contains more details about the image property controls:

Control	Description
Graphics format	<p>This group box contains radio buttons for each of the graphics formats supported by Lasetnet:</p> <ul style="list-style-type: none"> <li>• WMF</li> <li>• PNG</li> <li>• JPG</li> <li>• SVG</li> <li>• TIFF</li> <li>• LnEMF</li> <li>• Autodetect</li> </ul> <p>If the <b>Autodetect</b> radio button is selected, the image is inserted to the output preserving the format in which the image is stored in the <b>Images</b> folder. We recommend that you select this option if the image file name indicates the file extension.</p> <p>If the file extension is not indicated, you can manually select a graphics format using the radio buttons.</p>
Interpret as	<p>This group box contains radio buttons for each of the different methods used to interpret the value indicated on the <b>Input</b> tab of the <b>Edit Rearrange</b>:</p> <ul style="list-style-type: none"> <li>• Filepath/URL</li> <li>• JobInfo (Binary)</li> <li>• Base64 encoded</li> </ul>

Control	Description
	<ul style="list-style-type: none"> <li>• Azure Storage URL</li> <li>• SharePoint URL</li> </ul>
<b>POSITION TAB</b>	
Upscale	<p>Selecting the check box allows you to proportionally scale the image you have inserted to the output, according to the values specified in the <b>Width</b> and <b>Height</b> text boxes. The check box is enabled if <b>Auto Width+Height</b> is selected in the <b>Size type</b> drop-down list.</p> <p>If the check box is cleared, the image can be scaled to full size regardless of the values indicated in the <b>Width</b> and <b>Height</b> text boxes.</p>

### 3.3.6.6 *Insert Text Tool*



You can activate the **Insert Text** tool by clicking the **Insert Text** button in the toolbar.

**Note:** Text can be also added to an existing rearrange by clicking the **Add** button below the list of objects.

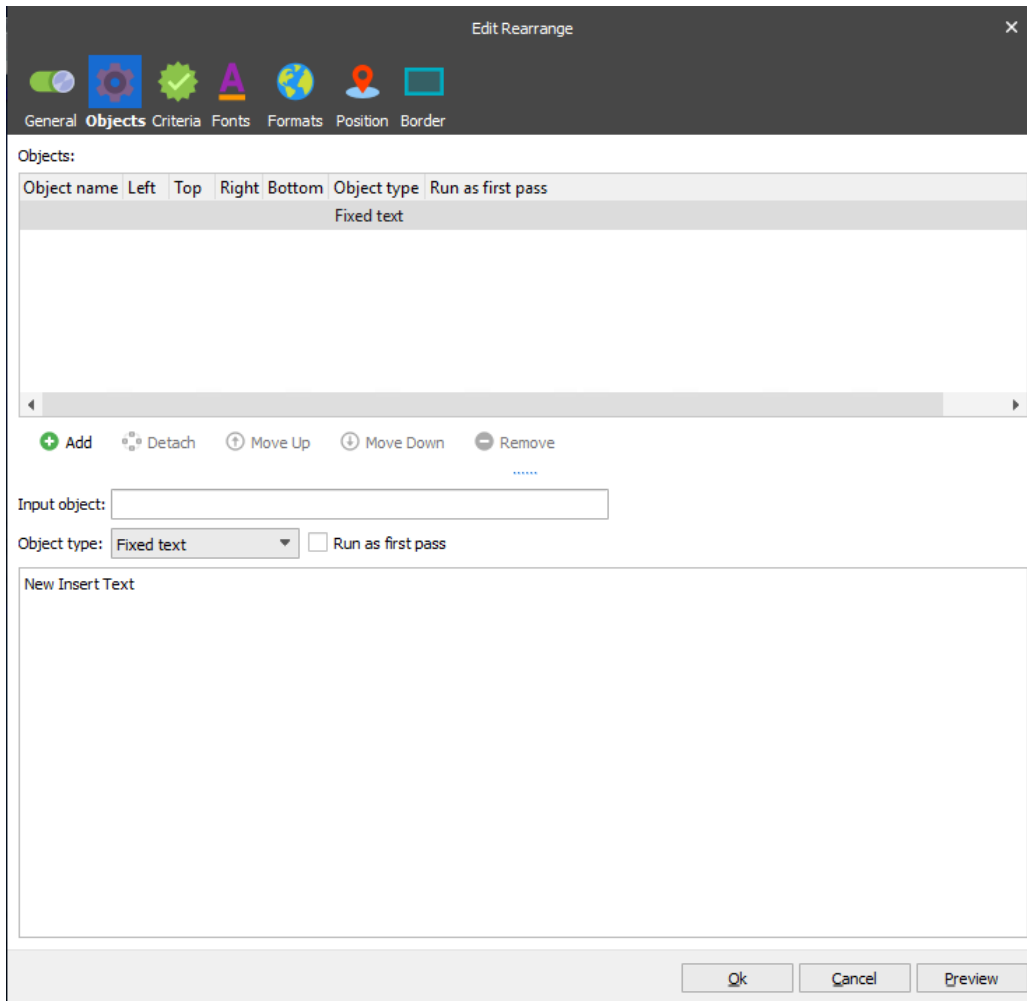
The **Insert Text** tool is used for adding the following types of elements to your output form:

<b>Fixed text</b>	Inserts static text.
<b>Current time</b>	Displays the current time.
<b>Current date</b>	Displays the current date.
<b>Current date and time</b>	Displays both the current time and current date.
<b>JobInfo</b>	Inserts the value of a JobInfo.
<b>Page x of y</b>	Inserts page numbering on the output pages where X = current page number and Y = total number of pages e.g. 'Page 3 of 5'
<b>Script</b>	Inserts a script on the output form for execution. (The First Pass Option is used in advanced setups and is explained in detail in "Lasernet Developer" Chapter 1.10.5 <i>Form Engine</i> ).

Elements are added on the properties dialog of the rearrange (as can be seen below). This is done by right-clicking on the rearrange on the output page and choosing the required property command from the menu. The various elements are set as follows:



### 3.3.6.6.1 Fixed Text

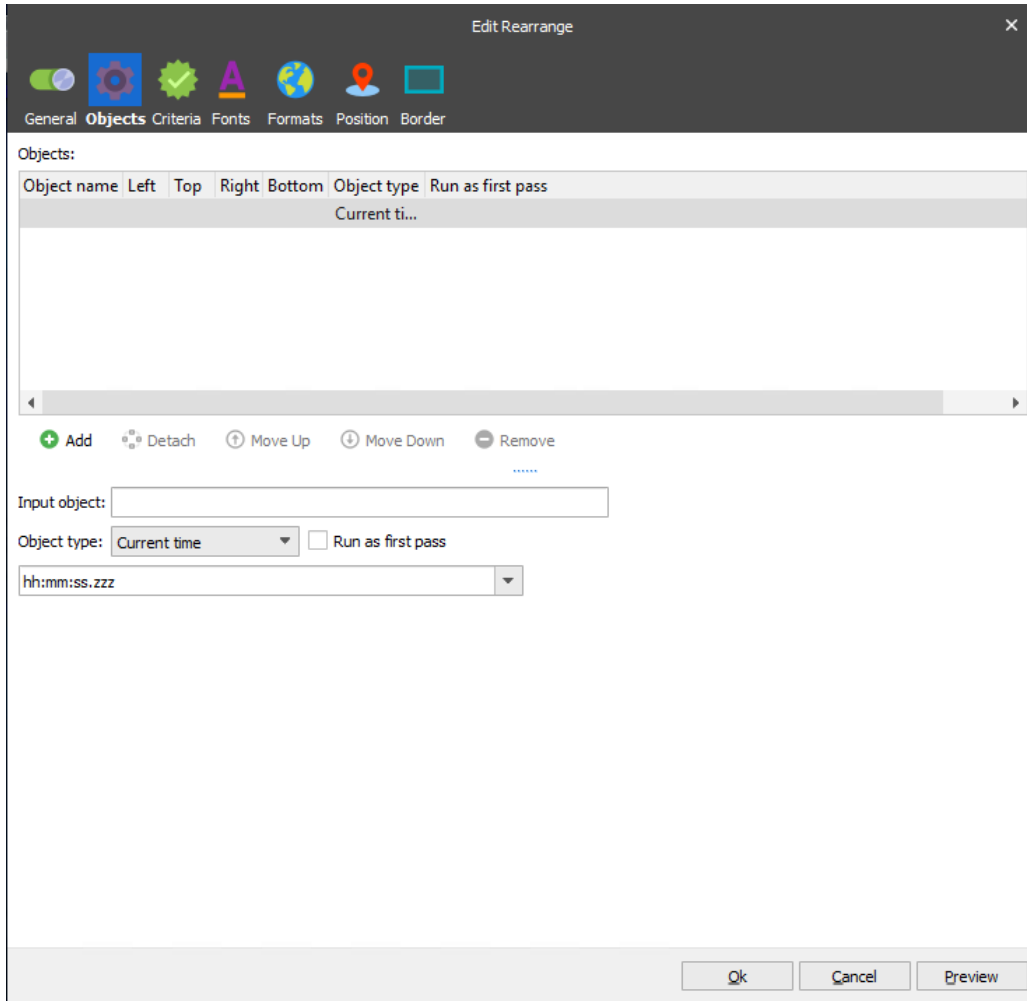


You can write any fixed text in the field to be included in the output page.

You can also edit fixed text directly in the output view: either right-click the rearrange containing at least one fixed text rearrange and select **In-place edit**, or select the rearrange and press **F2**. If there is more than one fixed text rearrange merged in a rearrange, the first one is selected for editing. You can switch between the fixed text rearranges by clicking the required fixed text rearrange or by pressing Tab (move to the next one) or Shift+Tab (move to the previous one). Any changes to the font settings using the top toolbar are applied to the selected rearrange only. To exit the editing mode and save changes press F2 or Ctrl+Enter.

*Please note that in-place editing is only available for rearranges with no specific format set.*

### 3.3.6.6.2 Current time



If Current time is selected, the system time will be printed using the chosen format:

hh = hours

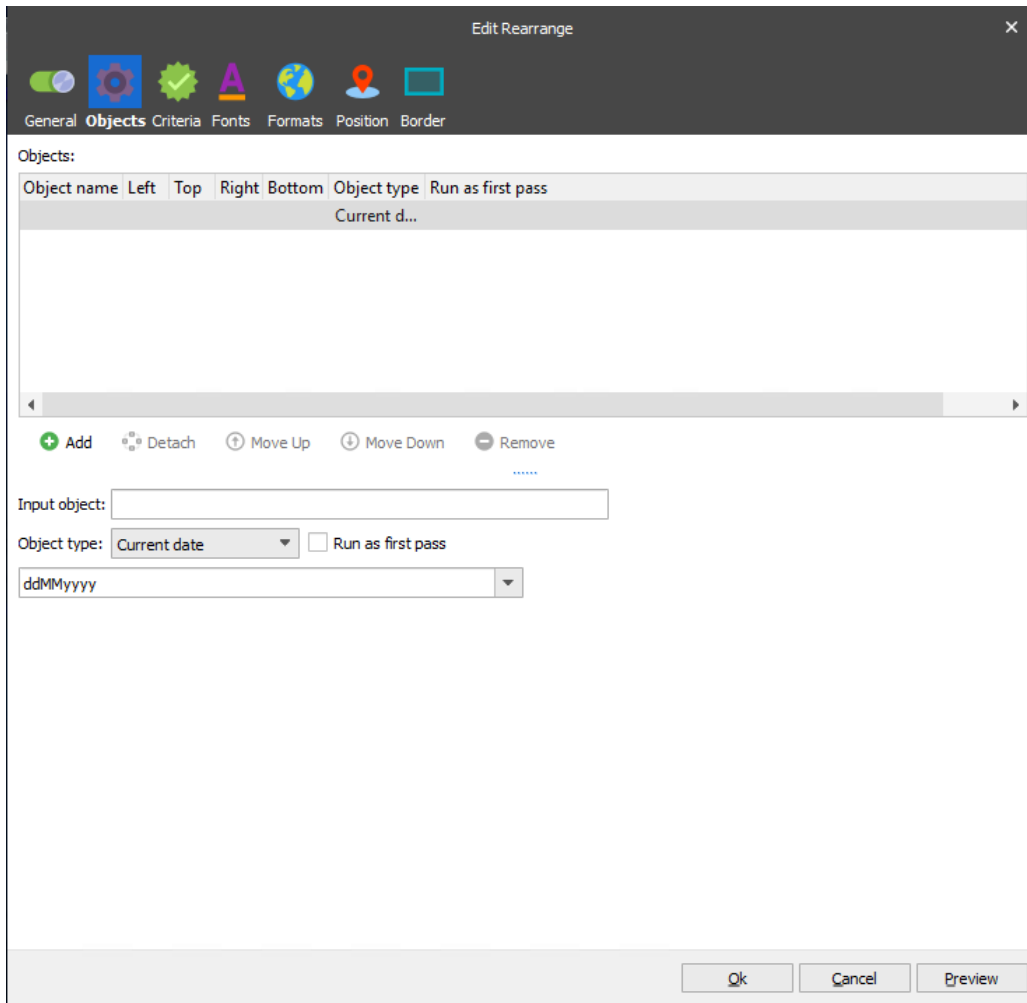
mm = minutes

ss = seconds

zzz = milliseconds

h:m:s ap = time in am / pm format

### 3.3.6.6.3 Current date



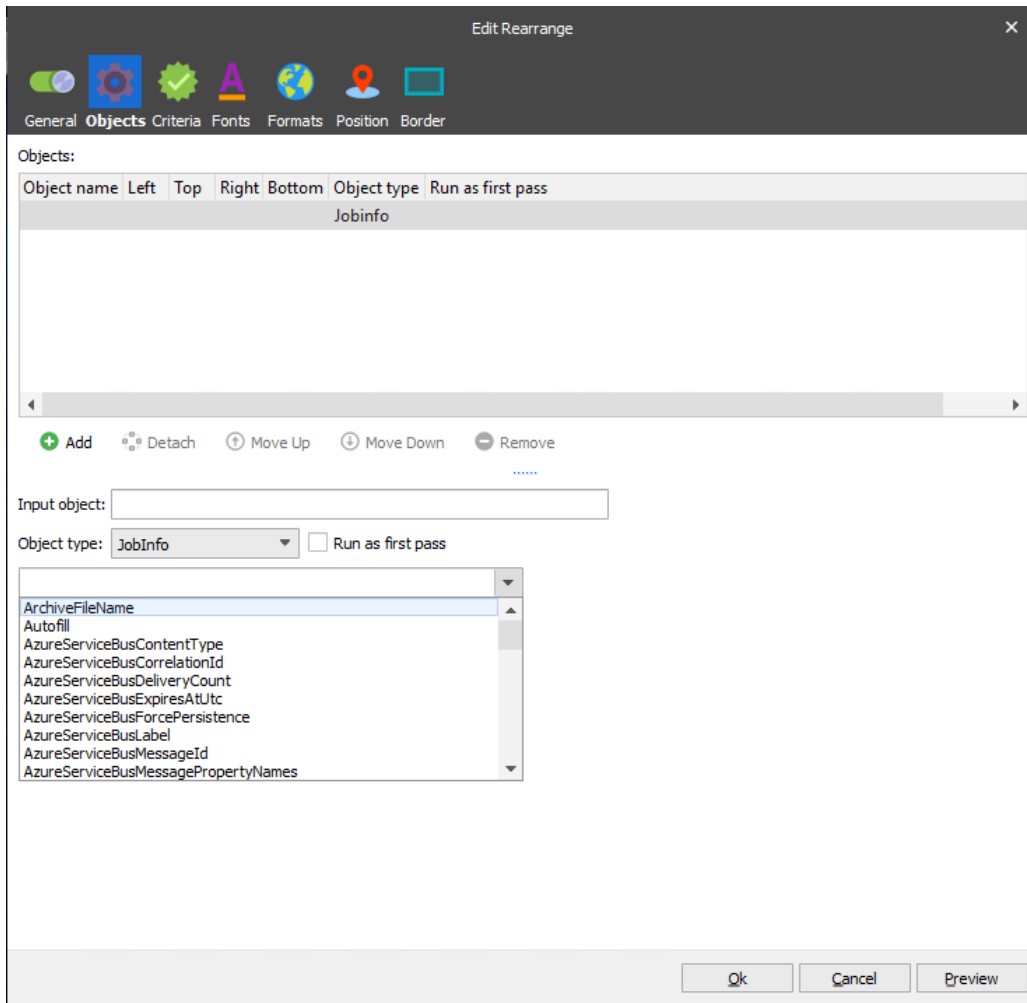
If Current date is selected, the system date will be printed using the chosen format:

- dd = day
- MM = Month in two digits
- MMM = Short text for month (Jan, Feb, Mar etc.)
- MMMM = Full text for month
- yy = Year in two digits
- yyyy = year in four digits

### 3.3.6.6.4 Current date and time

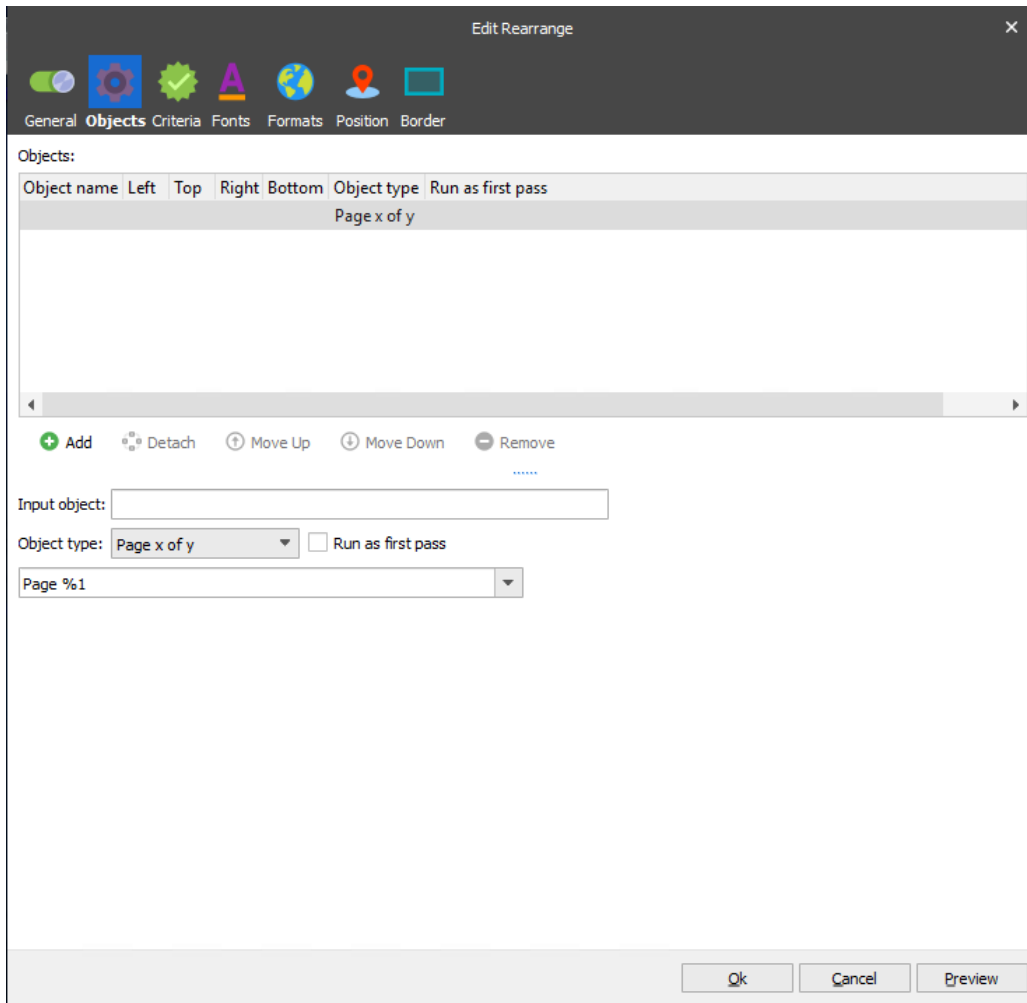
For more information about the date and time formats, see the Current date and Current time sections in this manual.

### 3.3.6.6.5 JobInfo



A JobInfo is inserted in the output page. Select the desired JobInfo from the dropdown box or enter the name of a custom JobInfo that has been created. For example, use the 'FileName' JobInfo to include the filename of the job on the form.

### 3.3.6.6 Page x of y



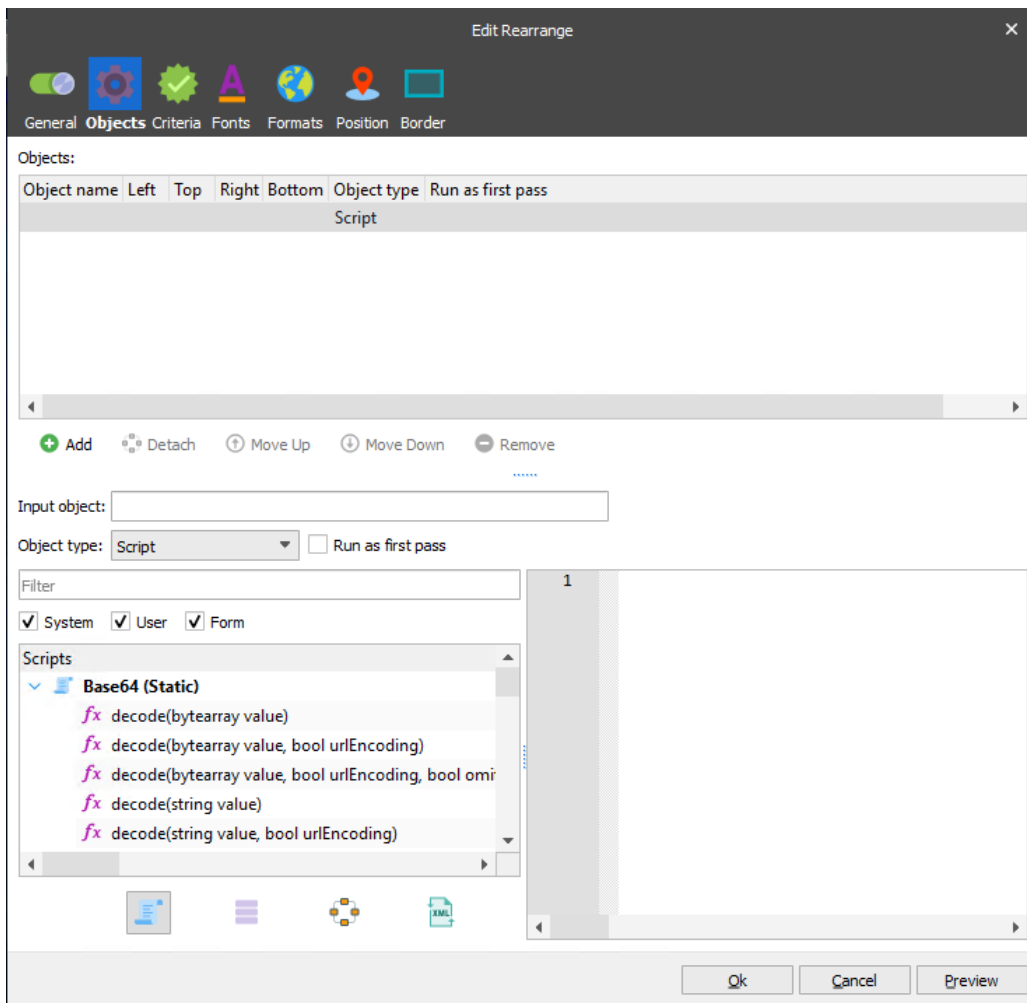
Selecting Page x of y will append page numbers to the print job. The format can be specified using the variables below:

%1 = the number of the current page

%2 = the total number of pages

You can add or change the text in the format field or localize it for foreign languages.

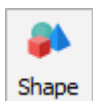
### 3.3.6.6.7 Script



Setting Script as the text type provides you with the flexibility of using predefined scripts to perform advanced functions, e.g., calculating the sum of a rearrange value, converting a date and much more.

**Note:** The output is the same as a rearrange (see 3.3.6.2 *Rearrange Tool*).

### 3.3.6.7 Shapes Tool



You can activate the **Shapes** tool by clicking the **Shapes** button in the toolbar.

The **Shapes** tool allows you to create lines and shapes on an output page of the form. Possible shapes are rectangle and rounded rectangle.

To create a line or a shape, click a down arrow next to the **Shapes** tool first. On the menu, click a command of your choice: **Line**, **Rectangle** or **Rounded Rectangle**.

When the required command is selected, the cursor turns to plus sign, and you can draw a line/rectangle/rounded rectangle by dragging the pointer in the output page to mark the area for a line or a shape. The line/rectangle/rounded rectangle is now visible in the form.

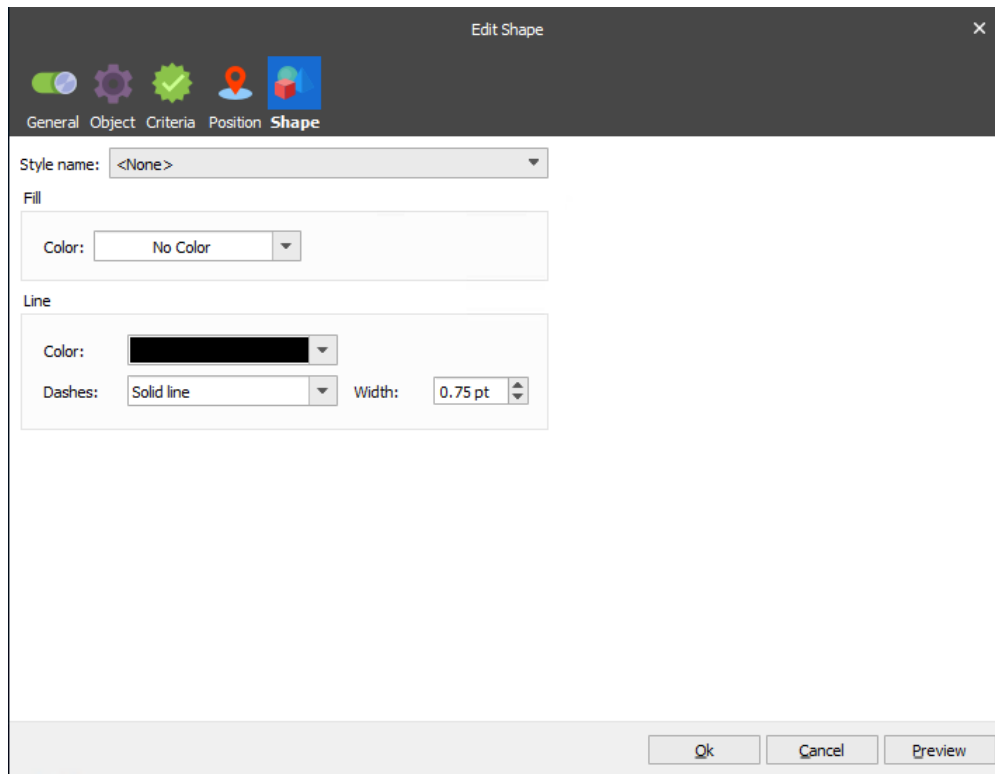
It is also possible to draw a single or multiple line(s)/rectangle(s)/rounded rectangle(s) in dynamic vertical positions in the output view, by dragging the pointer in the input page to select a pattern. As a result, the new object is

connected to any pattern meeting the selected pattern criterion. Line(s)/rectangle(s)/rounded rectangle(s) are now visible in the form.

The line/rectangle/rounded rectangle can be resized and positioned accordingly.

You can lock a shape to prevent it from moving and resizing. To do this, either select the **Lock** command on the context menu, or the **Locked** check box in the **Edit Shape** dialog box.

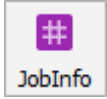
The properties for a line, rectangle and rounded rectangle are as follows:



Properties	Explanation
<b>Style name drop-down list</b> (available for all shapes)	
Style name	Specify a style for a shape.
<b>Line group box</b> (available both for the lines and shapes)	
Color	Set the color.
Dashes	Set the line style.
Width	Set the line width.
<b>Fill group box</b> (available both for the rectangle and the rounded rectangle, disabled for line)	
Color	Set the fill color.
<b>Position tab</b> (available only for the rounded rectangle)	
Width Ellipse	Define the width of the ellipse.

Height Ellipse	Define the height of the ellipse.
----------------	-----------------------------------

### 3.3.6.8 JobInfo Tool

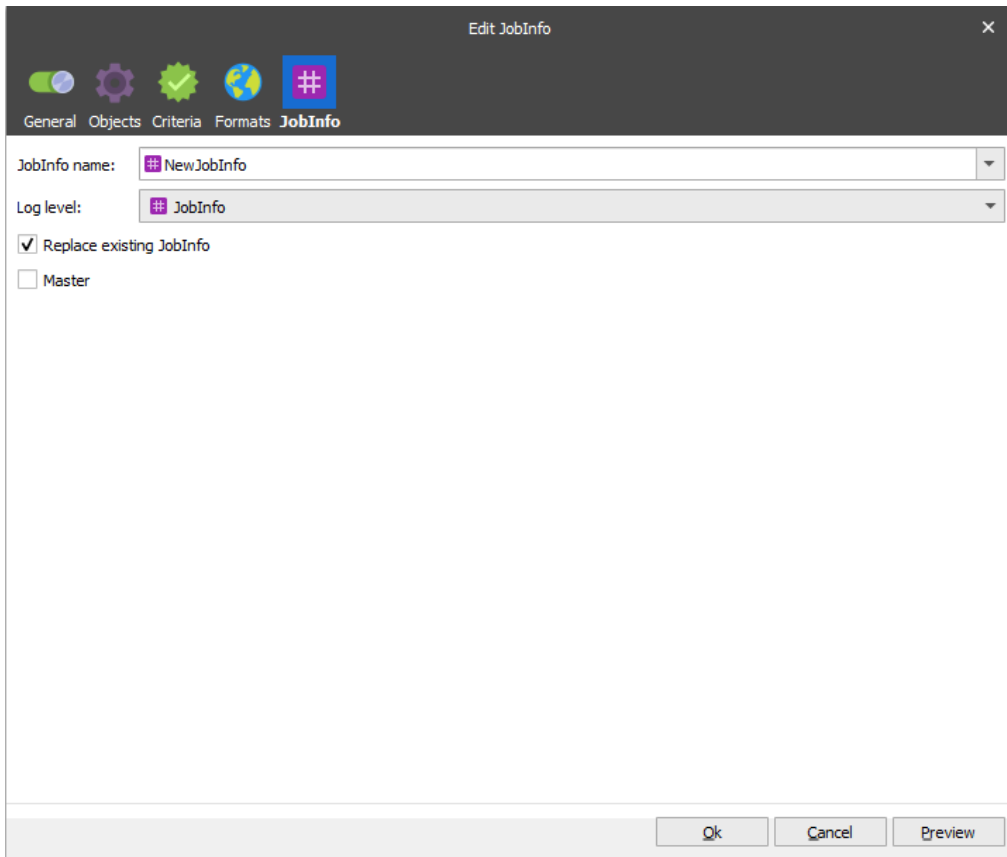


You can activate the **JobInfo** tool by clicking the **JobInfo** button in the toolbar.

The **JobInfo** tool allows you to create JobInfos based on input data.

Activate the **JobInfo** tool and select an area in your input data file by drawing a box around the text. The selected area will be highlighted in red, representing a rearrange.

The properties of a JobInfo are:



Properties	Explanation
JobInfo name	The name of the JobInfo when using it in scripts and in rearranges with the 'insert text' JobInfo type.
Log level	The category which events related to the JobInfo should be logged under. <b>JobInfo</b> The events related to the JobInfo are logged under the JobInfo category. <b>Debug</b> The events related to the JobInfo are logged under the Debug category. <b>NoLog</b> The events related to the JobInfo are not logged.



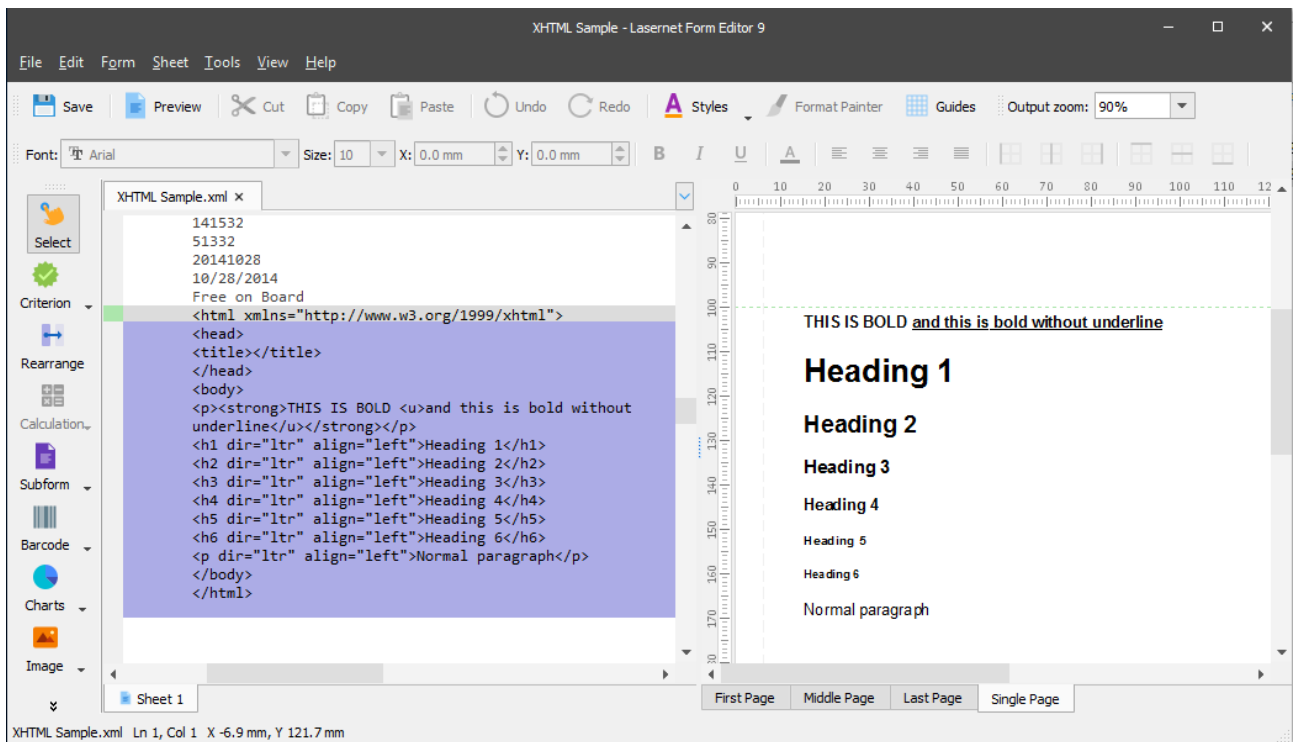
Replace existing JobInfo	If selected, any other JobInfo with the same name is replaced.
Master	<p>If selected, a JobInfo becomes available for the next sheets. The setting works the same way as the following script function does: <code>masterJob.setJobInfo ("JobInfoName", "Value")</code>.</p> <p>The value of a Master JobInfo will not be present in the final output of a sheet, created by the Form Engine, if the JobInfo is included as an Insert Text object <u>in the very same sheet</u> as where the Master JobInfo is created.</p>

### 3.3.6.9 XHTML

Allows you to read XHTML documents and display them in the output. The following tags are supported:

- The **DOCTYPE** declaration defines the document type to be HTML
- The text between `<html>` and `</html>` describes an HTML document
- The text between `<body>` and `</body>` describes the visible page content
- The text between `<h1>`-`<h6>` and `</h1>`-`</h6>` describes headings
- The text between `<p>` and `</p>` describes a paragraph
- Hyperlinks are defined with the `<a>` tag: `<a href="url">hyperlink text</a>`
- The `<b>` tag specifies bold text
- The `<u>` tag represents some text that should be stylistically different from normal text (underlined)
- The `<i>` tag is usually displayed in Italic

Using this description, Lasernet can display a document with headings and paragraphs.



### 3.3.7 Subforms

The **Subform** tool is designed to add fixed content as a stand-alone entity to a document or a report. For example, you might need to create several reports for different departments, where all the reports are to contain the same text fragment. Rather than adding the fragment to each report individually, the easiest method is to create a subform, and add the fragment to that instead. The subform can be then easily included in each report.

Alternatively, if the fragment should only appear on certain reports and not others, you can achieve this by using criteria to select or deselect reports for treatment. To do this, we would recommend you creating the required number of subforms and specify certain criteria for each of them based on the input or JobInfos.

Subforms can be added to the output of one of the enhanced metafile formats (for more details, see 3.5.2 *Enhanced Metafile*), as well as to outputs of the [XML](#), [EDI](#) or [JSON](#) formats. Subforms are often used as an alternative to overlays (used in previous versions of Lasernet) to maintain company branding elements, like company logos, addresses or graphical elements.

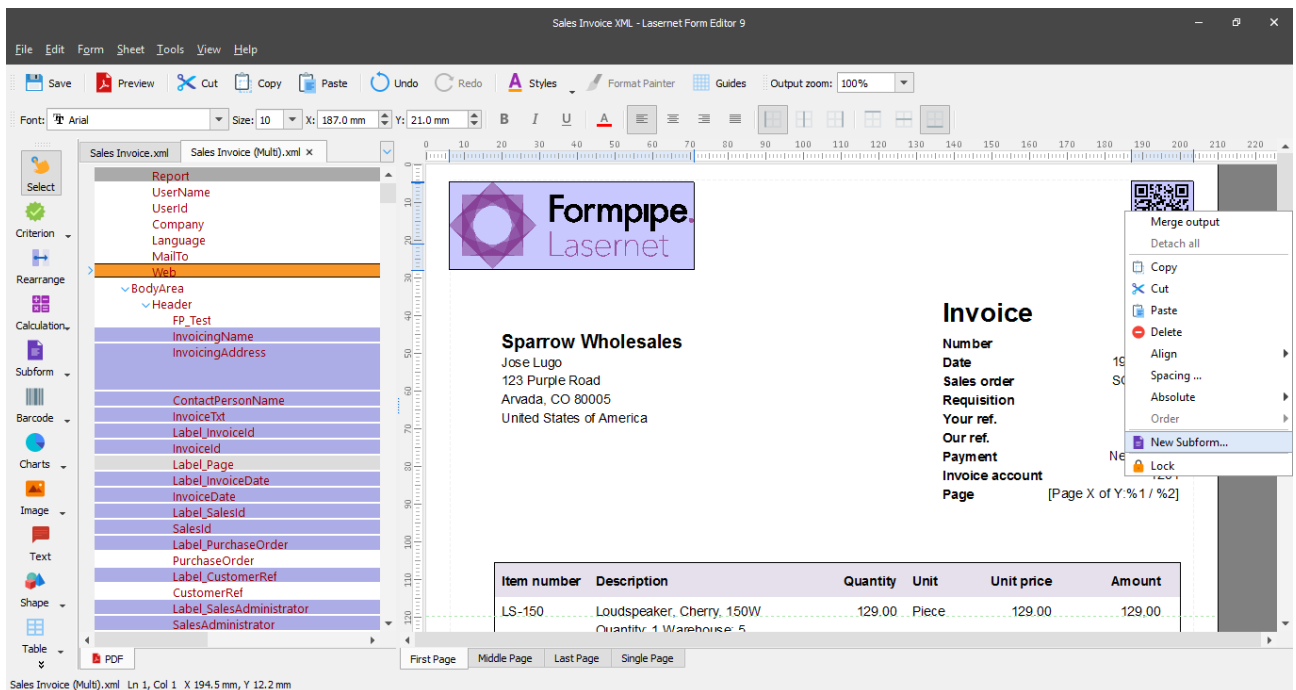
#### 3.3.7.1 Adding a Subform

To add a subform, follow the steps below:

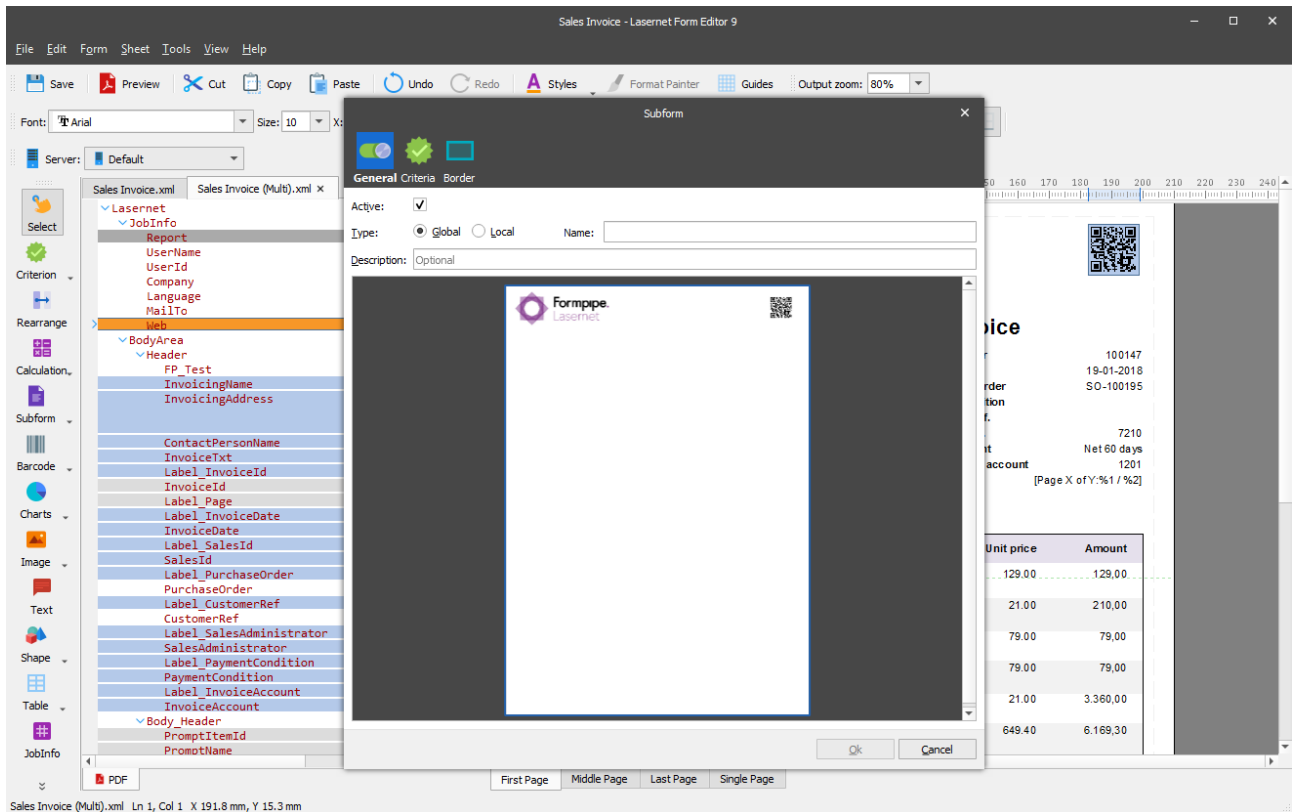
1. In the output, select the objects you want to add to the subform. Right-click the selected objects, and then select **New Subform...** on the context menu.

**Note:** Only absolute (not conditional) objects can be added to a subform.

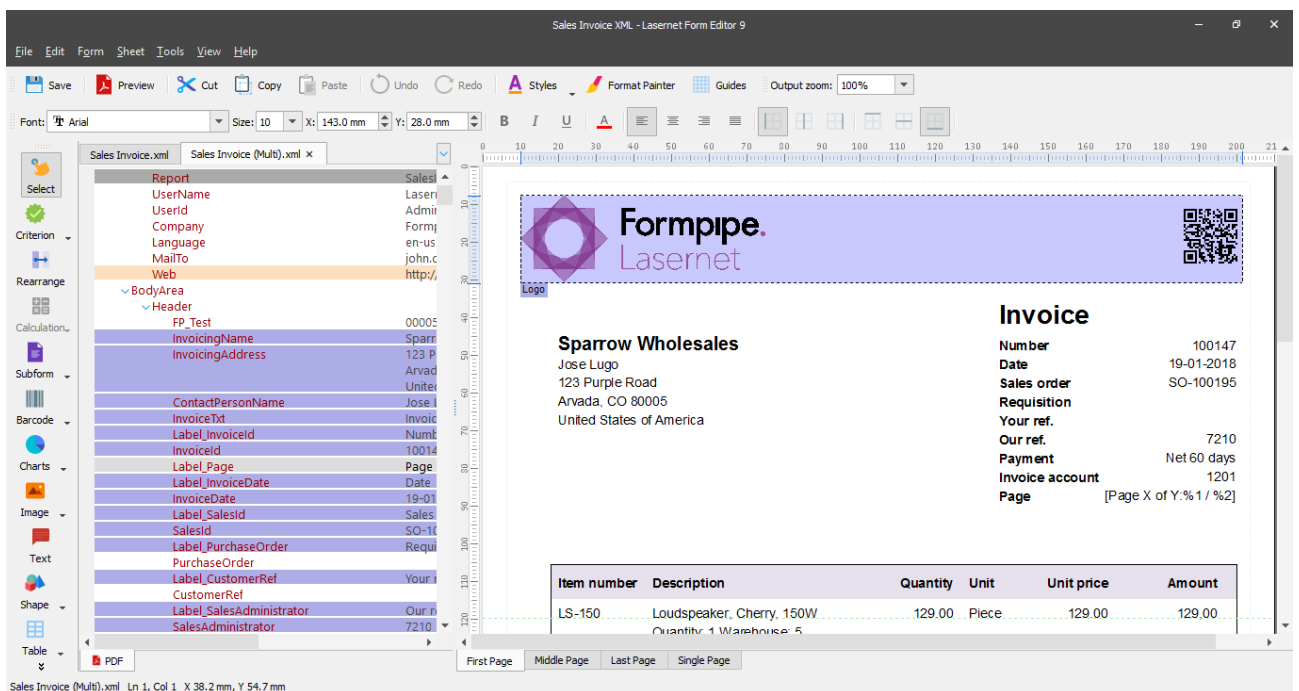
In addition, make sure that those objects have the same values for their **Absolute** and **Relative to** position settings.



2. With the **Subform** dialog displayed, specify a subform type (**Global** or **Local**) and a subform name.



3. Click the **OK** button to confirm, and then a subform is added and shown in the output.

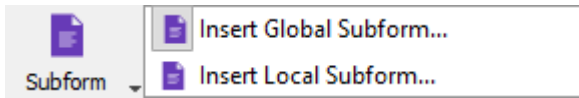


If you want to create a new subform from scratch, or select an already created one, use the **Subform** tool on the developer toolbar.

You can add the following subform types to your output: global or local. To do this, follow the steps listed below:

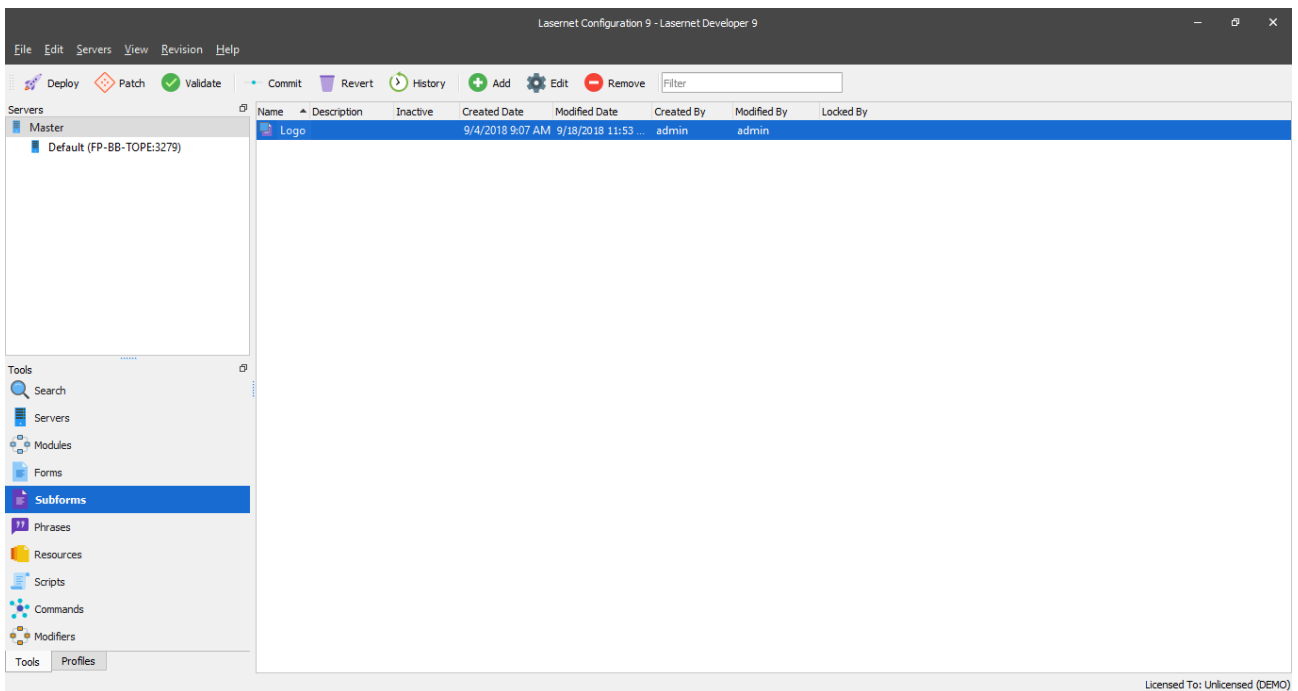
1. Click the down-pointed arrow next to the **Subform** tool.

2. On the menu that appears, click a command of your choice: **Insert Global Subform...** or **Insert Local Subform...**



3. After you have chosen a subform type, the mouse cursor changes its view. Click anywhere in the output to insert the subform.
4. Afterwards, use the **Subform** dialog that appears to add a subform.

It is also possible to add and manage subforms via the **Subforms** tab of the Lasernet Developer.



### 3.3.7.2 *Editing a Subform*

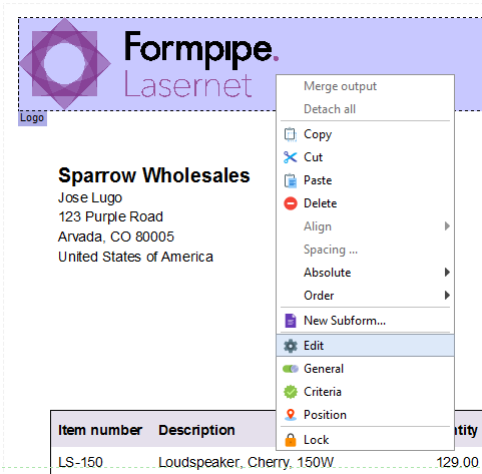
To edit a subform, you can do one of the following:

- double-click the subform tab

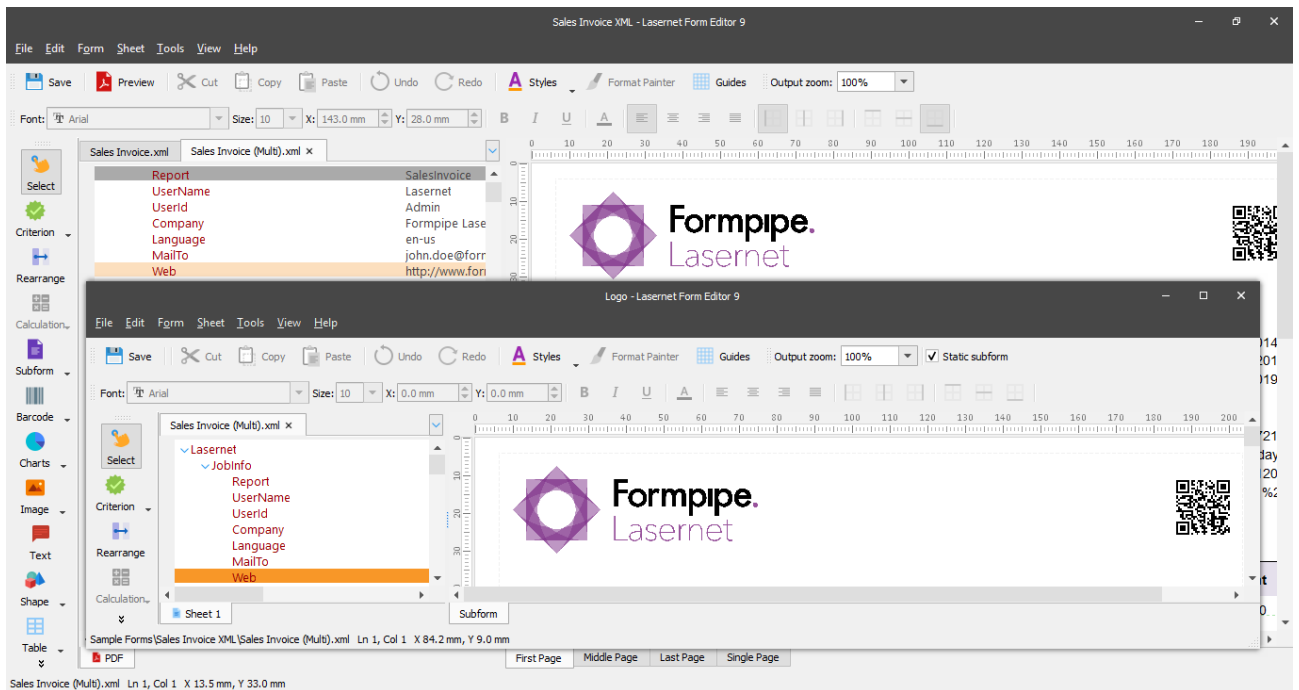


OR

- right-click the form, and then click **Edit**.

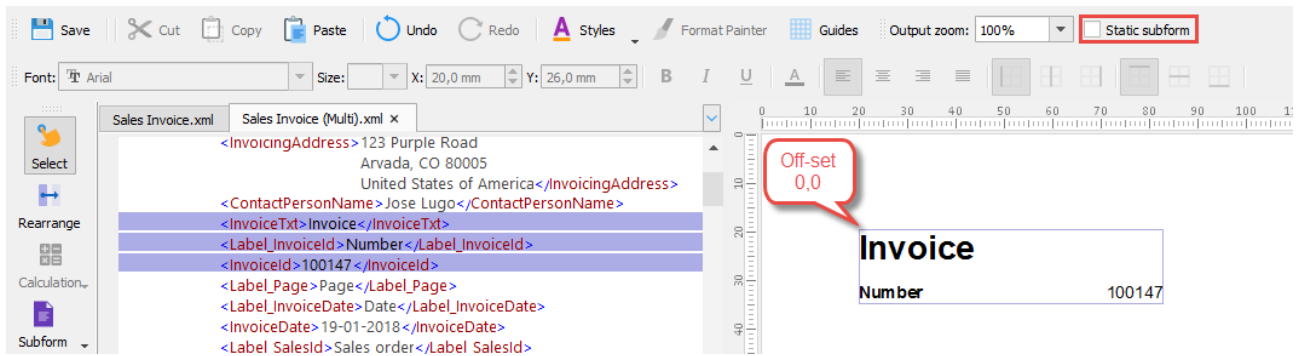


As a result, the subform editor opens.



**Note:** The subform editor only features tools designed for creating and manipulating absolute objects and not patterns with conditional rearranges.

To locate a subform in the same position as the objects added to the subform, select the **Static subform** check box on the toolbar of the subform editor. The position of the static subform is then locked in the output. Subforms marked as not static do not take the paper format into account.

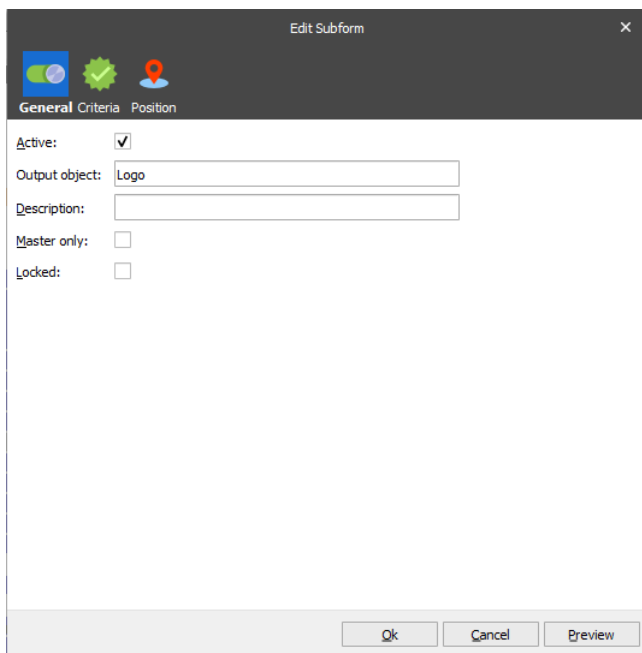


The rearrange in the upper left corner is calculated internally with an off-set set to X= 0 and Y = 0, and other objects on the page are relative to that rearrange.

### 3.3.7.3 Subform Instance Properties

Subform instances have specific properties which are similar to those of rearranges. For more details about the rearrange properties, see 3.3.6.2 *Rearrange Tool*.

To open a dialog showing a list of subform instance properties, double-click a subform or right-click it, and then select the required command on the context menu.



### 3.3.8 Conditional Area, Regions and Patterns

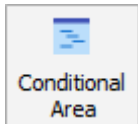
Conditional areas, regions and patterns further enhance the flexibility of processing input data files. This is described in more details below.

#### 3.3.8.1 Conditional Area

Using the Conditional area function, it is possible to define areas of the input data files to include in the print when certain conditions are met. This can be used to recognize invoice or order lines in the corresponding documents.

There are two types of conditional areas: default and custom.

Throughout this chapter, the input conditional area is referred to as the 'body area', as that is how it is most commonly known.



A conditional area is defined by selecting the **Conditional Area** tool from the toolbar and marking the desired area of the input data file (left hand side) when the pointer becomes a cross.

By clicking the little arrow next to the tool button, you can choose one of the following menu options to mark the area:

1. **Cond. Area Start/Stop Line:** allows you to set a fixed position for the area, with the start and end lines.
2. **Cond. Area Start Criterion:** allows you to set the start line of the area.
3. **Cond. Area Stop Criterion:** allows you to set the stop line of the area.

**Note:** By default, when a sheet is created, a conditional area is defined for the whole document with start and stop lines at the beginning and the end of the document respectively. As such, when a start criterion is set, the stop line is the end of the document, and vice versa.

You can only define one conditional area in an input data file.

John Haddock Insurance Co. Miss Patricia Doyle 10 High Tower Green Manchester, M02 4RT Great Britain		
----- MailTo: john.doe@formpipe.com		
Bill-to	Customer No.	30000
VAT Registration No.		533435789
Salesperson		Peter Sadow
Item number	Description	Posted Shipment Date
LS-150	Loudspeaker, Cherry, 150W	
LS-2	Cables for Loudspeakers	19-01-11
LS-75	Loudspeaker, Cherry, 75W	19-01-11
LS-81	Loudspeaker, Walnut, 80W	19-01-11
SPK-100	Spike for LS-100	19-01-11
1896-S	ATHENS Desk	19-01-11
1900-S	PARIS Guest Chair, black	19-01-11
1906-S	ATHENS Mobile Pedestal	19-01-11
1908-S	LONDON Swivel Chair, blue	19-01-11

In the example above, the area of an invoice containing the invoice lines has been marked as a conditional area, represented by the yellow region.

Unlike the input data file, the output data file can contain more than one conditional area. This allows for more flexibility when organizing the data on each page.

A conditional area can be locked to prevent moving and resizing. To do this, select the **Lock** command on the context menu or the **Locked** check box on the **Edit Conditional Area** dialog box.

Aside from the default conditional area, a custom conditional area can be added by following the steps below:

1. On the **Sheet** menu, click **Conditional Area**.  
Alternatively, right-click anywhere in a working space and then select **Conditional Area** on the context menu.
2. With the **Conditional Area** dialog displayed, navigate to the **Output** tab.
3. Under the **Areas** group box, click the **Add** button.
4. With the dialog displayed, indicate the parameters required for a new custom conditional area:

- **Area name:** add a name for a new custom conditional area.
- **Position:** indicate the **X** and **Y** values to set a start point for a new conditional area, and then type the **Width** and **Height** values to set a conditional area size.

**Note:** Once a custom conditional area is added to the output data file, you can move it. First, select the area and when the pointer becomes a four-headed arrow, drag the area to its new position. As a result, the **X** and **Y** values change accordingly.

In addition, you can resize the area by dragging an area side when a pointer becomes a double-headed arrow until the area is the size that you want. To resize the area proportionally, drag an area corner. As a result, the **Width** and **Height** values are changed respectively.

When you move or resize an area belonging to the area batch (multiple areas), you can move/resize only one area of the batch, the rest of areas are changed automatically.

- **Absolute:** define page(s) on which the conditional area is to appear by selecting the required check box(es): **First**, **Middle**, **Last** and/or **Single**. If data (conditional rearranges) does not match the specified page(s), data is cut.

**Note:** Default conditional area settings do not have any check boxes as they appear on every page by default.

- **Area:** click the plus button to add a new area. Each custom conditional area can have more than one area allowing you to organize data in the output file to present a special layout, for example newspaper style layout. Position, size and availability on page(s) can be defined for each area.
- **Master only:** select the check box to apply the custom conditional area to the Master sheet only and not to the child sheets (sheets inherit data from the Master sheet).
- **Locked:** select the check box to prevent the area from being moved or resized.
- **Table:** click the button to open the **Table Properties** dialog. For more details, see 3.3.9.1 *Table Properties*. The button is disabled if the table is not applied to the current conditional area.
- **Multiple areas:** select the check box to create multiple areas at a time.

Once you select the check box, you are to specify the following parameters:



Area name: Example

Absolute

First

Middle

Last

Single

Master only  Locked

Multiple areas

Table

OK Cancel

**Paper Dimension**

Width: 210.0 mm Height: 297.0 mm

Margin left: 10.0 mm Margin top: 10.0 mm

**Area Across**

Horizontal number of areas: 3 Vertical number of areas: 6

Horizontal progress: 60.0 mm Vertical progress: 40.0 mm

Horizontal margin: 3.0 mm Vertical margin: 3.0 mm

Processing order: Vertically (Start at top left)

### Paper Dimension

**Width** The field is disabled. The value for the field is taken from the paper setup.

**Height** The field is disabled. The value for the field is taken from the paper setup.

**Margin left** Denotes a space between the edge of multiple areas and the left page edge.

**Margin top** Denotes a space between the edge of multiple areas and the top page edge.

### Area Across

**Horizontal number of areas** Denotes a number of areas to be added horizontally.

**Vertical number of areas** Denotes a number of areas to be added vertically.

**Horizontal progress** Denotes a width of each single area belonging to a batch.

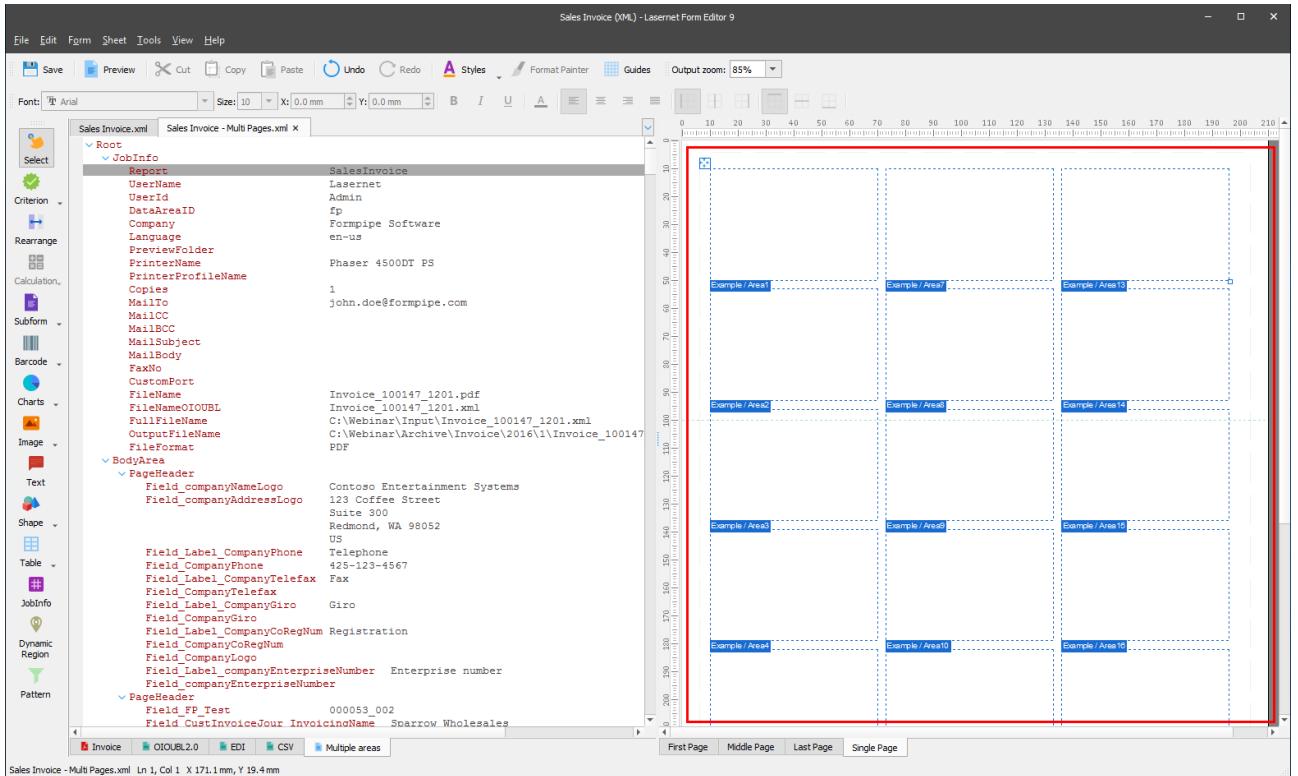
**Vertical progress** Denotes a height of each single area belonging to a batch.

**Horizontal margin** Denotes a distance between areas horizontally.

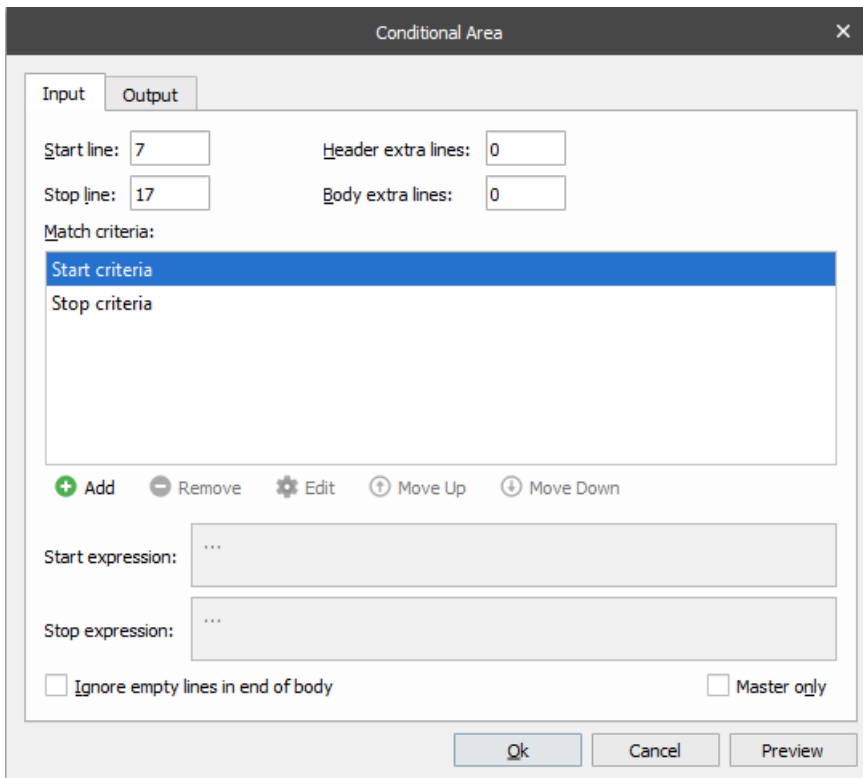
**Vertical margin** Denotes a distance between areas vertically.

**Processing order** Denotes the order areas are presented and enumerated in the batch.

Below, you can see an example of adding multiple areas to the output:



A conditional area has the following properties that can be accessed via the **Conditional Area** dialog.

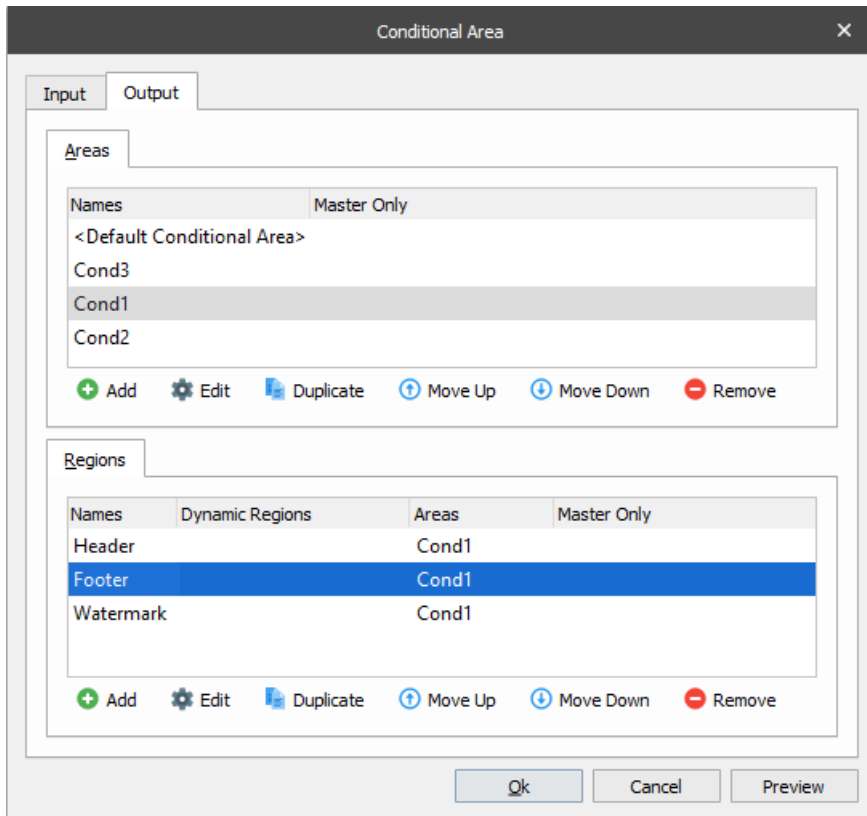


The conditional area has the following set of input properties.

<b>Start line</b>	The line number from where the conditional area starts in the input data file. The start line number must be a positive numeric value.
<b>Stop line</b>	The line number where the conditional area stops in the input data file. The stop number must be a positive numeric value higher than the start line number or an asterisk (*) which sets the conditional area to stop at End of Page.
<b>Header extra lines</b>	This is typically used together with start criteria inserted in a conditional area. The header area can then be extended with a positive number of additional lines or decreased with a negative number of lines.
<b>Body extra lines</b>	This is typically used together with stop criteria inserted in a conditional area. The conditional area can then be extended with a positive number of additional body lines or decreased with a negative number of body lines.
<b>Match criteria</b>	The conditional area can have its own Start and Stop criteria. The criteria allow for greater flexibility when defining where and what constitutes a conditional area. More information about start and stop criteria can be found in Section 3.3.2 <i>Grab</i> .
<b>Start expression</b>	A start expression can be added by defining that a certain number of start criteria must be true. Read more about expressions in Section 3.3.2 <i>Grab</i> .
<b>Stop expression</b>	A stop expression can be defined using the stop criteria of the conditional area. Read more in Section 3.3.2 <i>Grab</i>
<b>Ignore empty lines in end of body</b>	Selecting this option ignores any empty lines that appear at the end of the body area. Useful for stopping patterns trying to match these empty spaces.
<b>Master only</b>	If checked, the conditional area will only apply to the Master sheet and not on the child forms (forms inherit data from a Master sheet).

If **Match** criteria are used, they typically overrule any **Start line** and **Stop line** set. If the **Match** criteria are unsuccessful, then Lasernet reverts to using the **Start line** and the **Stop line**.

**Note.** When Combining is used, the input lines are appended to each other making it difficult to use a stop line to control the end of the conditional, as the line number depends on how many documents are combined. In these cases, it is generally advisable to use a Match criterion instead.



The conditional area has the following set of output properties.

### Areas

**List of areas** Contains <Default Conditional Area> which is listed by default and has fixed position parameters, and custom areas (if added).

**Add** Adds a custom conditional area.

**Edit** Edits the selected conditional area in the list. In addition, you can also edit the selected conditional area by double-clicking.

**Note:** For the default conditional area, it is possible to define settings for each page separately. For a custom conditional area, it is possible to define settings for all pages at once.

**Duplicate** Creates a copy of the selected conditional area in the list.

**Move Up** Moves the selected conditional area up one position in the list.

**Move Down** Moves the selected conditional area down one position in the list.

**Remove** Removes the selected conditional area from the list.

### Regions

**List of regions** Contains regions (if any have been added). Each region is shown by its name and the conditional area it belongs to.

**Add** Adds a region to a specific conditional area.

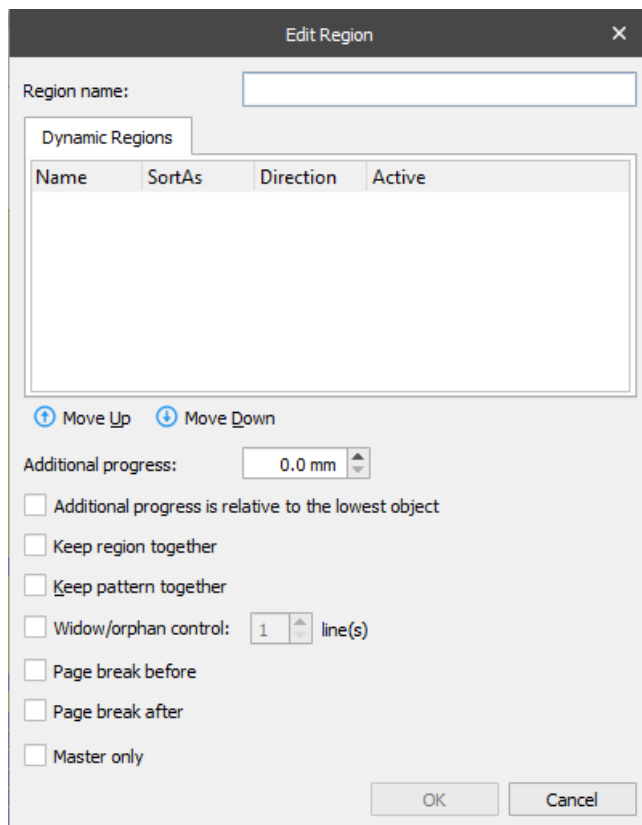
- Edit** Adds the selected region to the list.
- Duplicate** Creates a copy of the selected region in the list.
- Move Up** Moves the selected region up one position in the list. Once you move the region up in the list, it is moved up in the output file layout as well.
- Move Down** Moves the selected region down one position in the list. Once you move the region down in the list, it is moved down in the output file layout as well.
- Remove** Removes the selected region from the list.

### 3.3.8.2 **Regions**

Regions allow you to organize data (patterns) in the output file. One or more regions can be added to the default and/or a custom conditional area.

In the **Output** properties of the conditional area, you can also add, edit, remove, and arrange regions.

To add a region, under the **Regions** group box on the **Output** tab of the **Conditional Area** dialog, click the **Add** button. With the dialog box displayed, you can specify the following region properties.



**Region name** Add region's name.

**Additional progress** Define the size of the vertical margin after the region output.

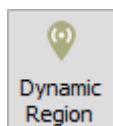
<b>Additional progress is relative to the lowest object</b>	An additional progress will automatically be added to the bottom of the region if an object included in the region is higher than the total progress summarized for all objects.
<b>Keep region together</b>	If enabled, Lasernet keeps all patterns related to the region together on the same page.
<b>Keep pattern together</b>	If the check box is selected, Lاسernet keeps all the consistently located lines of the pattern together on the same page. If the check box is cleared, Lاسernet does <b>not</b> keep all pattern lines together on the same page.
<b>Widow/orphan control</b>	If the check box is selected, Lاسernet avoids putting one or more paragraph-ending lines at the top of a page (widows) and leaving one or more paragraph-starting lines at the bottom of a page (orphans). You can set a number of lines to be considered widowed/orphaned.
<b>Page break before</b>	If the check box is selected, a page break is inserted before the region output.
<b>Page break after</b>	If the check box is selected, a page break is inserted after the region output.
<b>Master Only</b>	If the check box is selected, the region and related patterns only apply to the Master sheet, not to the child sheets (sheets inherit data from the Master sheet).
<b>Table</b>	Click the button to open the <b>Table Properties</b> dialog. For more details, see <a href="#">3.3.9.1 Table Properties</a> . The button is disabled if the table is not applied to the current region.

To edit the region properties, double-click the region record in the list.

You can reassign a region from one conditional area to another if needed. To do this, drag the region from the list to the chosen conditional area in question located under the **Areas** group box.

### 3.3.8.2.1 Dynamic Regions

Dynamic Regions are an extended functionality of [Regions](#) and allows you to organize data (patterns) in the output file with even greater flexibility. One or more dynamic regions can be added to an existing region to organize data within it according to the specified properties.

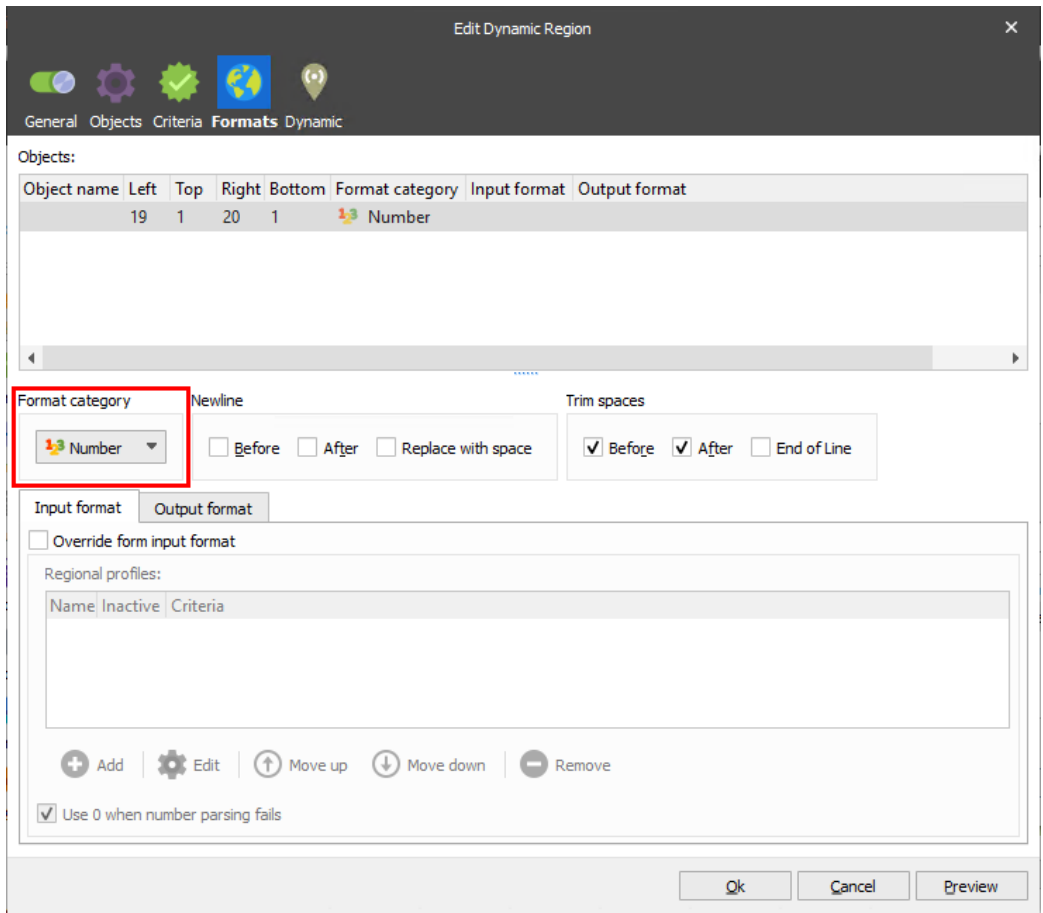


Use the **Dynamic Region** tool to add a dynamic region. To activate the tool, click the **Dynamic Region** button in the toolbar.

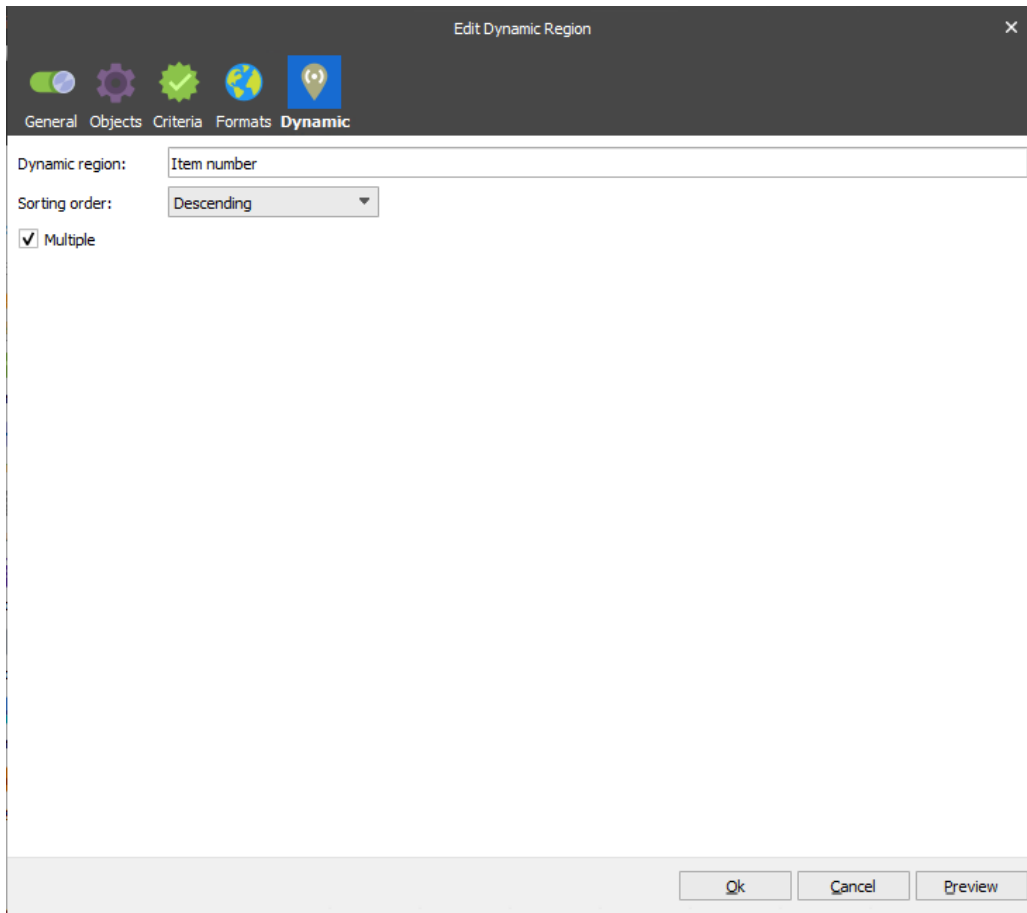
Once a dynamic region is added, you can use the **Edit Rearrange** and **Conditional Area** dialog boxes to specify the dynamic region properties.

You can specify the data input type in the dynamic region properties. Data can be interpreted as follows:

- Number
- Currency
- Time
- Date
- String



You can also specify the following dynamic region properties.



**Dynamic Region** Type a new criterion (dynamic region) name.

**Sorting Order** Arranges all available pattern instances in a defined order, within a region. Pattern instances are processed from top to bottom.

**First In First Out:** Pattern instances have the same order in the output as the input.

**Grouped:** Pattern instances are grouped by equal values in the input and then arranged in the output accordingly.

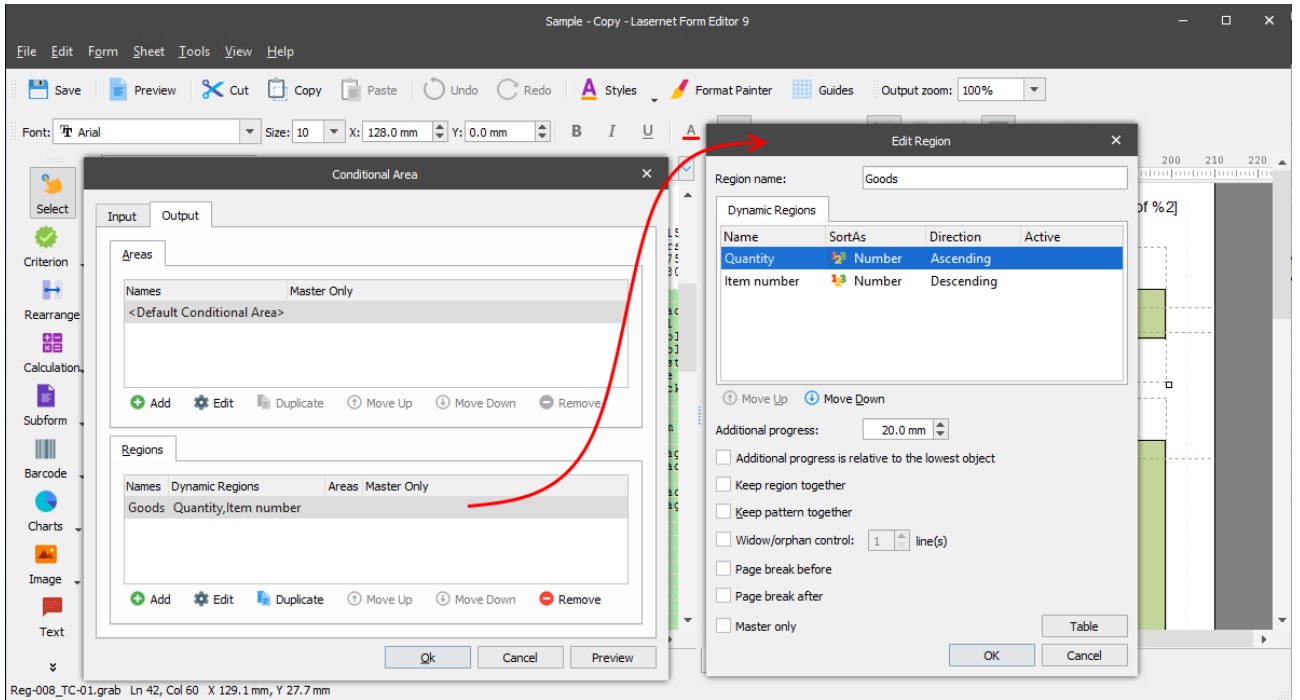
**Ascending:** Available pattern instances are sorted in ascending order.

**Descending:** Available pattern instances are sorted in descending order.

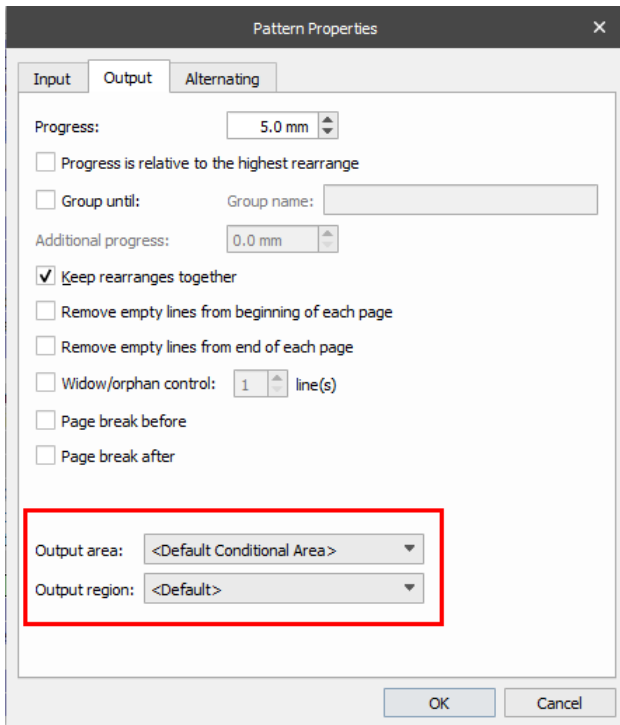
**Multiple** If the check box is cleared, available pattern instances are considered as all one region. All data is grouped in one set but still arranged according to the specified sorting order. If the check box is selected, each available group of pattern instances is considered as standalone, and all available pattern instances are then arranged according to the specified sorting order.

More than one dynamic region object can be added to the region at a time. As a property of the conditional area, you can arrange dynamic region objects by moving each up or down. The top object is applied first, with each following object applied to the sorted data one by one until the end (bottom) of the list.





A dynamic region object can be added to the pattern where the **Output Region** value is set to **Same As Previous Pattern**.



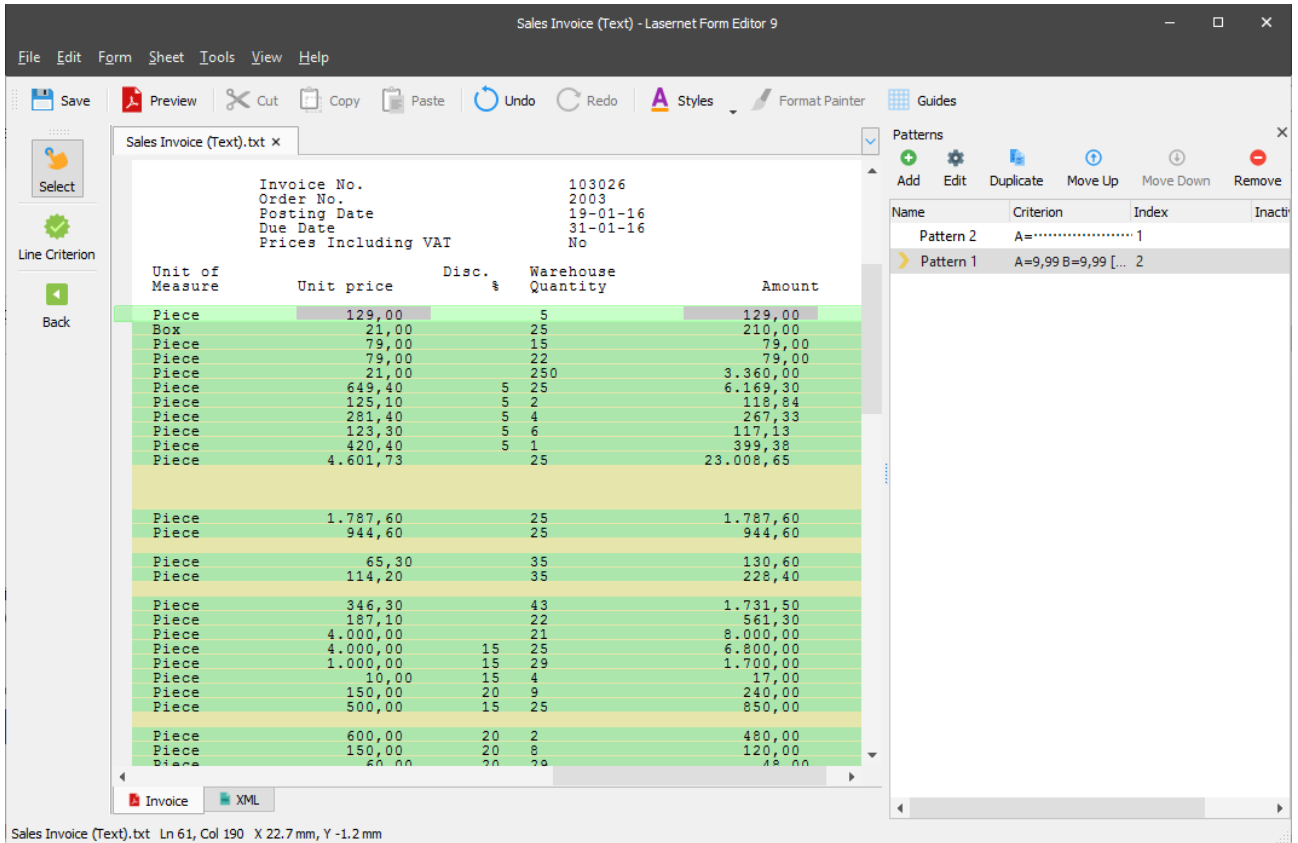
In this case, the dynamic region is applied to the selected regions, in line with the current grab file, according to the pattern settings. If you choose another grab file, it still comes into effect for the regions where it has already been applied in the first pass even if it does not correspond to the selected grab file/pattern settings any more.

### 3.3.8.3 Patterns

Patterns are used within conditional areas to recognize specific line items. For example, a pattern is used to identify various data elements contained in an invoice or order line.



Patterns are defined in Lasernet Developer's **Pattern Mode**, which is activated by clicking the **Pattern** tool in the toolbar.



In the **Pattern** mode, a panel is shown on the right-hand side showing already defined patterns and controls for adding, removing, editing and changing the priority of patterns.

You can change the priority of a pattern by highlighting it and moving it up or down the list using the **Move Up** and **Move Down** buttons.

In the above example, an initial pattern has been created with no criteria, resulting in all lines being recognized within the conditional area. A new pattern is added by clicking the **Add** button in the **Pattern** panel.

**Note:** Click the **Back** button or close the **Patterns** panel to exit the **Pattern** mode.

#### 3.3.8.3.1 Setting up a Pattern

To define a pattern, first use the **Select** tool to highlight the line(s) to be included. Commonly, this is the same line as used in the line criterion.

Please note the light green pattern marker on the left side of the screen. The pattern marker is used as a guideline while defining patterns. The size of the marker corresponds with the pattern height defined in the Pattern Properties.

Patterns are set up by selecting the **Line Criterion** tool and drawing a rectangle around the individual elements of the pattern. See the example below:

2000-S	SIDNEY Office chair, green
1900-S	PARIS Guest chair, black
1936-S	BERLIN Guest chair, yellow
1928-W	ST.MORITZ Bookshelf with drawers
70104	Paint, green
80100	Paper for printing
1908-S	LONDON Office chair, blue
766BC-A	OLYMPIC Conference system
	The conference package contain
	one table, twelve black chairs
	and a whiteboard.
1988-W	CALGARY Whiteboard, yellow

In the above example you can see a grey box representing a pattern criterion. In the example, the pattern matches any rows containing an 8-character long alpha-numeric string located between columns 21 to 28.

When a criterion is marked using the Line Criterion tool, a dialog appears showing the properties of the element.

The **Edit Criterion** dialog contains the following settings:

- Row**            The row number within the pattern. This value is normally 1, reflecting the actual row where the criterion was found, though it is possible to set other values e.g., setting the value to 2 includes the current row and, if the criterion matches, the content on the row underneath, whilst setting a value of -1 tests the criterion against the row above instead.
- Start Col**     Start column for the criteria.
- End Col**        End column for the criteria.
- Match**          The expression that is matched by the pattern. This can be edited to match alpha numeric values rather than an explicitly defined text string. In the example above, the text string can also be changed to "????????", resulting in the pattern matching all rows containing any string at the specified position.
- Regular ex.**    This check box indicates that the match string is a regular expression.
- Case sensitive**   This check box indicates whether the match string is case sensitive or not.

The area selected is initially contained in the **Match** field. The criteria can now be edited to make it generic which is essential for the pattern to be able to recognize other similar data elements.

### 3.3.8.3.2 Wildcards

These are the available wildcards used for defining a pattern:

- ?            Indicates any character including spaces

- X** Indicates a letter – not numbers and spaces
- 9** Indicates a number from 0-9
- \$** Indicates a number, spaces, comma, period and “-“
- §** Indicates the letters x or X
- ⌘** Indicates the digit 9

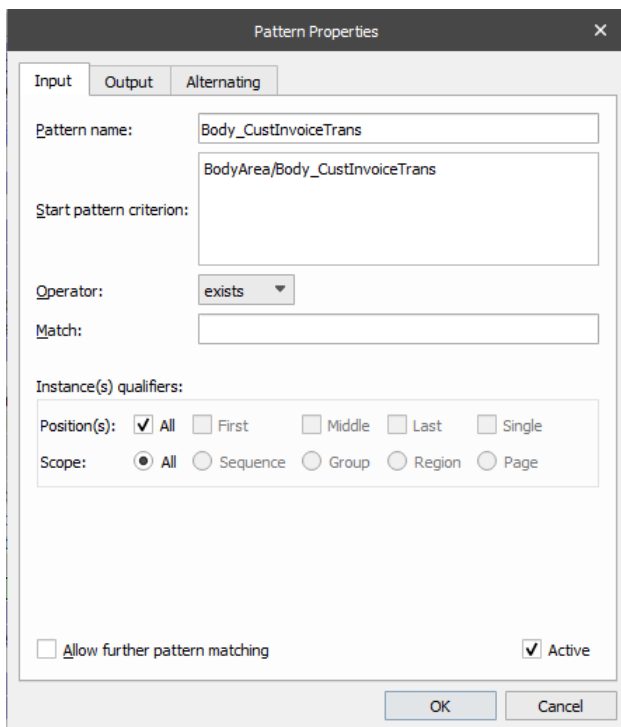
**Note.** Wildcards are not used in “Regular ex.” mode.

### 3.3.8.3.3 Editing a Pattern

A pattern can be edited by selecting it in the **Patterns** panel and then performing one of the following actions:

1. Clicking the **Edit** button on the toolbar of the **Patterns** panel.
2. Right-clicking the pattern record, and then clicking **Edit** on the context menu that appears.
3. Double-clicking the pattern record.

As a result, the **Pattern Properties** dialog opens.

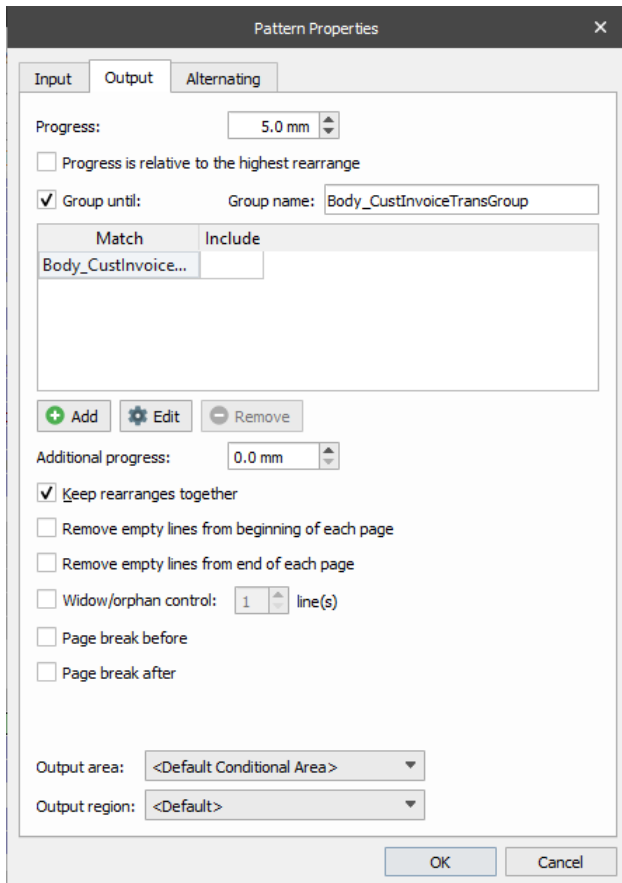


For each pattern, there is a list of predefined criteria under the **Input** tab. Each criterion contains the following fields: Name, Type, Row, Column and Match.

The following options are available on the **Input** tab of the **Pattern Properties** dialog:

- Add** Clicking the **Add** button brings up a dialog allowing a new criterion to be manually added.
- Remove** Removes the selected criterion.
- Move Up** Moves the selected criterion up one place.
- Move Down** Moves the selected criterion down one place.
- Edit** Clicking the **Edit** button brings up a dialog allowing you to manually change the properties of the selected criterion.

<b>Pattern Expression</b>	The <b>Pattern Expression</b> field can be used for defining a set of criteria which must be true (or false). Further information about expressions can be found in Section 3.3.2 Grab.
<b>Instance(s) qualifiers</b>	<p>Extends pattern expressions so that the following instances:</p> <ol style="list-style-type: none"> <li>1. All,</li> <li>2. First,</li> <li>3. Middle which is/are all non-first and non-last,</li> <li>4. Last,</li> <li>5. Single which is the only one existing line of the pattern</li> </ol> <p>match those ones which belong to:</p> <ol style="list-style-type: none"> <li>1. Scope of all instance,</li> <li>2. Sequence of the pattern instances (no other patterns match lines between two or more sequences),</li> <li>3. Region containing instances of the pattern,</li> <li>4. Group containing instances of the pattern,</li> <li>5. All instances of the pattern in conditional area on a page.</li> </ol> <p>Both the <b>All Position(s)</b> check box and <b>Scope All</b> radio button are selected by default. As such, the remaining controls (<b>First</b>, <b>Middle</b>, <b>Last</b> and <b>Single</b> check boxes, and <b>Sequence</b>, <b>Region</b>, <b>Group</b> and <b>Page</b> radio buttons) are disabled. To enable these controls, clear the <b>All Position(s)</b> check box. Various combinations of the controls are possible. Selecting the <b>Page</b> button disables the <b>Single</b> check box.</p>
<b>Pattern Height</b>	The <b>Pattern height</b> field defines the number of lines that the pattern will span. This can be used to match order lines where the data spans across multiple lines.
<b>Allow further pattern matching</b>	After matching the pattern and producing output, the algorithm will then continue to try matching the current line against the rest of the patterns in the list.
<b>Active</b>	<p>Toggles a pattern active/inactive. If the check box is selected, the pattern is active and is normally processed. If the check box is cleared, the pattern becomes inactive and is not processed or shown in the output or the input.</p> <p><b>Note:</b> Even if a pattern is hidden and not shown in the output, it is still listed in the <b>Pattern and Rearranges</b> dialog which you can access via <b>Sheet</b> → <b>Patterns and Rearranges</b>.</p>



The **Output** tab of the **Pattern Properties** dialog contains the following elements:

### Progress

The progress is the height that is reserved for the output of any rearranges belonging to the pattern. It effectively controls where the rearranges for the next pattern are placed so that they flow downwards on the output page. The **Y** position of rearranges belonging to a pattern are always relative to the current page progress. A progress of **5.0** means that the output of the next pattern match is placed 5 millimeters lower than the current pattern match.

### Progress is relative to the highest rearrange

Defines the **Progress** value as the size of the vertical margin between the output rearranges of each pattern match, instead of using an absolute progress for the pattern. This setting implies that rearranges within a pattern can have differing heights and positions, and calculates the total progress accordingly.

**Note:** For script output to be used for relative progress calculations, the scripts must be run as the first pass. See *Chapter 3.3.6 Insert Text Tool*.

### Group until

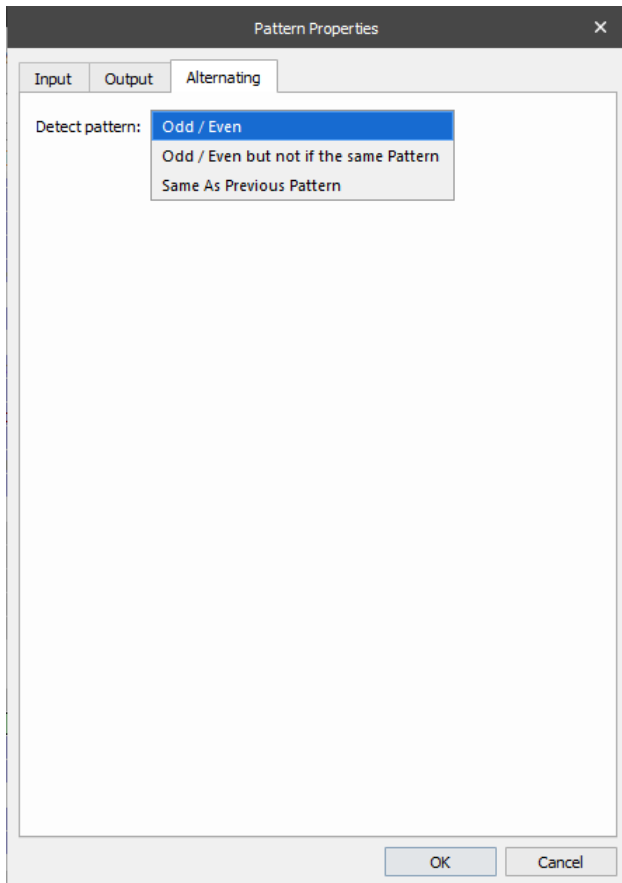
Creates a group starting at every instance of the current pattern and ending by any pattern available in the list (like the OR expression). This setting is related to the **Keep rearranges together** setting (see below): if the **Keep rearranges together** check box is selected for the group starting instance, Lasernet does not add implicit page breaks until the ending group instance.

Once the check box is selected, a grid containing patterns and command buttons to manipulate those patterns appear. By default, the current pattern is listed here.

Clicking the **Add** command button adds one more current pattern to the grid. To change it to a new one, select the pattern and click the **Edit** command button, or double click the pattern. Afterwards, select the required pattern among those available in the drop-down list. To remove the pattern from the grid, select it and click the **Remove** command button.

Each matching pattern except the current one can be included or excluded by acquiring the **Yes** or **No** value respectively. Patterns with the **No** value do not end the group. The last pattern before the **No** value pattern ends the group instead.

<b>GroupName</b>	Type a descriptive name for the group.
<b>Additional progress</b>	Defines the space size between group blocks.
<b>Keep rearranges together</b>	If the check box is selected, Lasernet keeps all the lines of the rearranges for a pattern together on the same page. If the check box is cleared, Lاسernet does <b>not</b> keep all rearranges in a pattern together on the same page.
<b>Remove empty lines from beginning of each page</b>	If the check box is selected, empty pattern lines are removed from the top of each page in the output.
<b>Remove empty lines from end of each page</b>	If the check box is selected, empty pattern lines are removed from the bottom of each page in the output.
<b>Widow/orphan control</b>	If the check box is selected, Lاسernet avoids putting one or more paragraph-ending lines at the top of a page (widows) or leaving one or more paragraph-starting lines at the bottom of a page (orphans). You can set a number of lines to be considered widow/orphan.
<b>Page break before</b>	If the check box is selected, a page break is inserted before each pattern output (instance). If a group is specified (see <a href="#">Group until</a> ), selecting the check box will insert a page break before each group block.
<b>Page break after</b>	If the check box is selected, a page break is inserted after each pattern output (instance). If a group is specified (see <a href="#">Group until</a> ), selecting the check box will insert a page break after each group block.
<b>Output Area</b>	From the drop-down list, select an output area to display the pattern. The list contains the default conditional area and custom conditional area(s), if added. Select the <b>&lt;Same As Previous Pattern&gt;</b> option to connect the pattern to the same conditional area as the previous pattern. If the first line of the conditional area is recognized as a pattern with the <b>&lt;Same As Previous Pattern&gt;</b> value, it will be processed in the same way as the default conditional area.
<b>Output Region</b>	Select the region where the pattern should be displayed in the output (see <a href="#">3.3.8 Conditional Area, Regions and Patterns</a> ). The list contains the default region and custom regions(s), if added to a defined conditional area.



The **Alternating** option comes into effect only when a table is added to the output. You can specify the table settings, including the color of odd/even rows (defined by instance(s) of a pattern), amongst other things (for more details, see [3.3.9.1 Table Properties](#)). There is a pattern instance for every pattern match in the input (represented in the output by object instances added to the pattern).

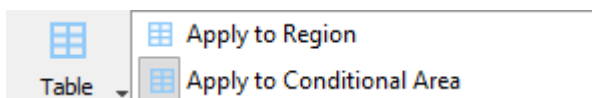
See the table below to learn more about the controls available on the **Alternating** tab of the **Pattern Properties** dialog:

<b>Detect pattern</b>	Use the drop-down list to select one of the options you need:  <b>Odd/Even</b> – select the option to alternate all available instances belonging to a pattern as odd and even; <b>Odd/Even but not in the Same Pattern</b> – select the option to alternate the current instance as odd and even but only if the previous one belongs to another pattern; <b>Same As Previous Pattern</b> – select the option to keep instances without alternating.
-----------------------	---

### 3.3.9 Create Table

Lasernet Form Editor supports the creation of tables which can be applied to a region or a conditional area (for more details, see [3.3.8 Conditional Area, Regions and Patterns](#)).

To add a table, follow the steps listed below:



1. On the toolbar, click the **Table** tool and then click **Apply to Region** or **Apply to Conditional Area** depending on your choice.



- When the pointer becomes a cross, mark the area to define the outer boundaries of the table outlining the required rearranges which belong to a region or a conditional area.

As a result, rearranges of a region or a conditional area are organized within the table. The number of columns in the table you have added corresponds to the number of outlined rearranges available in a region or a conditional area.

Each table is presented by header, body and footer.

Description	Dates Charged	Qty	Cost (Excl. VAT)	Cost (Incl. VAT)
62047458 Standard Phone line	22/01/14 31/01/14	3,00	18,87	22,83
62047458 Standard Phone line	01/02/14 29/02/14	3,00	62,88	76,08
		[script]	[script]	[script]

### 3.3.9.1 Table Properties

To access table properties, right-click the table you have added, then click **Table Properties** on the context menu that appears. Alternatively, double-click in a table you have added.

The **Table Properties** dialog contains the following tabs:

- General
- Header
- Body
- Footer

Each tab has the following command buttons:

- **Ok** – closes the **Table Properties** dialog and saves all the changes made.
- **Cancel** – closes the **Table Properties** dialog without saving any changes made.
- **Preview** – previews the table in the output, including any modified settings, but does not apply them. To apply modified settings, click the **Ok** button.

Use the **General** tab to specify the general table settings.

**Note:** the controls for the **General** tab are the same for tables applied to a region and a conditional area.

The table below details the controls on the **General** tab.

**Editor only** Select the check box to hide the table in the generated file. All the settings you have configured for the table are saved and the table is temporarily hidden. To display the table in the generated file, with all the table settings applied, unselect the check box.

**Name** Type a descriptive name for the table.

**Master only** Select the check box to display a table on the Master sheet only, not on the child sheets (sheets inherit data from the Master sheet).

**Locked** Select the check box to prevent a table from being moved or resized.

Use the **Header** tab to specify settings for the table header. The header settings for tables applied to a conditional area can be set for each column and page separately. You can apply header settings to all columns and all pages at once. The header for tables applied to a region can be set for all pages at once.

**Note:** controls for the **Header** tab differ for tables applied to a region and a conditional area.

The picture below shows the **Header** tab with settings for tables applied to a conditional area.

The screenshot shows the 'Table Properties' dialog box with the 'Header' tab selected. The 'Relative to' dropdown is set to 'Top of cond. area'. The 'Height' is 9.0 mm and 'Top' is 0.0 mm. There are checkboxes for 'Show even if no data' and 'Hide header on page'. 'Column 1 of 5' is selected with a width of 91.0 mm. The 'Fill' section has a color picker. The 'Border' section has four columns: 'Left border', 'Top border', 'Bottom border', and 'Right border'. Each has a 'Border color' dropdown (set to black) and a 'Width' spinner (set to 0.75 pt). The 'Bottom border' has a 'No Color' option. There are 'Previous Column' and 'Next Column' buttons, and an 'Apply to all columns' button. The 'Current page' section has radio buttons for 'First', 'Middle', 'Last', and 'Single', with an 'Apply to all pages' button. At the bottom are 'Ok', 'Cancel', and 'Preview' buttons.

The table below details the controls on the **Header** tab with settings for tables applied to a conditional area.

**Relative to** Contain the following options:

- **Top of page:** locates the table header relative to the top of a page. Position is fixed.
- **Top of cond. area:** locates the table header relative to the top of a conditional area.

**Note:** the control is only available for tables applied to a conditional area. It is not available for tables applied to a region.

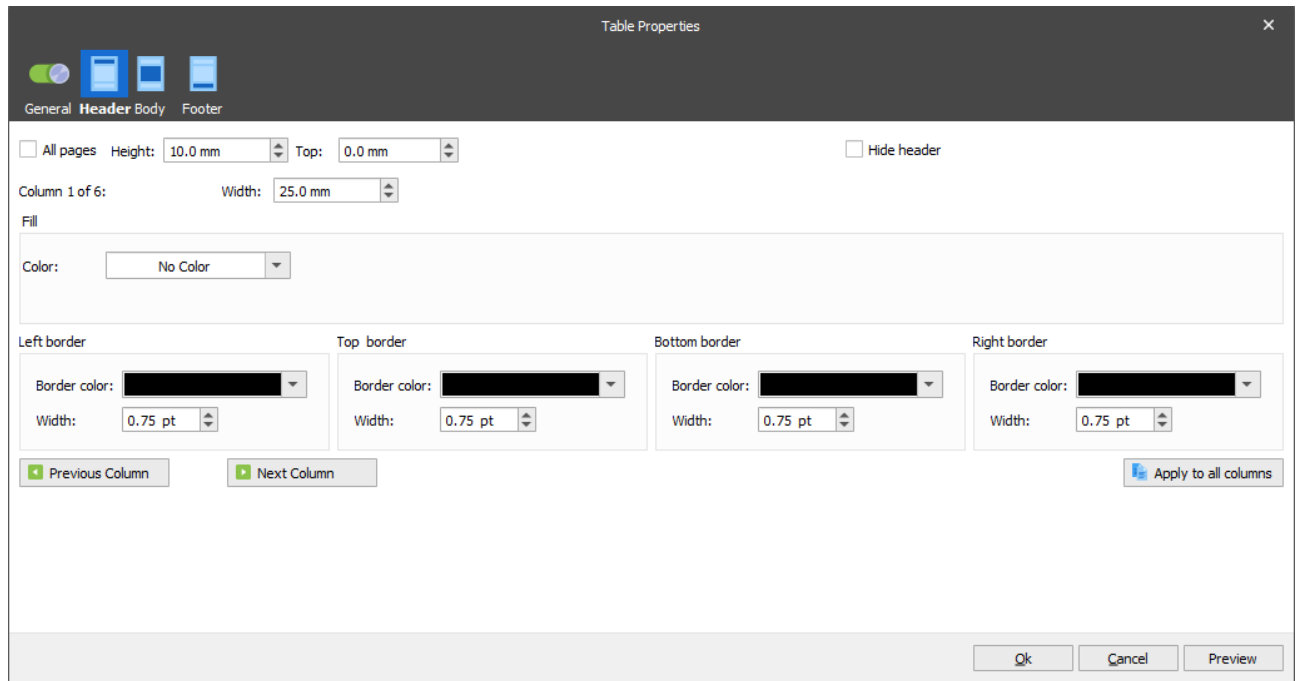
<b>Height</b>	Use the spin box to specify the header height.
<b>Top</b>	Use the text box to specify a fixed (Top of page) or a relative (To cond. area) <b>Y</b> position of the header on a page.
<b>Width</b>	Use the spin box to specify the column width.  <b>Note:</b> specifying the width for the header, you automatically specify the width for the whole column including the body and footer.
<b>Show even if no data</b>	Select the check box to show a table on the page(s) being generated even if there is no conditional data on those pages.
<b>Hide header on page</b>	Select the check box to hide the table header on the page for which you specify settings.
<b>Fill color</b>	Fills the header of the selected column on the specified page with a color. To do this, click the arrow in the control, and then click a color in the palette. For more choices, click <b>Custom Color</b> .
<b>Border color</b>	Specifies the color of the header borders: left, top, bottom and/or right. To do this, click the arrow in the control of the required group box (Left Border, Top Border, Bottom Border and/or Right Border), and then click a color in the palette. For more choices, click <b>Custom Color</b> .
<b>Border width</b>	Specifies the border width of the header: left, top, bottom and/or right. To do this, use the spin box to set the border width value (Left Border, Top Border, Bottom Border and/or Right Border).
<b>Previous Column</b>	Click the button to switch to the previous column for specifying the header settings.
<b>Next Column</b>	Click the button to switch to the next column for specifying the header settings.
<b>Apply to all columns</b>	Click the button to apply the specified header settings for one or all of the columns at once.
<b>First</b>	Select the radio button to specify the header settings for the first page.  <b>Note:</b> the control is only available for tables applied to a conditional area. It is not available for tables applied to a region.
<b>Middle</b>	Select the radio button to specify the header settings for the middle page(s).  <b>Note:</b> the control is only available for tables applied to a conditional area. It is not available for tables applied to a region.
<b>Last</b>	Select the radio button to specify the header settings for the last page.  <b>Note:</b> the control is only available for tables applied to a conditional area. It is not available for tables applied to a region.
<b>Single</b>	Select the radio button to specify the header settings for the single page.

**Note:** the control is only available for tables applied to a conditional area. It is not available for tables applied to a region.

**Apply to all page** Click the button to apply the header settings you have specified for all pages at once.

**Note:** the control is only available for tables applied to a conditional area. It is not available for tables applied to a region.

Below is a picture illustrating the **Header** tab with settings for tables applied to a region.



The table below shows the settings for the **Header** tab for tables applied to a region.

**All pages** Select the check box to show the header on all pages where the table is available.

Use the **Body** tab to specify the table body settings.

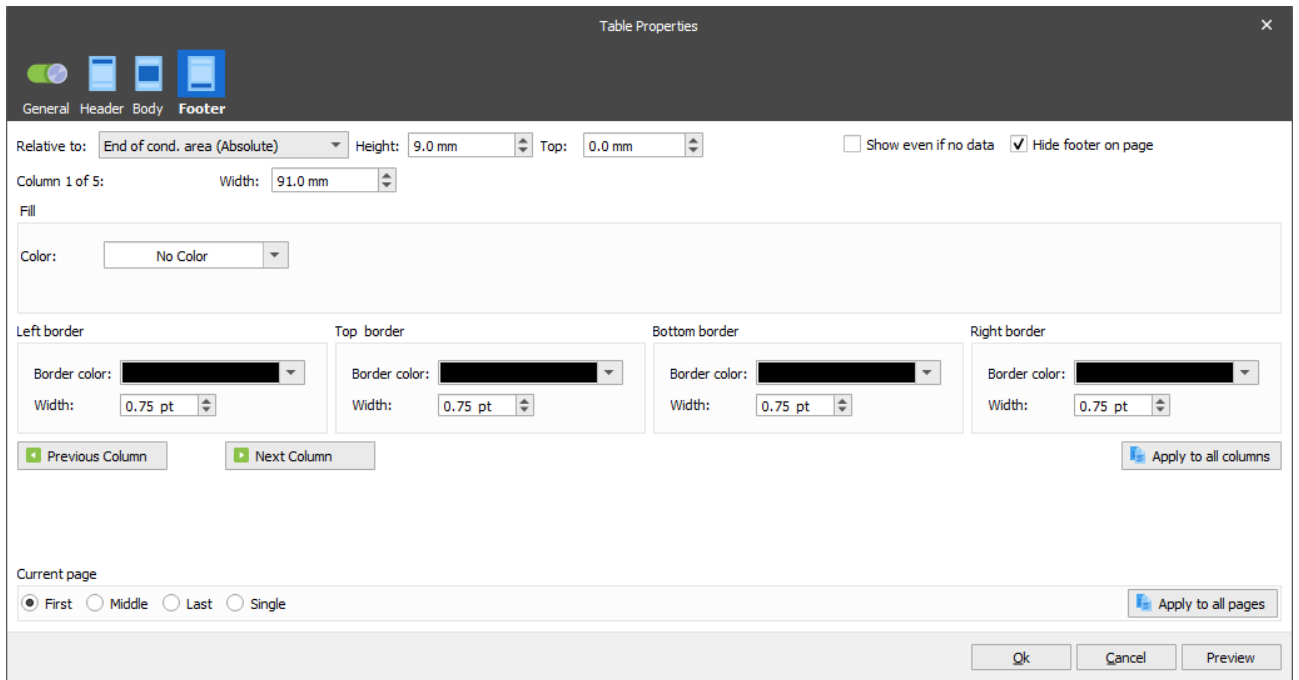
**Note:** controls for the **Body** tab are the same for tables applied to both a region and a conditional area.

The table below details the controls for the **Body** tab. Most settings are the same as for the **Header** tab.

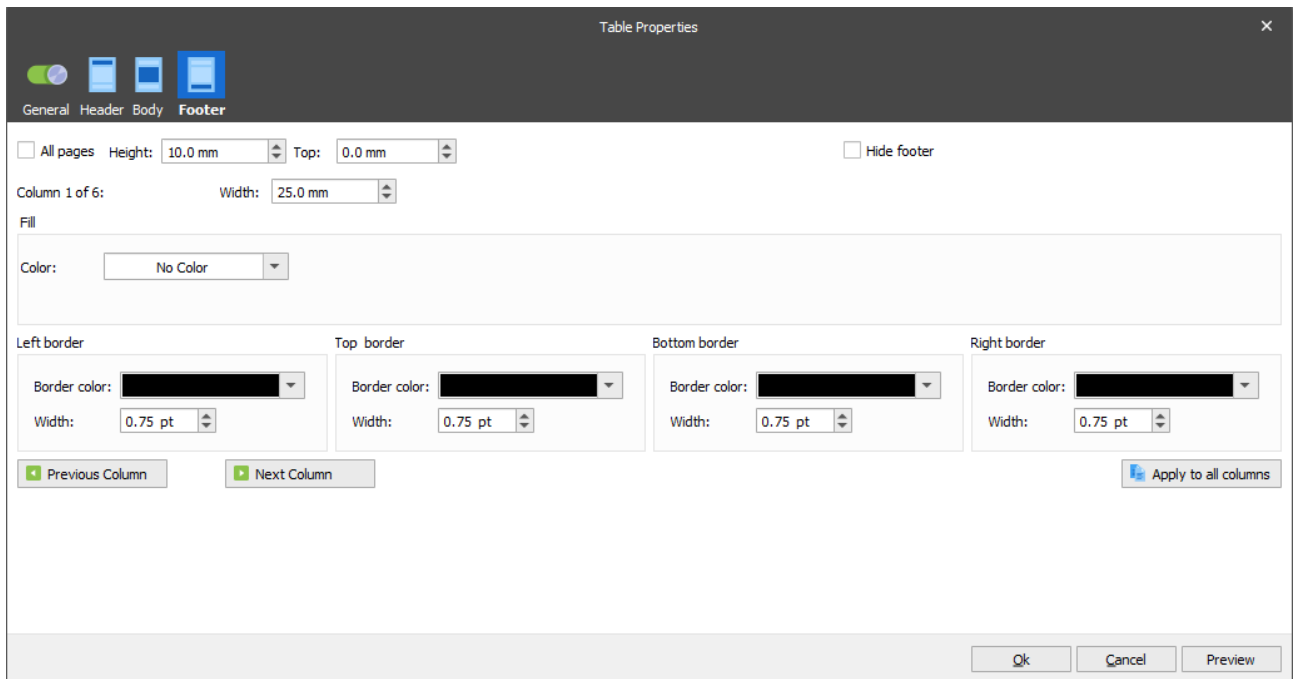
<b>Top Margin</b>	Use the spin box to specify an interval in millimeters between the header and the conditional data (rearranges).
<b>Bottom Margin</b>	Use the spin box to specify an interval in millimeters between the footer and the conditional data (rearranges).
<b>Vertical lines to header</b>	Clear the check box to separate the body from the header if the latter changes its position on the page.
<b>Vertical lines to footer</b>	Clear the check box to separate the body from the footer if the latter changes its position on the page.
<b>Odd color</b>	Allows specifying a color for instances defined as odd.
<b>Even color</b>	Allows you to specify a color for instances defined as even.
<b>Row border color</b>	Allows you to specify a color for a border of a row.
<b>Width</b>	Allows you to specify a width value for a border of a row.
<b>Top margin</b>	Allows you to specify a color style for a top margin, if any, based on the value specified for the first pattern instance per page (same or different), or setting no color at all.
<b>Bottom margin</b>	Allows you to specify a color style for a top margin, if any, based on the value specified for the last pattern instance per page (same or different), or setting no color at all.
<b>Margin border</b>	Select the required check box to add a border for the top and/or bottom margins respectively.
<b>Additional progress</b>	Allows you to define a color for an additional progress of groups and/or regions, if any: same as for a previous pattern instance or no color at all.

Use the **Footer** tab to specify settings for the table footer. The settings are similar to those of the table header.

Below is an image showing the **Footer** tab with settings for tables applied to a conditional area.



Below is an image showing the **Footer** tab with settings for tables applied to a region.

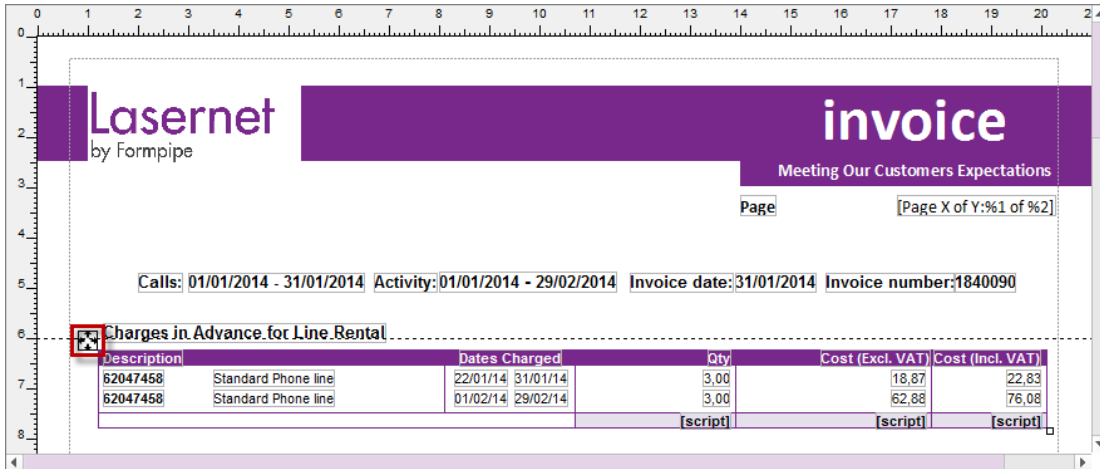


### 3.3.9.2 **Manipulate Table**

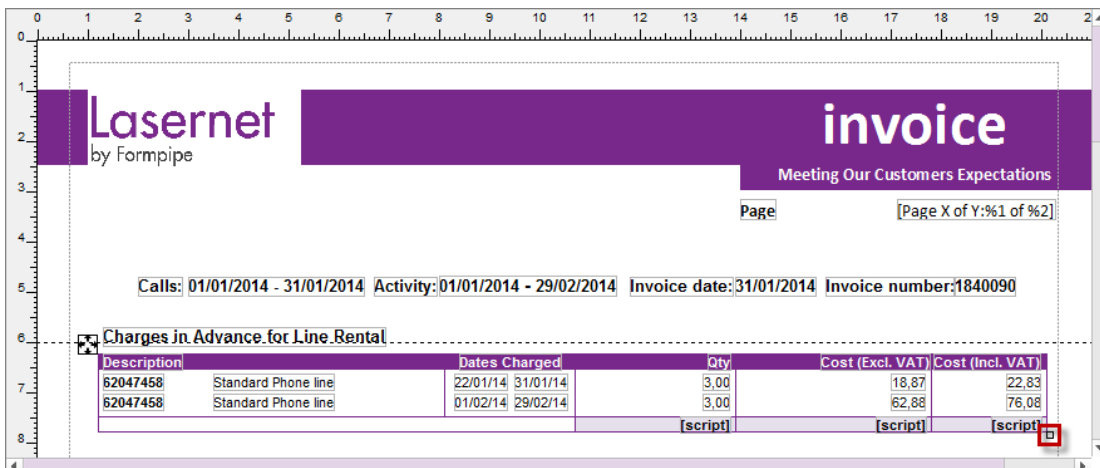
You can manipulate a table you have created in the output. Manipulations affect the table on all the pages.

1. Right-clicking on a table will bring up the context menu. From here you can:
  - Edit the **Table Properties** by clicking on the corresponding option.
  - Remove the selected table, by clicking **Delete Table**.

- To move a table, hover the mouse over it and the table move handle will appear. Using the table move handle, drag the table to the new location.



- To resize a table, hover the mouse over it and a sizing handle (a little square) will appear. Click and drag the handle to make the table larger or smaller. The height and width ratio will be maintained whilst resizing.



- To change a column width, rest the cursor on right side of the column boundary you want to adjust, until it becomes a resize cursor (a double-headed arrow), and then drag the boundary until the column is the desired width.
- To change a cell width, rest the cursor on the right edge of the cell you want to adjust until it becomes a resize cursor (a double-headed arrow), then hold down **Ctrl** and drag the edge of the cell until it is the desired width.
- To merge columns, right-click the shared edge between the columns you want to merge, and then click **Merge Columns** on the context menu.
- To insert a column, right-click the right side of the column where you want to insert a new column, and then click **Insert Column** on the context menu.

You can lock a table to prevent it from moving and resizing. To do this, select either the **Lock** command on the context menu or the **Locked** check box on the **Table Properties** dialog box.

### 3.3.9.3 How To

The **How To** section provides further information about settings for tables applied to conditional areas (for more details, see 3.3.9 *Create Table*). To modifying table settings, open the [Table Properties](#) dialog.

### 3.3.9.3.1 Set Table Header

To change the table header settings, follow the example steps below:

1. Switch to the [Header](#) tab of the [Table Properties](#) dialog.
2. Specify the header height value in the **Height** spin box.
3. Select the column where you want to set the width and fill color. To do this, use the **Previous Column** and **Next Column** buttons.

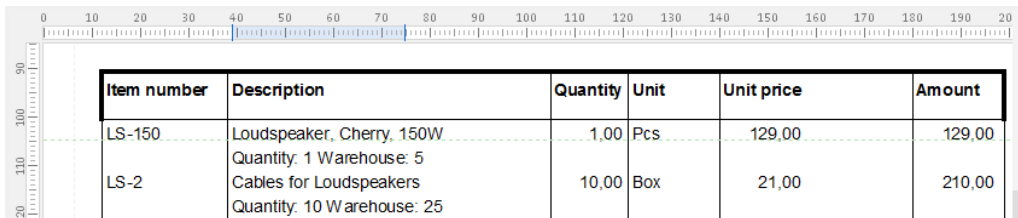


4. Once you have selected a column, use the **Width** spin box to specify the header width and **Fill Color** to choose a solid color. To do this, click the arrow next to the color picker control, and then click the color you want; or click **Custom Colors** for more choices. If you do not want to apply any fill color, click **No Color**.

If you want to apply the fill color you have specified to all columns, click the **Apply to all columns** button.

5. To change the border width for the header, use the corresponding spin box under each border group (Left, Top, Bottom, and Right).

For example, it is possible to just change the outline borders of the header. To do this, specify the same color and width value for the left and top borders of the first column, the right and top borders of the last column, and the top border for the rest of columns.

A screenshot of a table within a software interface. At the top, there is a horizontal ruler with markings from 0 to 200. On the left side, there is a vertical scrollbar with markings from 0 to 120. The table has a header row with the following columns: 'Item number', 'Description', 'Quantity', 'Unit', 'Unit price', and 'Amount'. Below the header, there are two data rows. The first data row contains: 'LS-150', 'Loudspeaker, Cherry, 150W', '1,00', 'Pcs', '129,00', and '129,00'. The second data row contains: 'LS-2', 'Cables for Loudspeakers', '10,00', 'Box', '21,00', and '210,00'. The 'Description' cell in the second row also contains 'Quantity: 10 Warehouse: 25'.

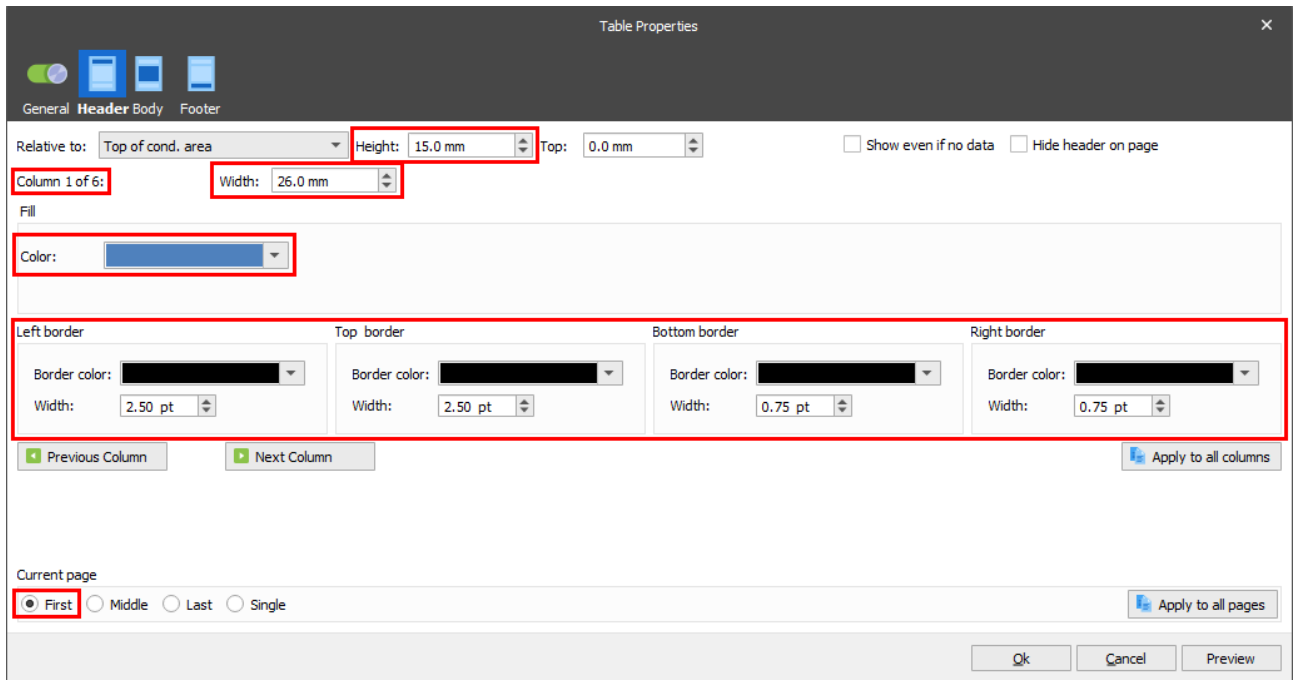
If you want to apply the border color and width you have specified to all columns, click the **Apply to all columns** button.

6. Once you have specified the header settings, you can apply them to the first, middle, last, or single page by selecting the corresponding radio button, or to all pages by clicking the **Apply to all pages** button.
7. Once you are done, click the **OK** button.

If you want to preview the table in the output with settings you have specified (but without applying them), click the **Preview** button.

Below is a picture of the **Table Properties** dialog showing the properties from the above example:





Below is a picture showing the table header with the applied settings:

Item number	Description	Quantity	Unit	Unit price	Amount
LS-150	Loudspeaker, Cherry, 150W Quantity: 1 Warehouse: 5	1,00	Pcs	129,00	129,00
LS-2	Cables for Loudspeakers Quantity: 10 Warehouse: 25	10,00	Box	21,00	210,00
LS-75	Loudspeaker, Cherry, 75W Quantity: 1 Warehouse: 15	1,00	Pcs	79,00	79,00
LS-81	Loudspeaker, Walnut, 80W Quantity: 1 Warehouse: 22	1,00	Pcs	79,00	79,00
SPK-100	Spike for LS-100 Quantity: 160 Warehouse: 250	160,00	Pcs	21,00	3.360,00
1896-S	ATHENS Desk Quantity: 10 Warehouse: 25	10,00	Pcs	649,40	6.169,30
1900-S	PARIS Guest Chair, black Quantity: 1 Warehouse: 2	1,00	Pcs	125,10	118,84
1906-S	ATHENS Mobile Pedestal Quantity: 1 Warehouse: 4	1,00	Pcs	281,40	267,33
1908-S	LONDON Swivel Chair, blue Quantity: 1 Warehouse: 6	1,00	Pcs	123,30	117,13
1920-S	ANTWERP Conference Table Quantity: 1 Warehouse: 1	1,00	Pcs	420,40	399,38
766BC-A	CONTOSO Conference System	5,00	Pcs	4.601,73	23.008,65

### 3.3.9.3.2 Set Table Footer

To change the table footer settings, follow the example steps below:

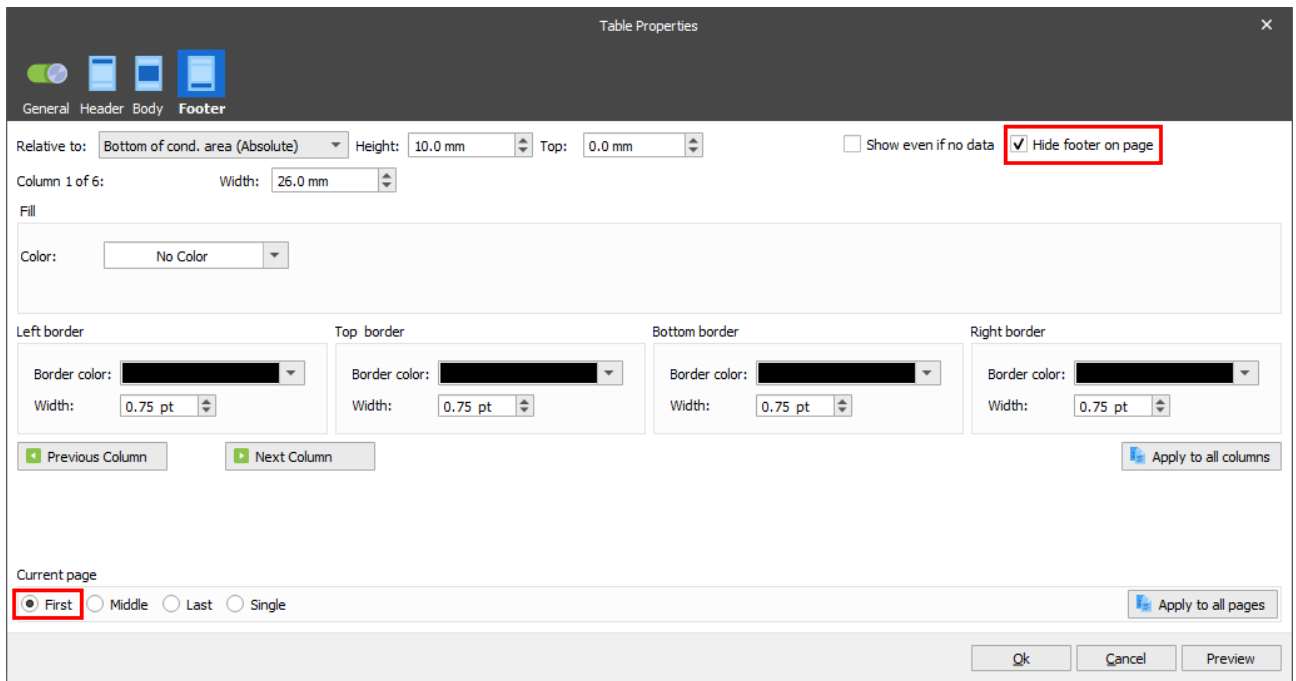
1. Switch to the **Footer** tab of the **Table Properties** dialog.
2. From the **Relative to** drop-down list, select **End of cond. area (Absolute)** to locate the footer relative to the end of the conditional area.
3. To change the **Y** position of the footer on a page relative to the end of the conditional area, use the **Top** text box.

As per the example, apply the setting for the last page by selecting the **Last** radio button once you have typed the **Top** value.

4. To only show the footer on the last page, use the radio button to select the **First** page and uncheck the **Hide footer on page** box. Repeat this step for the **Middle** page.
5. Once you are done, click the **OK** button.

If you want to preview the table in the output with settings you have specified (but without applying them), click the **Preview** button.

Below is a picture of the **Table Properties** dialog showing the properties from the above example applied to the **First** page:



The image below shows the table footer with the applied settings (no footer on the first page):

1920-S	Quantity: 1 Warehouse: 6 ANTWERP Conference Table	1,00	Pcs	420,40	399,38
766BC-A	Quantity: 1 Warehouse: 1 CONTOSO Conference Syste	5,00	Pcs	4.601,73	23.008,65
766BC-B	Quantity: 5 Warehouse: 25 The conference package contains one table, twelve black chairs, and one whiteboard.	1,00	Pcs	1.787,60	1.787,60
766BC-C	Quantity: 1 Warehouse: 25 CONTOSO Storage System	1,00	Pcs	944,60	944,60
8904-W	Quantity: 1 Warehouse: 25 Computer - Basic Package	2,00	Pcs	65,30	130,60
8908-W	Quantity: 2 Warehouse: 35 Computer - Highline Package	2,00	Pcs	114,20	228,40
8924-W	Quantity: 2 Warehouse: 35 Server - Enterprise Package	5,00	Pcs	346,30	1.731,50
<b>Transfer to next page</b>					<b>38.760,33</b>

The image below shows the **Table Properties** settings for the footer on the last page:

Table Properties

General Header Body **Footer**

Relative to: End of cond. area (Absolute) Height: 20.0 mm Top: 10.0 mm  Show even if no data  Hide footer on page

Column 1 of 6: Width: 26.0 mm

Fill

Color: No Color

Left border: Border color: Black Width: 0.75 pt

Top border: Border color: Black Width: 0.75 pt

Bottom border: Border color: Black Width: 0.75 pt

Right border: Border color: Black Width: 0.75 pt

Previous Column Next Column Apply to all columns

Current page

First  Middle  Last  Single Apply to all pages

Ok Cancel Preview

The final image below shows the table footer with the applied settings (footer on the last page):

<b>Payment per</b>	<b>18-02-2016</b>			Sales balance	66.143,95
				Round-off	0,00
				<b>Total</b>	<b>66.143,95</b>

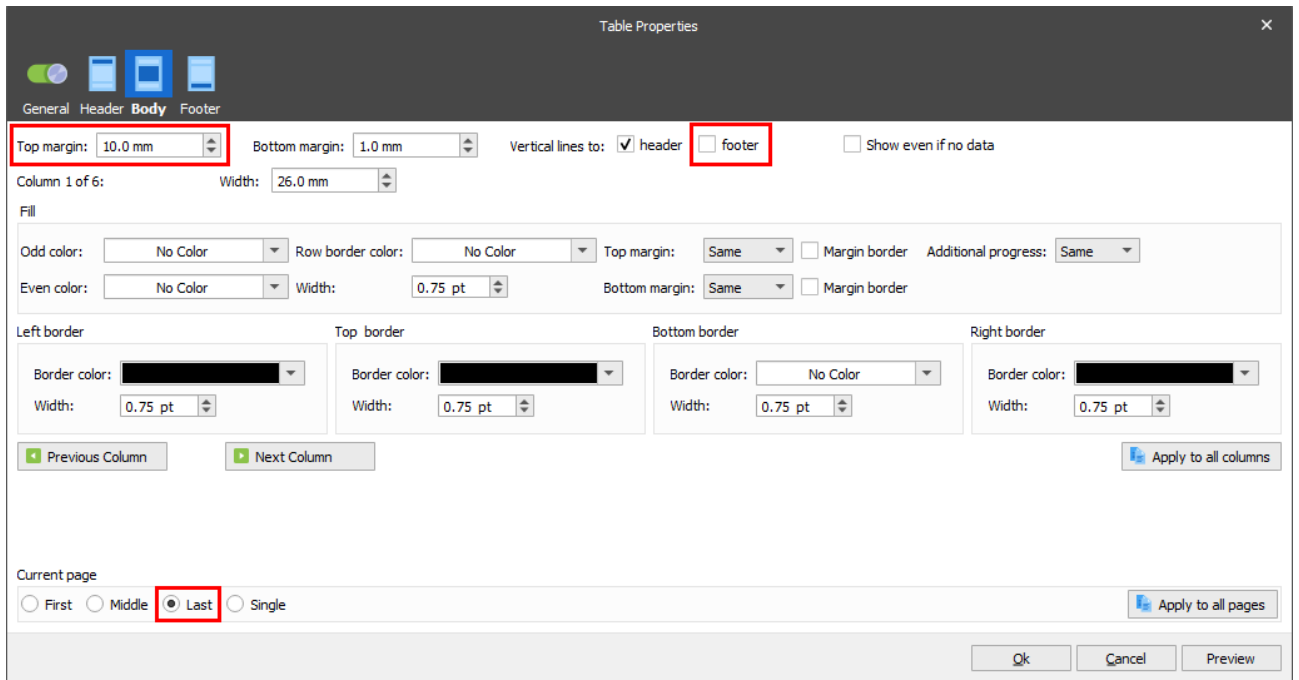
### 3.3.9.3.3 Set Table Body

To change the table body settings follow the example steps below:

1. Switch to the [Body](#) tab of the [Table Properties](#) dialog.
2. Use the **Top Margin** spin box to specify the interval in millimeters between the table header and the conditional data located in the first row of the table body.
3. To separate the table body from the footer on the last page only, select the **Last** page radio button and clear the **Vertical lines to footer** check box.
4. Once you are done, click the **OK** button.

If you want to preview the table in the output with settings you have specified (but without applying them), click the **Preview** button.

Below is an image of the **Table Properties** dialog showing the properties from the example above:

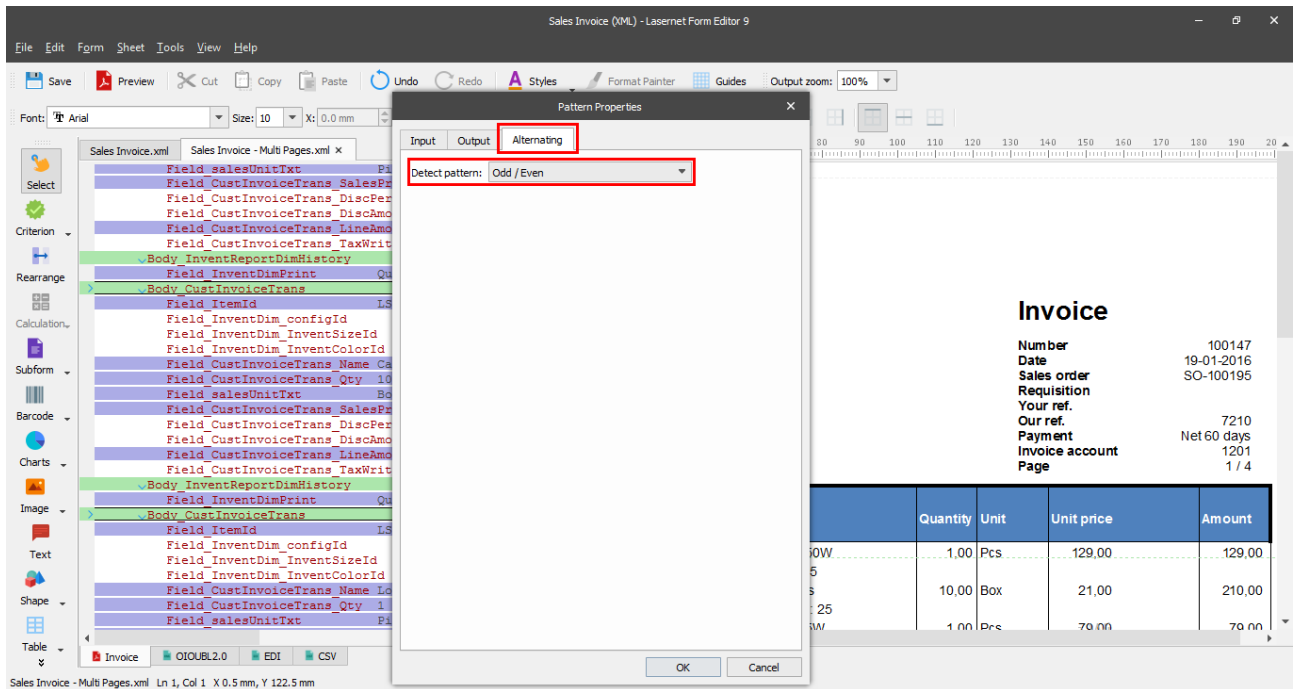


The image below shows the body with the applied settings:

80211	Quantity: 5 Warehouse: 25 Quietkey Keyboard	25,00	Pcs	5,80	145,00
80220	Quantity: 25 Warehouse: 65 Screw on Mount CD/Tape Driv	250,00	Pcs	1,00	250,00
1896-S	Quantity: 250 Warehouse: 430 ATHENS Desk	1,00	Pcs	649,40	616,93
1900-S	Quantity: 1 Warehouse: 25 PARIS Guest Chair, black	1,00	Pcs	125,10	118,84
	Quantity: 1 Warehouse: 2				
<b>Payment per</b>	<b>18-02-2016</b>			Sales balance	66.143,95
				Round-off	0,00
				<b>Total</b>	<b>66.143,95</b>

### 3.3.9.3.3.1 Define pattern(s) in the input

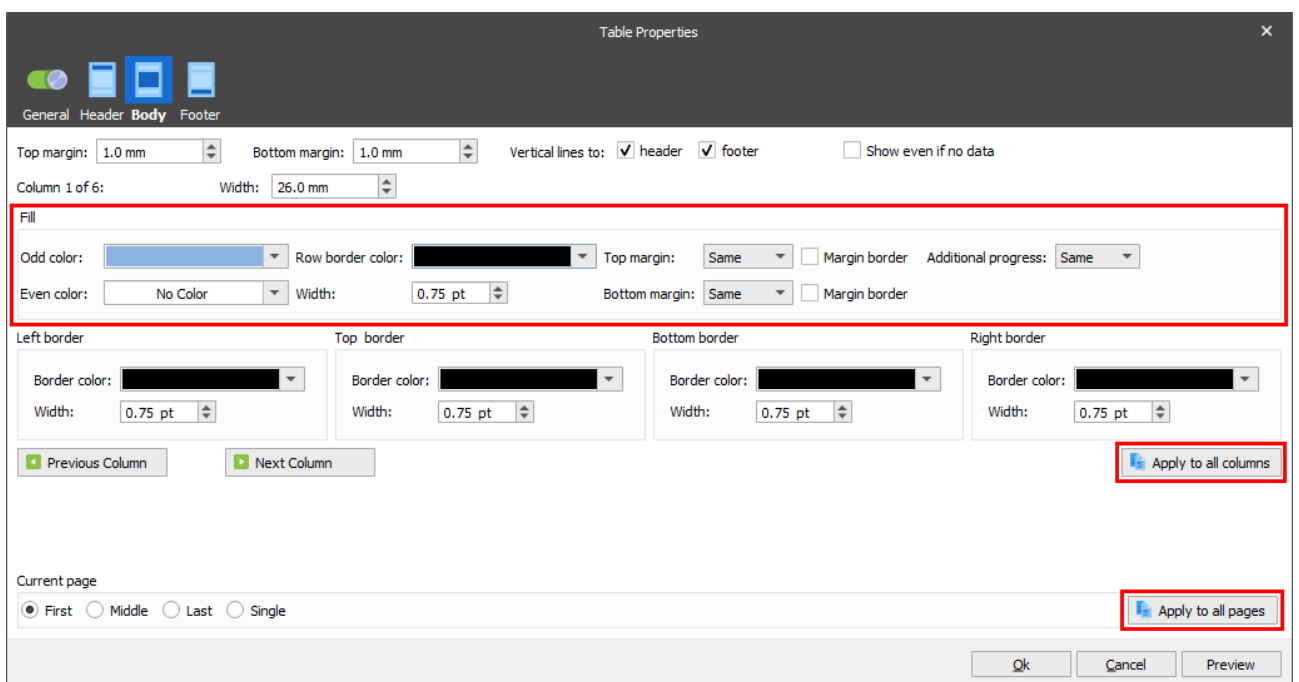
On the **Alternating** tab of the **Pattern Properties** dialog, select the **Detect pattern** value (for example, the **Odd / Even** value).



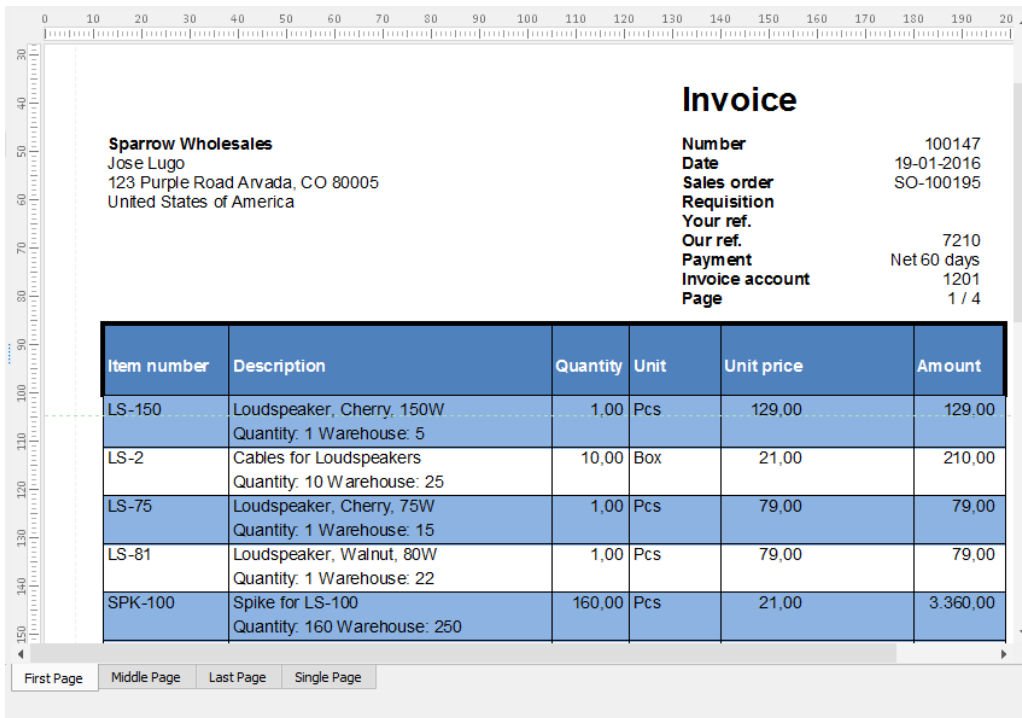
1. Open the **Table Properties** dialog on the **Body** tab.
2. To apply the **Alternating** option, use the controls on the **Fill** group box. For more details about the controls available in the **Fill** group box, see the following [table](#).
3. Once you are done, click the **Apply to all columns** and **Apply to all pages** buttons to apply the above settings to all available columns and pages respectively, and then click the **OK** button.

If you want to preview the table in the output with settings you have specified (but without applying them), click the **Preview** button.

Below is an image of the **Table Properties** dialog showing the properties from the example above:



Below is an image showing the table body with the applied settings:

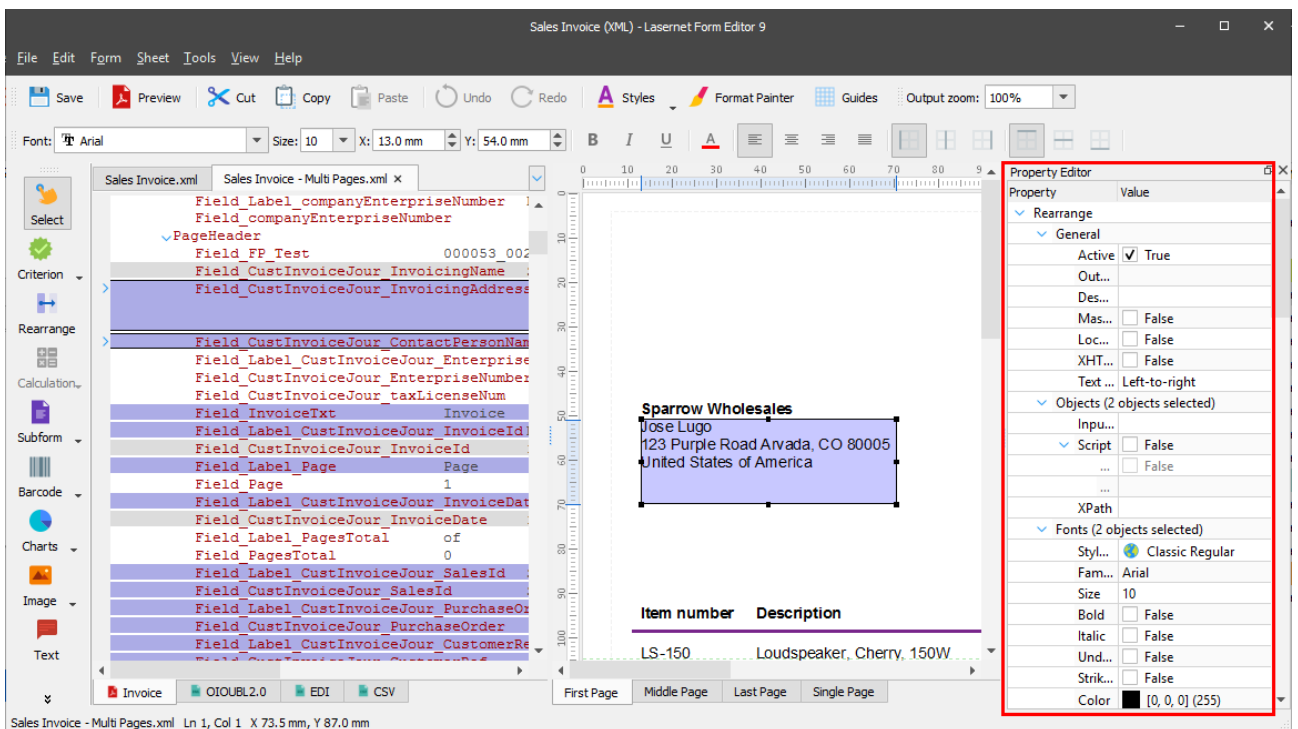


### 3.3.10 View Menu

The Lasernet Form Editor has a selection of additional functions in the **View** menu for assisting in the design process.

#### 3.3.10.1 Show Property Editor

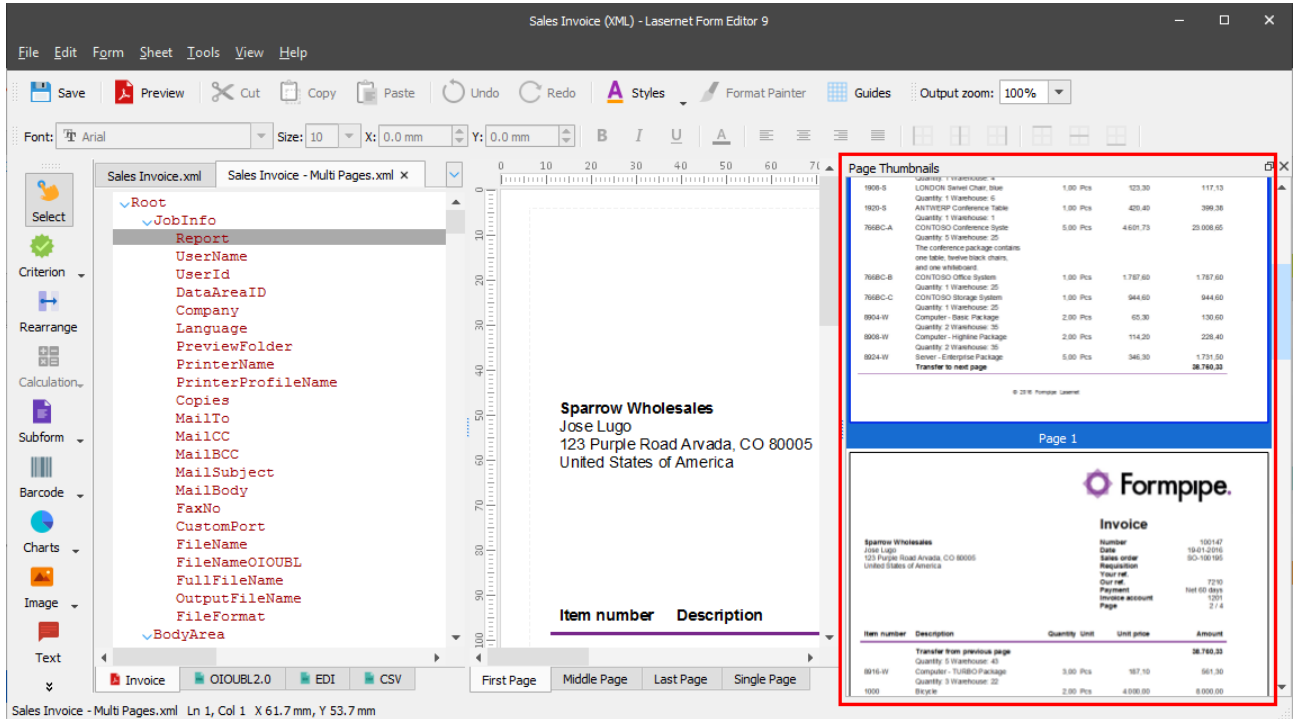
This option opens a third pane in the form window to edit the properties of a selected item.



### 3.3.10.2 Show Thumbnails

This option opens a third pane in the form window to view thumbnails of the sheet pages. Here you can quickly scroll through the thumbnails and select the required page for editing.

If the sheet is combined or mixed (see 3.1.5.1 Sheet Options), all pages of the combined or mixed document are shown in the pane.



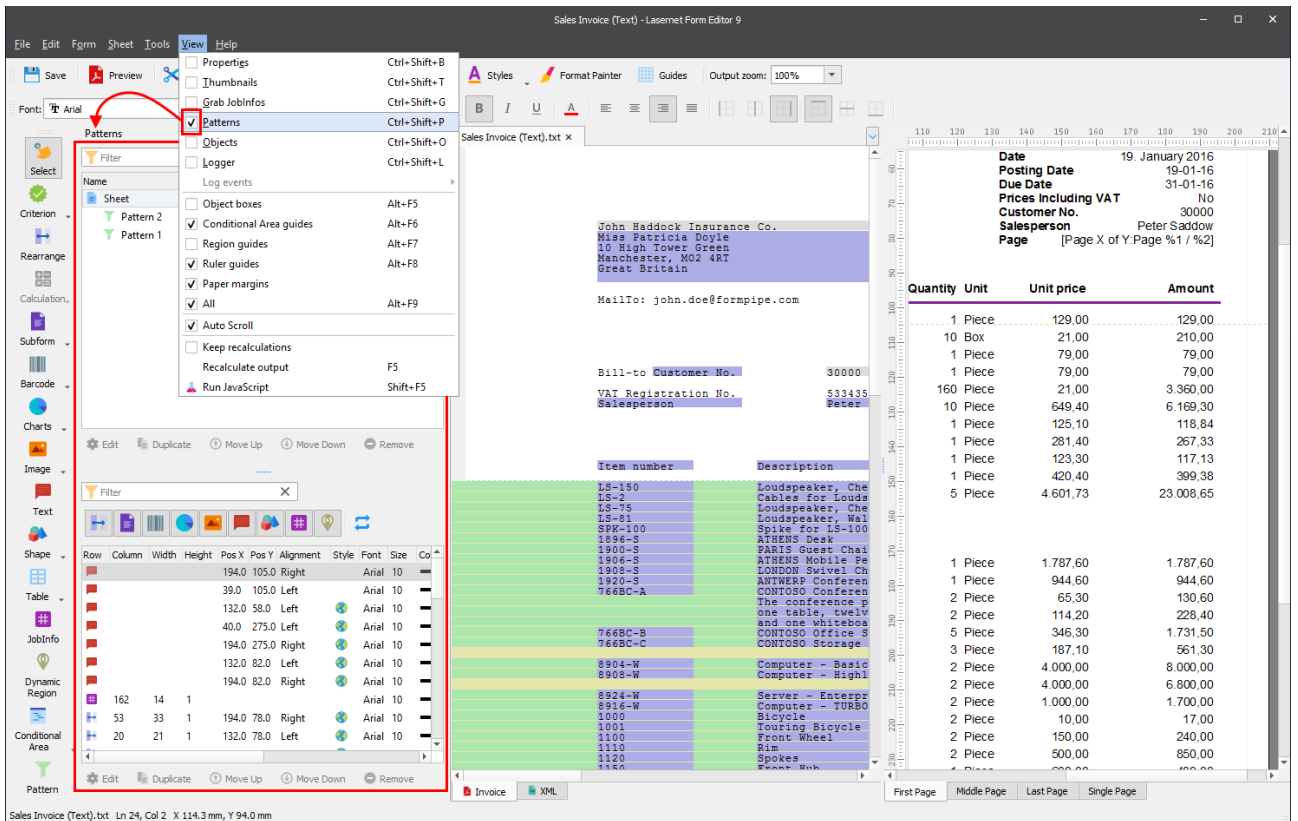
### 3.3.10.3 Show Grab JobInfos

This option opens a third pane in the form window to view available Grab JobInfos. For more details, see 3.3.2.2 View Grab JobInfos.

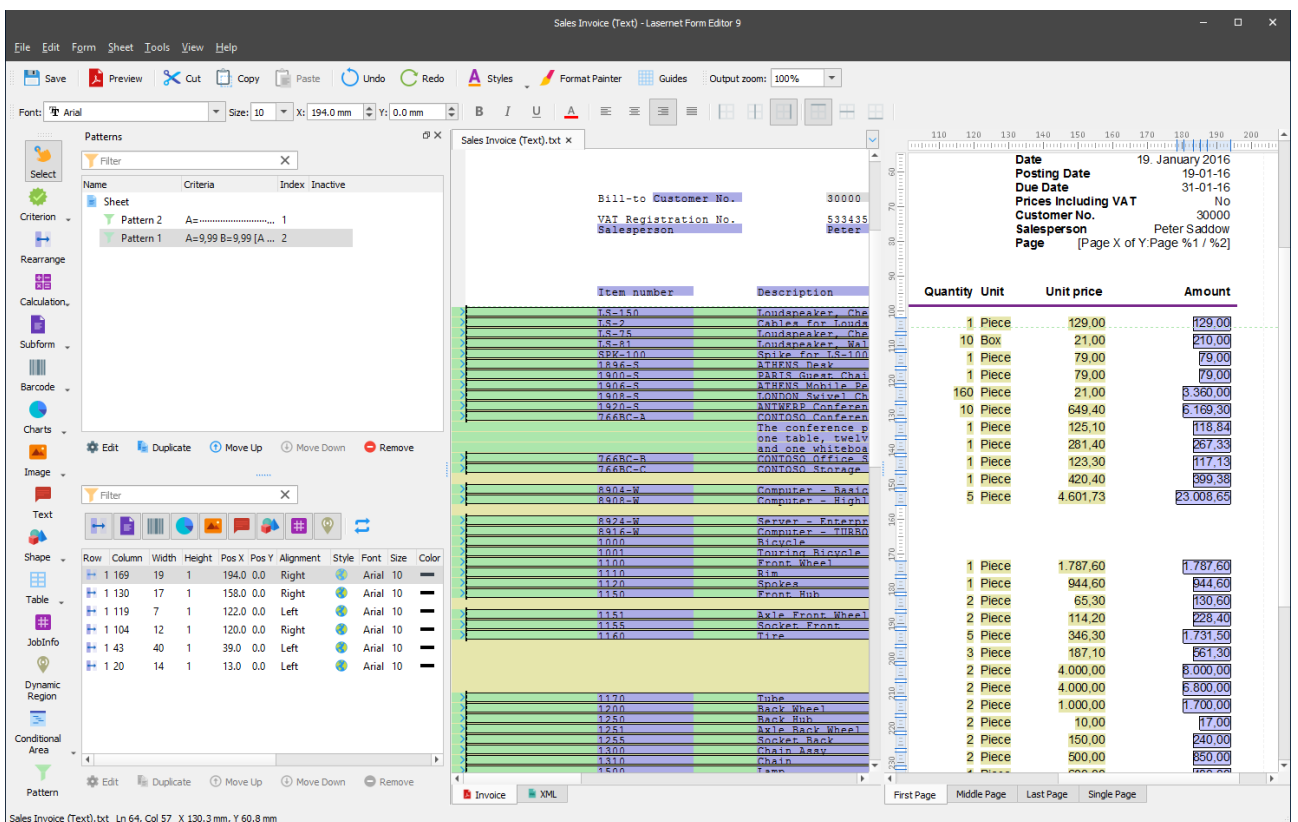
### 3.3.10.4 Show Patterns

Selecting a check box next to the Patterns command on the View menu opens the Patterns pane in the form window to view and manage available patterns as well as objects added to these patterns or a sheet.



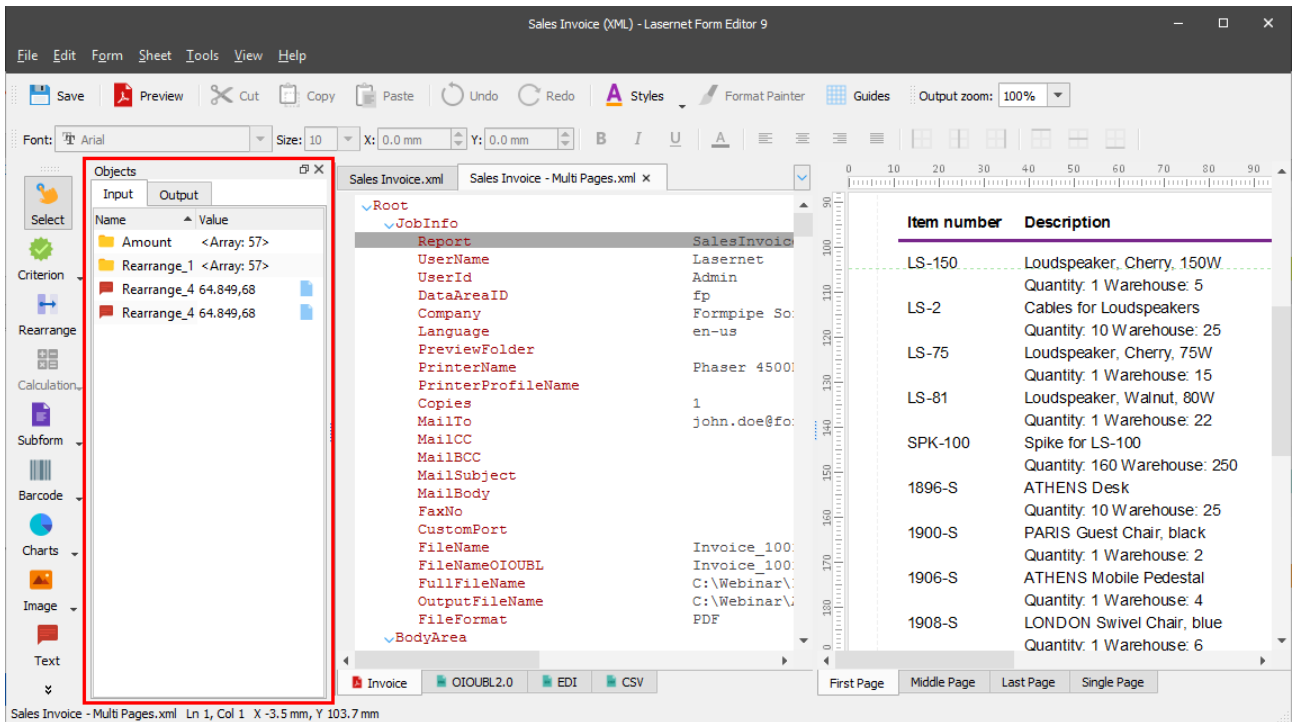


If you select a pattern on the **Patterns** pane, all the objects belonging to this pattern become yellow-highlighted.



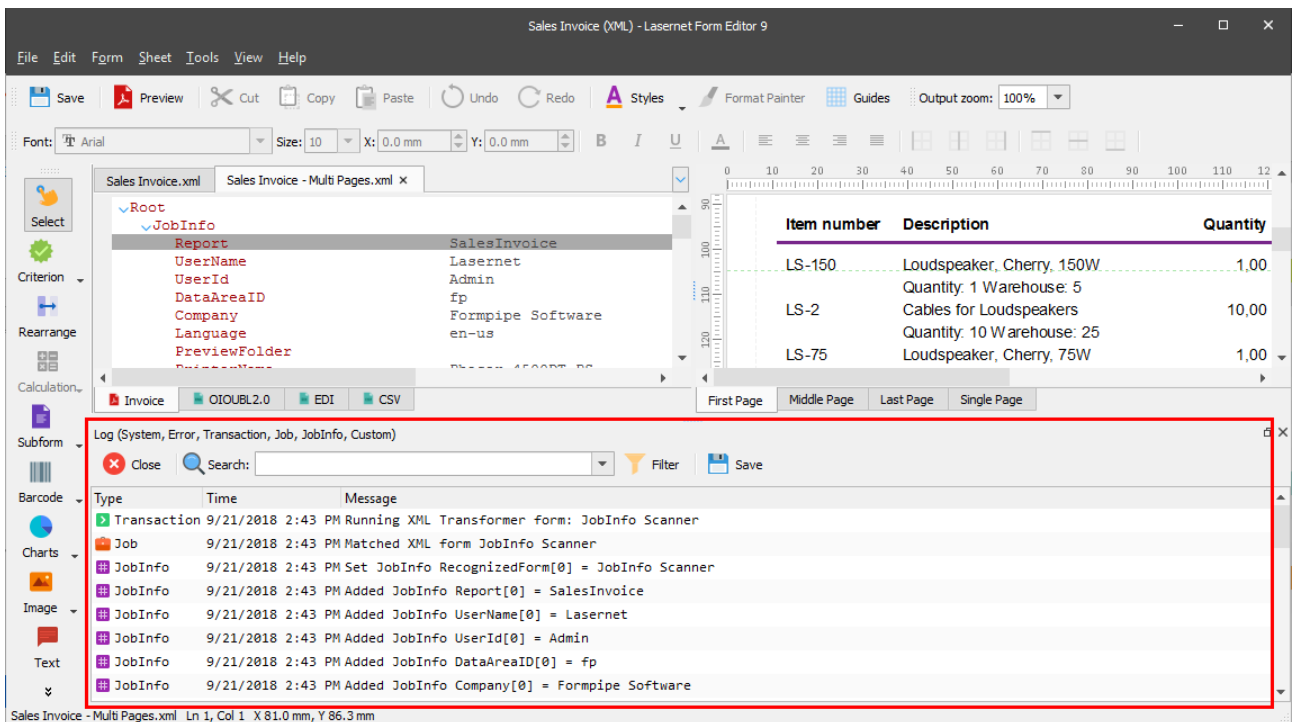
### 3.3.10.5 Show Objects

This option opens a third pane in the form window to view available named objects. To open the **Objects** pane, on the **View** menu, select the **Objects** check box.



### 3.3.10.6 Show Logger

The Logger Window provides low-level information and error messages whilst working with a project. The logger window opens once the **Logger** check box is selected on the **View** menu.



### 3.3.10.7 Show Log Events

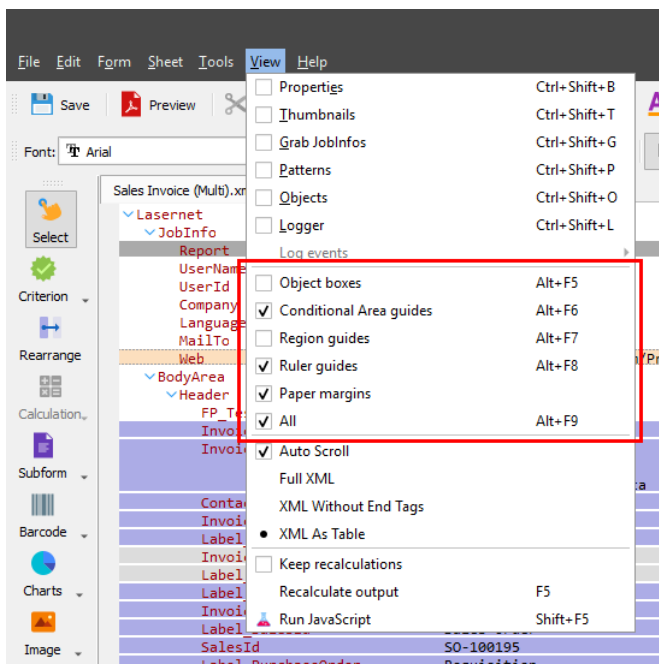
This feature becomes active if the **Logger** check box is selected on the **View** menu. It allows you to select which log events should be displayed in the logger window. You can choose to show or hide the following categories of events:

- System
- Error
- Transaction
- Job
- JobInfo
- Debug
- Custom

### 3.3.10.8 Show Object Boxes/Guides/Margins

It is possible to show the guide elements of your form on your output pages to aid in the design process (no additional output is generated). Simply select the desired element check box(es) on the **View** menu to display them in the output. The fewer object boxes that are checked, the closer your output pages will look to the finished / generated document.

To show/hide outlines for all available entities, select/clear the **All** check box on the **View** menu.



### 3.3.10.9 Auto Scroll

By selecting **Auto Scroll** on the **View** menu, it is possible to scroll an object in the output to the position of the one selected in the input, and vice versa.

### 3.3.10.10 Keep Recalculations

By enabling **Keep Recalculations** from the **View** menu, all output recalculated using **Recalculate Output** (see below) is kept (i.e. moving rearranges or editing the sheet does not remove script output).

Note: The output shown can become incorrect with regards to the grab file; however, this function can be useful if there are many scripts used in the form.

### 3.3.10.11 Recalculate Output

By selecting **Recalculate Output** on the **View** menu or pressing F5, all output is recalculated.

### 3.3.10.12 Run JavaScript

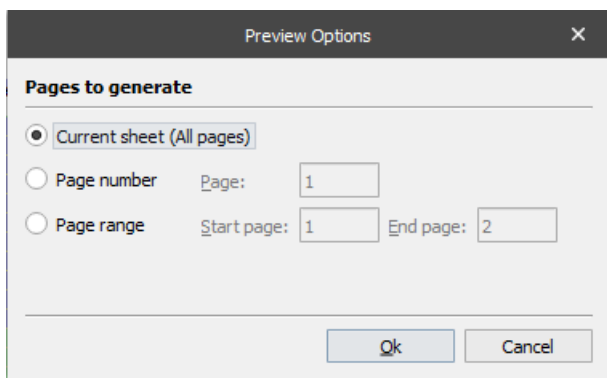
By selecting **Run JavaScript** on the **View** menu or pressing SHIFT+F5, any JavaScript contained on the output pages runs and any visible results are shown.

## 3.3.11 Preview

The preview functionality is designed to show the final result of the output without processing the job via the Lasernet Server.

To preview an output, proceed through the steps listed below:

1. On the toolbar, click **Preview**.
2. From the **Preview Options** dialog, specify the page(s) to be included to the output preview.



**Current sheet** Select this radio button to include all the pages on the current sheet.

**Page number** Select this radio button to include a specific page from the current sheet. Once selected, the **Page** text box is enabled allowing you to type the number of the page to be included.

**Page range** Select this radio button to include a range of pages. Once selected, the **Start page** and **End page** text boxes are enabled, allowing you to specify your desired page range.

**Note:** If you have enabled page mixing for sheets or sheet combining in the form you want to preview, the preview output will be organized according to the Sheet Order and Page Numbering rules (for more details, see *Sheet Order and Page Numbering*).

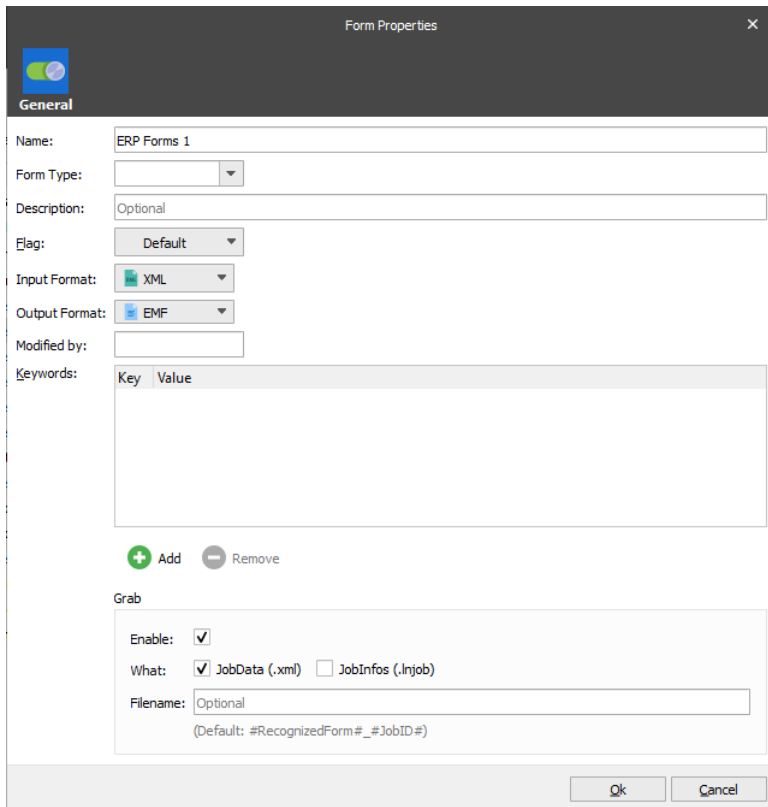
## 3.4 Input Formats

### 3.4.1 XML

Lasernet supports XML which is primarily used for data exchange between IT systems. Working with XML forms is similar to printed forms. The following section covers the main areas of working with XML.

#### 3.4.1.1 *Grab Files and Criteria*

When creating a new form for handling XML input, XML must be specified as the input format.



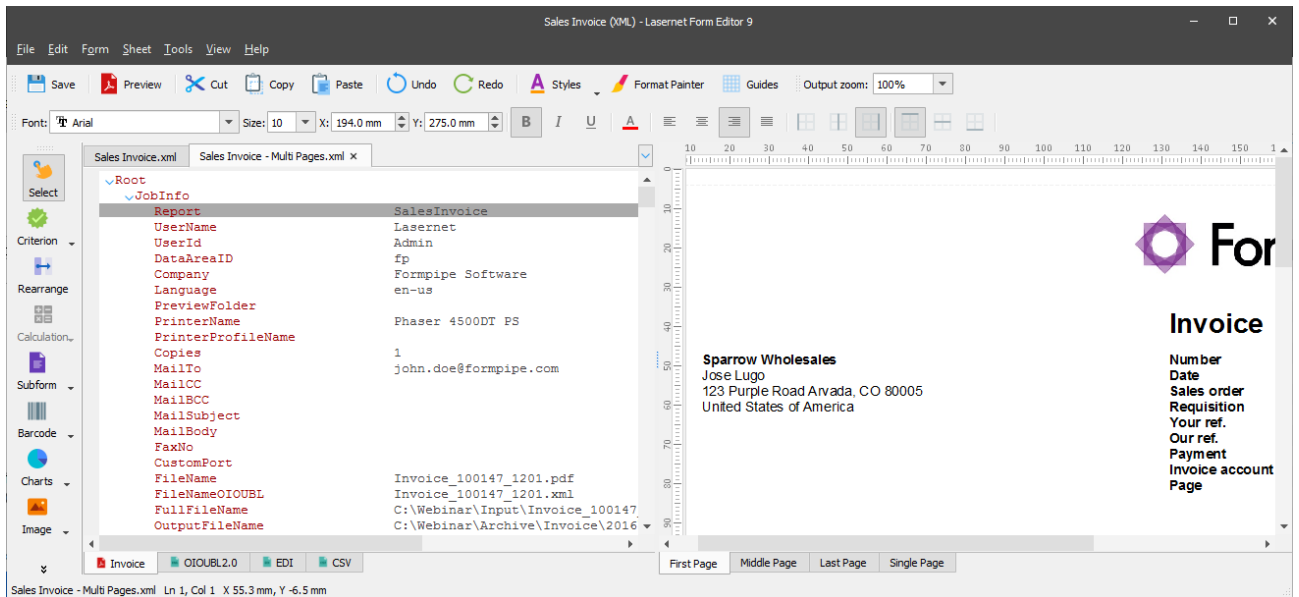
The screenshot shows the 'Form Properties' dialog box with the 'General' tab selected. The 'Name' field contains 'ERP Forms 1'. The 'Form Type' is set to 'Optional'. The 'Description' field contains 'Optional'. The 'Flag' is set to 'Default'. The 'Input Format' is set to 'XML' and the 'Output Format' is set to 'EMF'. The 'Modified by' field is empty. Below this is a 'Keywords' table with columns 'Key' and 'Value'. There are '+ Add' and '- Remove' buttons. The 'Grab' section is enabled, with 'JobData (.xml)' selected under 'What'. The 'Filename' field contains 'Optional' with a default value of '#RecognizedForm#\_#JobID#'. 'Ok' and 'Cancel' buttons are at the bottom.

The above form is set to receive XML formatted files and print standard text forms. If XML output is required, the output format would need to be changed to XML.

#### 3.4.1.1.1 *Selecting a Grab File*

Choosing a Grab File for an XML form can be done by selecting **Form** → **Select Grab File** from the menu. This launches a standard Windows **Open File** dialog to browse for an XML input file. XML files normally have .xml as an extension.

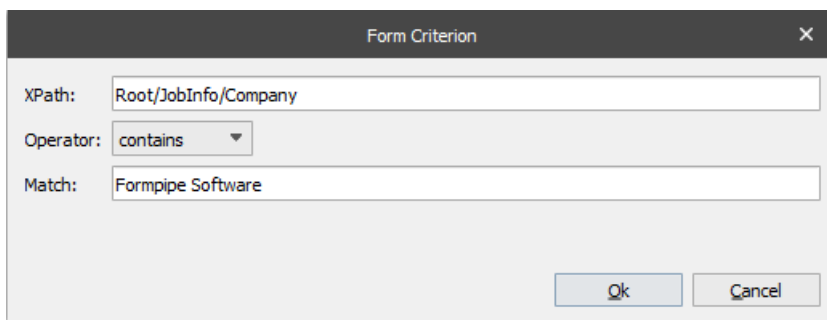
When an XML input file is open, it is shown in the left-hand panel of the Lasernet Form Editor, as can be seen below:



The XML data is represented in a tree structure with nodes identifying the variables and containing the actual data. You can switch the XML input view between Full XML, XML without end tags and XML as Table from the **View** menu.

### 3.4.1.1.2 Form Criteria

You can define form criteria to enable Lasetnet to recognize XML input files. This is done by selecting the **Criterion** tool and marking a node (tag) value.



It is also possible for Lasetnet to recognize a tag name not containing any value. This is done by leaving the **Match** field empty and choosing **Exist** as the operator.

The **Edit Criteria** dialog has the following properties.

#### 3.4.1.1.2.1 Tagname

The name of the XML node, including the top node.

#### 3.4.1.1.2.2 Match

The value (criterion) of the XML node.

#### 3.4.1.1.2.3 Operator

You choose the operator type that you want to use. In the example, the value of the chosen XML node must be equal to "Formpipe Software".

The following operators are available in the drop-down box:

**exists and not exists**

You can choose to let Lasernet test whether a tagname exists within the XML input file or not by using the operators “exists” and “not exists” and leaving the match string empty.

Choosing any of the other available operators will force Lاسernet to assume that the tagname exists and that the text data in the tag must match the match string according to the chosen operator.

**contains**

Returns true if the text data contains the match string.

**not contains**

Returns true if the text data does not contain the match string.

**like**

Returns true if the text data matches the regular expression.

**not like**

Returns true if the text data does not match the regular expression.

=

Returns true if the text data matches the match string exactly.

<>

Returns true if the text data does not match the match string exactly.

**Operators <= > >=**

These operators try to convert the value of the text data and the match string to numbers before comparing them. Therefore it is possible to make numerical comparisons. If either one of the text strings do not convert to a number, a regular string comparison is conducted.

**3.4.1.1.2.4 Example**

If you want to test if a tag name exists, use the operator “exists” and leave the match string empty.

If you want to test if the text data contains only numbers you need to use the operator “like” and set the value field to \d+ . This means that regular expressions are used.

On the **Form** menu, click **Criteria** to get an overview of the defined criteria.

Criteria
✕

Form

Criteria master form:

Inherited criteria:
 

Name	JobInfo	XPath	Operator	Case	Match	Master form

Form expression: ...

Form criteria:
 

Name	JobInfo	XPath	Operator	Case	Match
A		Lasernet/JobInfo/Report	=		SalesInvoice
B		Root/JobInfo/Company	contains		Formpipe-Software
C		Root/JobInfo/MailTo	contains		john.doe@formpipe.com

Form expression: A AND B AND C ...

+ Add Form
 + Add JobInfo
 ⚙ Edit
 ↕ Move Up
 ↕ Move Down
 - Remove

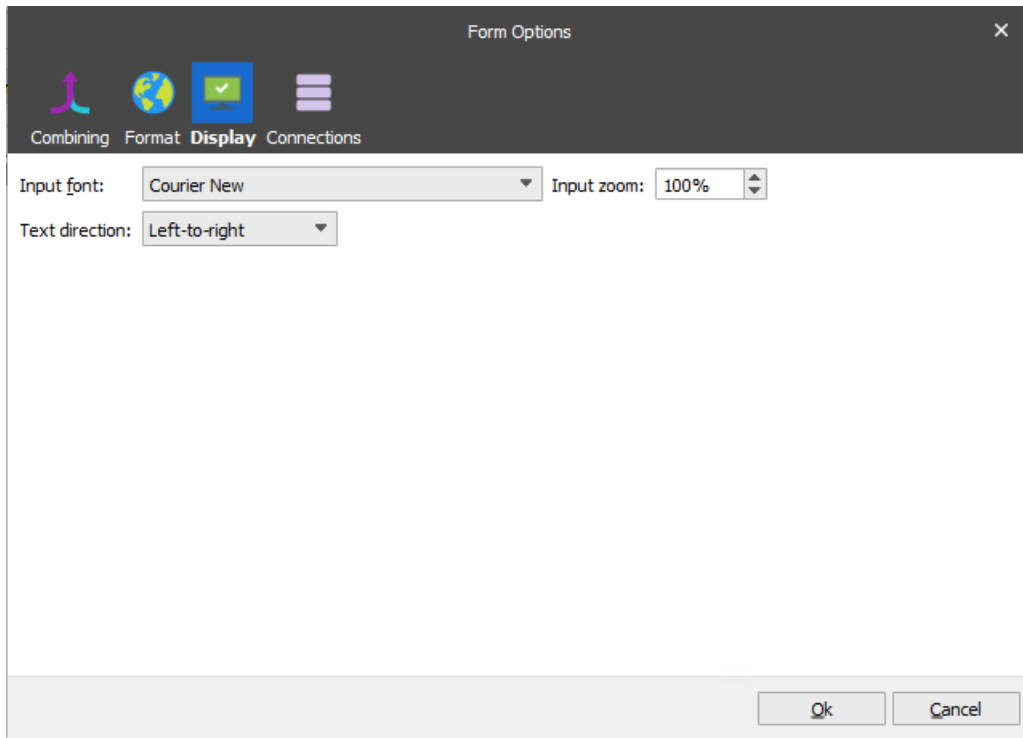
Ok
Cancel

From the **Criteria** dialog, you can manually add additional criteria and/or JobInfos. You can also create expressions in exactly the same way as for non-XML forms.

#### 3.4.1.1.3 Form Options

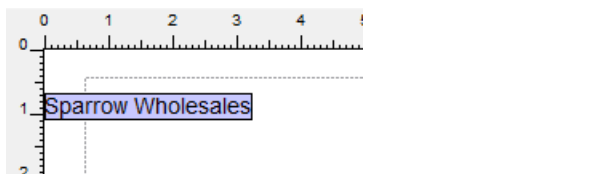
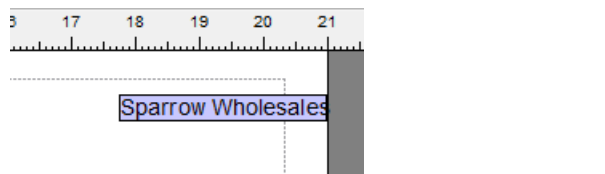
In forms with XML as input format and TEXT as output format you are able to define the default **Text direction** for your rearranges.





This setting will have an effect on the way the Form Editor behaves under different circumstances. In-line editing is not supported for fixed text objects if text direction is set to 'right-to-left' in the output settings of the rearrange.

The default position on screen for a new rearrange will vary based on this setting:

Left-to-right	Right-to-left
 <p>Upper left corner of output view.</p>	 <p>Upper right corner of the output view</p>

The value of the text direction setting in the Display option will also have an effect on three default values in the settings of a rearrange:

Edit Rearrange

General Objects Criteria Fonts Formats Position Border

Active:

Output object:

Description:

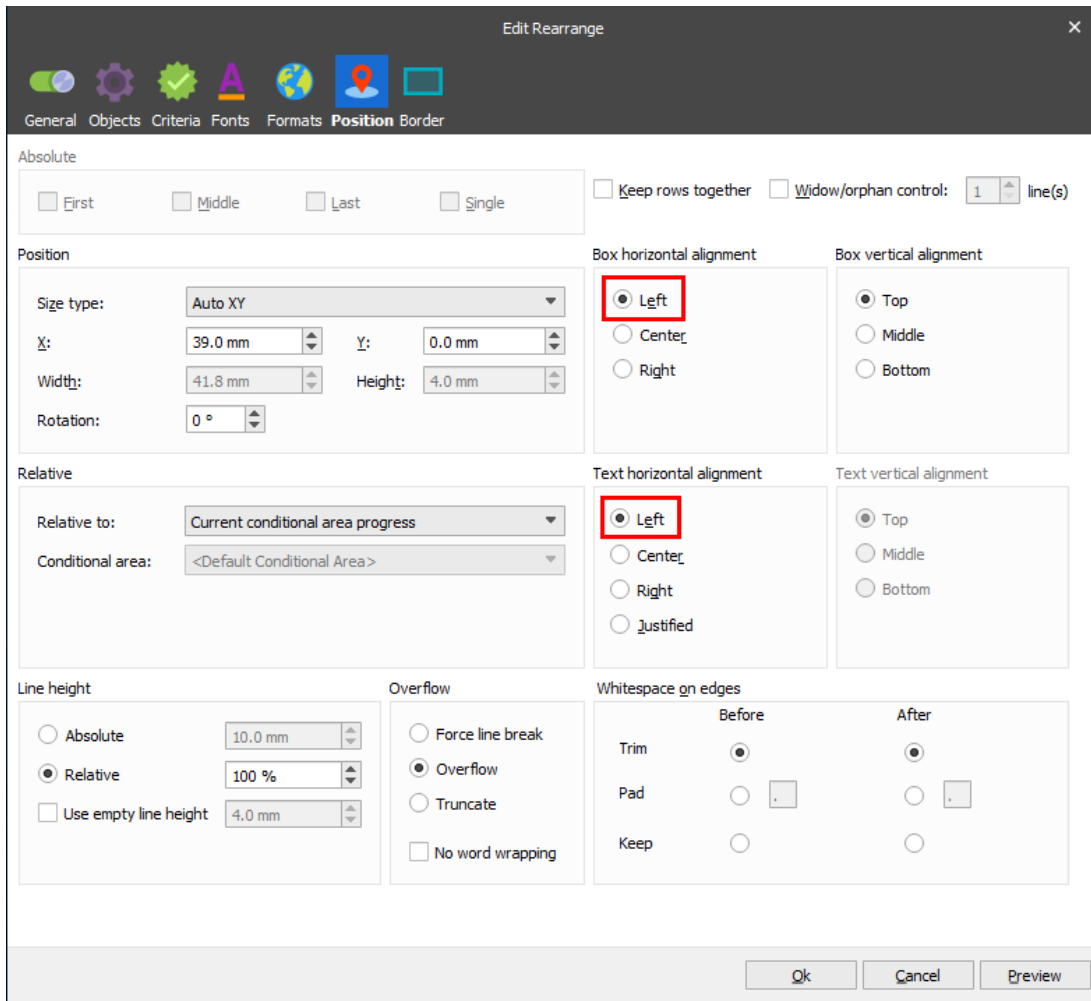
Master only:

Locked:

XHTML:

Text direction: Left-to-right

Ok Cancel Preview



Left-to-right	Right-to-left
Text direction: Left-to-right Box Horizontal alignment: Left Text Horizontal alignment: Left	Text direction: Right-to-left Box Horizontal alignment: Right Text Horizontal alignment: Right

#### 3.4.1.1.3.1 Punctuation

Punctuation marks at the end of a text string are rendered as if they are placed at the beginning when the writing direction is right-to-left. Punctuation characters are:

- comma ,
- full stop .
- exclamation mark !
- question mark ?
- semi-colon ;
- colon :
- apostrophe '
- quotation marks “ ”
- hyphen -

brackets ( ) or [ ]

slash /

backslash \

Example of punctuation handling in left-to right mode:

"Lasernet has support for left-to-right text writing:"

Example of punctuation handling in right-to-left text mode:

":Lasernet has support for right-to-left text writing"

#### 3.4.1.1.4 *Rearranges*

By creating rearranges you can map data contained in the XML input file to the output pages. This is done by selecting the **Rearrange** tool from the toolbar and marking the relevant XML tag.

com:PartyName	LaserNet Demo
com:Name	
com:Address	Pay To
com:ID	Demo Street 5
com:Street	
com:CityName	1234 Demo Town
com:PartyTaxScheme	
com:CompanyTaxID	46 64 57 75
@schemeID	TaxId

In the above example, an XML tag named 'CityName' has been marked as a rearrange. You can then access the input properties of the rearrange by right-clicking it and choosing **Properties** from the menu.

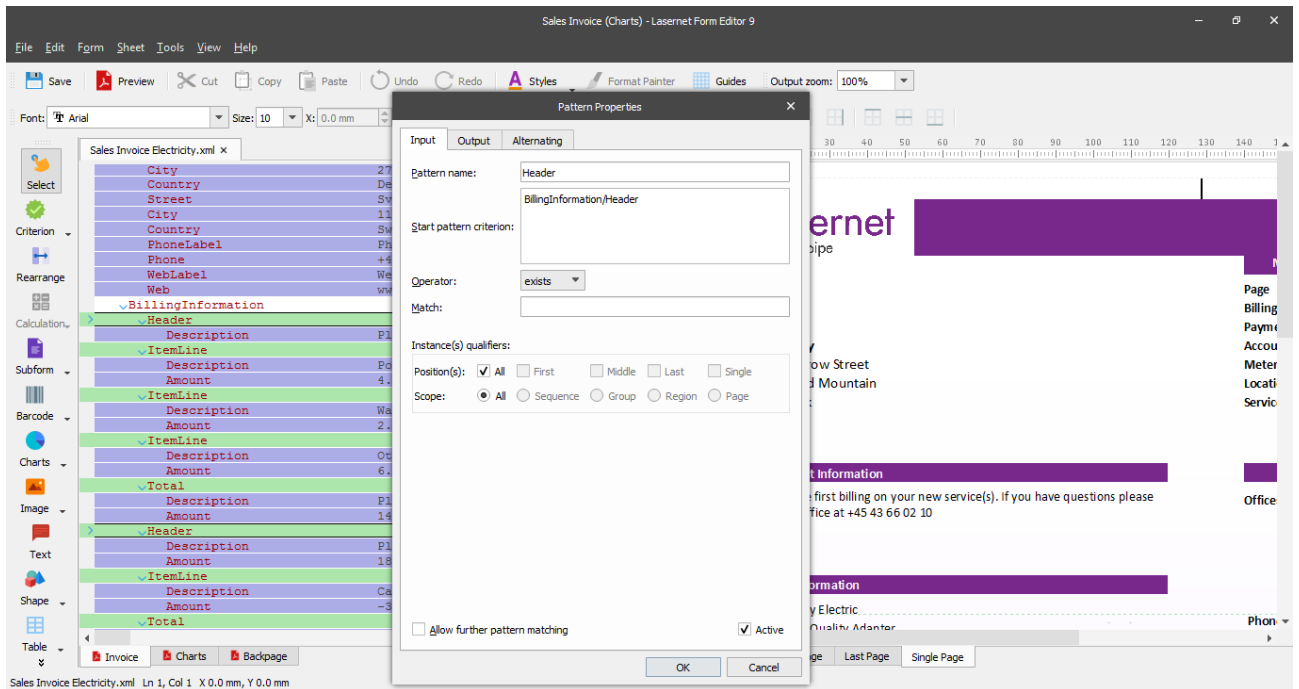
The properties are essentially the same as for non-XML input files, except for the position information which is irrelevant in XML.

#### 3.4.1.1.5 *Patterns*

XML files typically contain multiple item lines. Therefore it is likely that you will need to use the pattern tool to define and recognize them.

An XML invoice could be expressed using a tag named <BillingInformation/ItemLine> with sub tags containing the description and amount. Each <BillingInformation/ItemLine> tag would then have an ID field uniquely identifying the tag within the XML file.

In the example below, all the <BillingInformation/ItemLine> tags will be mapped to lines of an invoice created by Lasernet.



To define a range of tags as a pattern, mark the relevant tag using the **Pattern** tool. An example of which can be seen in the picture above. The <BillingInformation/ItemLine> tag has been selected as the Start pattern criteria using an empty Match field and the Operator, 'exists'. This will force Lasernet to test if the XML file contains the tag <BillingInformation/ItemLine> and recognize it as a pattern.

When you have selected a tag as the **Start** pattern criteria, all of the corresponding tags are marked in green. The individual information items can now be marked within the tag using the **Rearrange** tool.

**Note:** The node path is relative to the top node, meaning that the name of the top node should not be included.

### 3.4.2 JSON

It is possible to work with forms based on the JSON input which is derived from a grab file exported by any system on any platform. Handling and processing the JSON input form type in the Lasetnet Form Editor application is similar to the operations with the XML input form type.

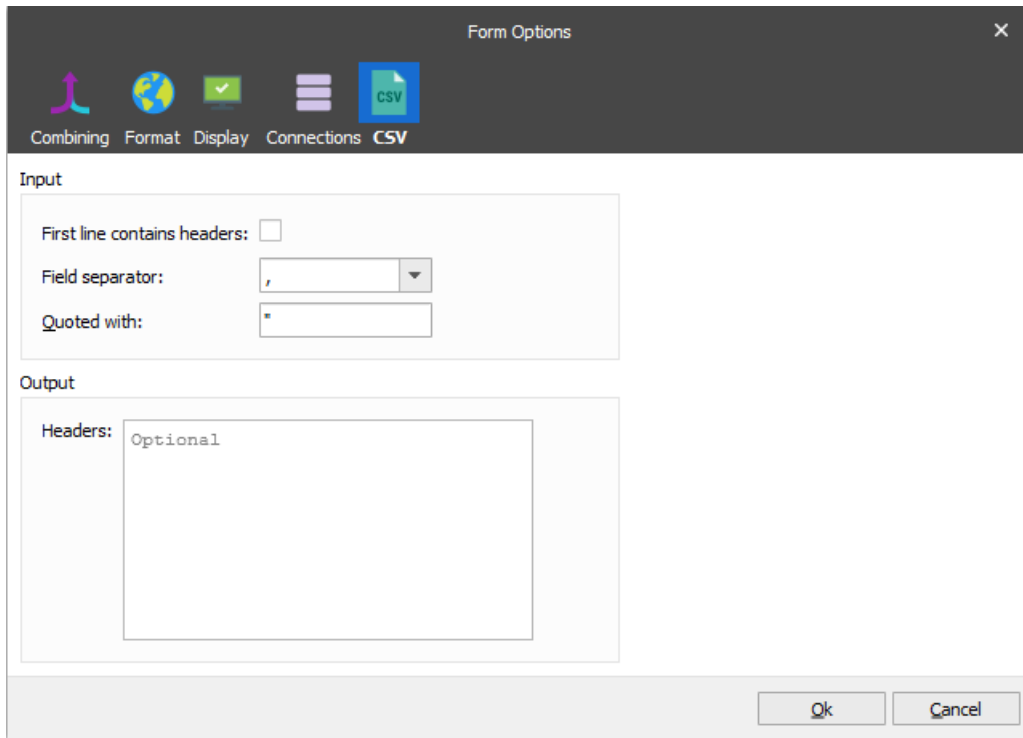
### 3.4.3 CSV

Input files in CSV format are automatically converted to XML. Handling and processing CSV input in Lasetnet Form Editor is similar to XML input.

When a CSV grab file is opened, it is automatically converted to XML.

#### 3.4.3.1 Settings

CSV input type has the following settings:



- First line contains headers**      Often, the first line of a CSV file contains the headers of the fields. Selecting this option makes Lasetnet use the header names in the XML, skipping the first line as it does not contain data.
  
- Field separator**                      Defines the separator between the fields in the CSV.
  
- Quoted with**                              Defines which character is used to represent quotes within fields. This is useful when a field separator occurs within a field.
  
- Headers**                                      (Optional) Set the header names if they are not included in the CSV of the ones included are not correct. If no header names exist, the fields are named by Lasetnet.

### 3.4.4 EDI

EDI formatted input files are automatically converted to XML. Handling and processing EDI files in Lasetnet Form Editor is similar to XML input.

When an EDI grab file is opened, it is automatically converted to XML.

### 3.4.5 XLSX

XLS formatted input files are automatically converted to XML. Handling and processing XLS files in Lasetnet Form Editor is similar to XML input.

When an XLS grab file is opened, it is automatically converted to XML.

Spreadsheets created in Microsoft Excel 2007 or newer are supported. Microsoft Excel does not have to be installed to convert Excel into XML.

The XLS input type has the following settings:

Form Options

Combining Format Display Connections **Excel to XML**

Number of description rows: 0 (Row(s) above header row(s) to ignore)

Number of header rows: 0 (Indicates that the first row(s) contains column names and not data)

Sheet names for elements:  (Use sheet name instead of Sheet with attribute Name)

Header names for elements:  (Use header name instead of Column with attribute Name)

Include empty cells:

Ok Cancel

### 3.4.5.1 Data Fields

Rows and columns on all sheets are extracted and saved into the XML structure.

	A	B	C	D	E	F
1	<b>Art no.</b>	<b>Description</b>	<b>Pcs</b>	<b>Price</b>	<b>Disc</b>	<b>Amount</b>
2	2000-S	SIDNEY Office chair, green	15	140,8	5	2.006,40
3	1900-S	PARIS Guest chair, black	7	142,8	20	799,68
4						
5						

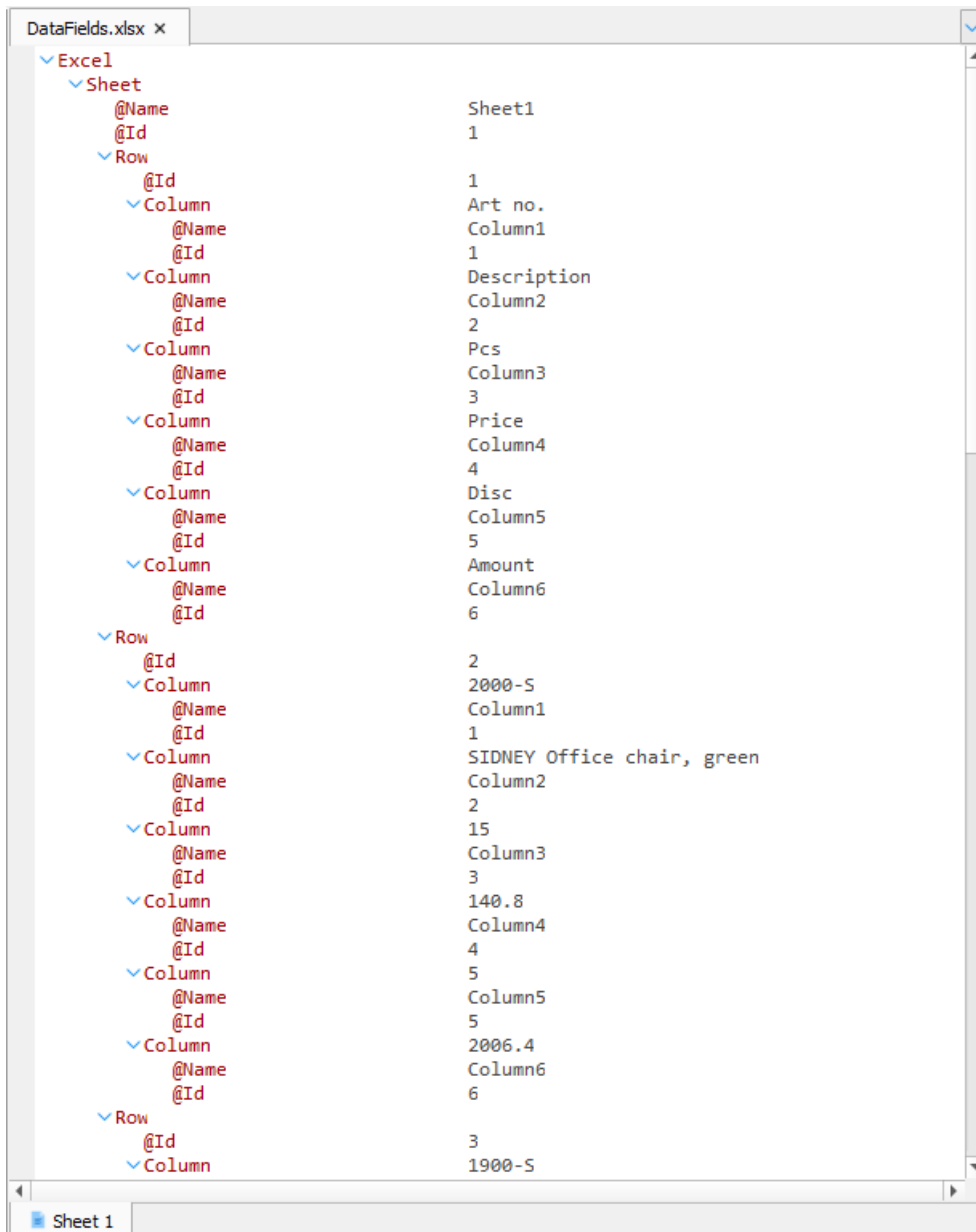
Above is an example of the first sheet named *Sheet1*, containing a header and two rows.

	A	B	C	D	E	F
1	<b>Art no.</b>	<b>Description</b>	<b>Pcs</b>	<b>Price</b>	<b>Disc</b>	<b>Amount</b>
2	1936-S	BERLIN Guest chair, yellow768	7	164,267	20	919,9
3	1928-W	ST.MORITZ Bookshelf with drawers	4	390,533	15	1.327,81
4						
5						

Above is an example of a second sheet named *Sheet2*, containing a header and two rows.

The final result is:

- An XML file containing an <Excel> root node
- A child for each sheet named <Sheet> with attributes for @Id = Sheet index, @Name = Sheet name
- Sub-node for each row named <Row> with attribute for @Id = Row index
- Sub-node for each column named <Column> with attributes for @Id = Column index, Name = Header names for elements (if available/selected)

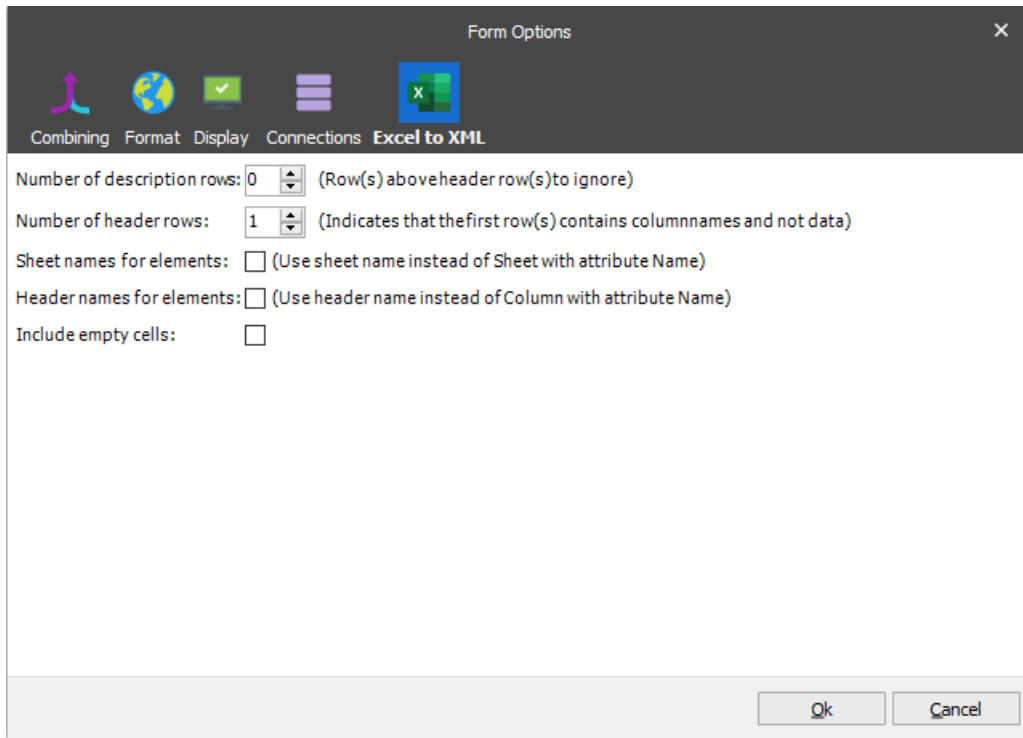


### 3.4.5.2 Settings

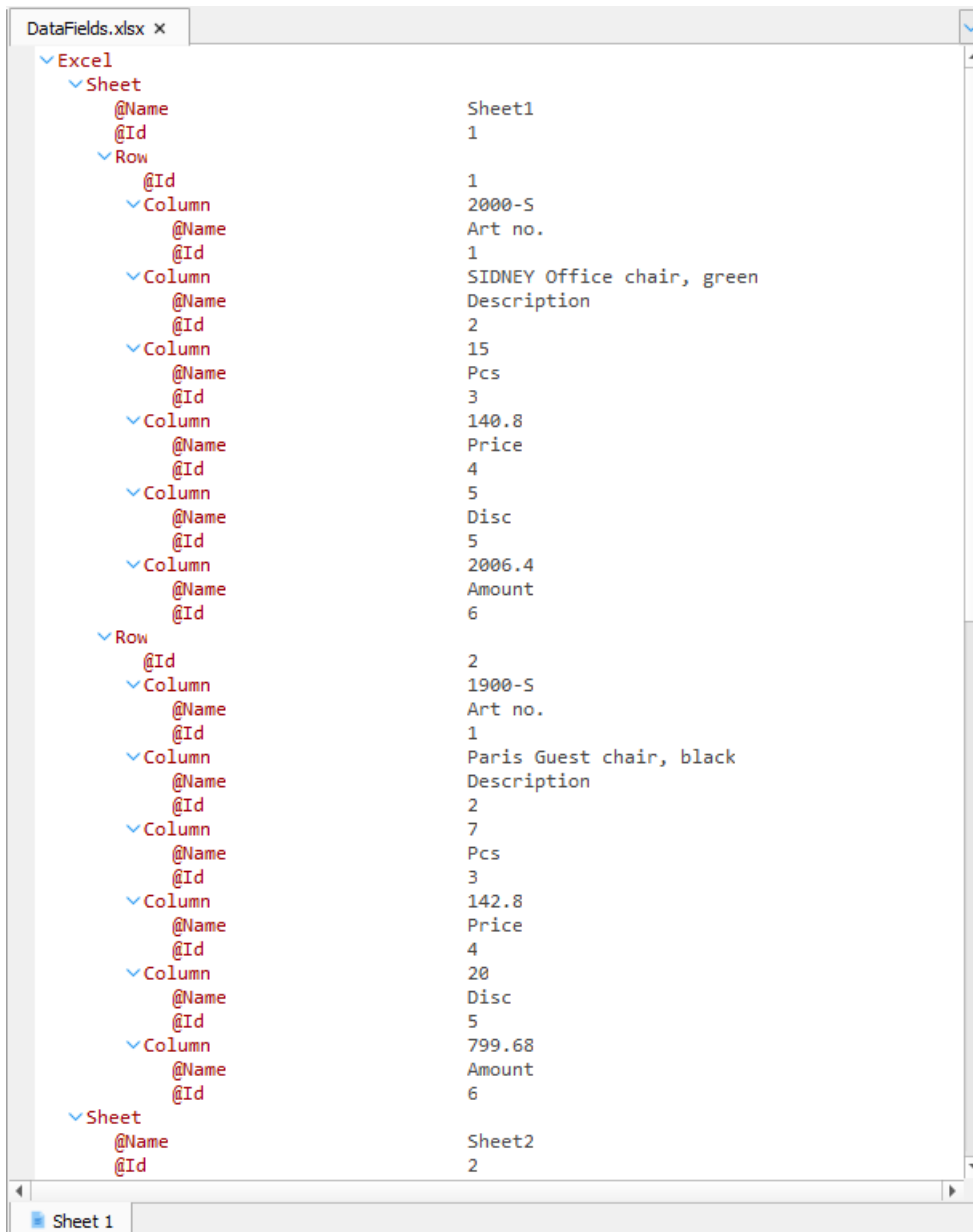
The *Number of description rows* setting defines a number of rows to ignore before the first row is extracted from the spreadsheet.

The *Number of header rows* setting affects the final structure of the generated XML file. It is used for determining if the first row(s) in the Excel spreadsheet should be parsed as column names and not as data. If the description rows are set to be ignored, they are not considered.

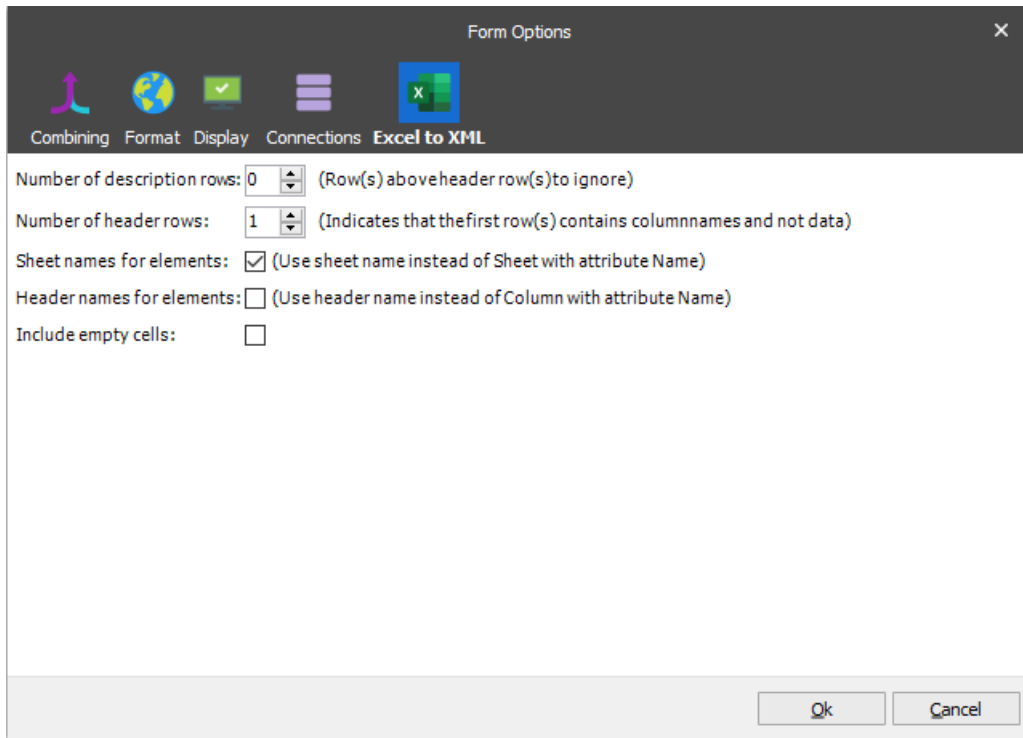




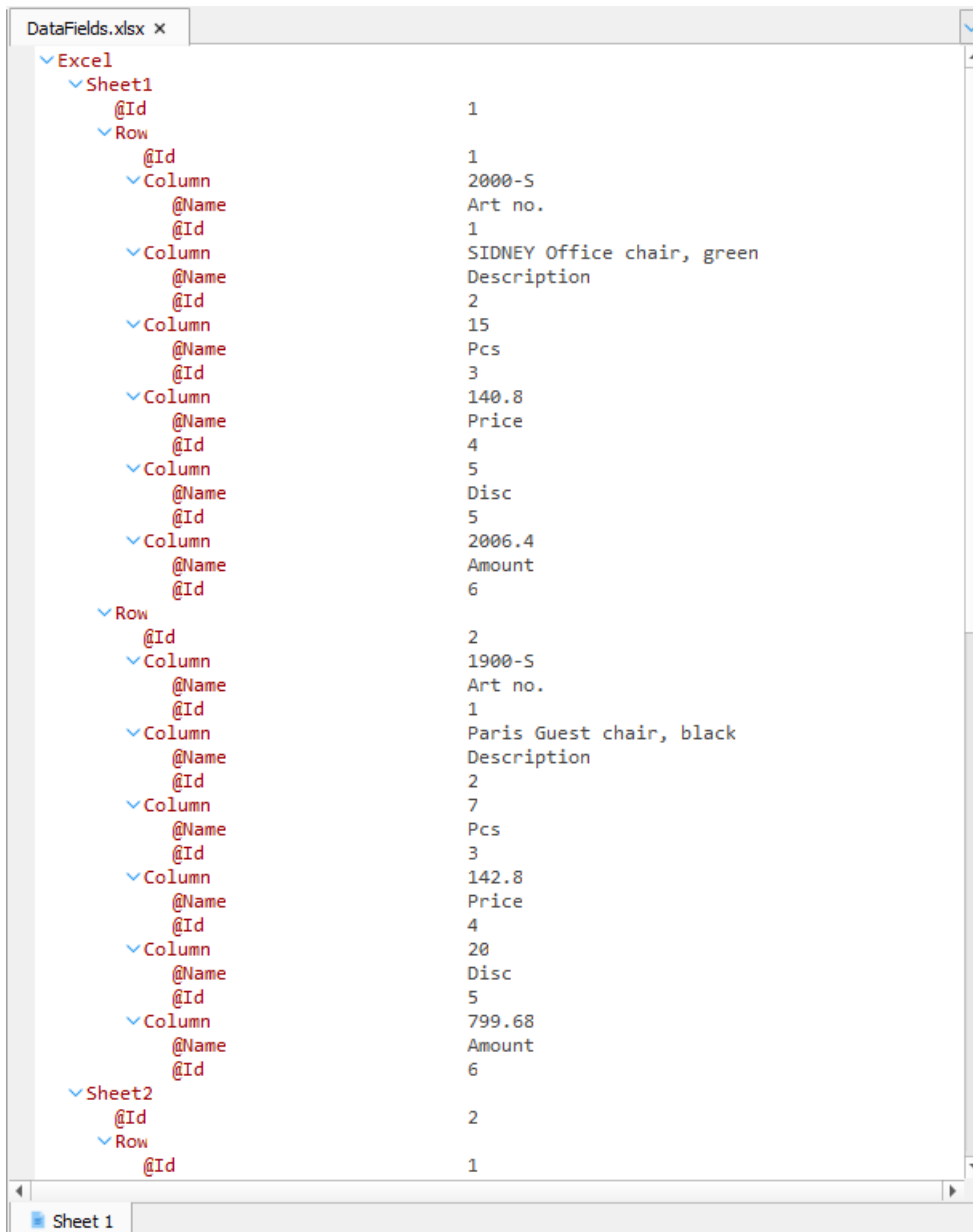
The number of defined rows to be considered as header rows.



The *Sheet names for elements* setting is designed to use a sheet name instead of the *Sheet* node and its *Name* attribute. To apply the setting, select the corresponding check box in the **Form Options** dialog.



When the setting is applied, it affects the input as follows:



The *Header names for elements* setting affects the final structure of the generated XML file, where a header name is used instead of the column name with attribute. To apply the setting, select the corresponding check box in the **Form Options** dialog.

Form Options

Combining Format Display Connections **Excel to XML**

Number of description rows: 0 (Row(s) above header row(s) to ignore)

Number of header rows: 1 (Indicates that the first row(s) contains column names and not data)

Sheet names for elements:  (Use sheet name instead of Sheet with attribute Name)

Header names for elements:  (Use header name instead of Column with attribute Name)

Include empty cells:

Ok Cancel

As a result, the input looks as follows:

DataFields.xlsx	
Excel	
Sheet1	
@Id	1
Row	
@Id	1
Artno.	2000-S
@Id	1
Description	SIDNEY Office chair, green
@Id	2
Pcs	15
@Id	3
Price	140.8
@Id	4
Disc	5
@Id	5
Amount	2006.4
@Id	6
Row	
@Id	2
Artno.	1900-S
@Id	1
Description	Paris Guest chair, black
@Id	2
Pcs	7
@Id	3
Price	142.8
@Id	4
Disc	20
@Id	5
Amount	799.68
@Id	6
Sheet2	
@Id	2
Row	
@Id	1
Artno.	1936-S
@Id	1
Description	BERLIN Guest chair, yellow768
@Id	2
Pcs	7
@Id	3
Price	164.267
@Id	4
Disc	20
@Id	5
Amount	919.9
@Id	6

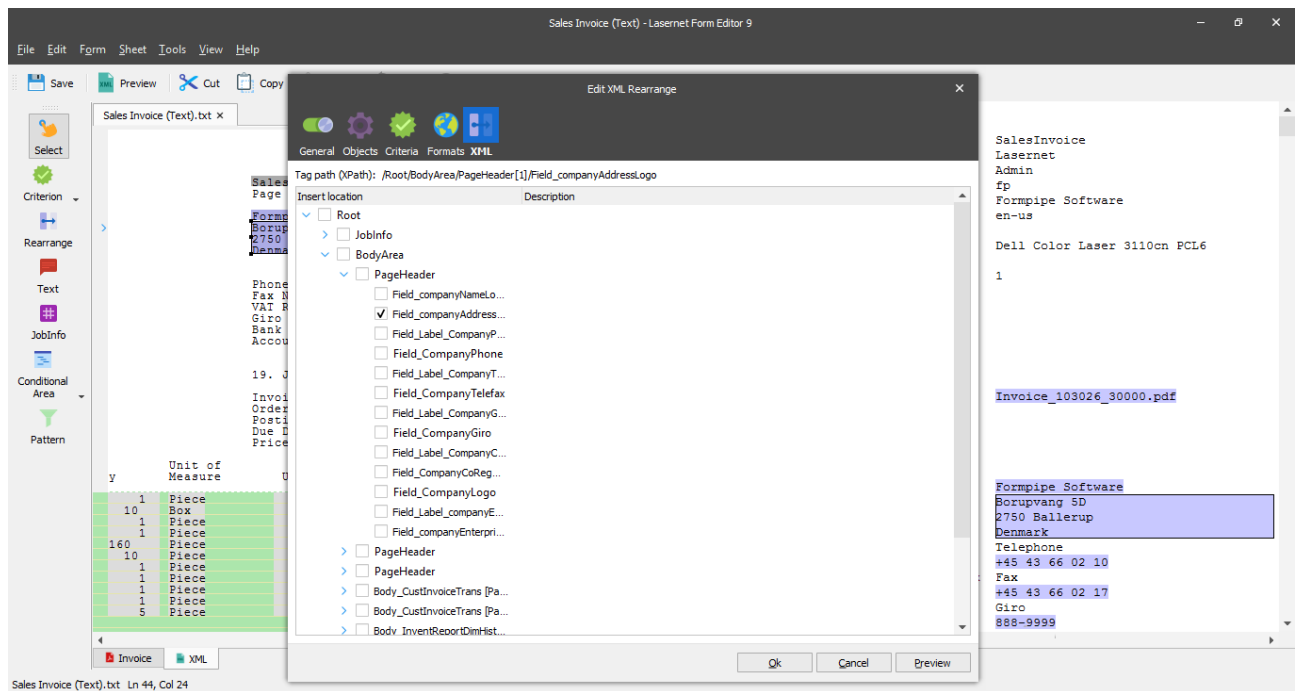
If you select the *Include empty cells* check box in the **Form Options** dialog to activate the setting, the XML data also include the cells with empty values, otherwise, they are ignored and not present in XML.

## 3.5 Output Formats

### 3.5.1 Extensible Markup Language

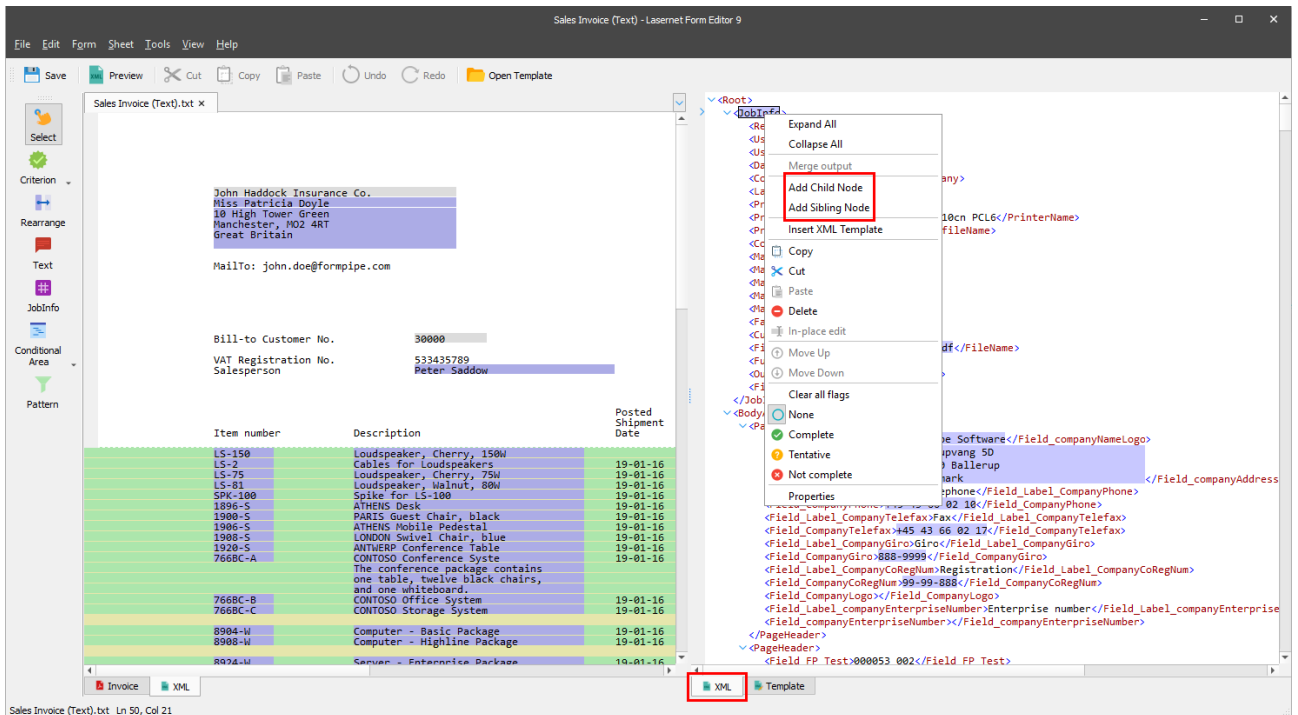
#### 3.5.1.1 XML

When you produce XML files, the output properties of a rearrange are identical to the structure of the XML file and the input rearranges are mapped to tags in the output XML file.



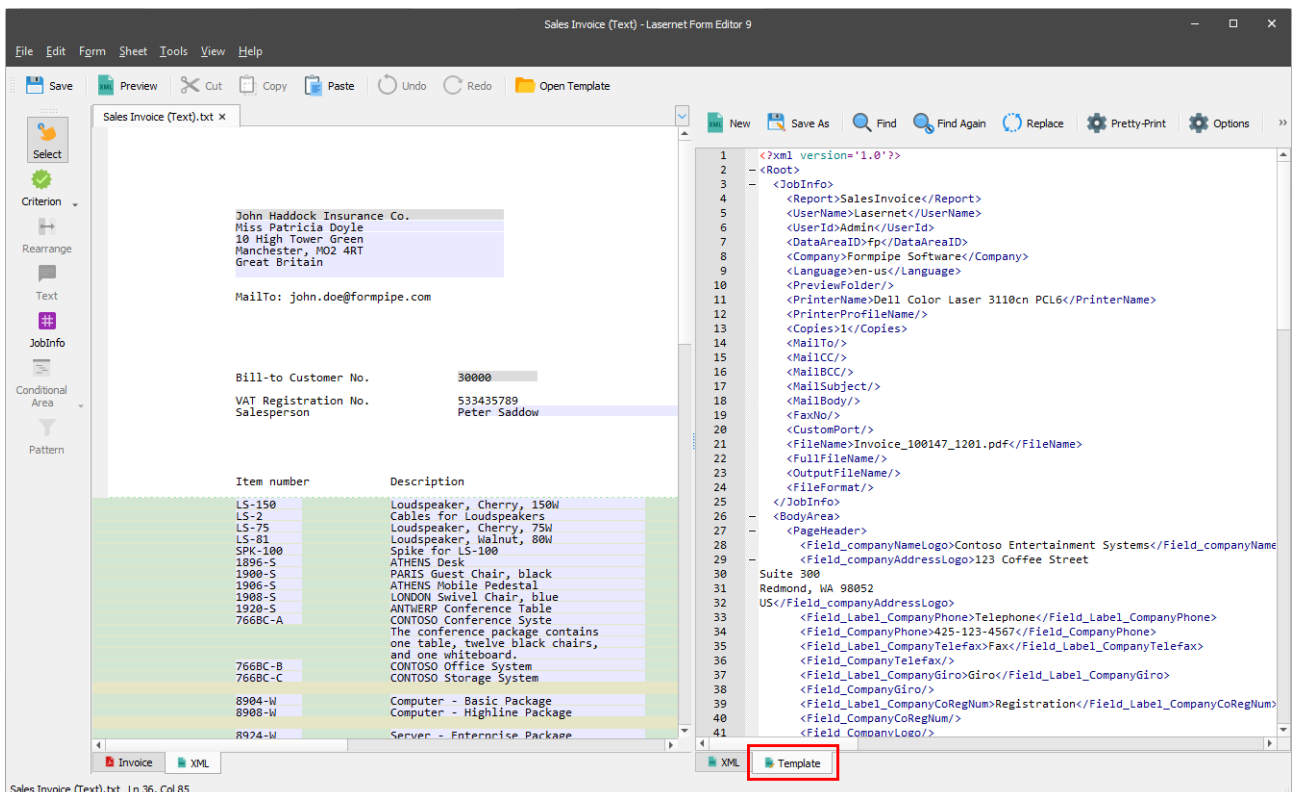
The example illustrates how data contained in an input text file is mapped to a tag in an output XML file using rearranges.

You can create the structure of the XML output file using any of the available tabs in the output: **XML** or **Template**. Use the **XML** tab to create a structure by adding nodes in the right-hand panel of Lasetnet Form Editor. This is done by right-clicking the XML tags and choosing the **Add Child Node** or **Add Sibling Node** menu depending on the hierarchy that you wish to design.



Note that if you detach a merged rearrange in XML output you need to specify the node where you want to put the detached rearrange. For more information about merging and detaching rearranges see Chapter 3.3.6.2 *Rearrange Tool*.

With that, you can directly edit a plain text representation of the XML output file on the **Template** tab:



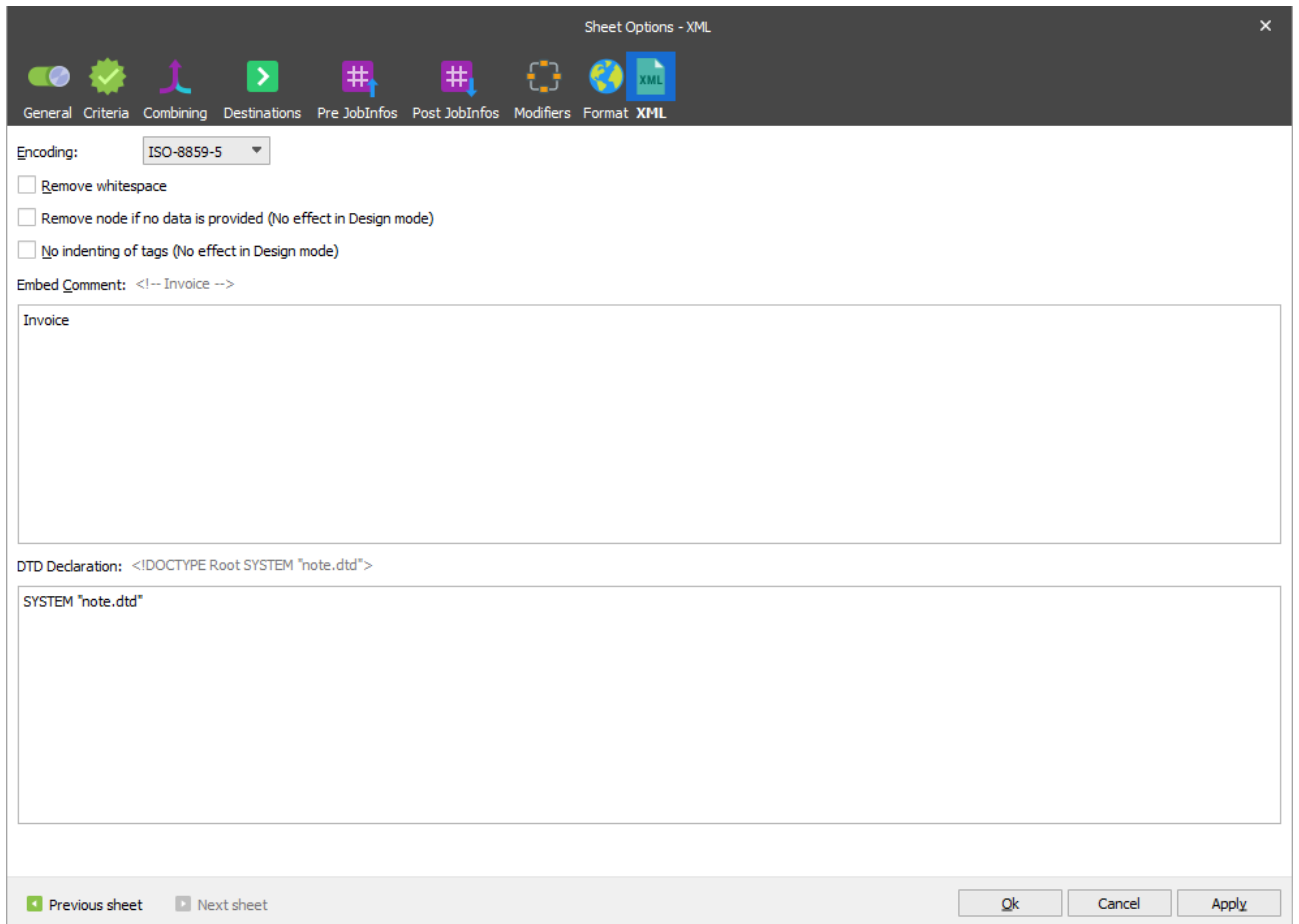
It is possible to view the final result of the output without processing the job via the Lasetnet Server. To do this, click the **Preview** button on the toolbar.



### 3.5.1.1.1 Sheets

#### 3.5.1.1.1.1 Sheet Properties for XML Forms

When working with XML forms an additional XML tab is added to the **Sheet Options**.



The dialog has the following properties.

#### Encoding

Definition of the XML file's encoding format when produced by Lasernet. The default is UTF 8, which allows the viewing of the XML file in a browser.

#### Remove whitespace

In most XML prints, blank fields are not allowed with the data which can happen when mapping data in Lasetnet. Here blank fields mean empty spaces before and after the text. This setting makes it possible to remove these blank fields. Alternatively, Trim spaces before and after can be chosen in the input properties or Whitespace on edges for output properties, respectively.

#### Remove node if no data is provided – no effect in Design mode

This is used to exclude empty nodes from the output. Note that this setting overrides the settings of individual nodes on the sheet.

#### No indenting of

Controls the formatting of the XML. When checked, the XML output generated is written as

**tags – no effect in Design mode**

one long line containing all the tags. When cleared, each tag is placed on a separate line and whitespace is added to indent the tags to give it a tree-like look when viewed in a text editor. The check box has no effect on how the XML is presented in the Lasernet Form Editor.

**Embed Comment**

Is used for adding information at the beginning of an XML file, e.g., company details. Comments are only used for the receiver of the file and are rarely used in an XML business to business solution.

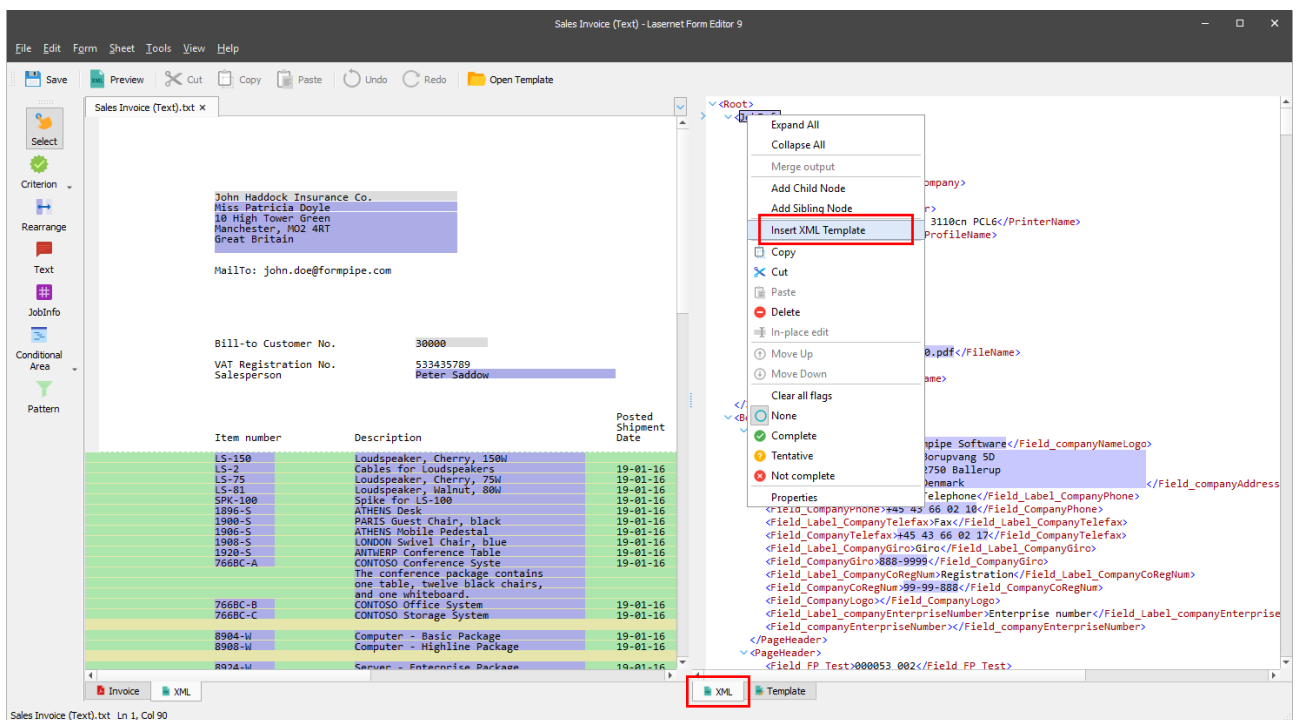
**DTD Declaration**

Defines the structure and the legal elements and attributes of an XML document.

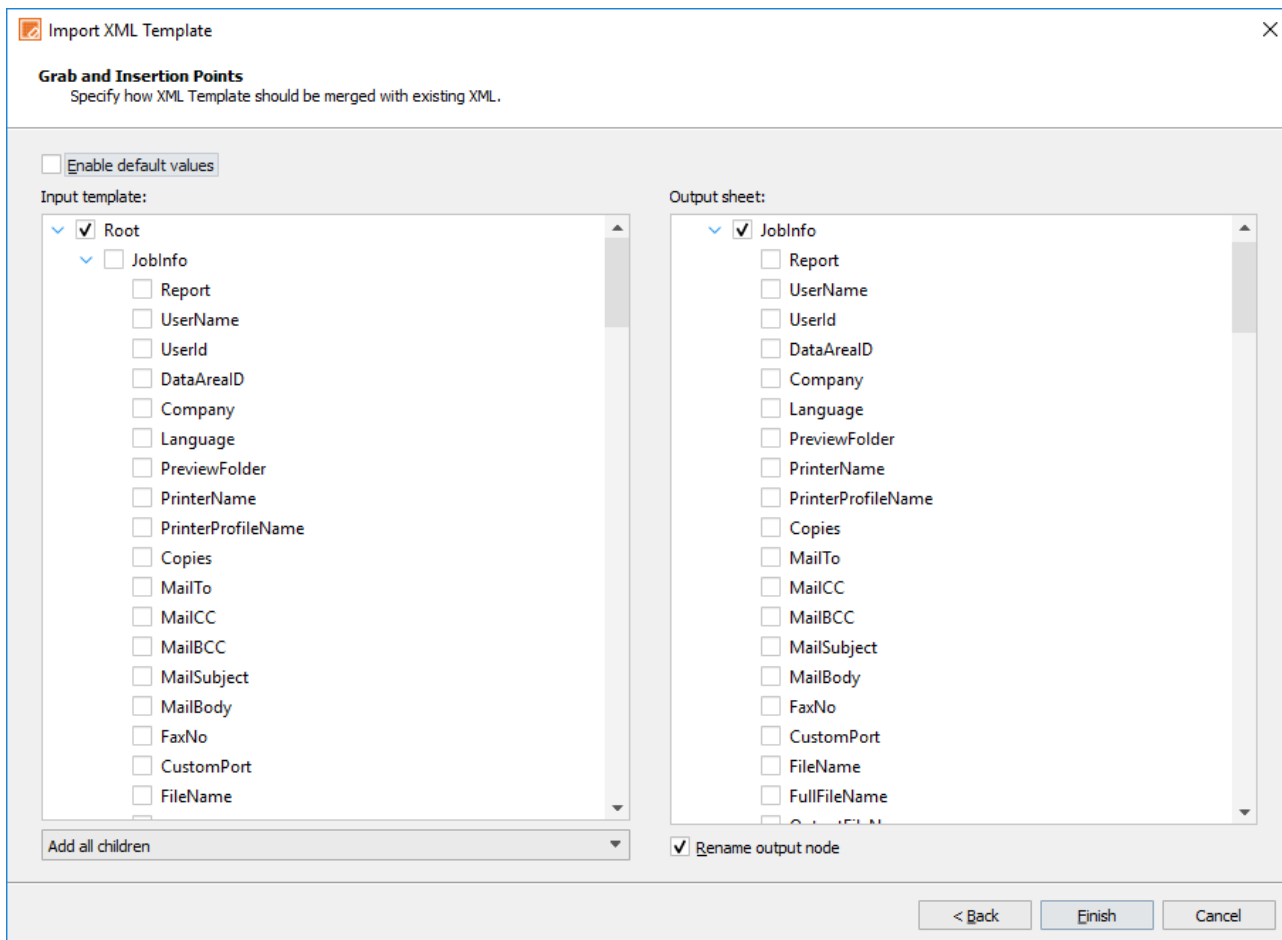
**3.5.1.1.1.2 Templates**

Lasernet supports the loading of pre-defined XML or XSD templates. This enables you to receive an external template file and import it into your Lasernet project to achieve significant time savings in the design phase.

The template is imported into a Lasetnet project. This is done on the **XML** tab of the output by right-clicking the node where the template should be inserted and choosing **Insert XML Template** in the context menu. It brings up the **Import XML Template** dialog allowing you to browse for a template file with the.XML extension.



After selecting the template to import, the **Import XML template** window changes, allowing you to specify how to merge the XML template with the existing XML file.



This dialog window has the following controls:

**Enable default values** When an XML template file is imported with **Enable default values** selected, all nodes that will be created/updated as a result of the operation will have the option **'Show node with default value if no rearrange data is provided'** checked.

Drop-down list:

**Add all children** Take all children of selected input node and append as children of the output node.

**Replace all children** First remove all children of the output node and then add all children of the input node as children of the output node.

**Add input node as child** Append the selected input node as a child of the output node. The children of the selected input node will then become grand-children of the selected output node.

**Rename output node** Change the name of the selected output node to the name of the selected input node

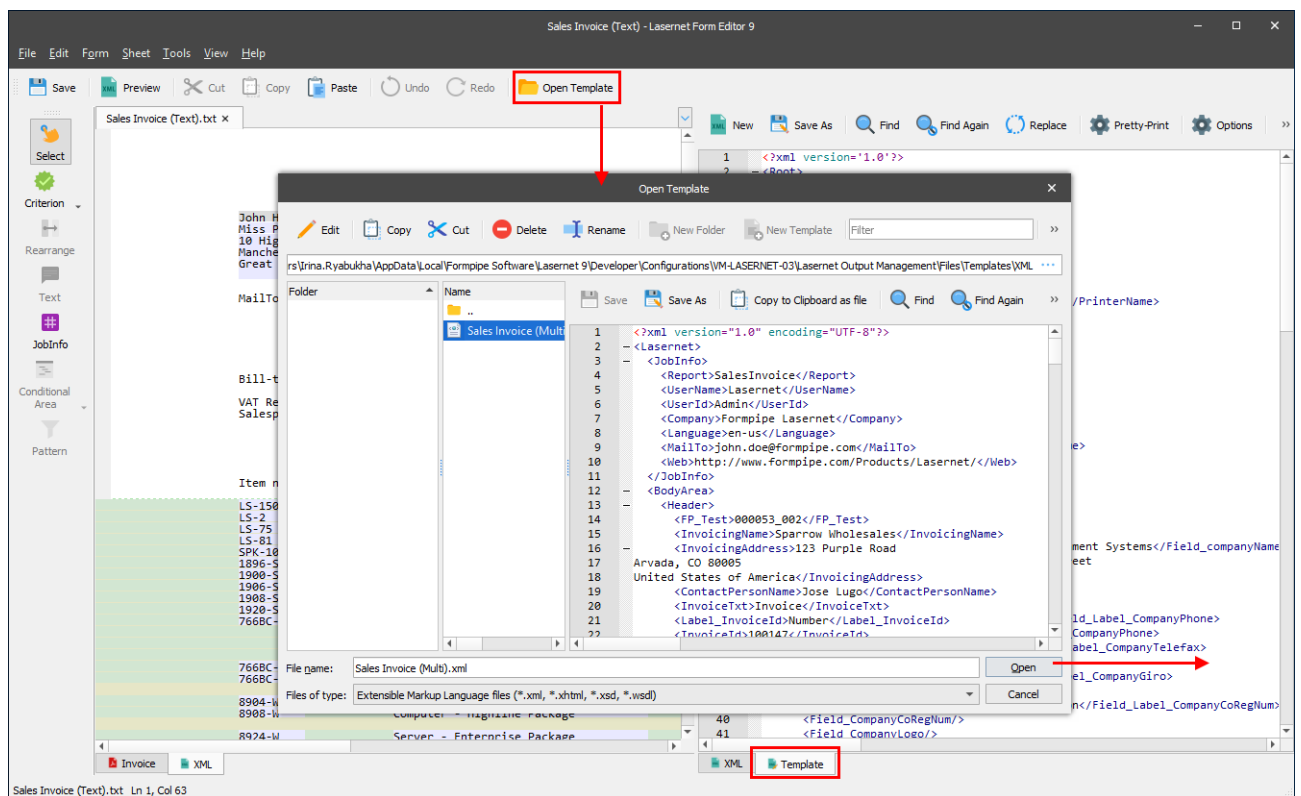
When you have imported the XML template you can add, modify or delete the nodes as necessary to reach your final output format. The various tags are then mapped to rearranges on the input side and all tags are included in the final XML output files.

<b>Type</b>	Select the type of the node: <b>Element</b> , <b>Attribute</b> , <b>CDATA</b> , or <b>Text</b> (available only for nodes with a child node).
<b>Name</b>	Specify the name of the node.
<b>Default value</b>	Specify the default value (optional).
<b>Description</b>	Specify a description of the node which is then shown on the <b>Edit Rearrange</b> and <b>Pattern Properties</b> dialogs.
<b>Remove node if no data is provided</b>	Check to exclude empty nodes from the output. This setting has no effect in the Design mode.
<b>Use default value if no rearrange data is provided</b>	Check to use the default value if no rearrange data is provided.
<b>Use default value if rearrange data contains an empty string</b>	Check to use the default value if the rearrange data contains an empty string. This setting has no effect in design mode.
<b>Maximum value length (Design mode only)</b>	Specify a maximum number of symbols in the node value to be shown in the output. The setting is applied only in the Design mode.
<b>UTC Date and Time</b>	Define a format of the output rearrange data as UTC Date and Time by selecting the check box.
<b>Status Flag</b>	Specify a status for the selected node. You can use one of the available statuses to mark a node as: <ul style="list-style-type: none"> <li>• None (no status is applied).</li> <li>• Complete (a node is completely processed and ready to be published in the output).</li> <li>• Tentative (a node is partially processed and not ready to be published in the output).</li> <li>• Not complete (a node has not been processed yet and is not ready to be published in the output).</li> </ul> <p>The node status is only displayed in the editor and does not affect the final</p>

view of the output document.

It is possible to enter default values for the individual nodes, which can be used when there are no rearranges connected to the node or if the rearrange data contains an empty string.

In addition, you can add a template with a predefined structure by clicking the **Open Template** button on the toolbar being on the **Template** tab of the output. In this case, you do not need to specify how XML template is to be merged with the existing XML file. Being open, the template is inserted directly to the output and substitutes any information previously entered on the **Template** tab.



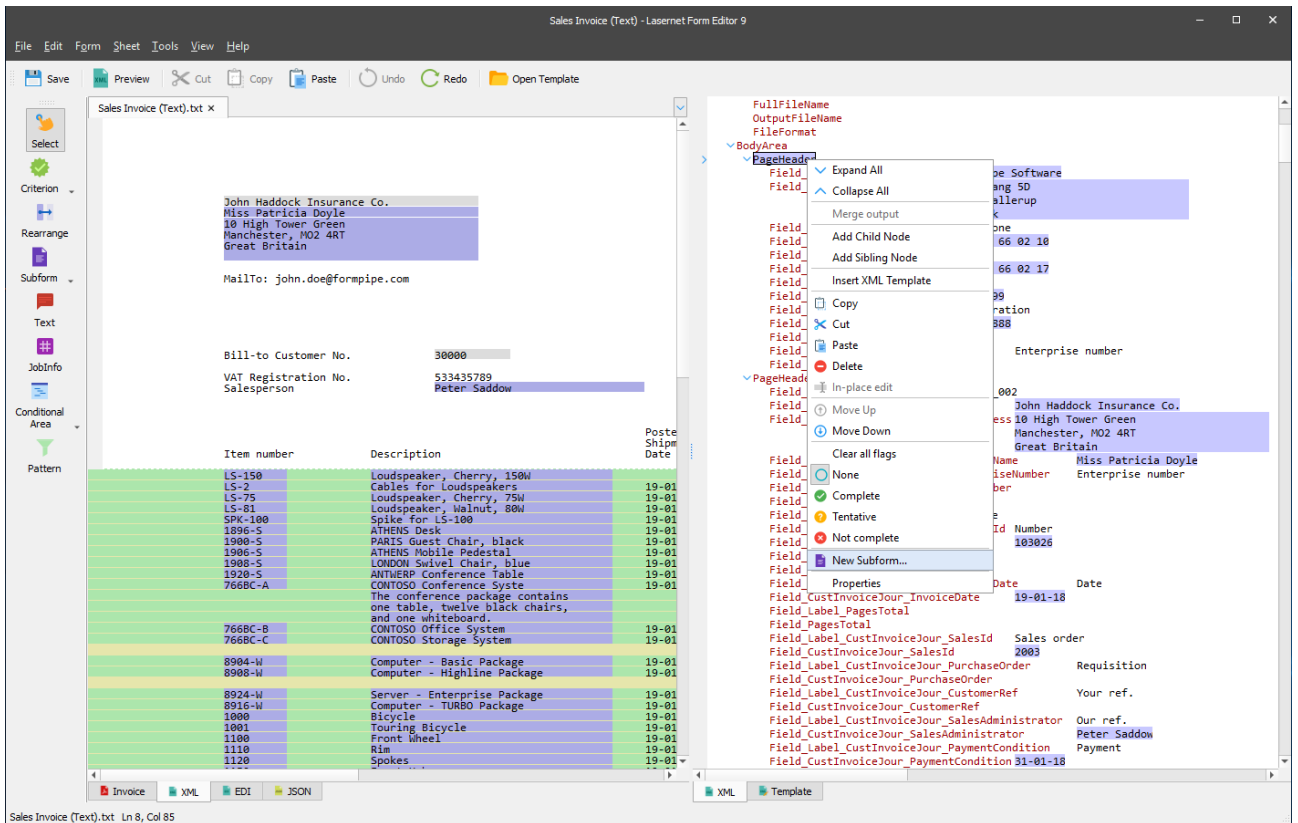
### 3.5.1.1.2 Subforms

Besides adding subforms to the output of one of the enhanced metafile formats (for more details, see 3.3.7 *Subforms*), you can also create subforms for such output formats as [XML](#), [EDI](#) and [JSON](#). The procedure is the same for all the mentioned output formats.

#### 3.5.1.1.2.1 Adding a Subform

To add a subform to any of the mentioned output formats ([XML](#), [EDI](#) and [JSON](#)), follow the steps listed below:

1. In the output, right-click a top node of the structure you want to add to the subform. On the context menu that appears, select **New Subform....** As a result, this node as well as all its child node(s), rearranges and patterns added to them are copied/moved to this subform.

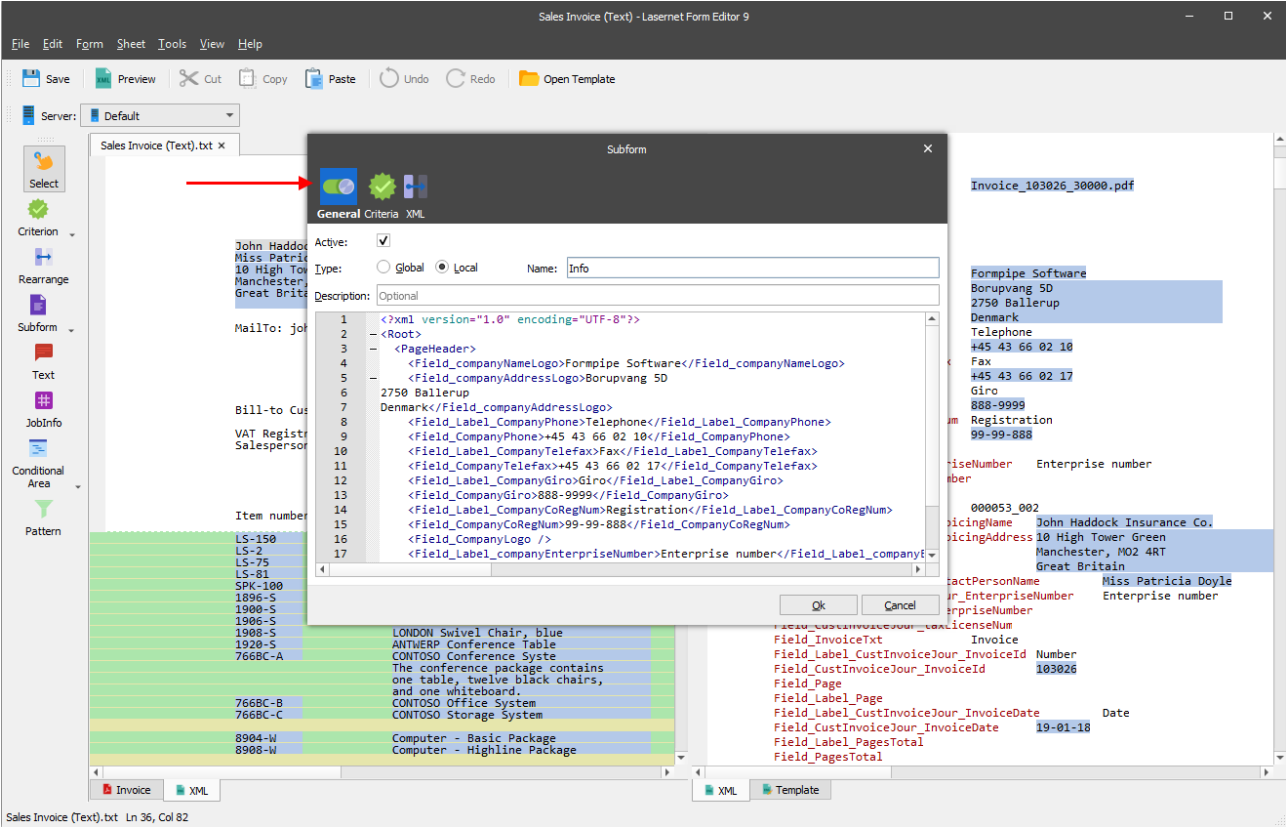


2. With the **Subform** dialog displayed, specify a subform type (**Global** or **Local**) and a subform name.

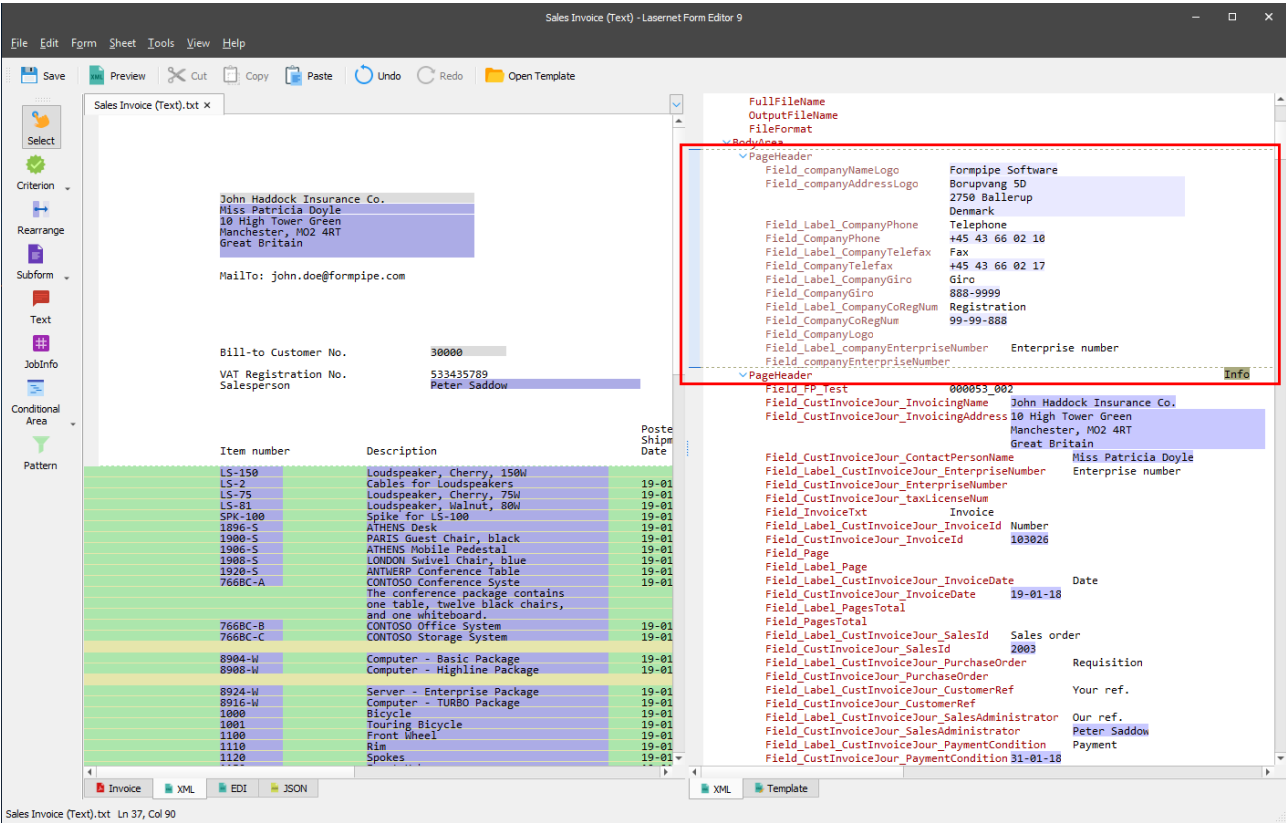
Once you are done, click **OK** to confirm. As a result, the subform is created.

**Note:** A local subform is added within the current form. It becomes available for each sheet of the form possessing the same output type.

**Note:** A global subform which is added becomes available of all the forms of the same input/output formats within the current configuration.



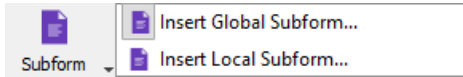
3. Click the **OK** button to confirm. As a result, the subform is added and shown in the output.



If you want to create a new subform from scratch, or select an already created one, use the **Subform** tool on the developer toolbar.

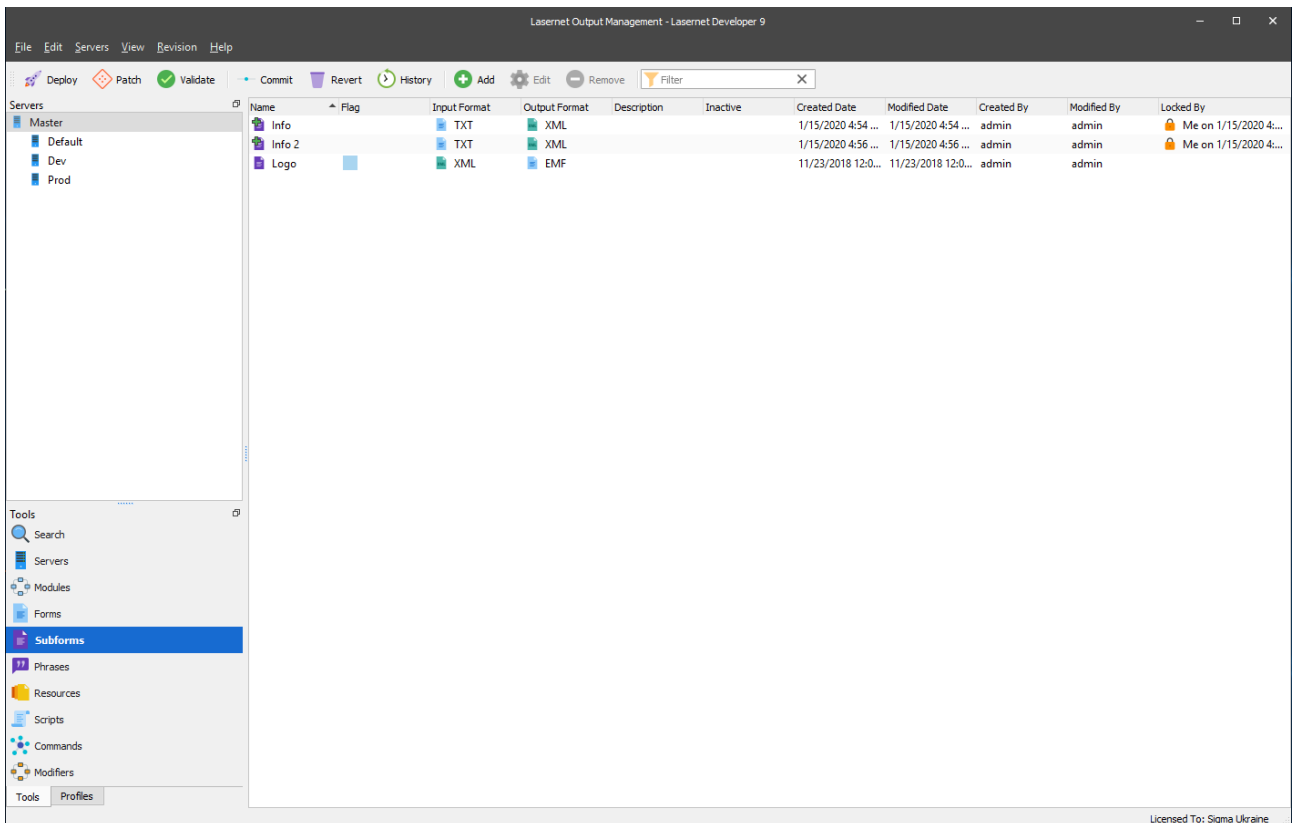
You can add the following subform types to your output: global or local. To do this, follow the steps listed below:

1. Click the down-pointed arrow next to the **Subform** tool.
2. On the menu that appears, click a command of your choice: **Insert Global Subform...** or **Insert Local Subform....**



3. After you have chosen a subform type, the mouse cursor changes its view. Click anywhere in the output to insert the subform.
4. Afterwards, use the **Subform** dialog that appears to add a subform.

It is also possible to add and manage subforms via the **Subforms** tab of the Lasernet Developer.



### 3.5.1.1.2.2 Editing a Subform

To edit a subform, you can do one of the following:

- double-click the subform tab



BodyArea  
 PageHeader  
 Field\_companyNameLogo Formpipe Software  
 Field\_companyAddressLogo Borupvang 5D  
 2750 Ballerup  
 Denmark  
 Field\_Label\_CompanyPhone Telephone  
 Field\_CompanyPhone +45 43 66 02 10  
 Field\_Label\_CompanyTelefax Fax  
 Field\_CompanyTelefax +45 43 66 02 17  
 Field\_Label\_CompanyGiro Giro  
 Field\_CompanyGiro 888-9999  
 Field\_Label\_CompanyCoRegNum Registration  
 Field\_CompanyCoRegNum 99-99-888  
 Field\_CompanyLogo  
 Field\_Label\_companyEnterpriseNumber Enterprise number  
 Field\_companyEnterpriseNumber

Info

PageHeader

OR

- right-click the form, and then click **Edit Subform...**

BodyArea  
 PageHeader  
 Field\_companyNameLogo Formpipe Software  
 Field\_companyAddressLogo Borupvang 5D  
 2750 Ballerup  
 Denmark  
 Field\_Label\_CompanyPhone Telephone  
 Field\_CompanyPhone +45 43 66 02 10  
 Field\_Label\_CompanyTelefax Fax  
 Field\_CompanyTelefax +45 43 66 02 17  
 Field\_Label\_CompanyGiro Giro  
 Field\_CompanyGiro 888-9999  
 Field\_Label\_CompanyCoRegNum Registration  
 Field\_CompanyCoRegNum 99-99-888  
 Field\_CompanyLogo  
 Field\_Label\_companyEnterpriseNumber Enterprise number  
 Field\_companyEnterpriseNumber

Info

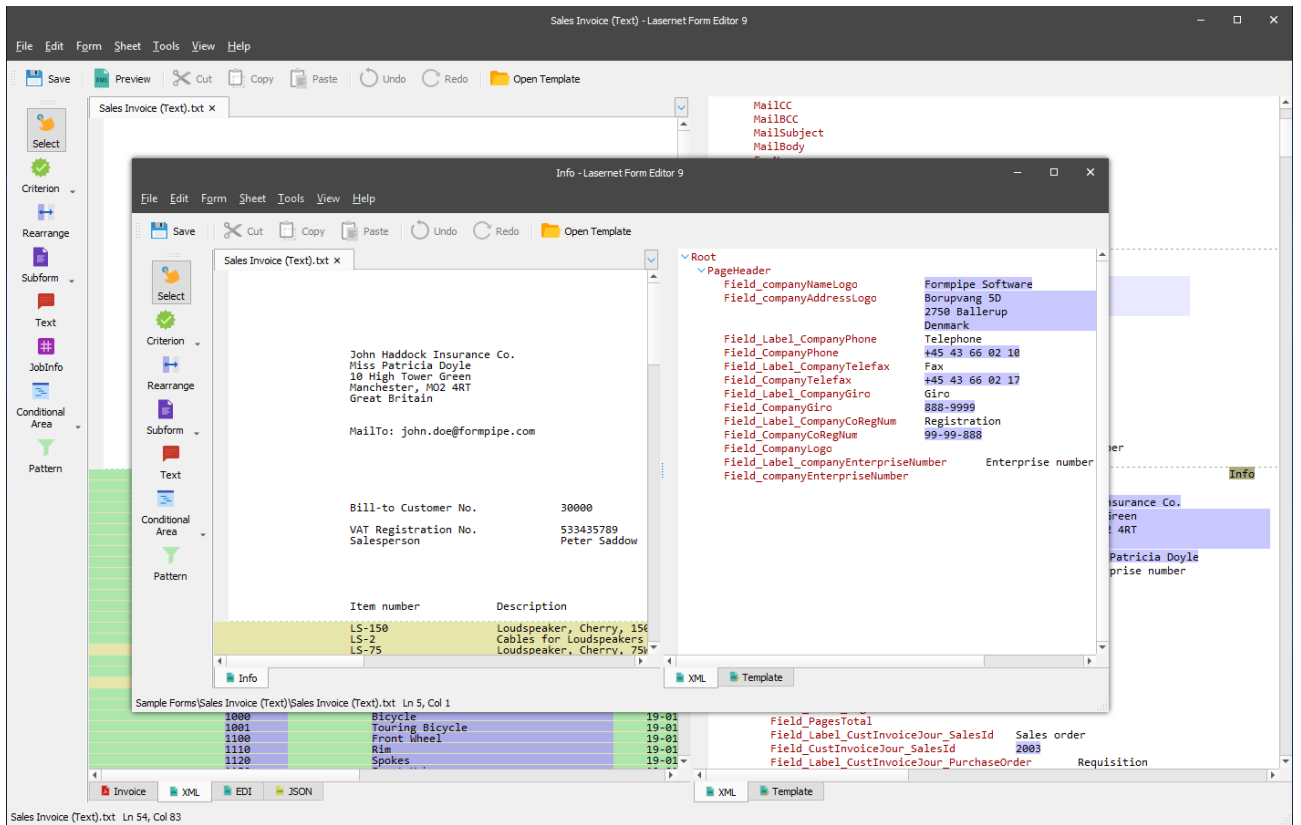
PageHeader

Field\_FP\_Test  
 Field\_CustInvoiceJour\_EnterpriseNumber  
 Field\_CustInvoiceJour\_EnterpriseNumber  
 Field\_CustInvoiceJour\_taxLicenseNum  
 Field\_InvoiceTxt Invoice  
 Field\_Label\_CustInvoiceJour\_InvoiceId Number  
 Field\_CustInvoiceJour\_InvoiceId 103026  
 Field\_Page

Copy  
 Cut  
 Paste  
 Delete  
 Move Before  
 Move After  
 New Subform...  
**Edit subform...**  
 General  
 Criteria  
 XML

Info

As a result, the subform editor opens.



### 3.5.1.1.2.3 Add Rearranges and Patterns to Subform Structure

Working with subforms, you have the following ways of adding rearranges and patterns:

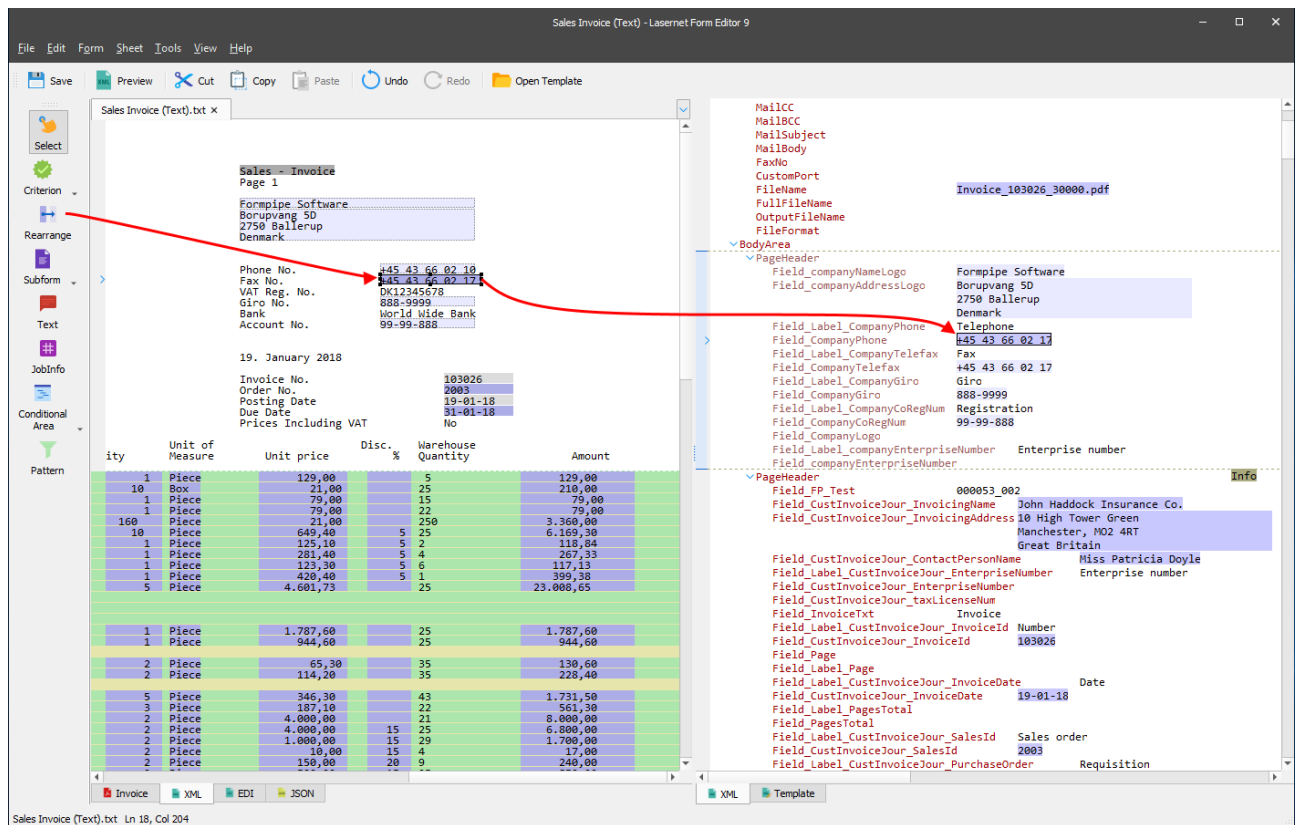
- By editing the subform itself using the subform editor (for more information, see 3.5.1.1.2.2 *Editing a Subform*).
- By adding rearranges and patterns directly to a subform in the output.

It depends on the purpose of using the subform functionality.

In the former case, you are supposed to create several different output files based on one input file which contains the same fragment(s). Patterns and rearranges are then added to the subform itself using the subform editor. Afterwards, you add the edited subform to those documents.

In the latter case, you are supposed to have different input files with different structures, and as a result, get different output files possessing the same fragment(s). To this end, you can create a subform in an output document and add patterns and rearranges directly to this subform structure by moving them from the input.

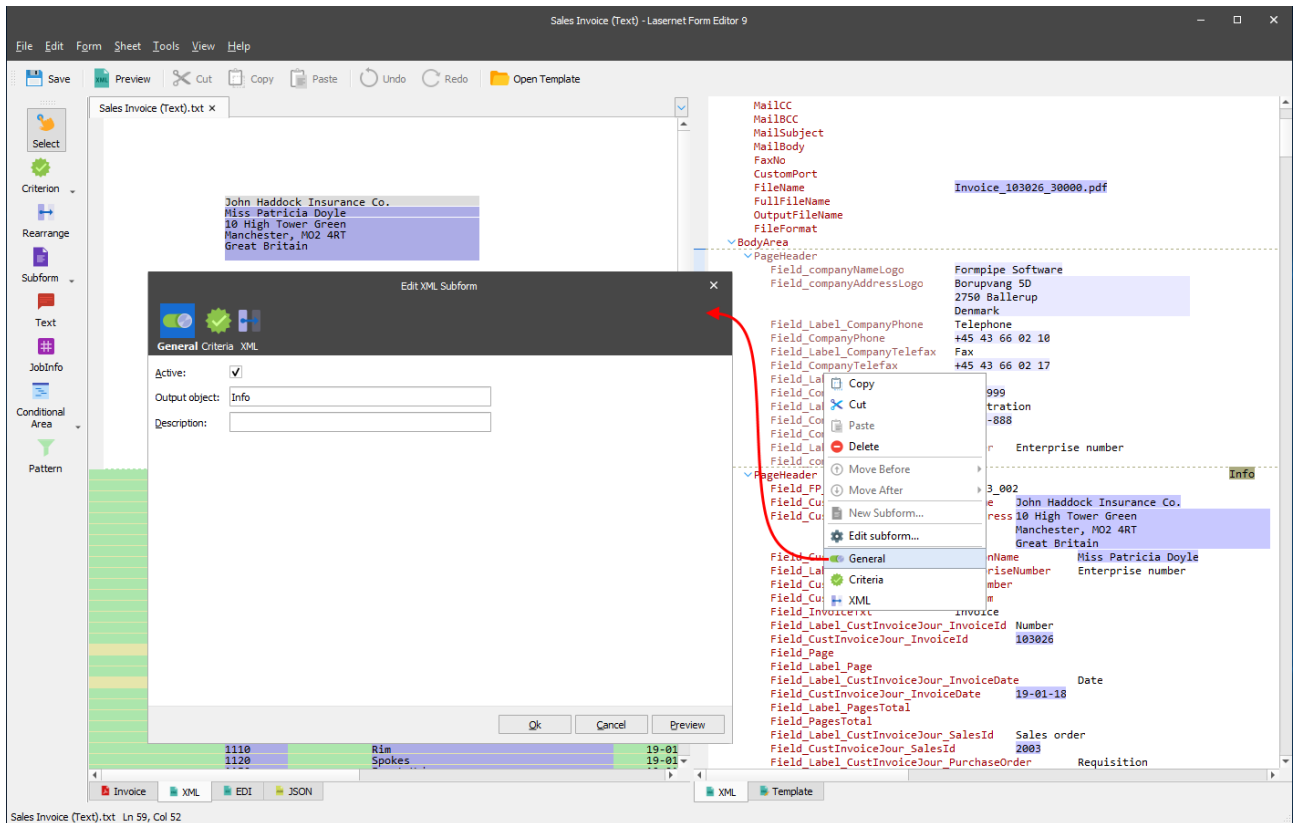
You can use both cases described above at the same time.



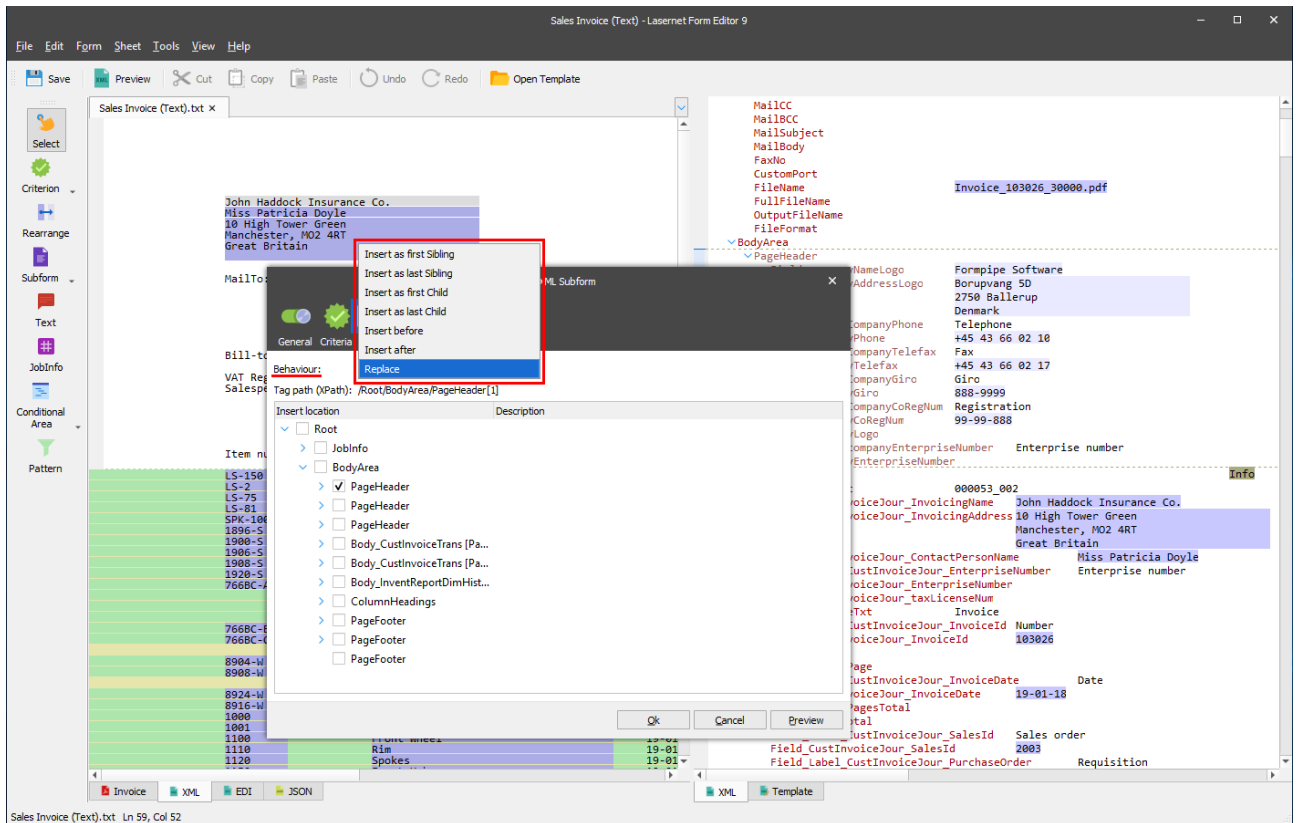
### 3.5.1.1.2.4 Subform Instance Properties

Subform instances have specific properties which are similar to those of rearranges of the XML file. For more, see 3.5.1.1 XML.

To open a dialog showing a list of subform instance properties, double-click a subform or right-click it, and then select the required command on the context menu.



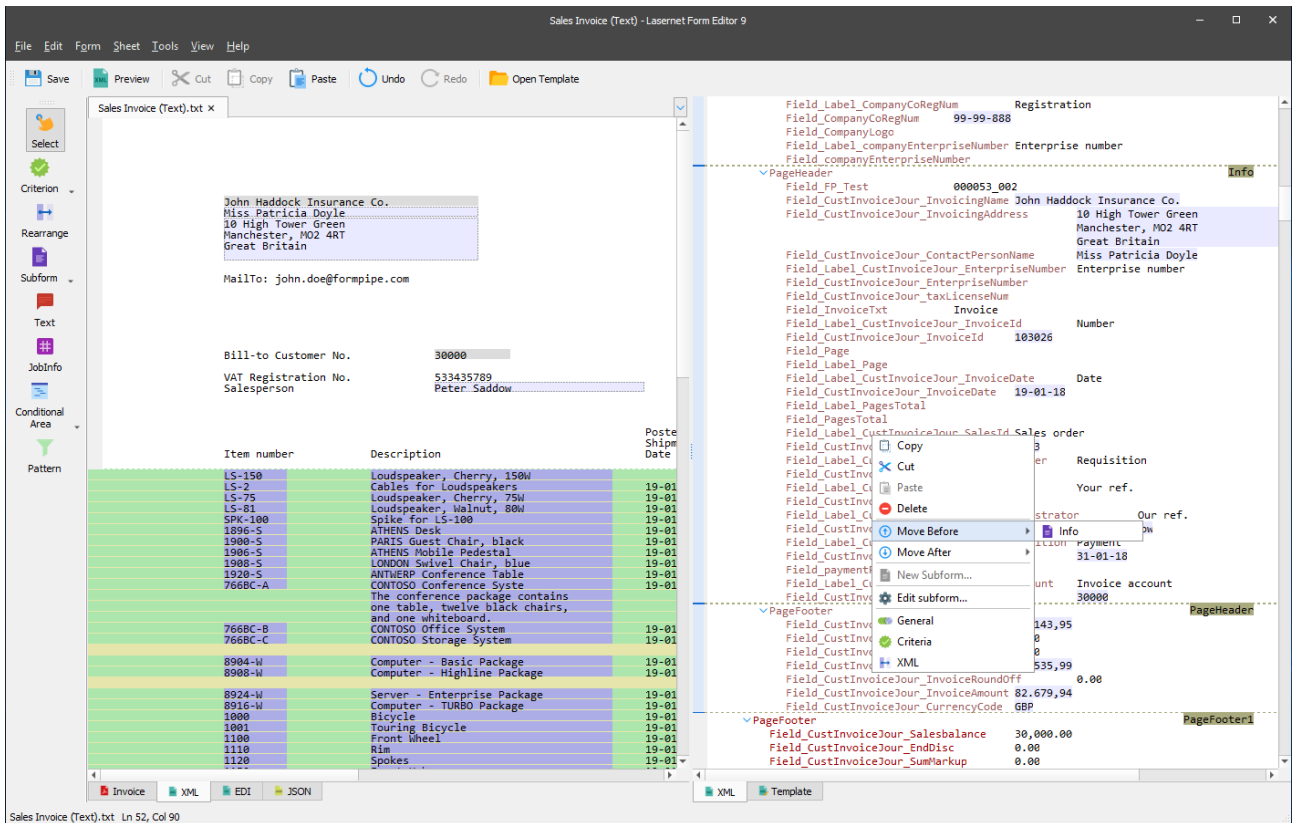
There is a property which is specific for a subform created for one of the mentioned output formats: [XML](#), [EDI](#) or [JSON](#). It is the **Behaviour** property. This property is available on the **XML** tab of the **Edit XML Subform** dialog. You can use the property to define a behaviour for a subform being edited, and then apply that subform to a definite node, which you can select from the list on the **XML** tab.



### 3.5.1.1.2.5 Move a Subform

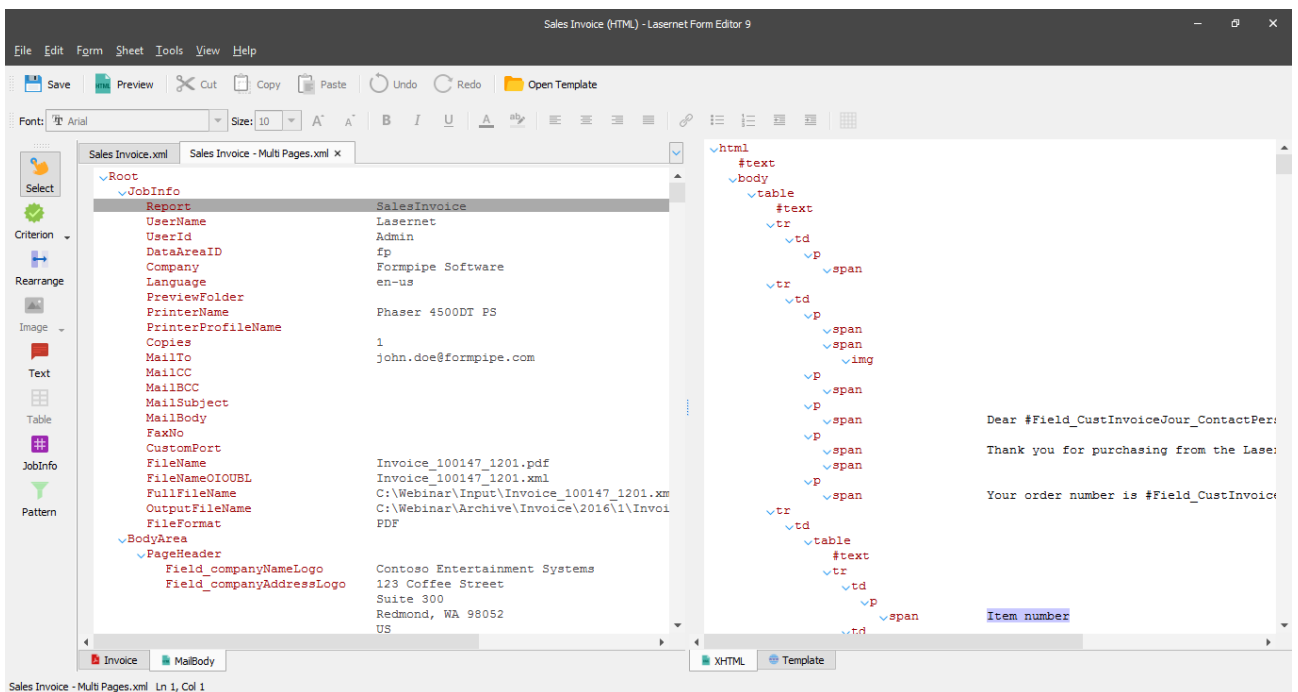
You have a possibility to change a subform order relatively to another subform. The subforms, for which you want to change the order, must possess the same **Behaviour** and **Insert location** values. Otherwise, the functionality is disabled.

To change the order of a subform, right-click or double-click it, and then select **Move Before** or **Move After** depending on your need.



### 3.5.1.2 XHTML

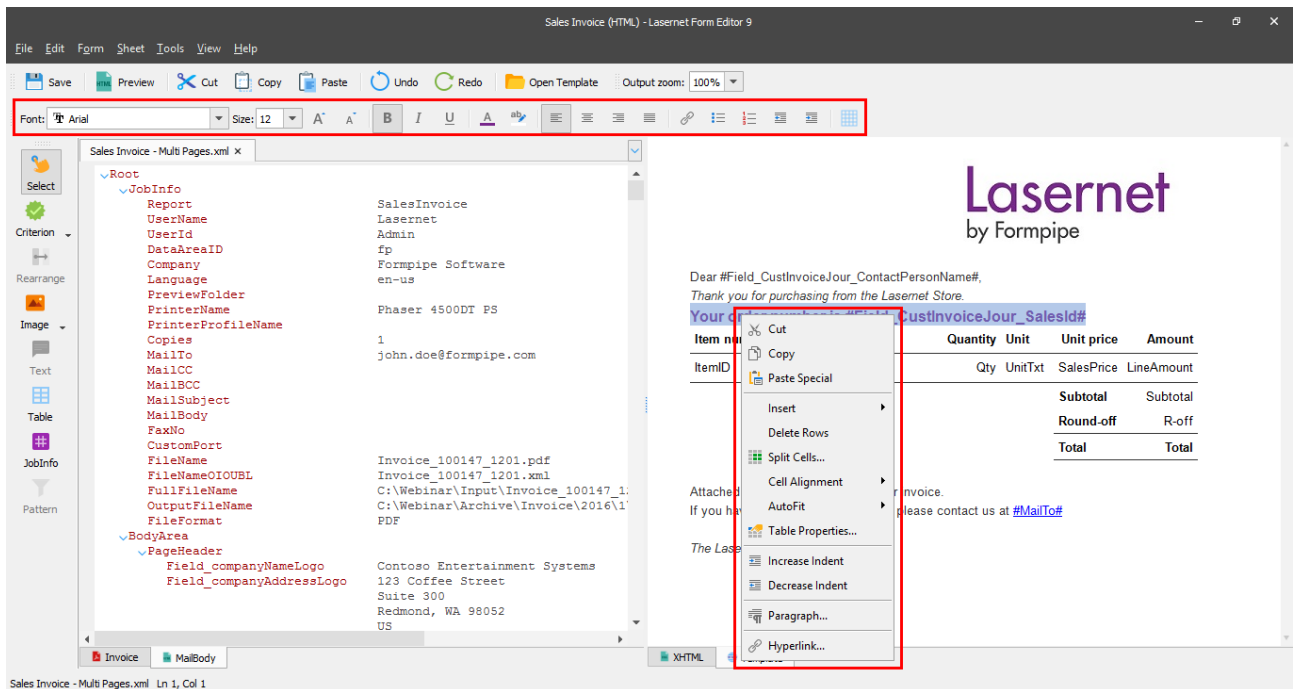
The XHTML output type is designed to create an output of the HTML format.



The output has two tabs: XHTML and Template. Both tabs are designed to create, edit and view any file of the XHTML output format.

### 3.5.1.2.1 Template Tab

The Template tab is designed to edit content of the XHTML output with the Rich Text Editor.



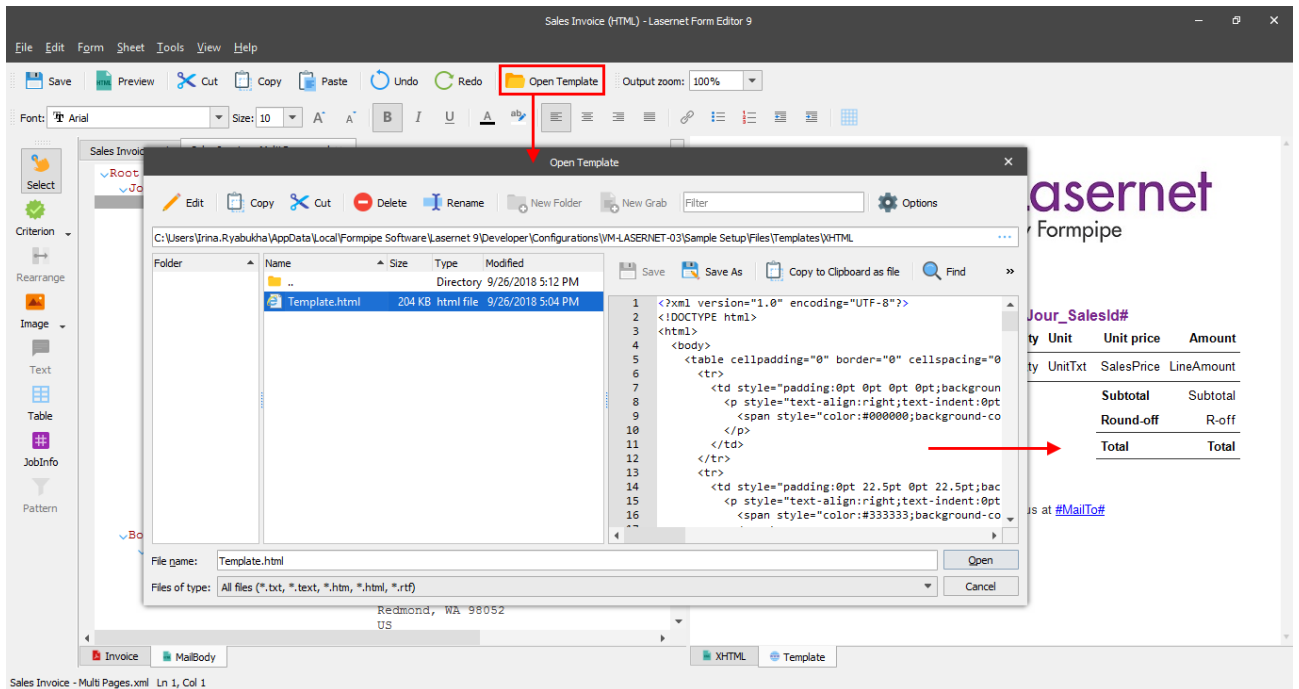
You can make use of a variety of the Rich Text Editor's capabilities with the help of commands from the context menu or tools on the Property bar (see the picture above). These features are similar to those in MS Word and they are not described in this manual.

When working with the Template tab, the following tools are available on the developer toolbar:

- Image
- Table
- JobInfo

To preview an HTML output in a browser, click the **Preview** button on the toolbar.

In addition, you can also add a template with a predefined structure and, if needed, edit it further. The added template substitutes any information previously entered on the Template tab. To do this, click the **Open Template** button on the toolbar.

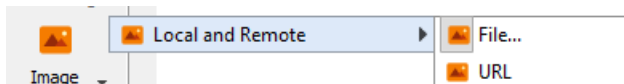


### 3.5.1.2.1.1 Insert Image Tool



Use the **Insert Image** tool to add an image rearrange. To activate the tool, click the **Image** button in the toolbar.

There are two available options for inserting an image into the output:



In addition, you can copy an image from any resource and then paste it to the output. The image is inserted as a Base64 encoded string.

### 3.5.1.2.1.2 XHTML Image Translation

An image can be inserted to the XHTML output from various sources. Depending on where the XHTML is going to be used, these sources might not be available. In these cases, Lasetnet supports translating these sources into something which is available at the time of use.

Translation is optional for some image types and required for others.

To this end, you can use the XHTML tab of the Sheet Options dialog to translate image sources from one location to another.



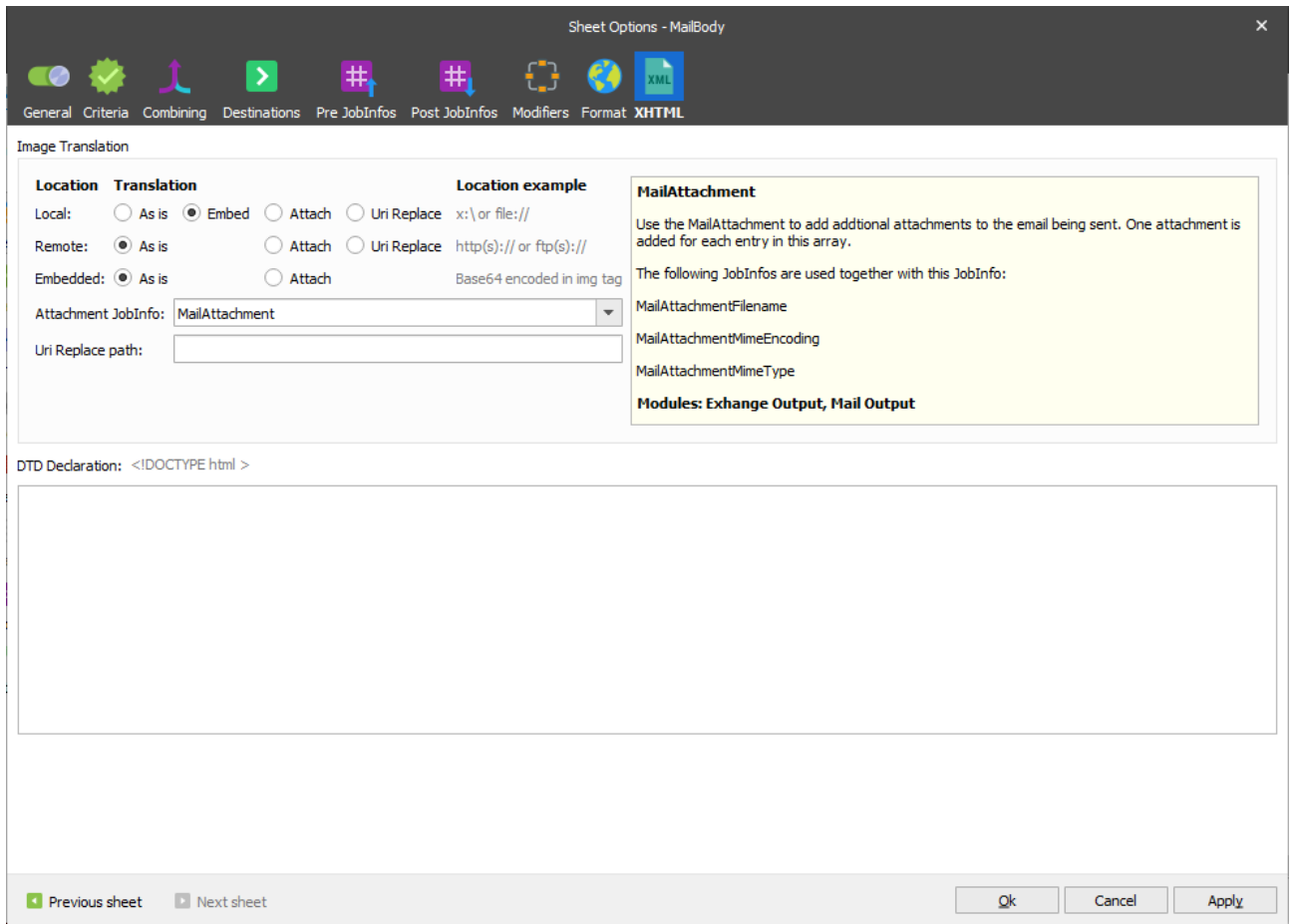


Image sources can be one of the following types:

1. Local: a local image on local drive or network.
2. Remote: a remote image on Internet or Intranet.
3. Embedded: Base64 encoded image data.

#### 3.5.1.2.1.2.1 Local

A local image can have either an absolute or relative URL.

```




```

#### 3.5.1.2.1.2.2 Remote

A remote image is identified by the http prefix.

```


```

#### 3.5.1.2.1.2.3 Embedded

An embedded image is presented in the XHTML data. Not all browsers are able to show embedded images.

```


Below is a description of possible ways of translation:

1. **As is**: allows leaving the source untouched. Basically translation is not performed.
2. **Embed**: allows embedding the image directly in the XHTML data as Base64 binary data. Please note that this can make the XHTML output very large. Moreover, embedded images are not supported by all browsers.
3. **Attach**: allows attaching the image in a JobInfo and referring to the filename of the attachment instead. Only certain bundled Lasernet modules support such attachments, namely *Exchange* and *Mail Output*, which is why the default JobInfo is *MailAttachment*. Filenames are inserted in *MailAttachmentFileName* when *MailAttachment* is used.
4. **Uri Replace**: allows translating the local path to a global path when a local image, which also resides on a server, is used.



→



#### 3.5.1.2.1.3 *Insert Table Tool*



Use the **Insert Table** tool to add a table to the output. To activate the tool, click the **Table** button in the toolbar.

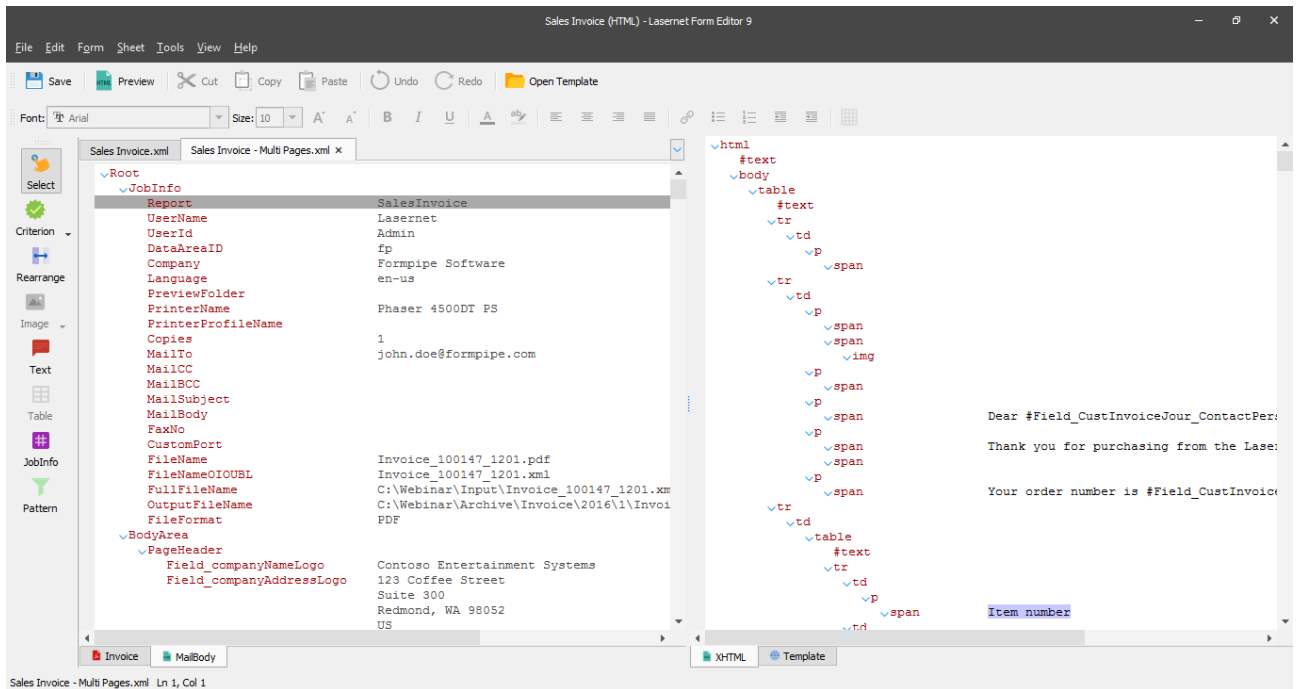
#### 3.5.1.2.1.4 *JobInfo Tool*

It is possible to add JobInfo(s) to the output via the Template tab. To this end, just type a JobInfo's name and then put the hash symbol (#) before and after the JobInfo's name.

You can also add a JobInfo when adding a link, by inserting it in any field. In this case, the JobInfo's value is automatically shown.

#### 3.5.1.2.2 *XHTML Tab*

The XHTML tab is designed to edit content of the XHTML output in the HTML source editing mode.



When working with the XHTML tab, the following tools are available on the developer toolbar:

- Rearrange (for more details, see 3.3.6.2)
- Text (for more details, see 3.3.6.6)
- JobInfo (for more details, see 3.3.6.8)
- Pattern (for more details, see 3.3.8.3)

In addition, you can add, modify or delete nodes as necessary to reach your final output format. Working with the XHTML output, it is possible to define the node value as a preformatted text. XHTML is the only output format for which this option is available. To this end, select the **Preformatted text** check box in the **Node Template Properties** dialog. As a result, whitespace is preserved for such text by the browser. The text only wraps on line breaks.

For more information about controls of the **Node Template Properties** dialog, see 3.5.1.1.1.2 Templates.

Edits made to the HTML code have priority over edits on the **Template** tab in case of substitution (the former substitutes the latter).

To preview the rendered HTML code of an HTML output, click the **Preview** button on the toolbar.

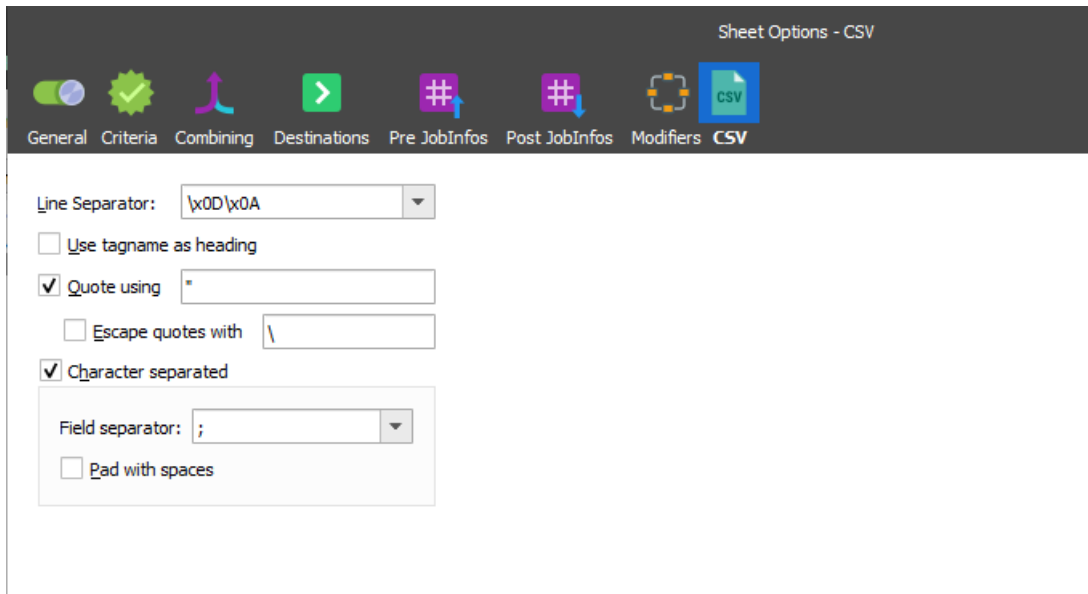
### 3.5.1.3 CSV

Is used for creating an output in CSV format. The Forms Engine retrieves data from the input grab file, processes it, maps it to fields in the output and automatically converts the result to CSV.

It is possible to view the final result of the output without processing the job via the Lasernet Server. To do this, click the **Preview** button on the toolbar.

#### 3.5.1.3.1 CSV Settings

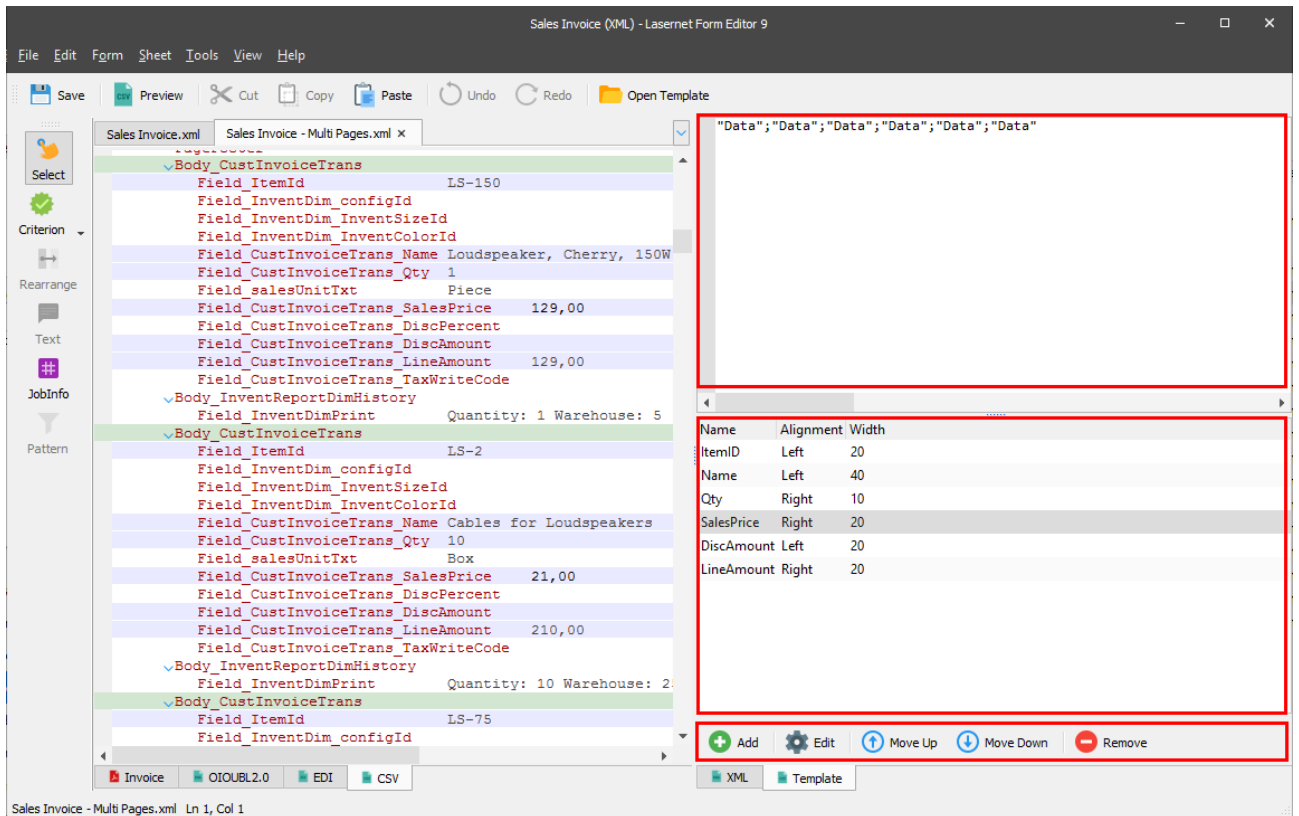
The CSV Output has the following settings:



|                               |                                                                                                                                                                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Line Separator</b>         | Determines what line separator to use between lines in the text file.                                                                                                                                                                      |
| <b>Use tagname as heading</b> | If selected, a header line is created where names of the tags are used for naming the columns (see below).                                                                                                                                 |
| <b>Quote using</b>            | If selected, a quote character should be specified, usually “, which are put around the text of each column. When using quotes, the column width must be adjusted accordingly since the quotes are not counted in the width of the column. |
| <b>Escape quotes with</b>     | If selected, the text for each column is examined for the character entered in <i>Quote using</i> , so it escapes with the character here.                                                                                                 |
| <b>Character separated</b>    | If selected, character-separated files are produced. Enter the column separator, e.g.: comma, semicolon, colon or tab.                                                                                                                     |
| <b>Pad with spaces</b>        | When selected, the text in the columns are padded with spaces until they fill out the width determined by the xml file.                                                                                                                    |

### 3.5.1.3.2 *Template Tab*

The Template tab is designed to create, edit and at the same time preview the structure of the CSV output. The lower part of the tab is used for fields; the upper part is used for previewing the final result. Buttons located at the bottom of the tab are for adding fields and managing them.



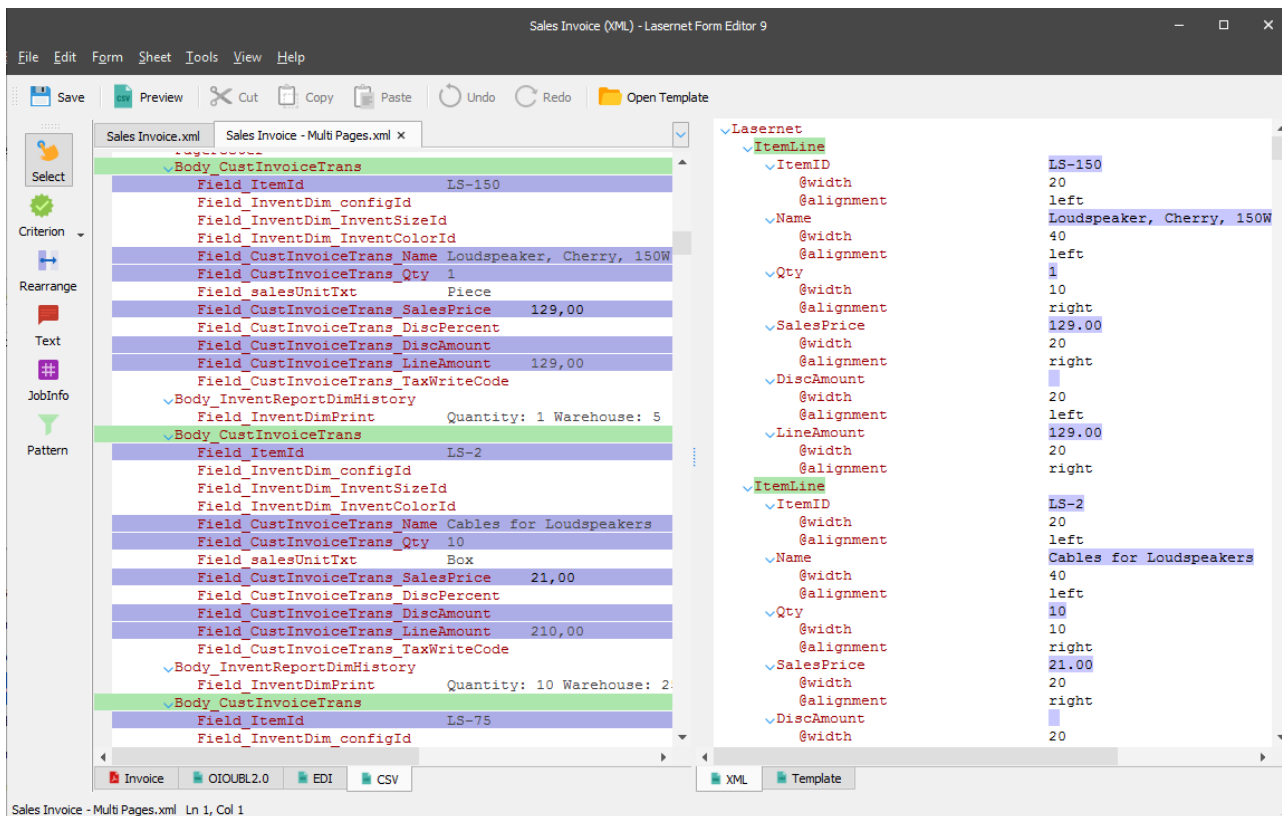
A field has the following parameters:

- **Name:**
- **Width:** each field contains the column data. For column separated files, the width attribute is used for setting the width of the column. The default value is 20.
- **Alignment:** the alignment attribute can be set to either left or right. By default, left is assumed.

To preview a CSV output in a separate window, click the **Preview** button on the toolbar.

### 3.5.1.3.3 XML Tab

The XML tab is designed to edit content of the XML output in the XML source editing mode.



When working with the XML tab, the following tools are available on the developer toolbar:

- Rearrange (for more details, see 3.3.6.2)
- Text (for more details, see 3.3.6.6)
- JobInfo (for more details, see 3.3.6.8)
- Pattern (for more details, see 3.3.8.3)

To preview the XML output, click the **Preview** button on the toolbar.

### 3.5.1.4 EDI

Is used for creating an output in the EDI format. The Forms Engine retrieves data from the input grab file, processes it, maps it to fields in the output and automatically converts the result to EDI.

It is possible to view the final result of the output without processing the job via the Lasetnet Server. To do this, click the **Preview** button on the toolbar.

#### 3.5.1.4.1 EDI Settings

The EDI Output has the following settings:

Sheet Options - EDI

General Criteria Combining Destinations Pre JobInfos Post JobInfos Modifiers **EDI**

EDI (UNA) Characters

Escape character: 
 Group separator: 
 Value separator: 
 End segment character: 
 Decimal character: 
 Insert Newlines:  (CR+LF)
 Count UNT:

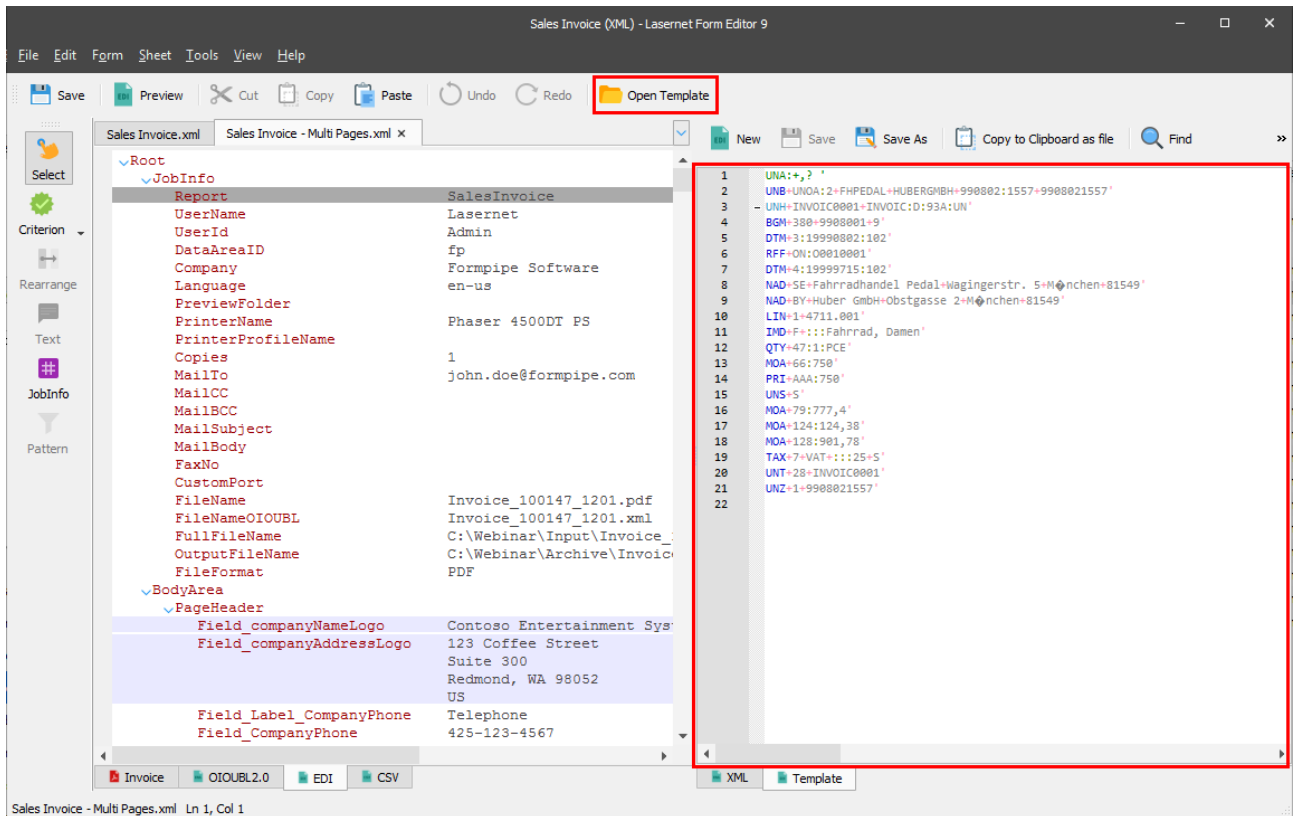
For successful conversion, you can set up **EDI (UNA) characters** for escaping, grouping, separations, decimal characters and segments which are included in the (EDI) file. UNA characters are typically located in the first line of the EDI data.

Activate **Insert Newline** to add a newline after each segment or deactivate to create an EDI file without newlines.

Activate **Count UNT** to calculate and include the number of segments in the EDI file. It is necessary for the UNT segment to already be present in the message trailer.

#### 3.5.1.4.2 *Template Tab*

The Template tab is designed to create, edit and preview the structure of the EDI output. Here you can create a template by yourself or open an existing one by clicking the **Open Template** button on the toolbar and then edit it if needed.

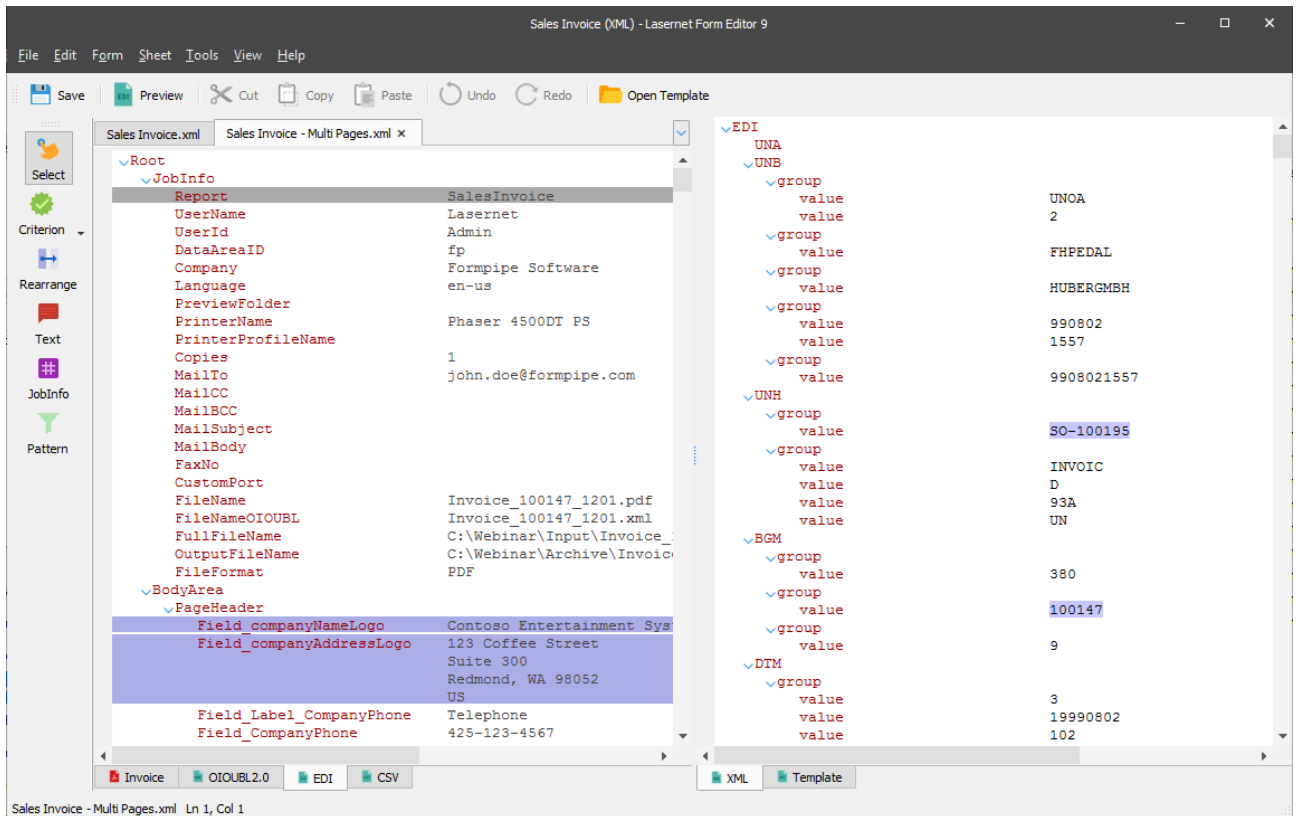


To preview the EDI output in a separate window, click the **Preview** button on the toolbar.

### 3.5.1.4.3 XML Tab

The XML tab is designed to edit content of the EDI output in the XML source editing mode.





When working with the XML tab, the following tools functions are available on the developer toolbar:

- Rearrange (for more details, see 3.3.6.2)
- Text (for more details, see 3.3.6.6)
- JobInfo (for more details, see 3.3.6.8)
- Pattern (for more details, see 3.3.8.3)

To preview the EDI output, click the **Preview** button on the toolbar.

### 3.5.1.5 DataSet

Is used for creating an output in the XML format with embedded XML Schema Definition (XSD). The Forms Engine retrieves data from the input grab file, processes it and maps it to fields in the output.

It is possible to view the final result of the output without processing the job via the Lasetnet Server. To do this, click the **Preview** button on the toolbar.

The DataSet output file should be used as an input for the [Rich Text](#) and [Spreadsheet](#) output formats.

#### 3.5.1.5.1 Creating Output

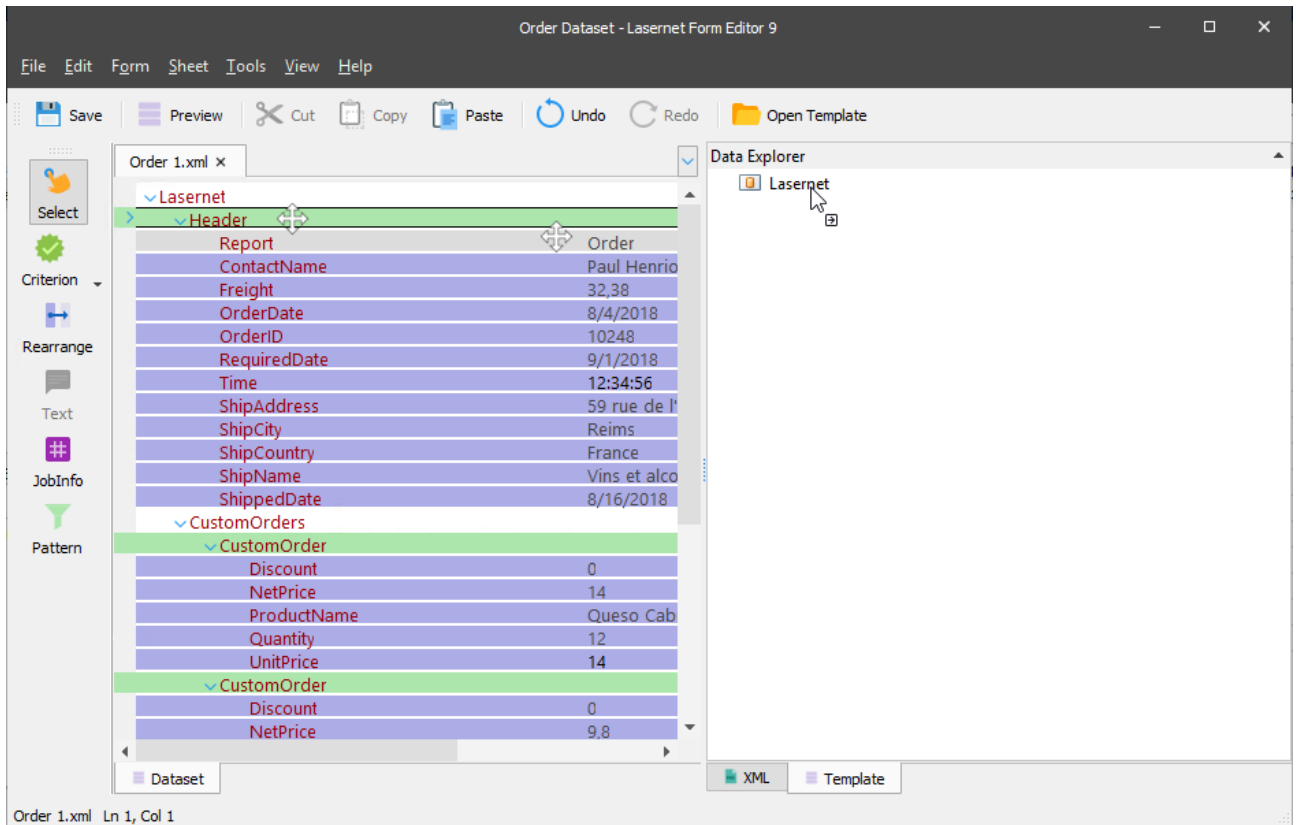
To create DataSet output, follow the steps listed below:

1. Open a [grab](#) file.
2. Add [pattern\(s\)](#).
3. Add [rearranges](#), if required.
4. Set a format category for numeric, date or time values for a node using the **Format Category** drop-down list from the **Format** tab, on the rearrange properties dialog (for more details, see 3.3.6.2 *Rearrange Tool*).
5. Create an output structure (for more details, see 3.5.1.5.1.1 *Creating Output Structure*).

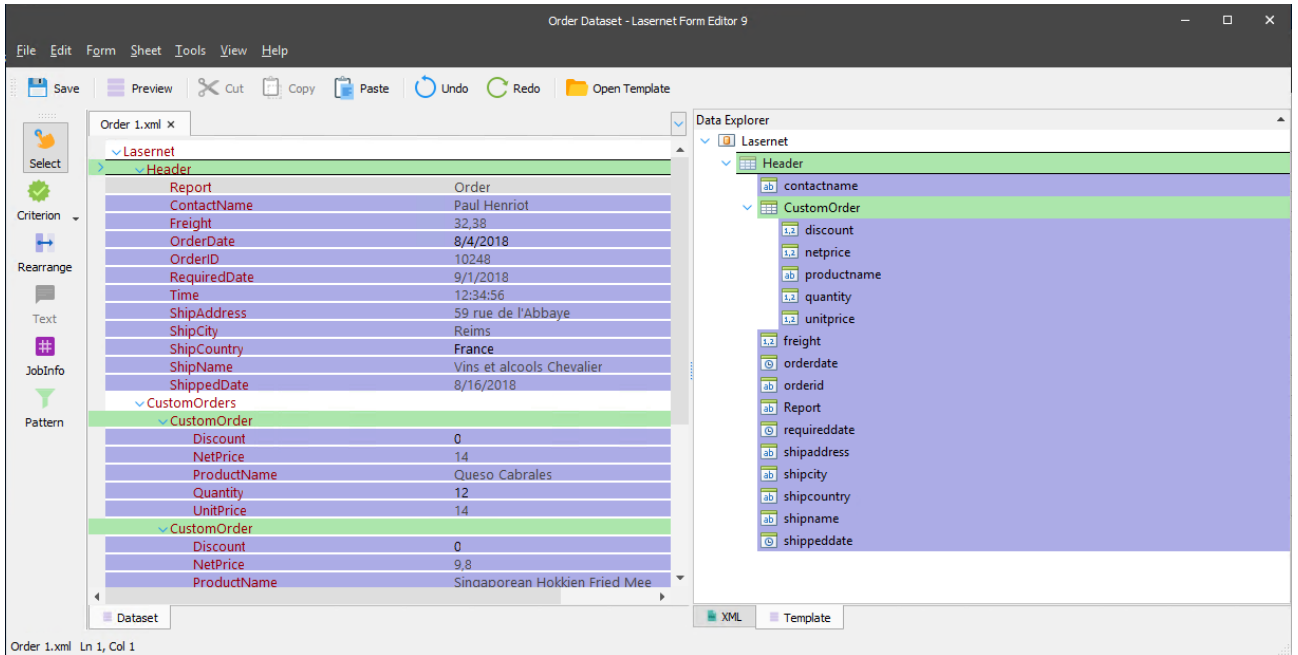
### 3.5.1.5.1.1 Creating Output Structure

To create an output structure, follow the steps listed below:

1. In the output, switch to the **Template** tab.
2. Drag the required element from an available input on the left-hand panel of Lasernet Form Editor to the **Template** tab of an available output on the right-hand panel of Lasetnet Form Editor.

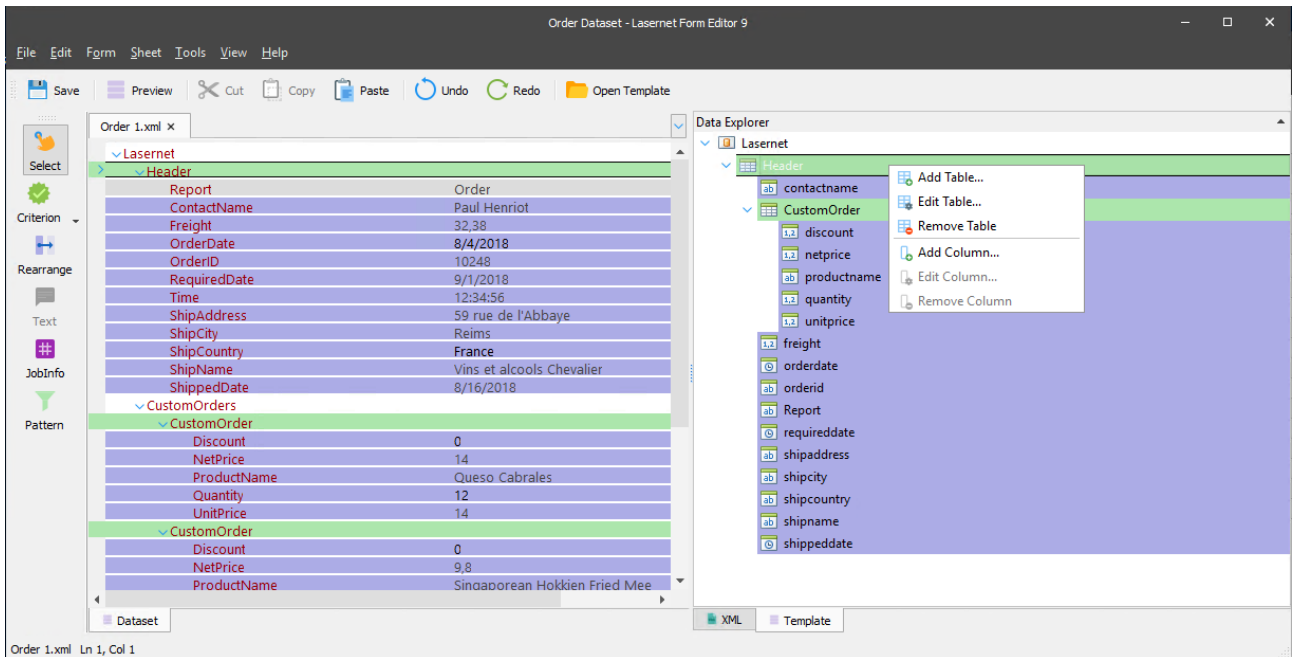


3. When you release the button, the structure is added and displayed on the **Template** tab.



4. Afterwards, you can edit the output structure, if required. To do this, you can add/edit a table or a table column:

- On the **Template** tab, right-click a node element of the structure and then click **Add Table...** or **Edit Table...** from the context menu. In the dialog box that appears, type a table name or change the existing one, and then click **OK**.
- To add/edit a column, right-click the table and then click **Add Column.../Edit Column...** on the context menu. In the dialog box that appears, type a column name or change the existing one, select a data type for the column and then click **OK**.



- To connect a certain element of the output structure with a required pattern or rearrange added in the input, switch to the **XML** tab. From the **XML** tab of an output, you can customize or expand the structure you have added in your output.

#### 3.5.1.5.1.2 Open Template

Once you have created an output structure, you can save it for later by using the Preview functionality (on the toolbar, click the **Preview** button, and then click the **Save** button indicating the file name and the file location) and use it as a template when creating a new DataSet output. To this end, click the **Open Template** button on the toolbar, select and open a file you have previously saved as a template.

#### 3.5.1.5.2 Sheet Properties for DataSet Forms

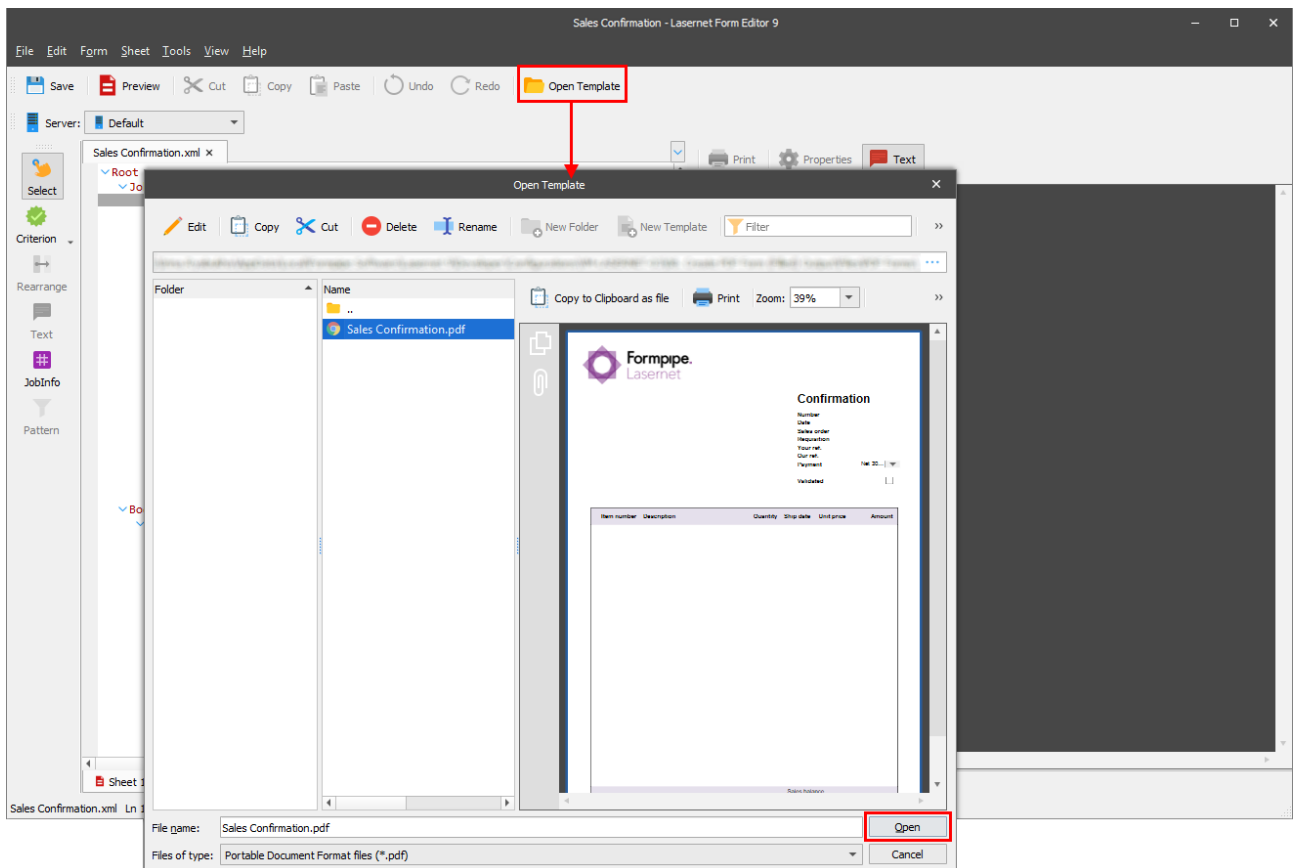
The DataSet output format has the same properties as XML does, except for [DTD Declaration](#). This property is not available for the DataSet output format (for more details, see [3.5.1.1.1.1 Sheet Properties for XML Forms](#)).

#### 3.5.1.6 PDF Form (Filled)

PDF files may contain interactive elements such as text boxes, check boxes, combo boxes, etc. The PDF Form (Filled) output is used for manipulating such PDF files. This output is designed to work with interactive elements filling them with data taken from the input.

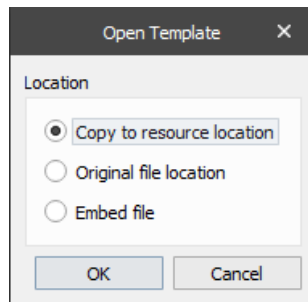
To create an output of the PDF Form (Filled) format, follow the steps listed below:

- In the sheet of the PDF Form (Filled) format, which is already open, click the **Open Template** button and select a template containing fields (interactive elements).

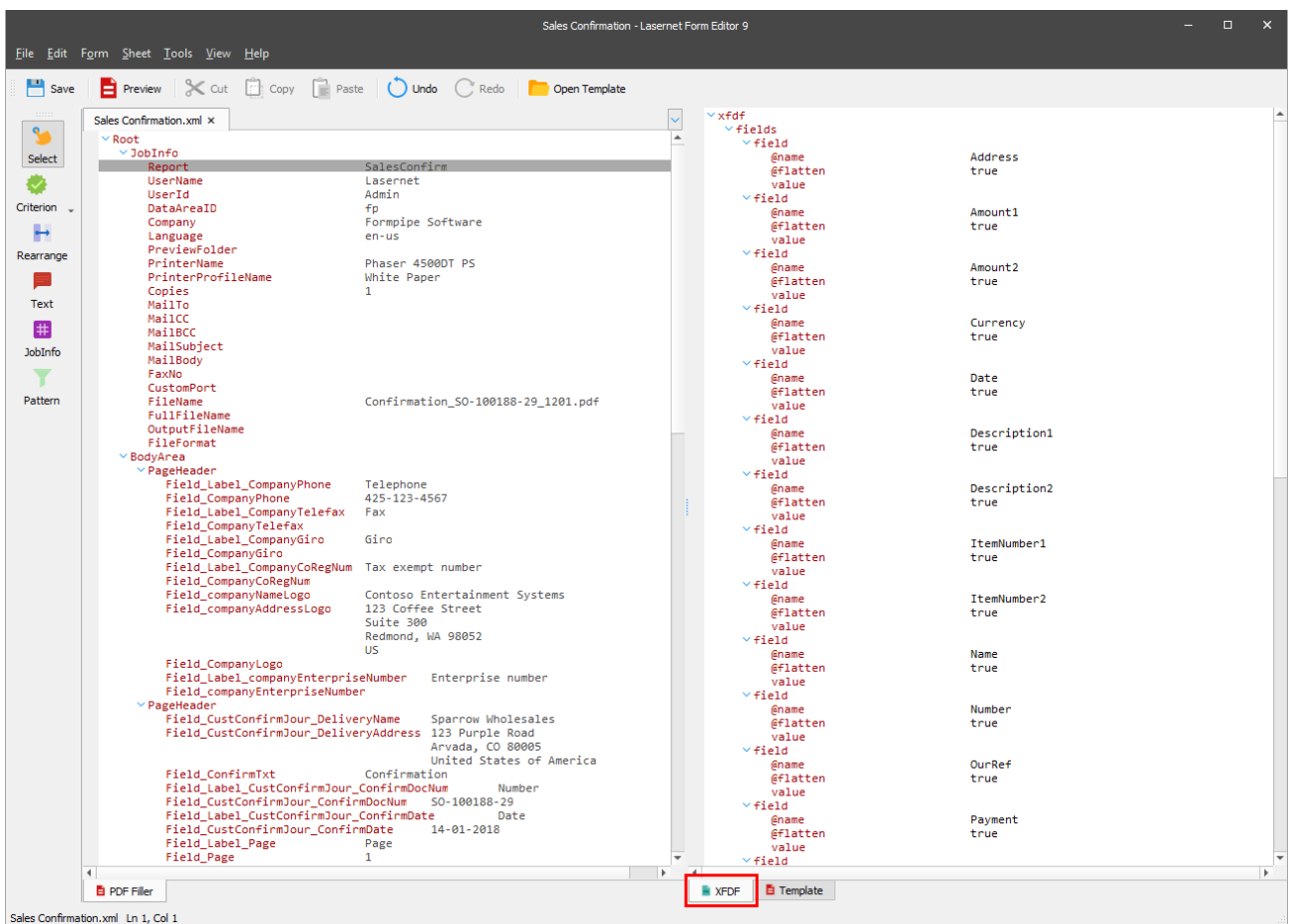


- Once you click the **Open** button in the **Open Template** dialog box, you are prompted to select whether to embed a file into the form or just to refer to that file. You can choose among the following options:

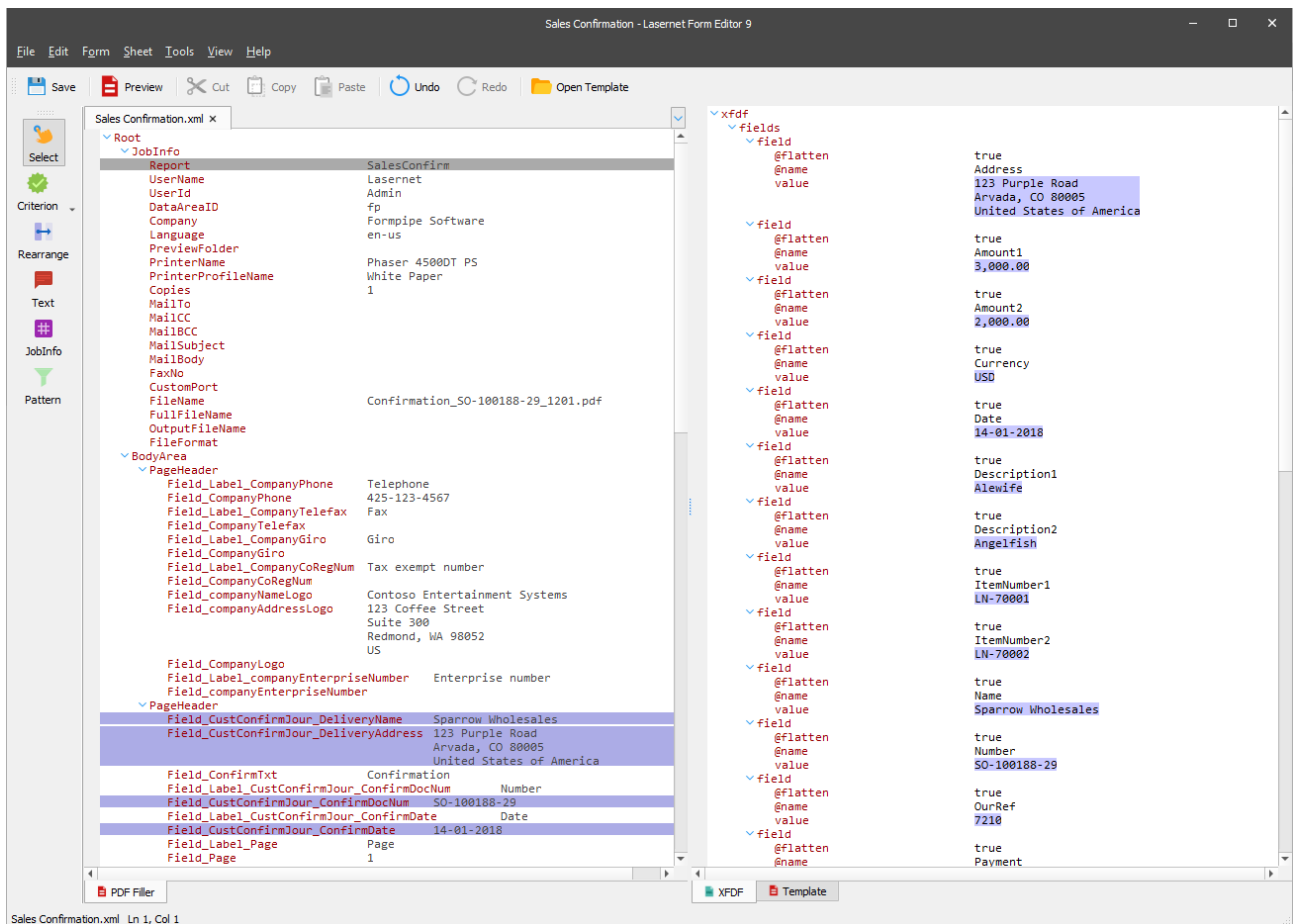
- **Copy to resource location:** allows copying a file you select to the **PDF Forms** folder of the Configuration Resources location. As a result, the form refers to the file which has been copied to the resource location.
- **Original file location:** allows the form referring to the selected file directly on disk, making it possible to change that file on disk without having to open a configuration, load a new template, as well as commit and deploy. If any changes to the template file imply adding interactive elements which are supposed to be used in Lasernet, the template shall be re-open.
- **Embed file:** allows using a template embedded with the form.



3. Once you open a template, switch to the **XDF** tab. Based on the template, an XDF (XML Forms Data Format) structure is generated here.

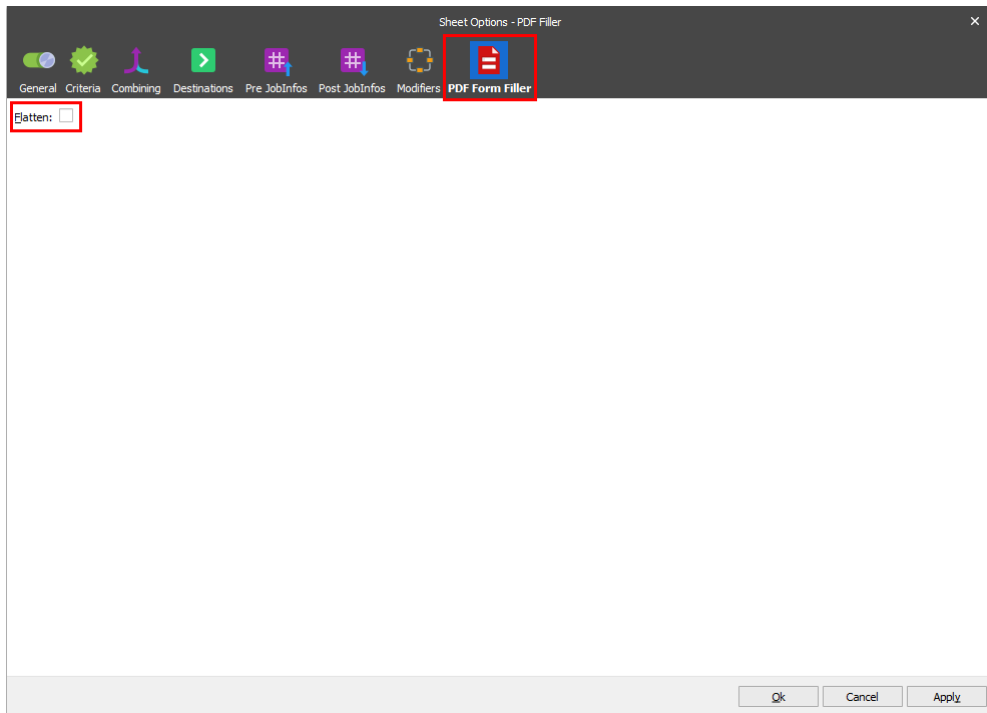


4. Add rearranges to the input, and then drag them to the output to fill the fields (interactive elements), as needed.



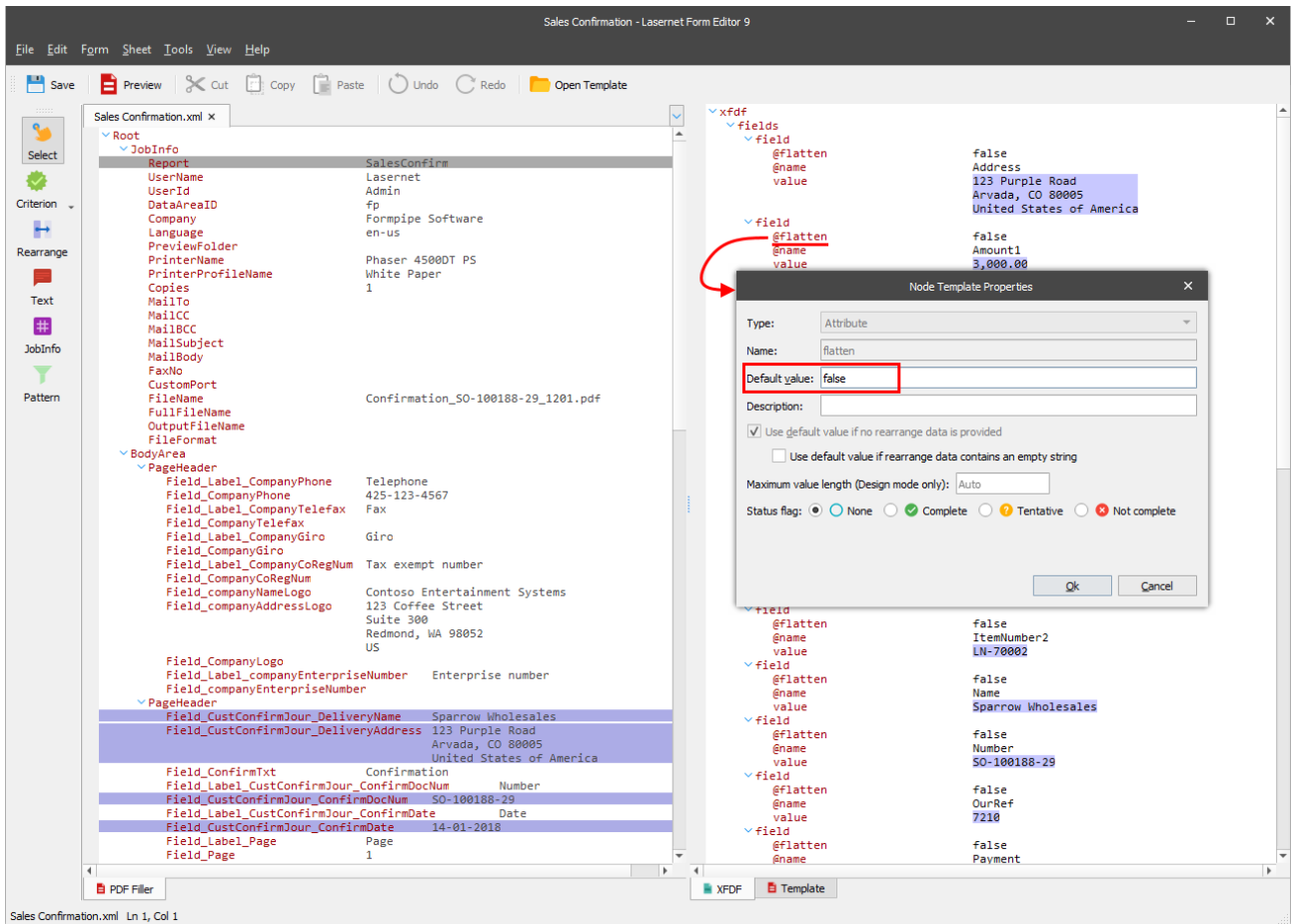
By default, the output is added as flatten meaning that a document being generated contains fields filled with corresponding object values, but it is locked for changing those values. However, you can disable the **Flatten** option to make interactive fields editable. To this end, follow the steps listed below:

5. Open the **Sheet Options** dialog on the **PDF Form Filler** tab, and then clear the **Flatten** check box. This enables manipulating the form fields.



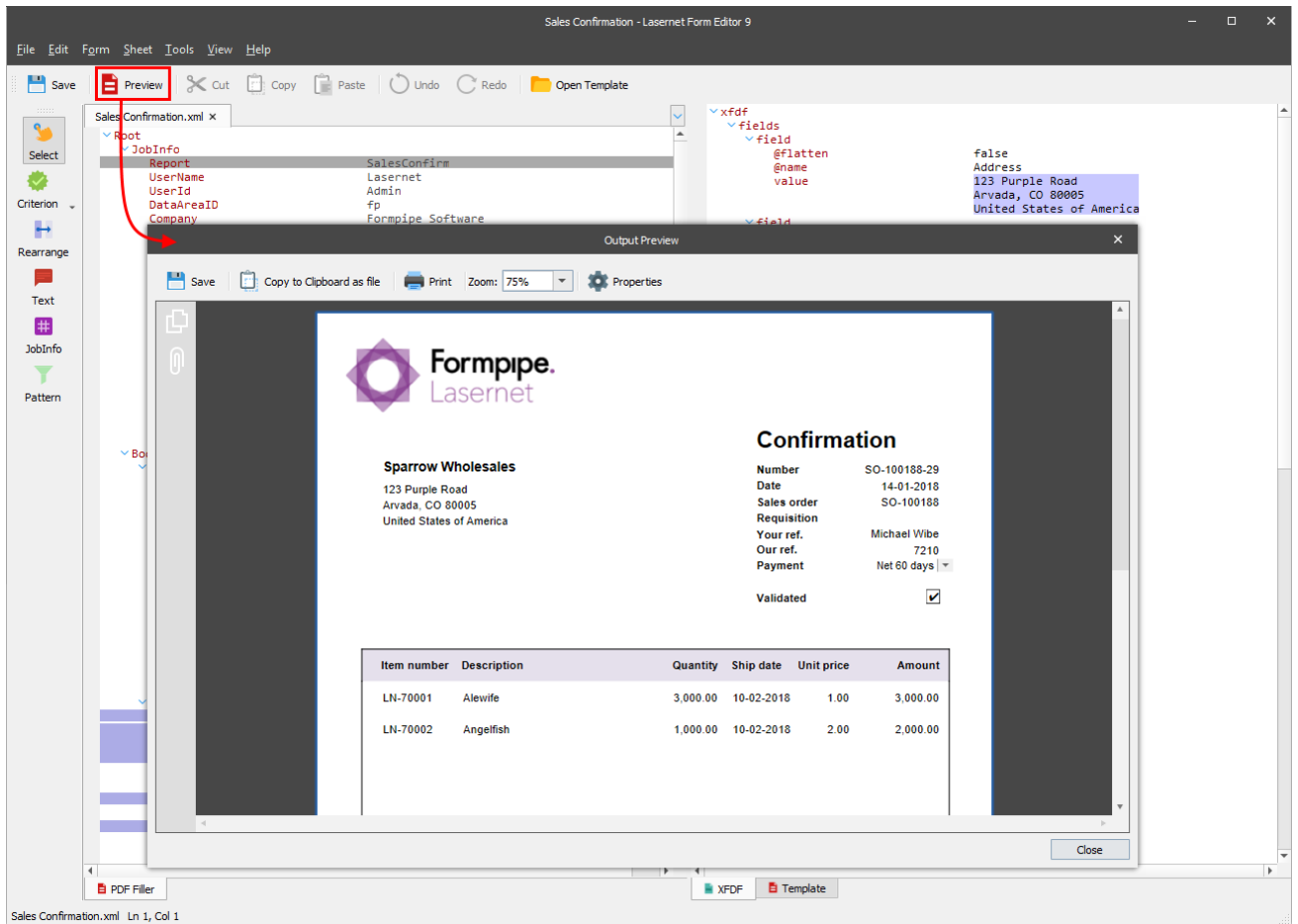
**Note:** You can lock or "flatten" the PDF document after completing the fields to prevent, for example, other users from manipulating or editing the information. To this end, select the **Flatten** check box.

6. Additionally, you shall change the default value of the **Flatten** attribute for that form field which you want to unlock for manipulating. To this end, open the node properties for editing, and then specify **false** as the default value.



- Once you are done, you can preview the final version of your document containing fields with filled values by clicking the **Preview** button.





## 3.5.2 Enhanced Metafile

### 3.5.2.1 EMF

For more details about the format, see [3.3 Text to EMF Forms](#).

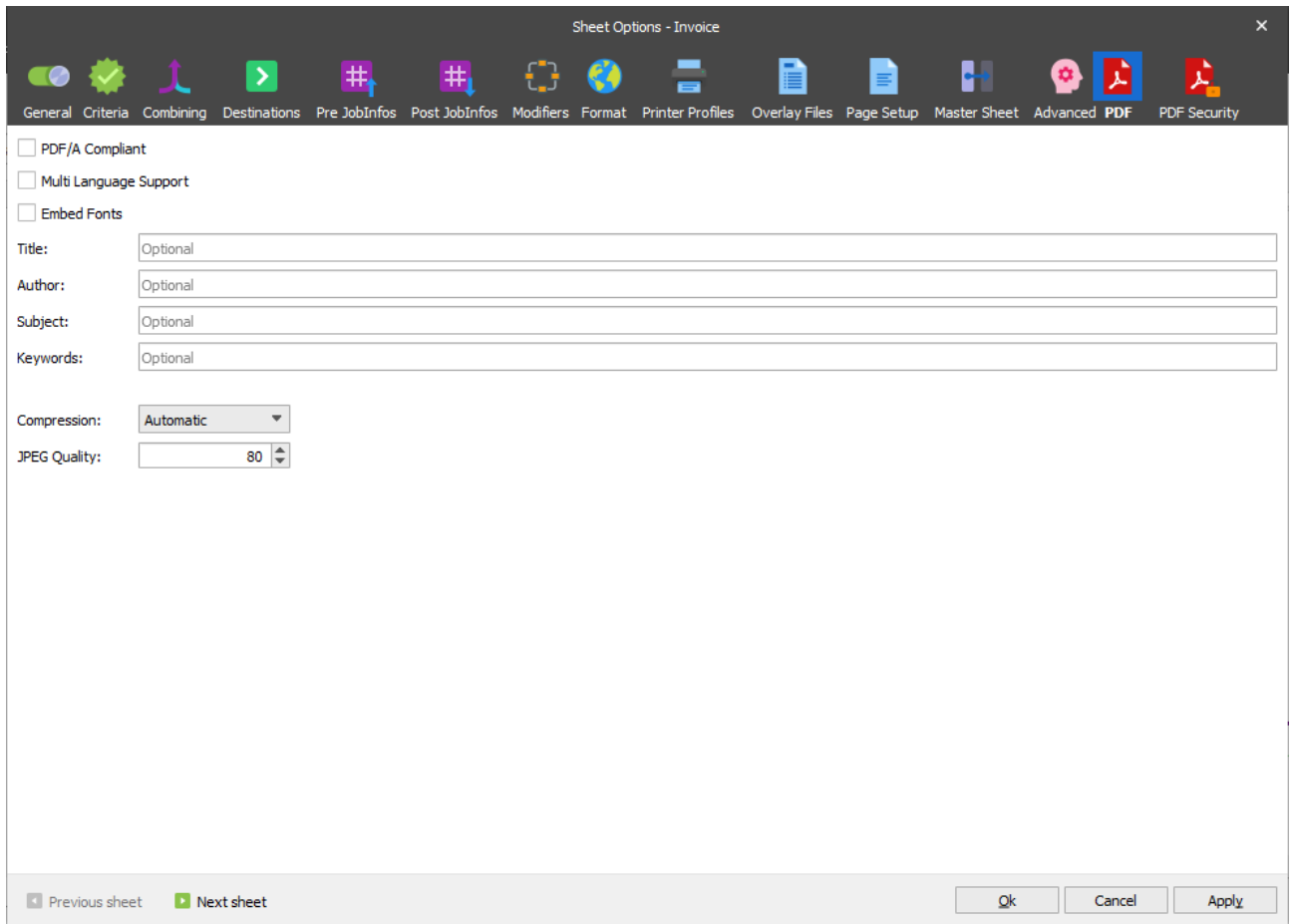
### 3.5.2.2 PDF

Is used for converting EMF data to PDF format. The Forms Engine retrieves data from the input grab file, processes it and maps it to fields in the output file and automatically converts the result to PDF.

It is possible to view the final result of the output without processing the job via the Lasernet Server. To do this, click the **Preview** button on the toolbar.

#### 3.5.2.2.1 PDF Settings

The PDF Output has the following settings:



#### 3.5.2.2.1.1 PDF/A Compliant

PDF/A is a PDF format typically used for the long-term archiving of electronic documents and is based on the PDF reference version 1.4. Fonts and color profiles will be embedded in the PDF file.

#### 3.5.2.2.1.2 Multi Language Support

By default, the PDF format includes 7-bit ASCII characters only. Multi language support must be activated for supporting and embedding additional characters and fonts.

#### 3.5.2.2.1.3 Embed Fonts

Determines what fonts are embedded in the PDF file. Font embedding is used to assure correct output on other client computers.

#### 3.5.2.2.1.4 Title, Author, Subject and keywords

Descriptions to be included in the document properties of the PDF-file.

#### 3.5.2.2.1.5 Image Compression

Three options and a JPEG quality value (default 80%) are available for compressing images:

**Automatic** Prefers indexed and uses JPEG if image contains more than 256 colors.

**Indexed** Creates indexed images (using a palette) if image contains no more than 256 colors - otherwise store as bitmap. The setting gives the best image quality, but the file size may increase.

**JPEG** Compresses all images using JPEG. The setting compromises image quality in favor of smaller file sizes.

#### 3.5.2.2.1.6 PDF/A-3 - tunneling attachment(s) into PDF

The PDF output has a support for PDF/A-3 (ISO 19005-3:2012, PDF1.7). It allows embedding the previous sheets (such as XML, CSV, EDI, PDF, TIFF, XHTML) into documents that conform to PDF/A standards, plus additional PDF/A schemas in a Metadata section.

Embedding files in a PDF requires a set of JobInfos per file to be defined before PDF creation.

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PDFEmbedFilename</b>     | Defines the name of the embedded file inside the PDF.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>PDFEmbedRelationship</b> | <p>This field must set to either <i>Source</i>, <i>Data</i>, <i>Alternative</i> or <i>Supplement</i>:<br/>The standard describes which value to use, depending on the embedded files relationship to the PDF:</p> <p><b>Source</b><br/>Use if the file specification is the original source material for the associated content.</p> <p><b>Data</b><br/>Use if the file specification represents information used to derive a visual presentation – such as for a table or a graph.</p> <p><b>Alternative</b><br/>Use if the file specification is an alternative representation of content, for example audio.</p> <p><b>Supplement</b><br/>Use if the file specification represents a supplemental representation of the original source or data that may be more easily consumable (e.g., A MathML version of an equation).<br/>If no PDFEmbedRelationship is defined, or it is set to an invalid value, it defaults to <i>Supplement</i>.</p> |
| <b>PDFEmbedDescription</b>  | This JobInfo contains a description of the embedded file. The field is optional.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>PDFEmbedSubType</b>      | This JobInfo must contain the MIME type of the embedded file. If not specified it will default to <i>application/octet-stream</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>PDFEmbedData</b>         | This JobInfo must contain the (binary) content of the file to embed into the PDF.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

Any number of files can be embedded by creating an array of the JobInfos described above. The files are embedded at the PDF document level (it is currently not possible to embed files per page).

It is possible to embed files when using regular PDFs and PDF/As. The PDF version will change from 1.4 to 1.7 when embedding files. If PDF/A is enabled, Lasernet will generate PDF/A-3B instead of PDF/A-1B.

#### Embedding PDF/A Extension Schemas and additional metadata elements to a PDF/A.

Additional PDF/A Extension Schemas and additional XMP Metadata can be embedded in the PDF. Both features are required by certain formats such as **ZUGFeRD**, used for electronic invoicing in Germany.

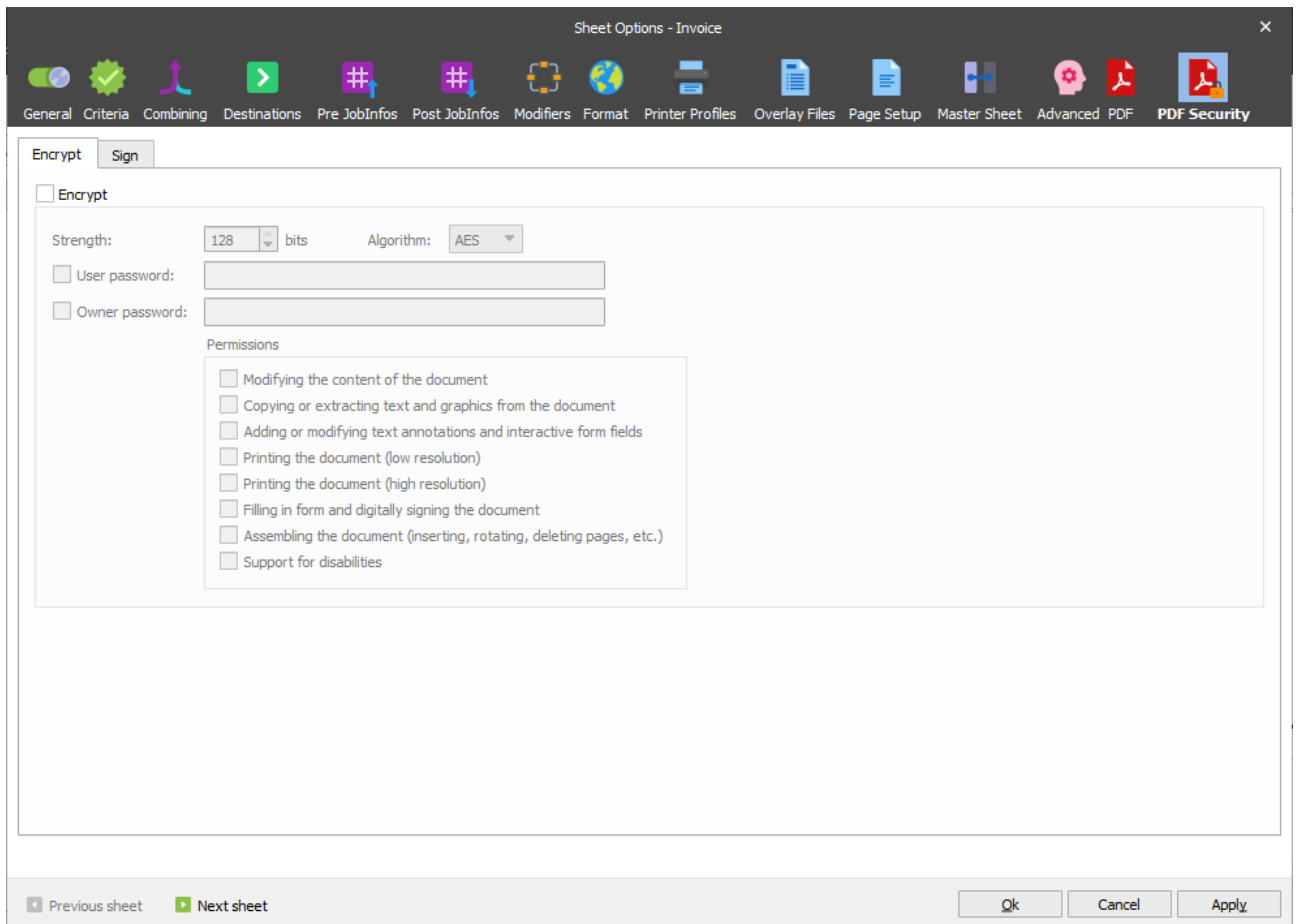
The **PDFEmbedPDFExtensionSchema** JobInfo is used for PDF/A Extension Schemas. Any number of schemas can be embedded by creating an array. Each entry must be valid XML.

The **PDFEmbedAdditionalMetadataElement JobInfo** allows you to embed any number of additional XML metadata elements in the PDF by creating an array. Each entry must be valid XML.

XMP Metadata (and PDF/A extension schemas) are only included in the PDF when using PDF/A.

### 3.5.2.2.2 PDF Security

The PDF security options allow you to set PDF protection to prevent others from changing content, printing, copying content, adding notes or modifying form fields, signing, etc.



#### 3.5.2.2.2.1 Encrypt

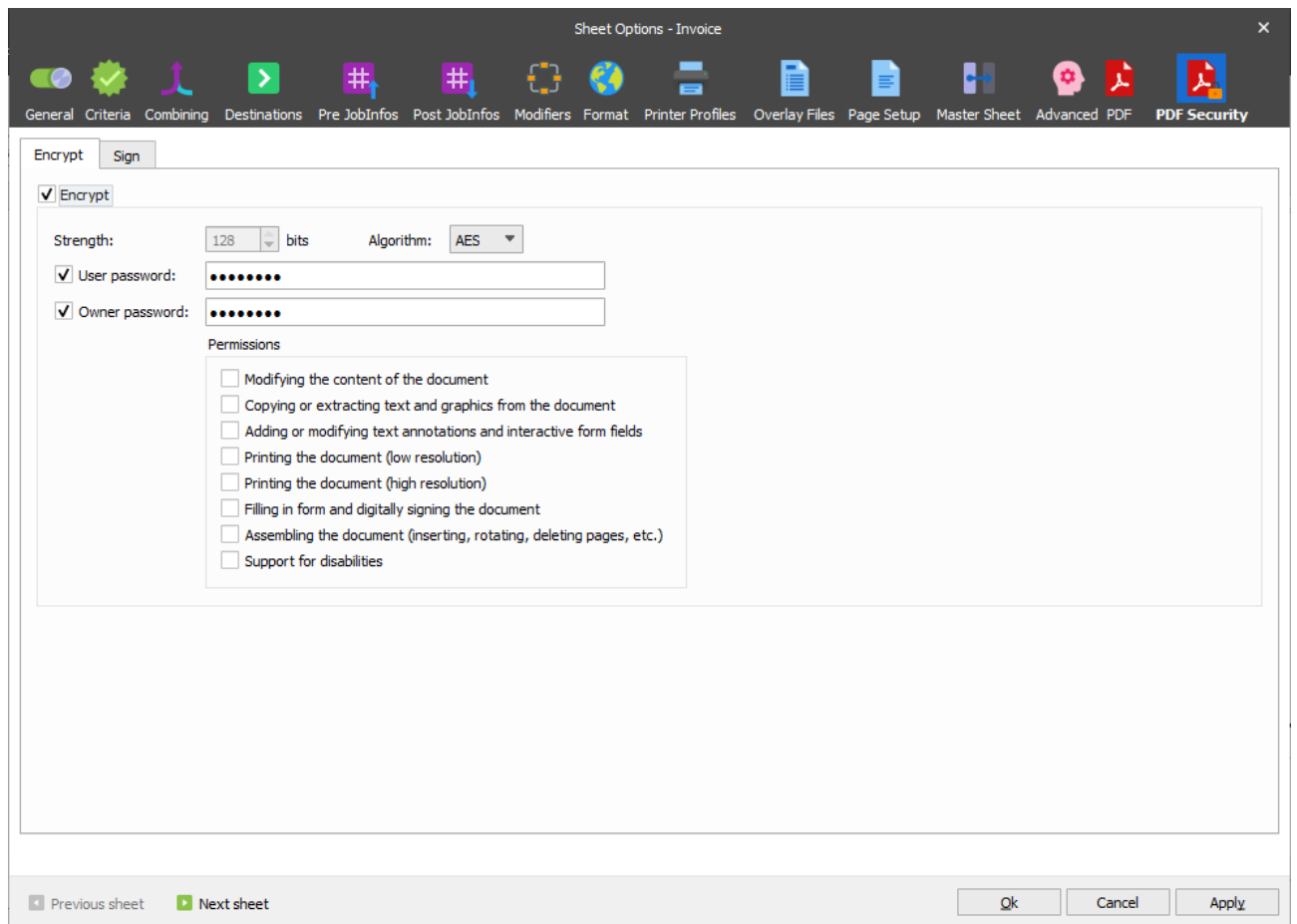
PDF encryption allows you to secure the contents of your PDF with a password. It also allows you to define which operations will be allowed by the user reading the PDF.

The user and owner password created for the PDF document can be overwritten at runtime by setting the JobInfos:

PDFOwnerPassword

PDFUserPassword

**Please note that encryption is not allowed when working with PDF/A (ISO 19005-1-2005).**



## Algorithm choice

The following algorithms can be used for encrypting the PDF. Each algorithm has its own advantages and disadvantages which should be taken into consideration when deciding which one to use.

**RC4** The RC4 algorithm is supported from PDF 1.1 (Acrobat Reader 2.0). It supports key lengths ranging from 40 bits to 128 bits in 8 bit increments. Use of key lengths longer than 40 bits is supported from PDF 1.4 (Acrobat Reader 5.0). Be aware that the RC4 algorithm has been proven to have vulnerabilities that make it less secure than the AES algorithm. It should only be used for backward compatibility with earlier versions of Acrobat Reader.

**AES** The AES algorithm is a newer algorithm that provides better security than RC4. AES encryption was introduced in PDF 1.6 (Acrobat Reader 7.0) and only supports a key length of 128 bits. This is the recommended algorithm when you do not require backward compatibility with older versions of Acrobat Reader.

## Passwords

Two passwords are defined when enabling encryption. The user password is the password that must be supplied to the recipient of the PDF. When opening the PDF with the user password, the restrictions defined in the document permissions are enforced.

Opening the PDF with the owner password overrides any document restrictions. You will also be able to change the operations allowed by the recipient.

If the user password and the owner password are the same, the user password has priority which means you will not be able to circumvent the restrictions defined in the document permissions.

## Permissions

You can define which actions will be allowed when opening the encrypted PDF with the user password. This allows you to prevent the document from being modified, printed or copied from.

### 3.5.2.2.2.2 Sign

By signing your PDF using a digital certificate, you enable the recipient to verify the origin and the integrity of the document, so that they can be certain the document came from your organization and has not been changed since it was created. Digital signatures are supported since PDF 1.3 (Acrobat Reader 4.0) and are allowed in PDF/A.

Sheet Options - Invoice

General Criteria Combining Destinations Pre JobInfos Post JobInfos Modifiers Format Printer Profiles Overlay Files Page Setup Master Sheet Advanced PDF PDF Security

Encrypt Sign

Sign

Certificate Store: Current User

Certificate:  Select

SHA1 Fingerprint:  View

Embed Revocation Info:  OCSP - RFC 2560, CRL - RFC 3280

Reason:

Location:

Stroke color: Choose Fill color: Choose Sample Text

Time stamp

URL:

Username:

Password:

PKCS#11 Interface

Interface DLL:

Slot#: 1

Password:

Previous sheet Next sheet Ok Cancel Apply

## Certificate

To sign the PDF using a digital signature, you must have a valid and appropriate certificate installed for the user account that the Lasernet service is running under.

## Reason

The Reason field allows you to enter a text string that will be displayed when viewing the signed PDF. This provides a visual representation of the signature to the user. You can select text and background colour for the text field.

## Location

The physical location where the signature is added, for example "Zurich, Switzerland". If this property is set to an empty string no entry is created.

## Timestamp

By signing your PDF with a timestamp provided by a trusted source, you can make sure that the PDF will still show a valid signature after your certificate expires. If you choose not to timestamp your PDF, the recipient will receive a warning that the certificate used to sign the PDF has expired.

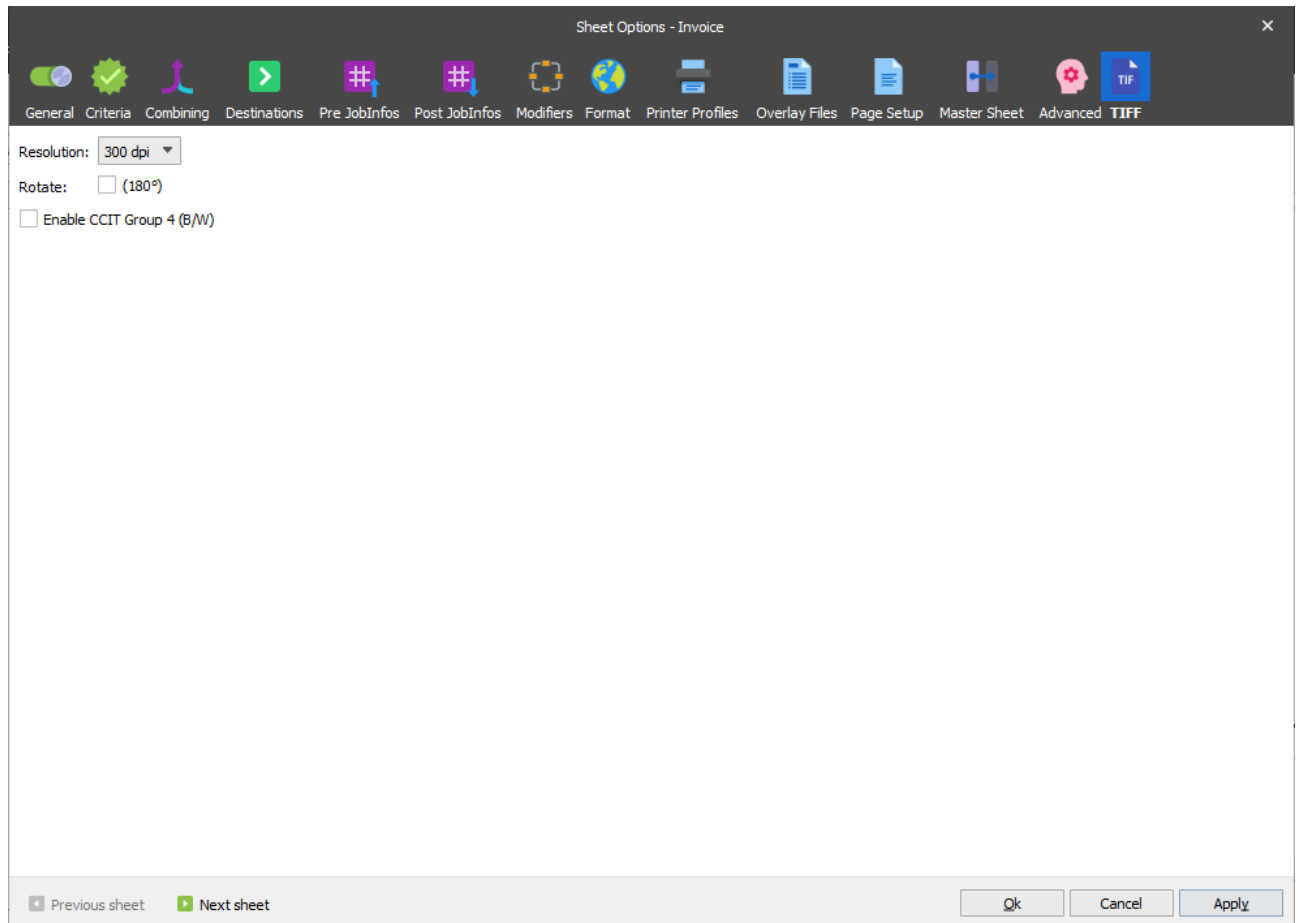
### 3.5.2.3 TIFF

Is used for converting EMF data to TIFF format. The Forms Engine retrieves data from the input grab file, processes it and maps it to fields in the output file and automatically converts the result to TIFF.

It is possible to view the final result of the output without processing the job via the Lasernet Server. To do this, click the **Preview** button on the toolbar.

#### Settings

The TIFF Output has the following settings:



#### 3.5.2.3.1 Resolution

The resolution can be set to 96 DPI, 192 DPI, 300 DPI or 600 DPI.

96 DPI or 192 DPI are used for most fax systems to define the fax quality.

300 DPI or 600 DPI are mostly used to store documents in archive systems.

#### 3.5.2.3.2 Rotate

Activate 180 degrees if your fax system requires that the TIFF document is rotated before transmission.

#### 3.5.2.3.3 Enable CCIT Group 4 (B/W)

CCITT Group 4 compression is a lossless method of image compression used in Group 4 fax machines. It is only used for black and white image.

### 3.5.3 JavaScript Object Notation

#### 3.5.3.1 JSON

##### 3.5.3.1.1 Creating Output

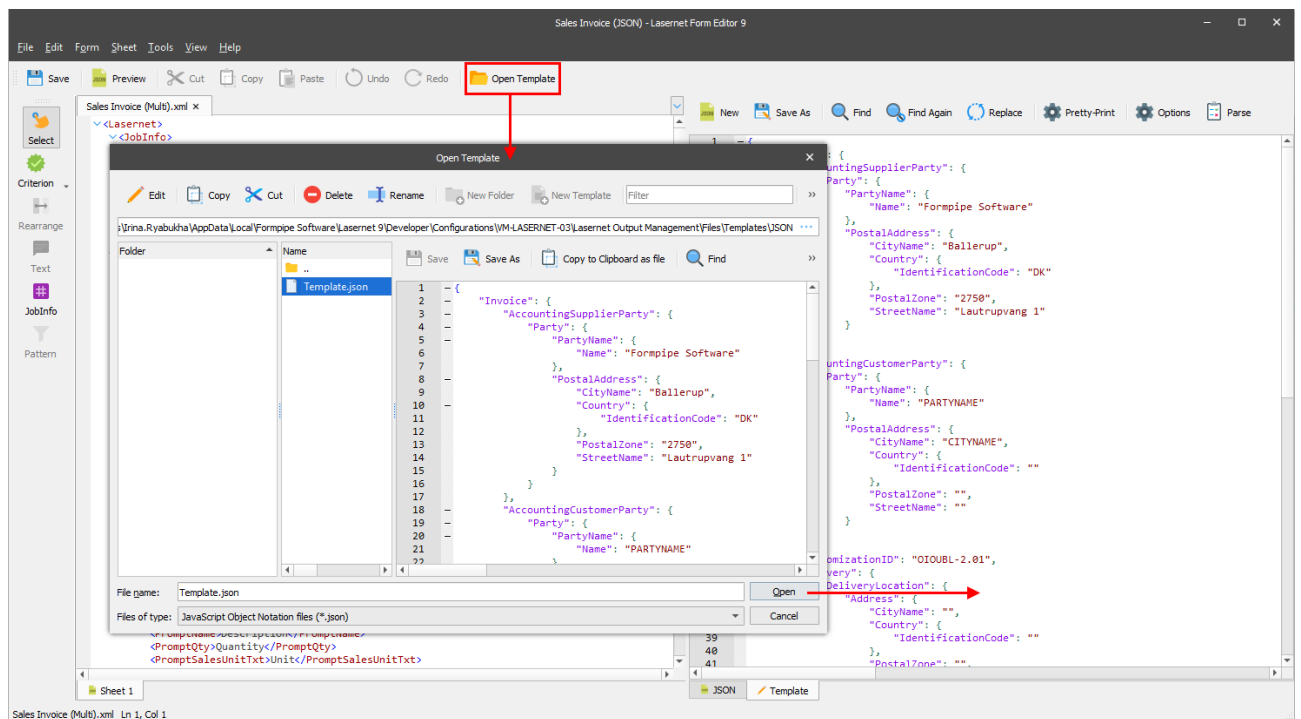
Creating JSON output is similar to the process of creating [XML](#) output, but there are a few differences which are described below. For more details about creating the XML output, see chapter 3.5.1.1 XML.

You can create the JSON output structure from a scratch. You can do it either on the **JSON** tab or on the **Template** tab.

Use the **JSON** tab to create a structure by adding nodes. This is done by right-clicking a JSON tag and selecting the **Add Child Node** or **Add Sibling Node** menu depending on the hierarchy that you wish to design.

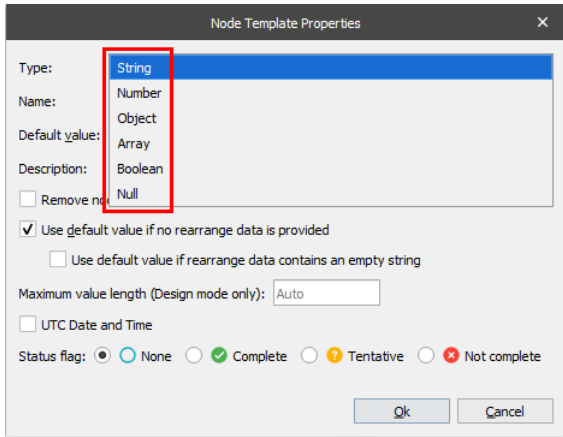
Otherwise, you can create a structure using a plain text representation of the JSON output file directly on the **Template** tab.

You can then import a pre-defined JSON template to your Lasernet project in order to achieve significant time savings in the design phase. To do this, click the **Open Template** button on the toolbar.

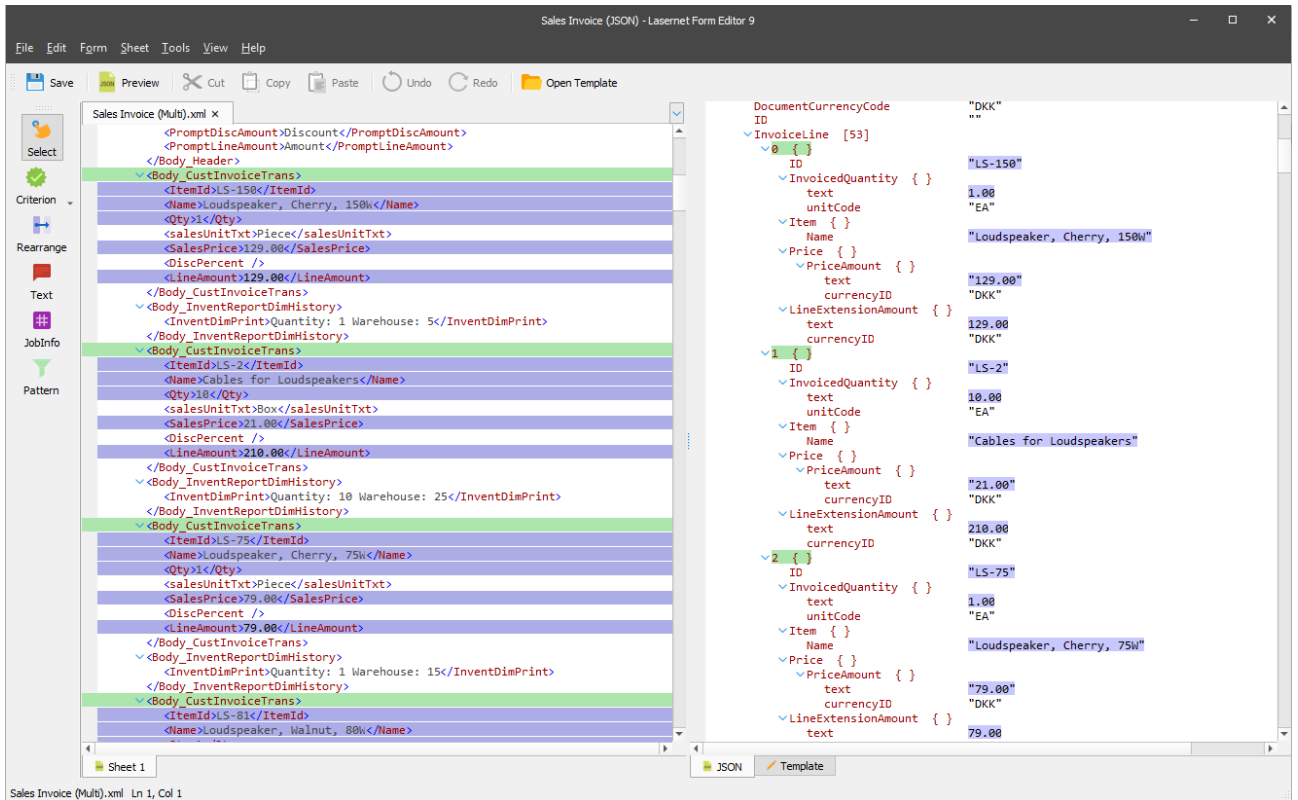


The difference between the XML and JSON output lies in the type of nodes. Below, you can find a list of node types for the JSON output:



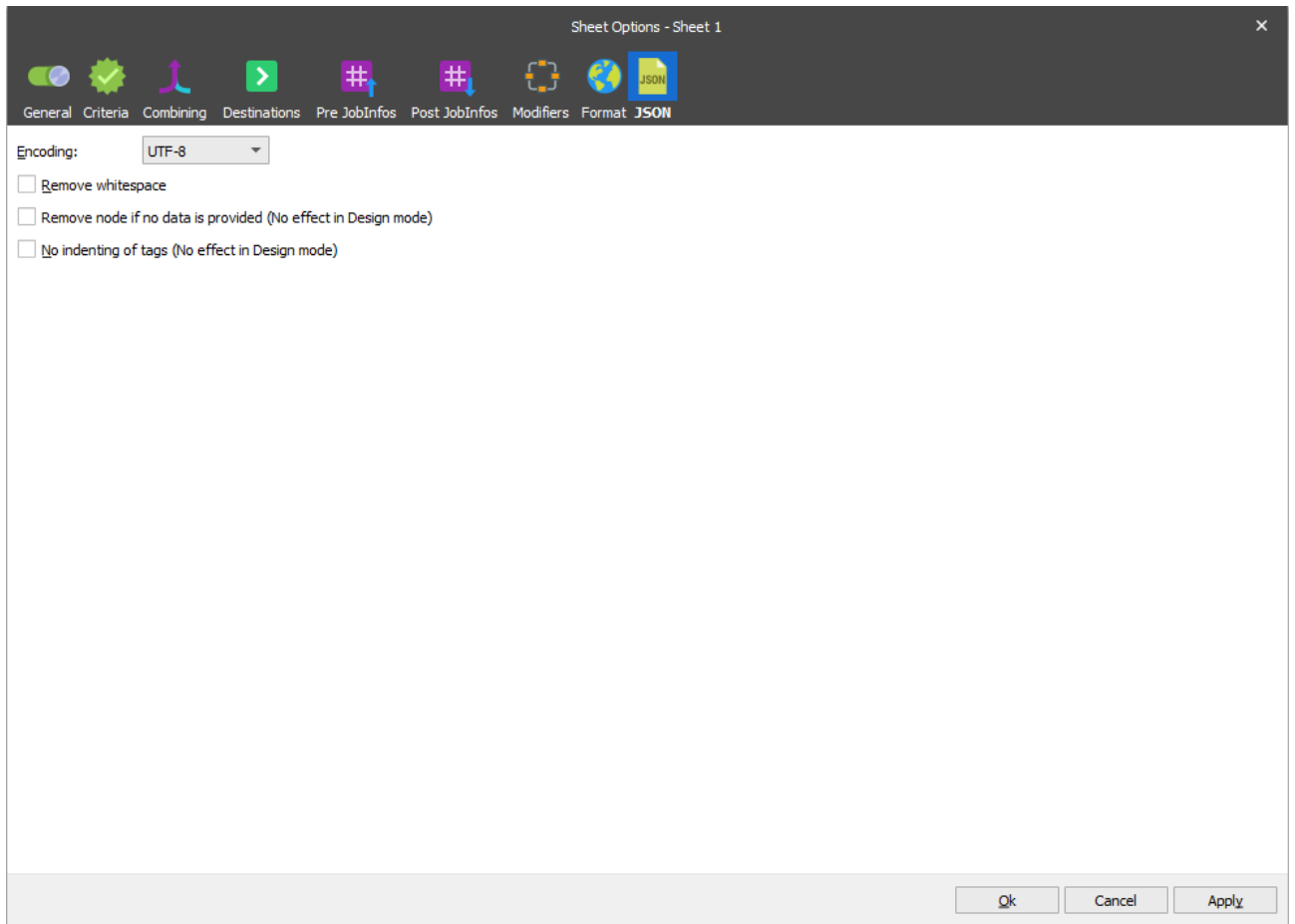


Unlike XML output, JSON format *does not allow* you to have two or more nodes with the same name on the same hierarchy level. If you want to add a multi-line pattern to the JSON output, you must add it to an element of an array.



### 3.5.3.1.2 Sheet Properties for JSON Forms

The JSON output format properties can be accessed via the **JSON** tab of the **Sheet Options** dialog. Right-click the sheet tab, then click **Sheet Option** on the context menu.



As both XML and JSON outputs have some sheet properties in common, see section 3.5.1.1.1 *Sheet Properties for XML Forms* for more details about those properties.

### 3.5.4 Rich Text

#### 3.5.4.1 DOCX

Is used for creating an output in the DOCX format. The Forms Engine retrieves data from the input file, processes it and adds defined fields to the output along with static elements and text added by a user while modifying the output in the Editor.

As an input, the DataSet format is always used. For more information about the DataSet format, see 3.5.1.5 *DataSet*.

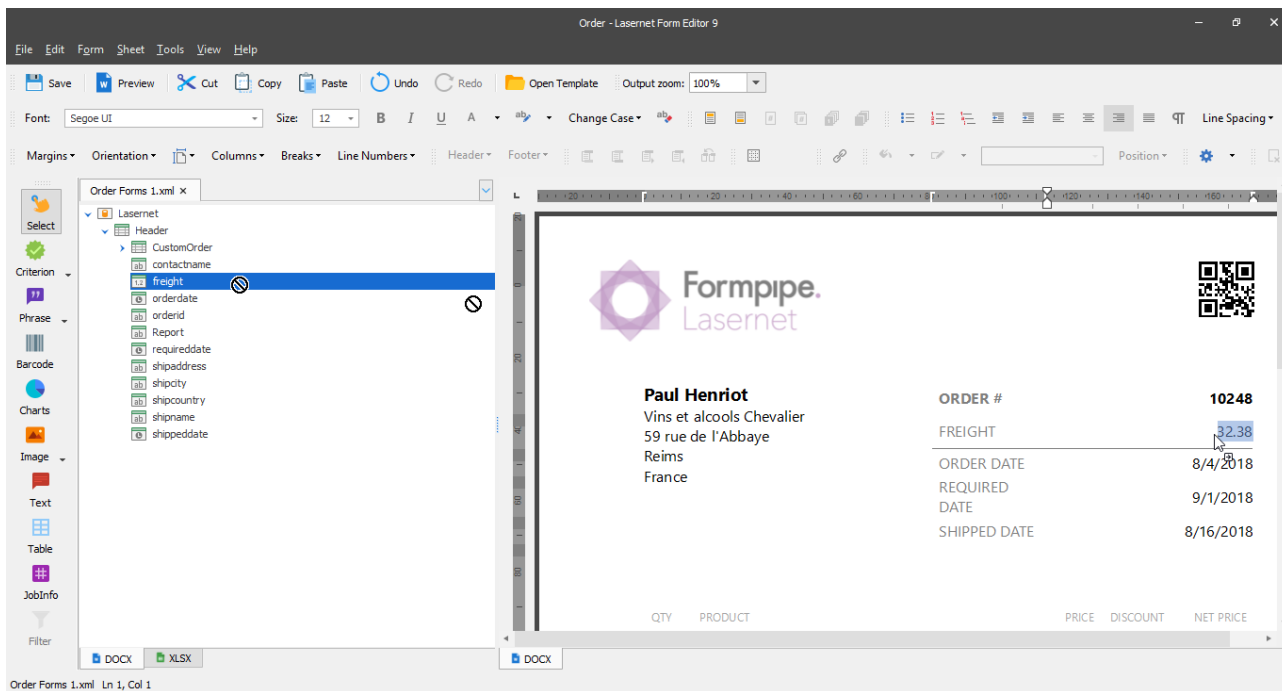
Lasernet uses a Microsoft Word style interface for designing DOCX formatted output, therefore only the features that are unique to Lasernet are described in this document.

##### 3.5.4.1.1 Creating Output

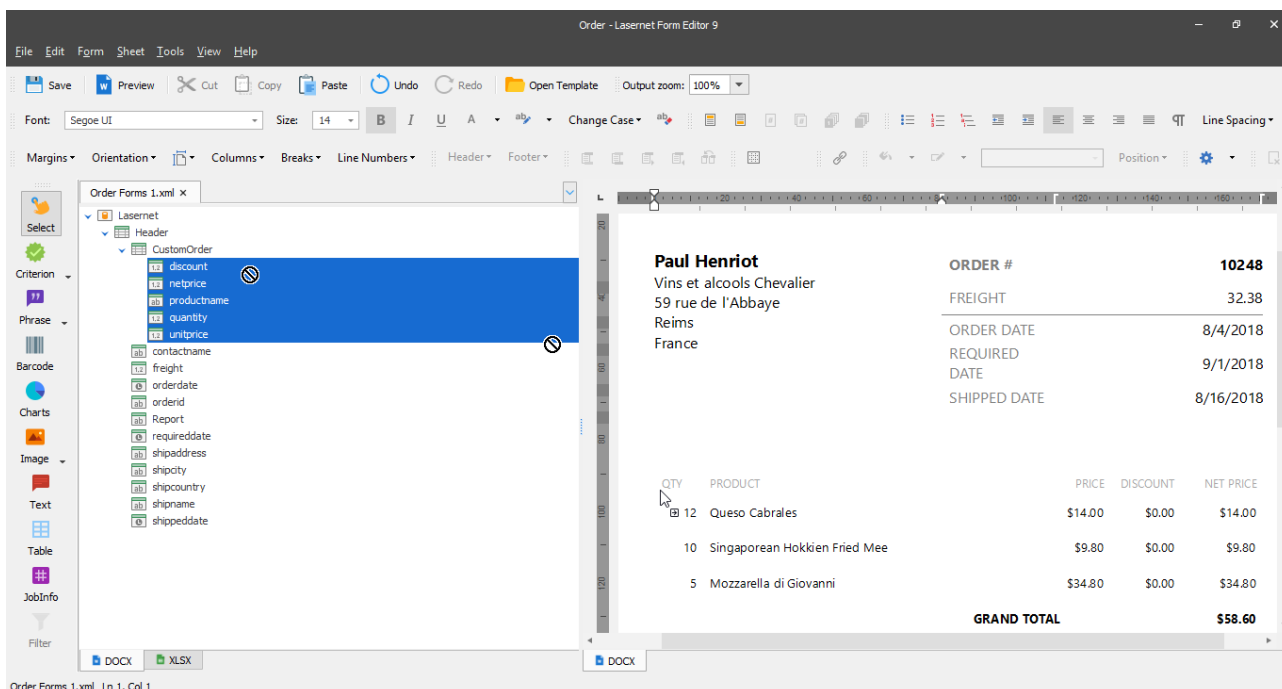
To create DOCX formatted output, follow the steps listed below:

1. Open a [grab](#) file. DataSet is specified as the input format by default.
2. Add required fields to the output from the input by dragging them.

We recommend that you drag the fields from the table where the **Use for Mail Merge** option is selected, first. These fields are then inserted as inline text.



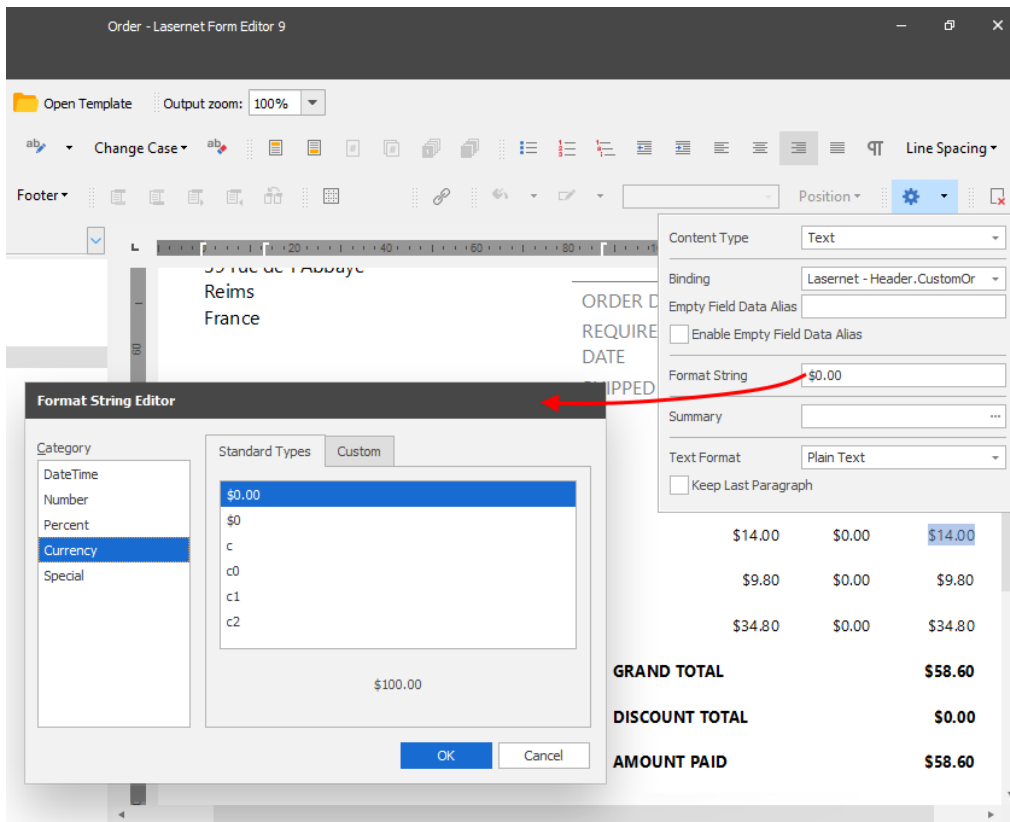
You can then drag fields belonging to the nested table. To do this, select the required fields on the nested table by holding down the Ctrl key while clicking your mouse button on each field you want to add. Those fields are then added to the output in the order you have selected them.



In addition, you can also drag the whole nested table.

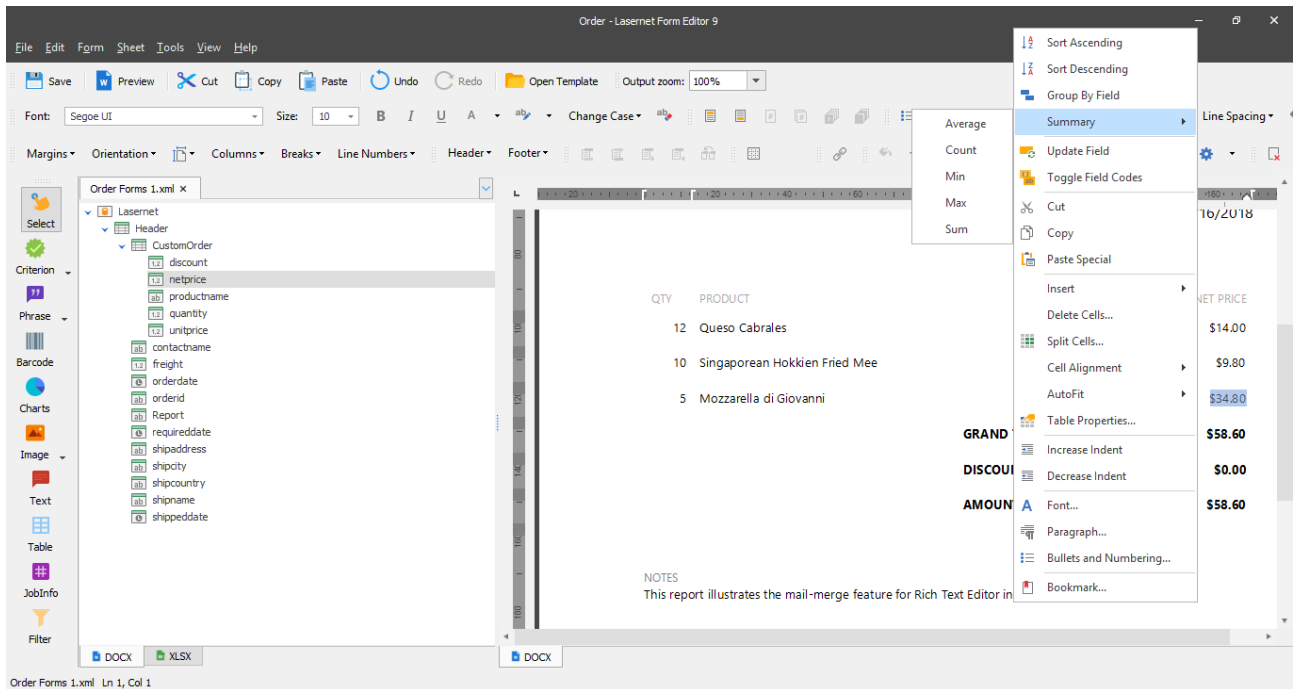
3. Afterwards, you can edit the output if required, by adding a static text or by editing table you have added for example.
4. You can also define or re-define settings for fields you have added to the output using the **Properties** button on the **Field** bar.

To do this, highlight the item (field) for which you want to edit the properties, the **Properties** button then becomes available on the **Field** bar. Click it and then specify the required properties.

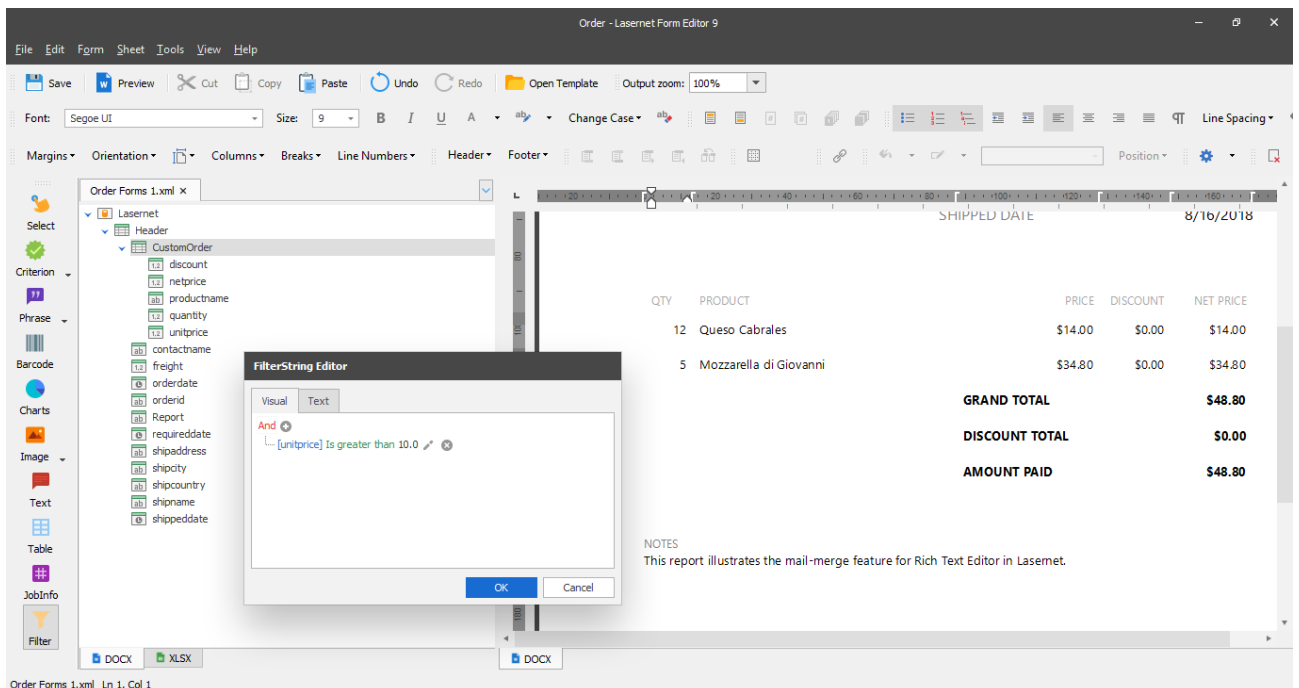


5. In addition, you can apply the following actions to items in the output:
  - calculate summary;

To do this, select a value in the column for which you want to calculate, for example, a sum of available values, right-click it and then select the required Summary type command on the context menu.



- sort data;
  - group data by.
6. You can also filter data in the table added to the output.



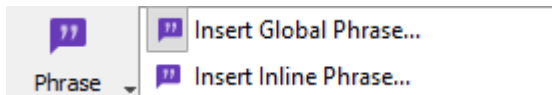
### 3.5.4.1.2 Phrases

The **Phrase** tool is designed to add specific content as a stand-alone entity to a document or a report, for example, when creating several reports for different departments, which all need to include the same piece of content. Rather than adding the piece to each report separately, you can create a global phrase instead, add the content to the phrase and then insert the phrase into each report. An example of the type of content used with Phrases, would be a company's legal information, Term & Conditions, etc.

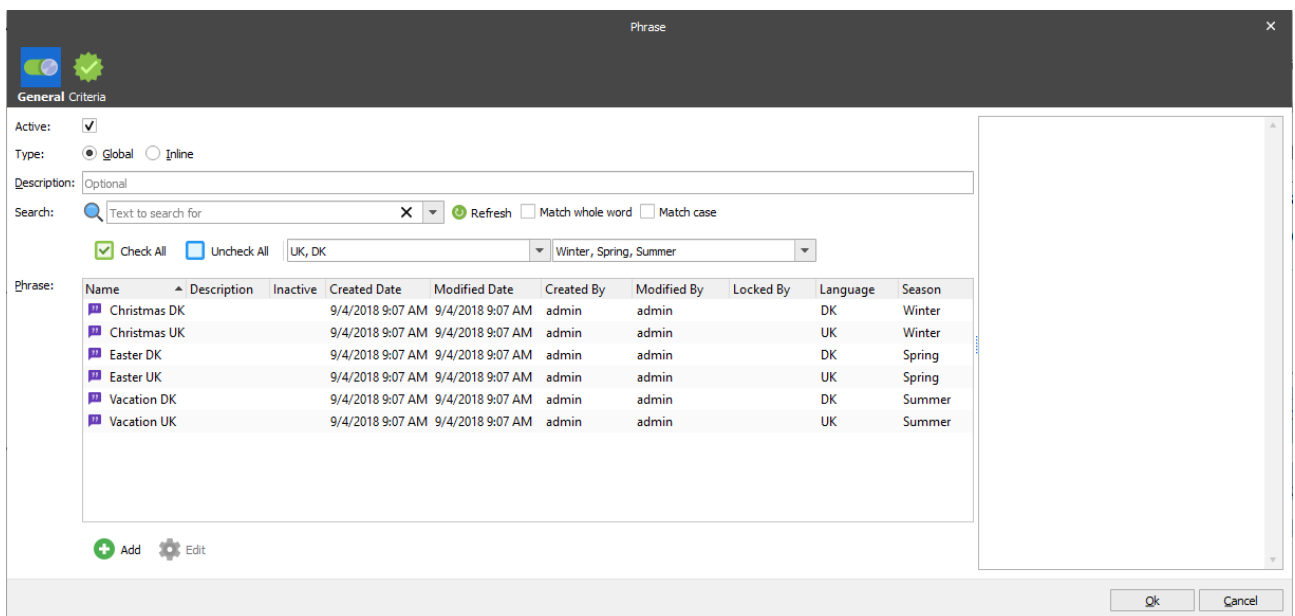
You can also use criteria to show one piece of content whilst hiding another. Simply create the required number of inline phrases and specify the criteria for displaying/hiding each of them based on the DataSet input or JobInfos.

#### 3.5.4.1.2.1 Adding a Phrase

You can add the following phrase types to your output: global or inline. To do this, click the down arrow next to the **Phrase** tool. On the menu, select either **Insert Global Phrase...** or **Insert Inline Phrase...**



Afterwards, use the **Phrase** dialog that appears to add a phrase. By default, the dialog opens with the **General** tab.

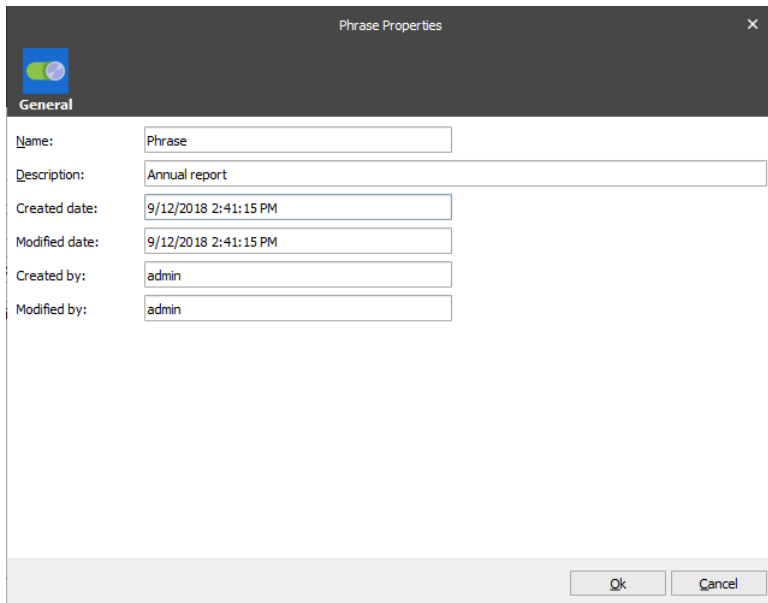


You can select a phrase from the list or add a new phrase.

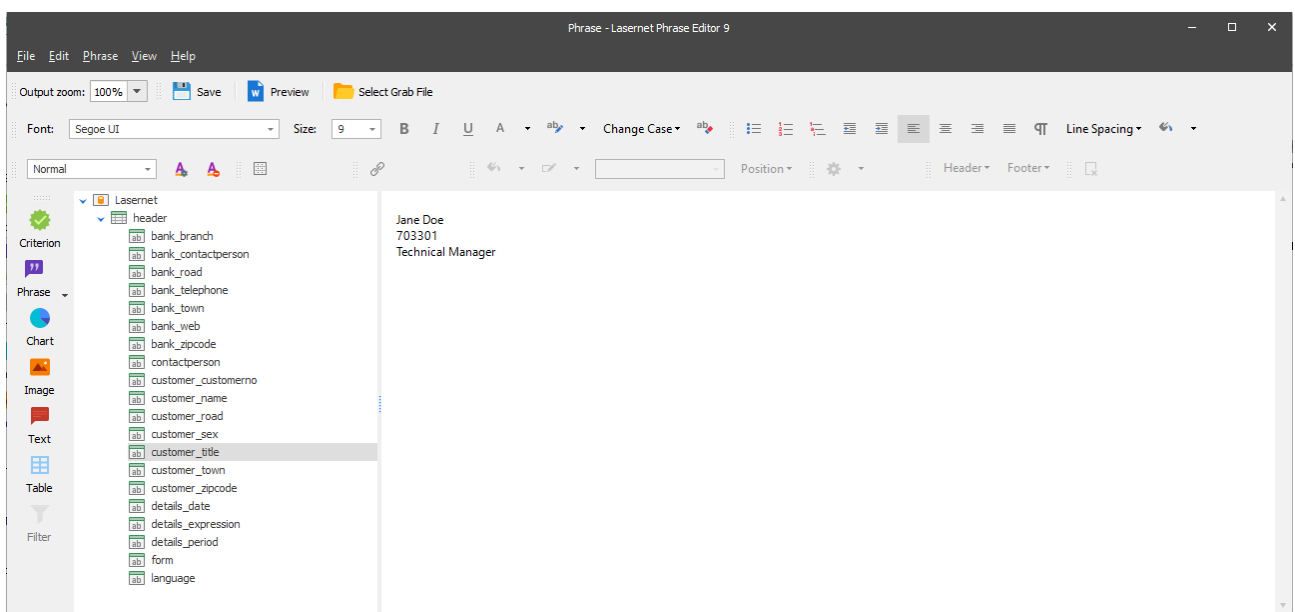
To add a phrase from the list to the output, select it and then click the **OK** button.

To add a new phrase, follow the steps listed below:

1. On the **General** tab of the **Phrase** dialog, click **Add**.
2. With the **Phrase Properties** dialog displayed, specify the phrase name and description and then click **OK**.



3. Add the phrase content in the phrase editor window.



From here you can [add required fields](#) by dragging them from the input or adding a static text, table or the other elements using the available tools.

4. Once you are done, click the **Save** button on the toolbar and then close the phrase editor.
5. The phrase is then available (and automatically selected) from the list on the **Phrase** dialog. To add it to the output, just click the **OK** button.

In addition, you can use the following controls available from the **Phrase** dialog window:

| Control            | Explanation                                                                                                                                          |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GENERAL TAB</b> |                                                                                                                                                      |
| <b>Active</b>      | Select the check box to make the phrase active and show it in the output; clear the check box to make the phrase inactive and hide it in the output. |

|                     |                                                                                                                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>         | Select the <b>Global</b> radio button to create a global phrase; select the <b>Inline</b> radio button to create an inline phrase. Note: Depending on the radio button selected, the controls on the <b>General</b> tab will vary. |
| <b>Search</b>       | Use controls for the <b>Search</b> group to find a phrase.                                                                                                                                                                         |
| <b>Preview</b>      | Use the preview panel to view the phrase content.                                                                                                                                                                                  |
| <b>Edit</b>         | Click to edit the selected phrase.                                                                                                                                                                                                 |
| <b>CRITERIA TAB</b> |                                                                                                                                                                                                                                    |
| <b>Add DataSet</b>  | Add a criterion based on the DataSet input.                                                                                                                                                                                        |
| <b>Add JobInfo</b>  | Add a criterion based on JobInfo.                                                                                                                                                                                                  |

Once a phrase has been added to the output, it can be managed by right-clicking on it and using the available commands from the context menu:

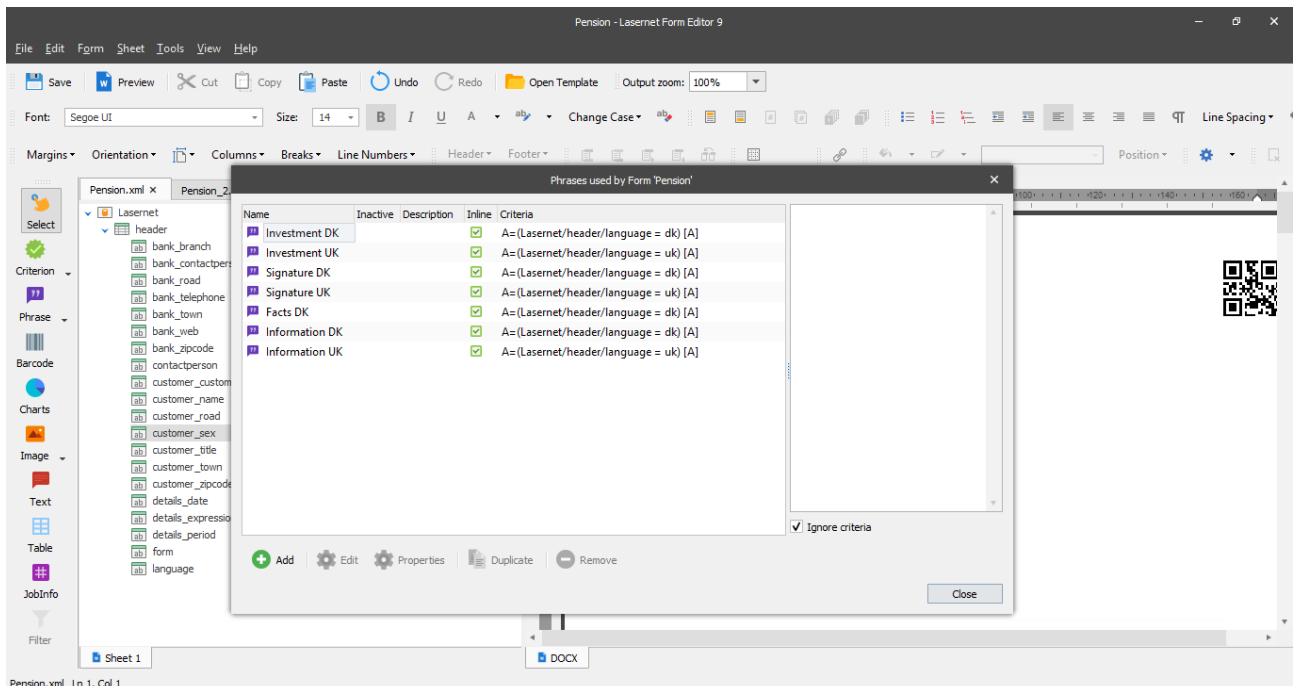
**Edit...** Opens the phrase in the editor so you can make adjustments as required. You can also double-click the phrase to edit it.

**Properties...** The **Phrase** dialog opens with the **General** tab where properties can be edited of the phrase instance which is available in the current document. Those changes are not applied to the phrase itself that appears in several documents at a time.

**Duplicate** The phrase instance is duplicated for the current output.

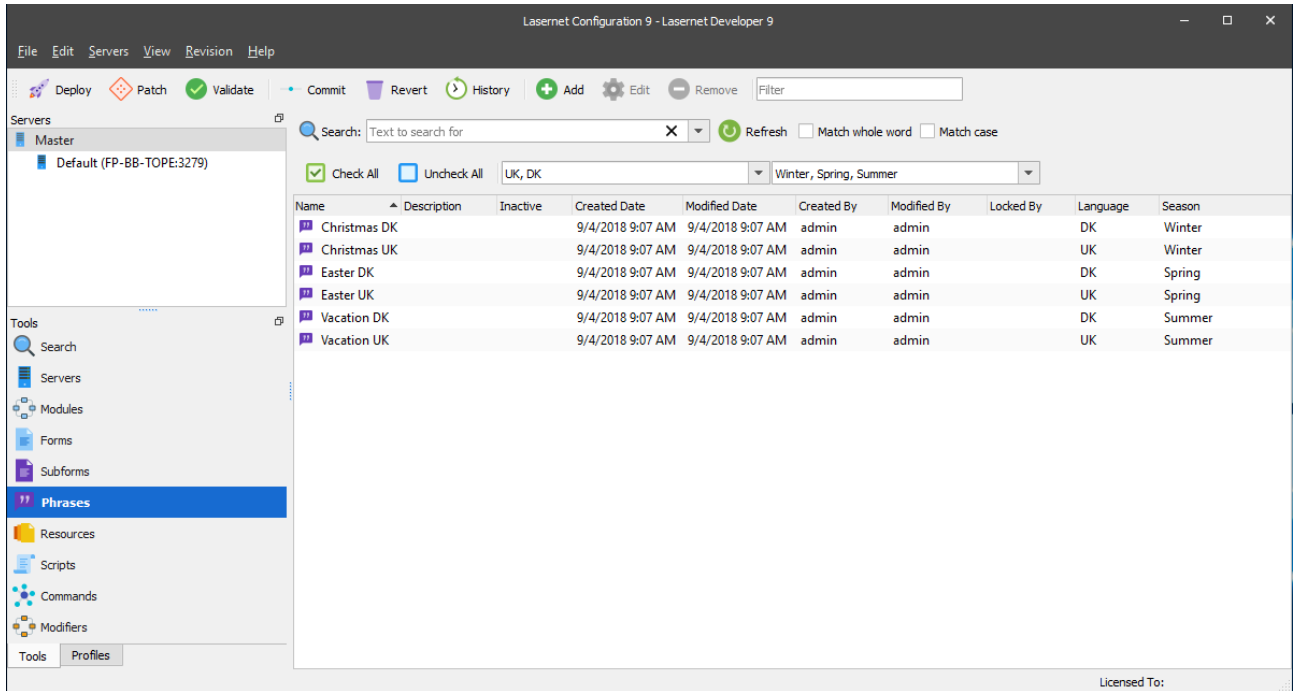
**Add DataSet Criterion...** Use the command to add DataSet criteria to a phrase.

To access a list of all phrases added to the output, click **Sheet** → **Phrases...**



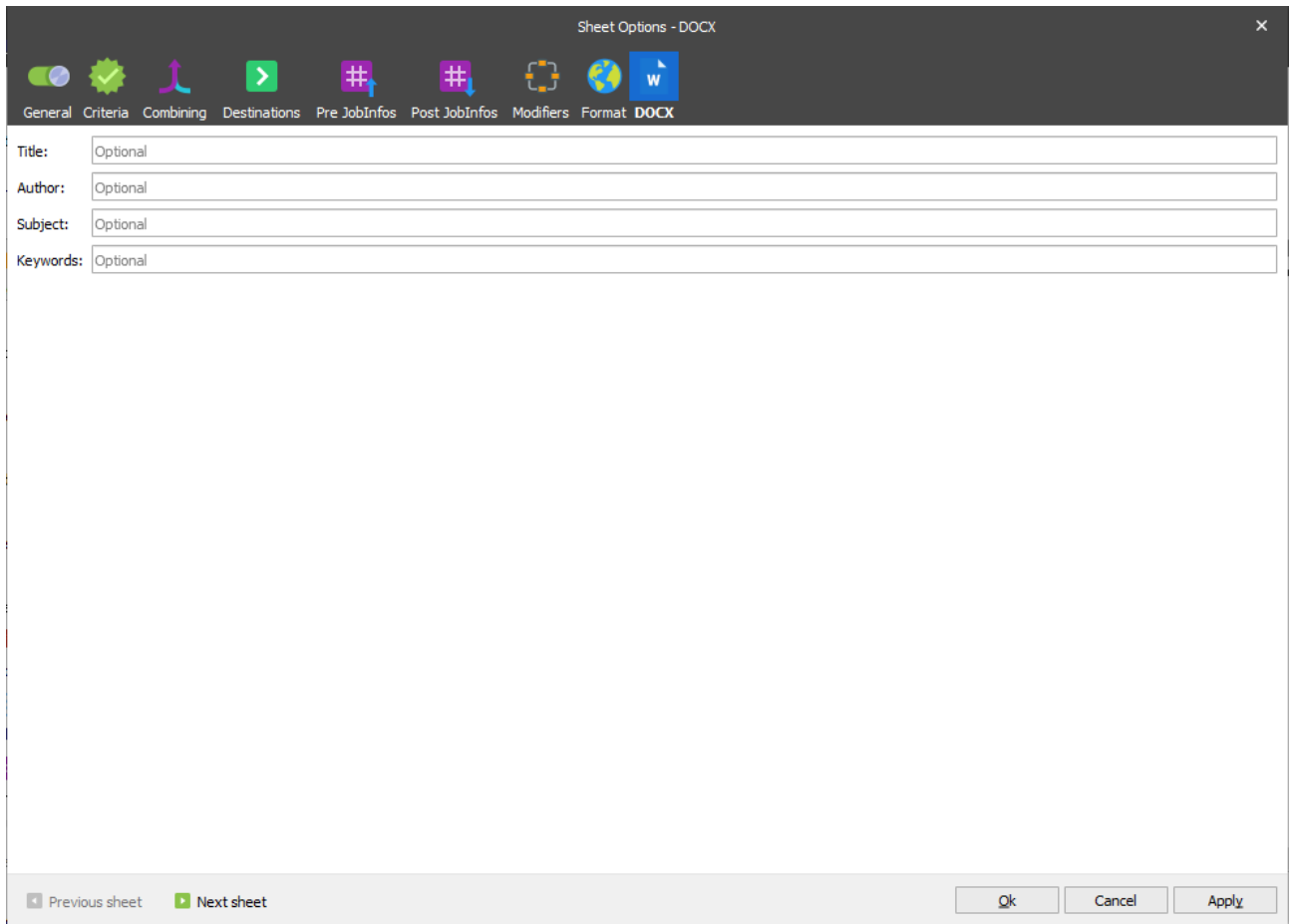


Global phrases can be managed via the **Phrase** tab of the Lasernet Developer.



### 3.5.4.1.3 Sheet Properties for DOCX Forms

The DOCX output format properties can be accessed via the **DOCX** tab of the **Sheet Options** dialog. Right-click the sheet tab and then click **Sheet Option** on the context menu.

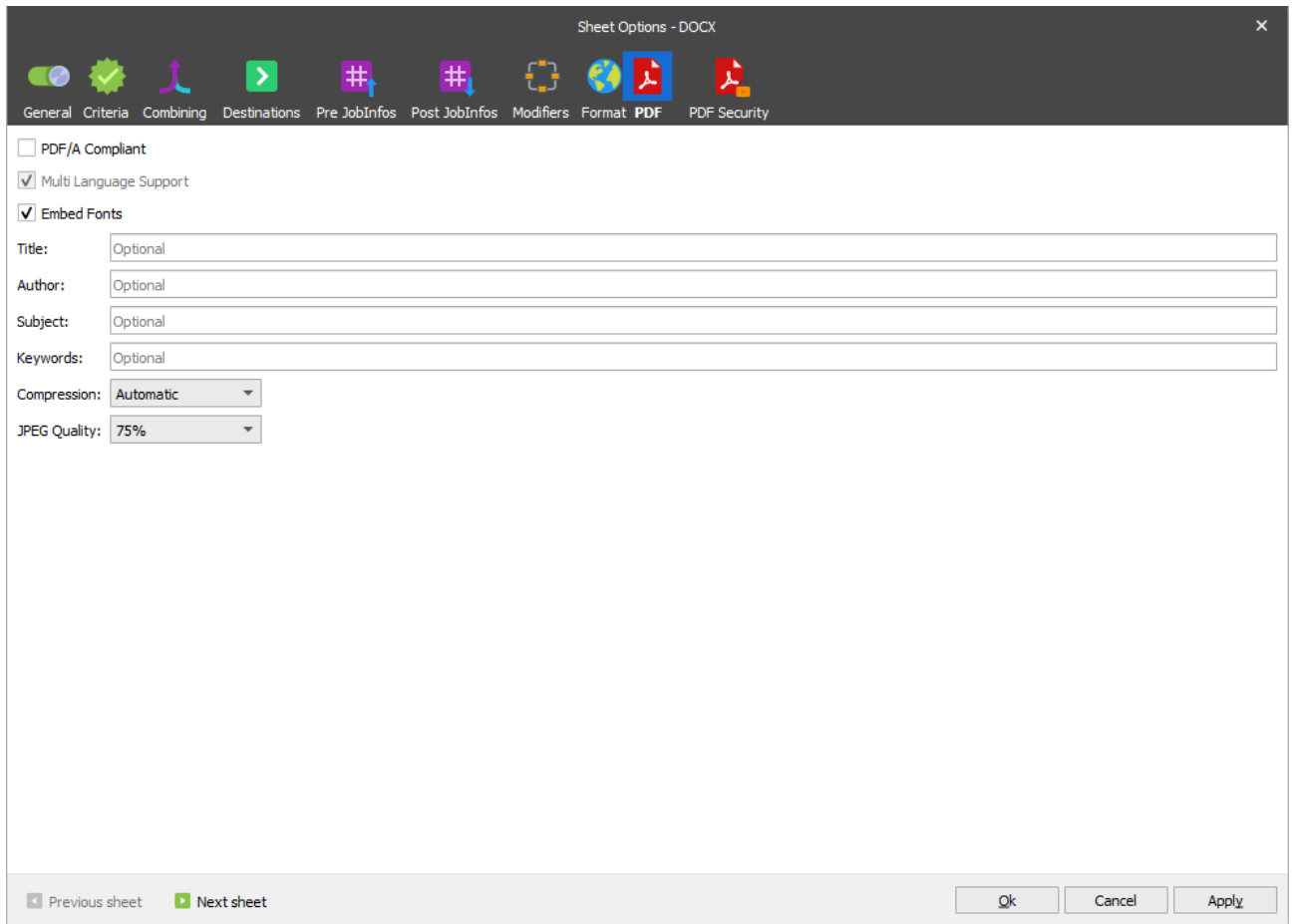


### 3.5.4.2 **PDF**

Is used for creating an output in PDF format. The PDF report is created in the same manner as the DOCX one. For more information, see [3.5.4.1.1 Creating Output](#).

#### 3.5.4.2.1 **Sheet Properties for PDF Forms**

The PDF output format properties can be accessed via the **PDF** and **PDF Security** tabs of the **Sheet Options** dialog by right-clicking the sheet tab and then clicking **Sheet Option** on the context menu. Specific sheet options for the PDF format are described in [3.5.2.2.1 PDF Settings](#) and [3.5.2.2.2 PDF Security](#).



### 3.5.5 Spreadsheet

#### 3.5.5.1 XLSX

Is used for creating output in XLSX format. The Forms Engine retrieves data from the input file, processes it and adds defined fields to the output along with static elements and text added by a user while modifying the output in the Editor.

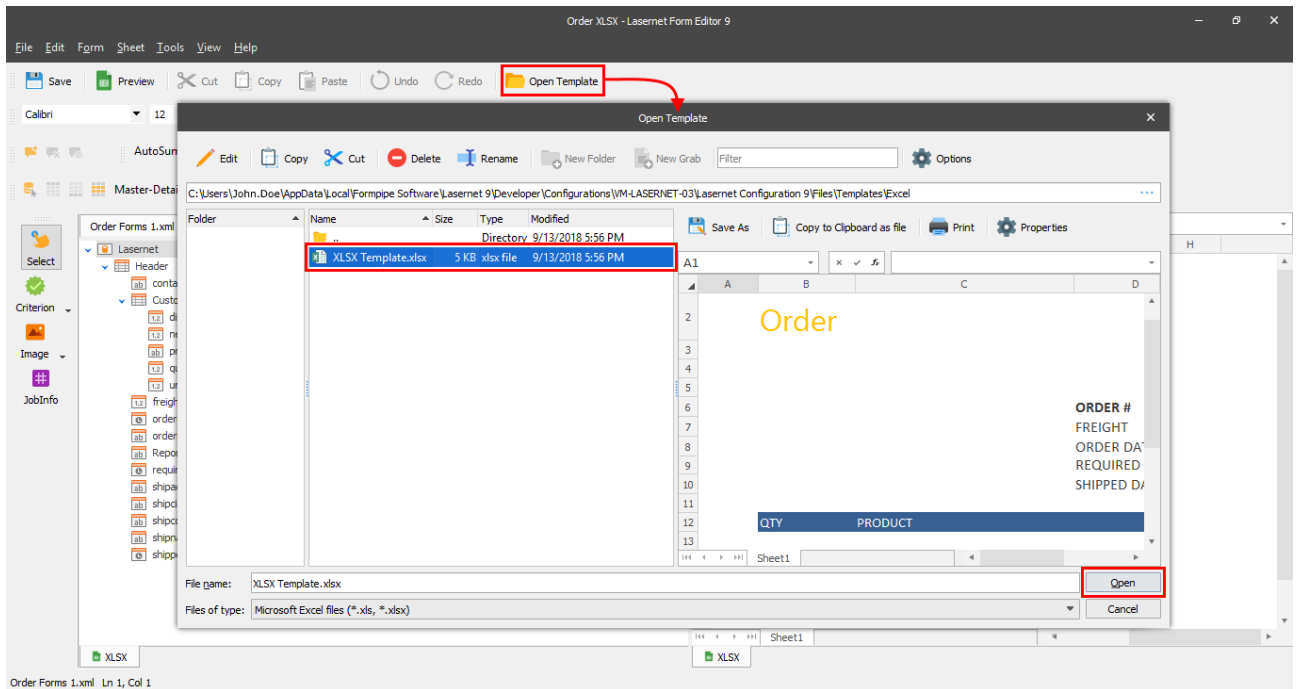
As an input, the DataSet format is always used. For more information about the DataSet format, see [3.5.1.5 DataSet](#).

Lasernet uses a Microsoft style interface for designing XLSX formatted output, therefore only the features that are unique to Lasernet are described in this document.

##### 3.5.5.1.1 Creating Output

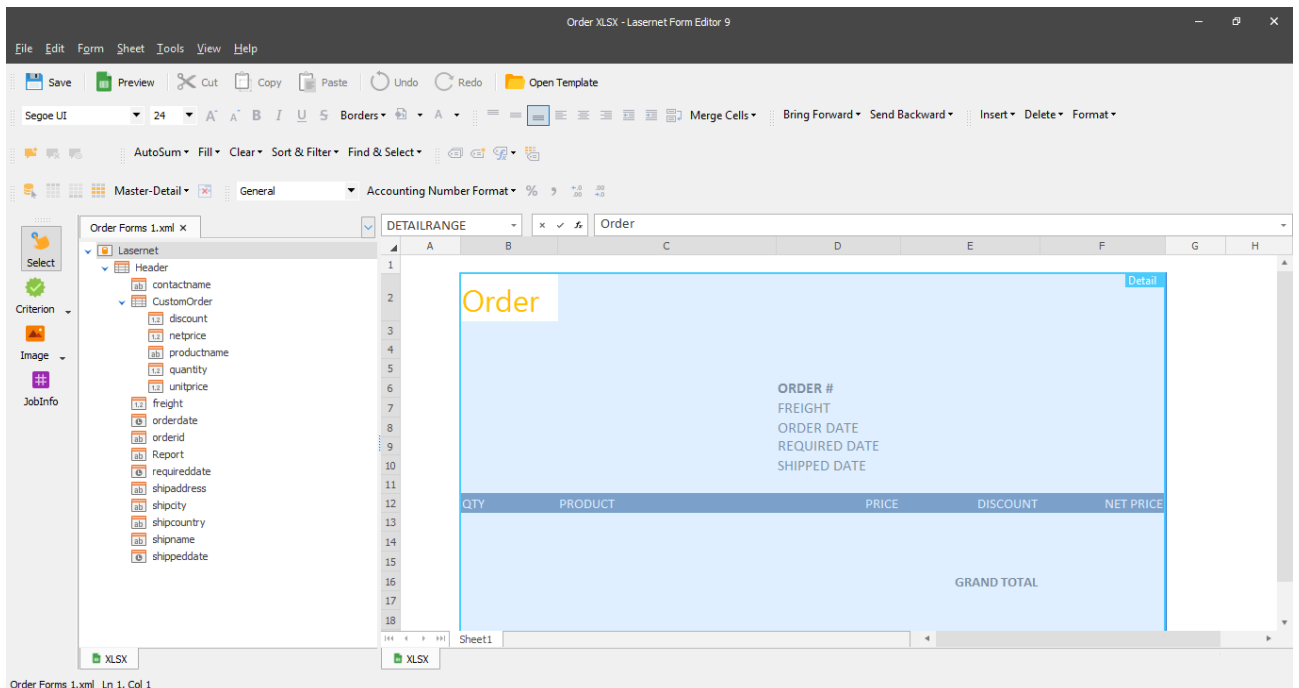
To create output in XLSX format, follow the steps listed below:

1. Open a [grab](#) file. DataSet is specified as the input format by default.
2. Create a template for the report in the output or open a previously created template.

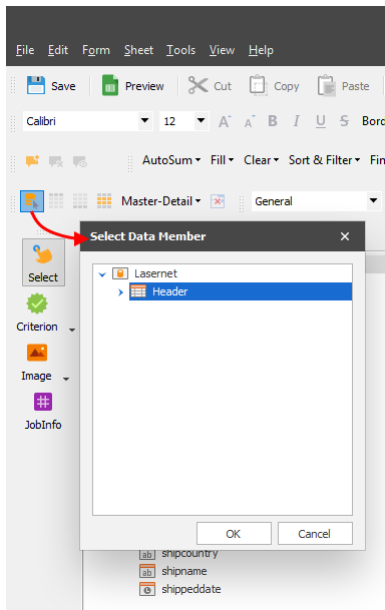


### 3. Specify a template range.

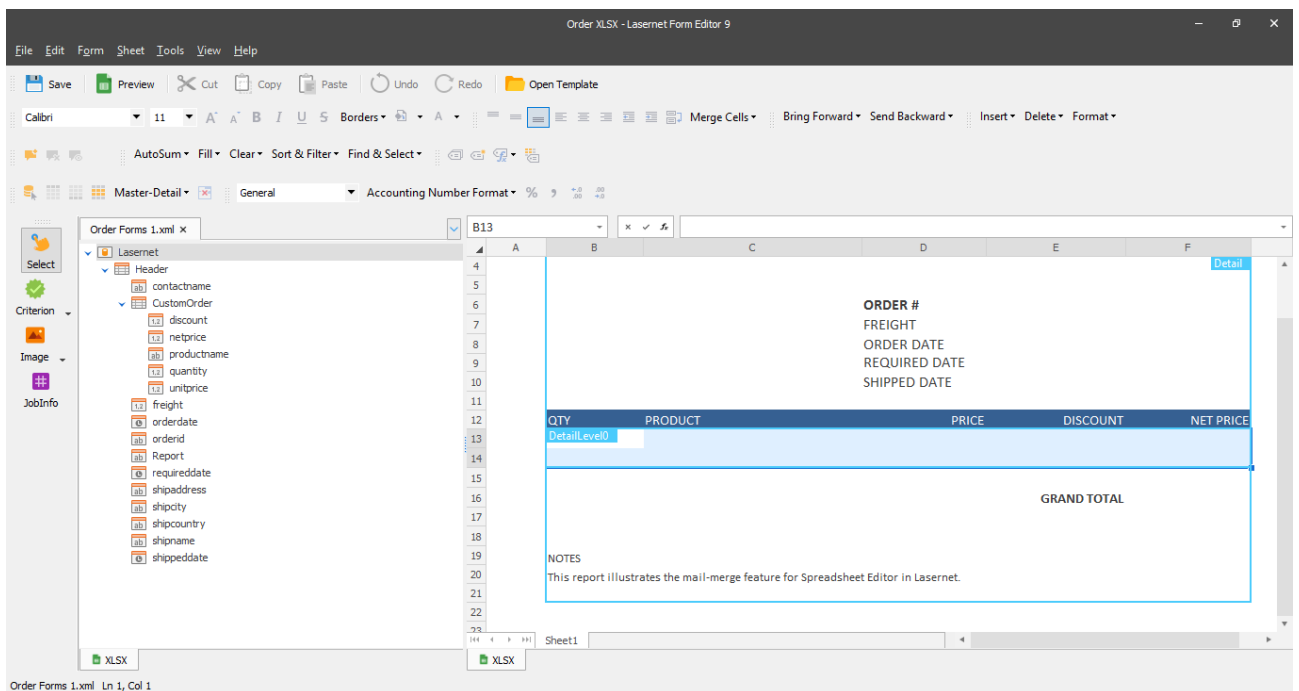
- select the cell range which outlines the template region and then click the **Detail** button (🔍) on the **Mail Merge Extended** toolbar;



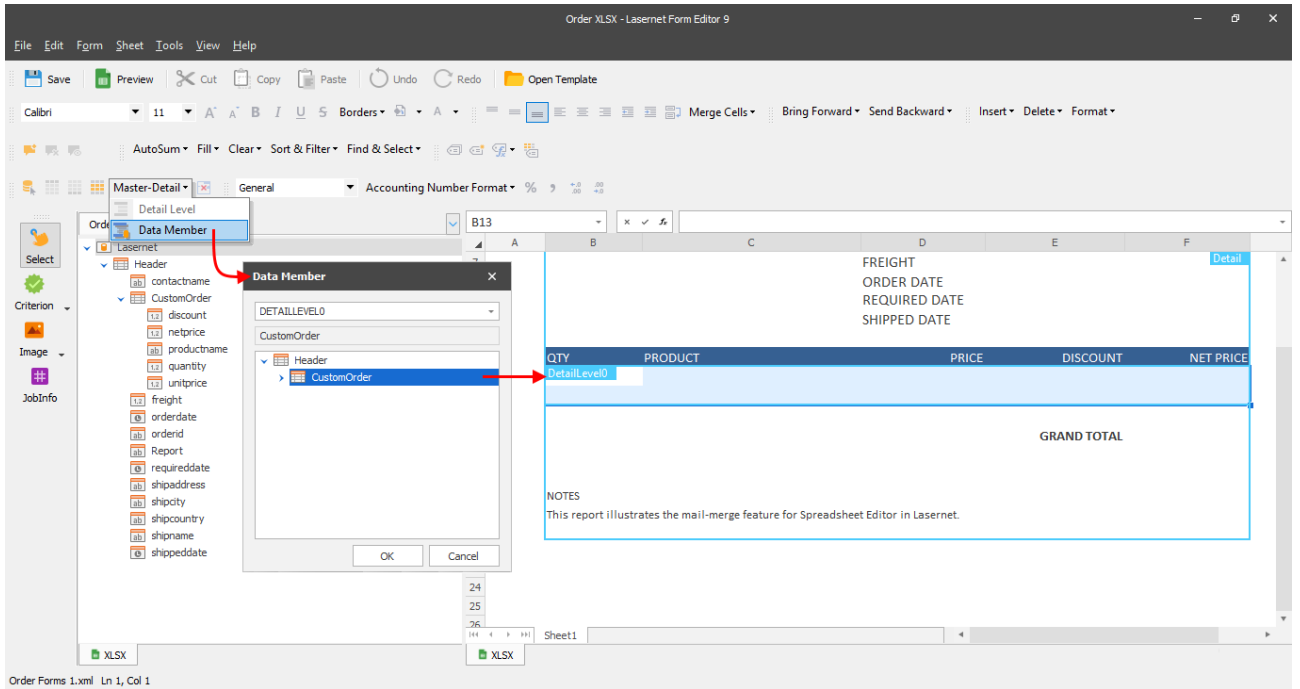
- on the **Mail Merge Extended** toolbar, click the **Select Data Member** (🔍) button. With the **Select Data Member** dialog displayed, select a mail merge table as a data member for the worksheet data set;



- add a nested level to the **Detail** range to display the detail-level data from the child table. To do this, select the required cell range to outline the **Detail** range and then click **Master-Detail** → **Detail Level**. As a result, the **DetailLevel0** range is created;



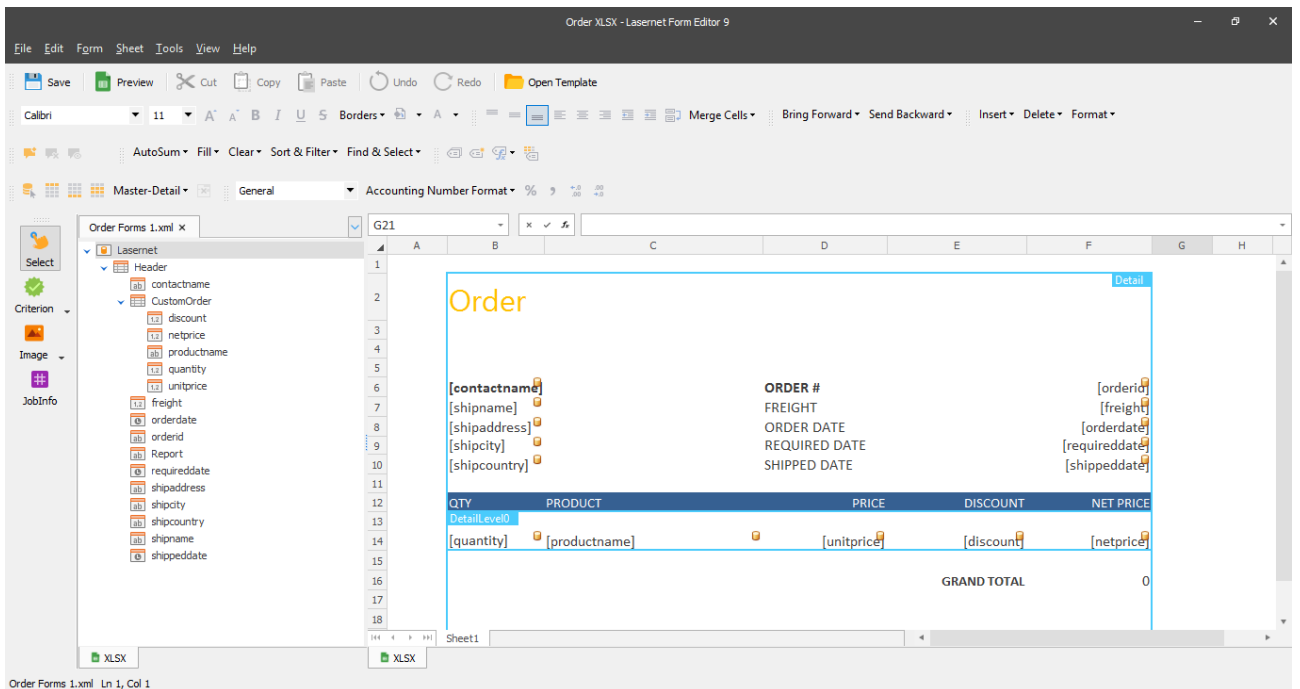
- on the **Mail Merge Extended** toolbar, click **Master-Detail** → **Data Member** to specify a nested data member for **DetailLevel0**.



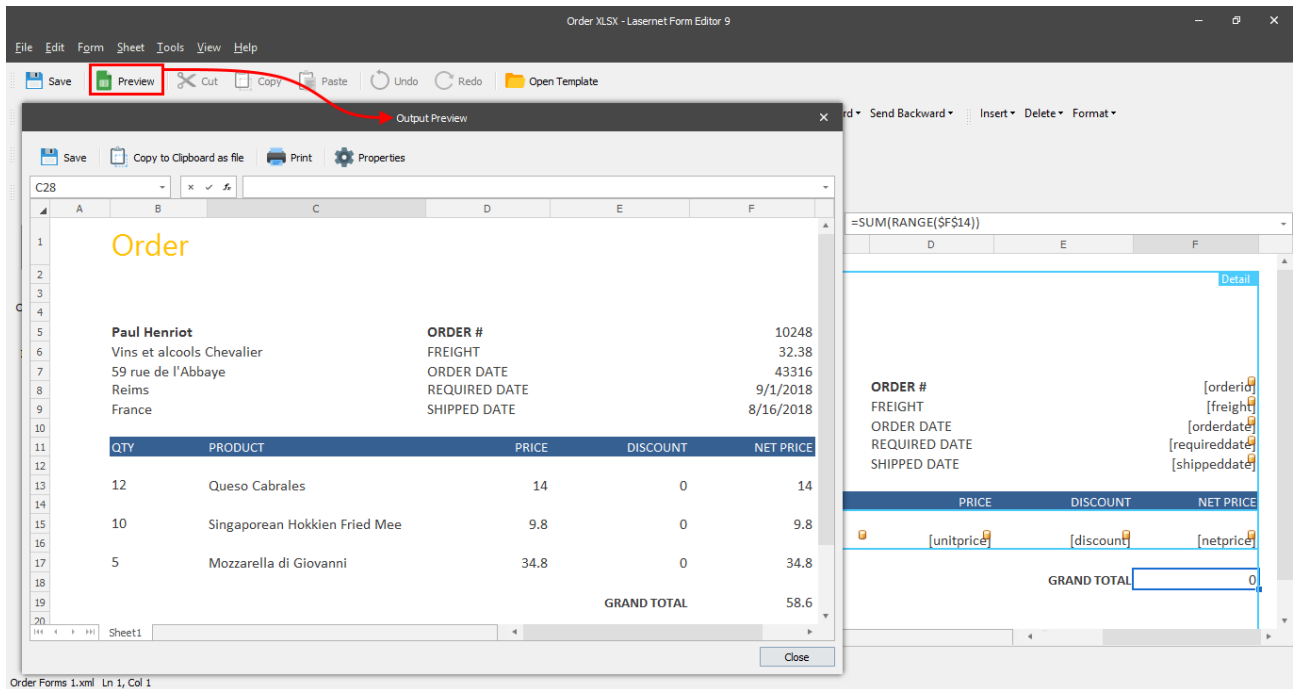
4. Insert mail merge fields. To do this, select a cell in the template and then double-click a field in the input which contains the value you want to insert into the selected cell. Repeat the same action for each cell you want to fill in with the required field value.

Cells in the **Detail** range have to be filled in with field values from the master detail table. Cells in **DetailLevel0** have to be filled in with field values from the nested table.

The output should then look like the image below:

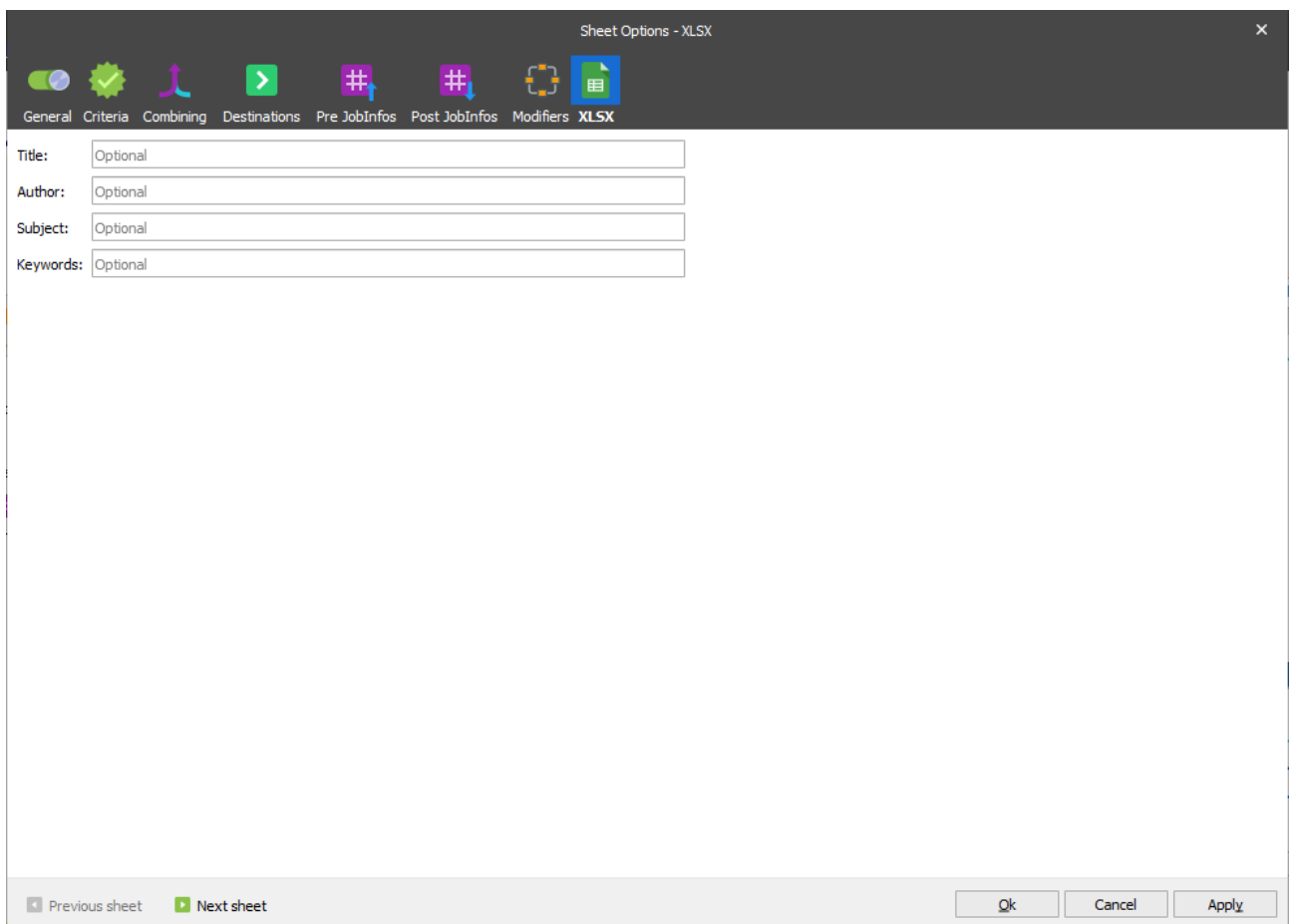


5. To finalize the output creation, apply the required style, add calculations, etc.
6. To make sure that all the required elements are added to the template, preview it by clicking the **Preview** button on the toolbar.



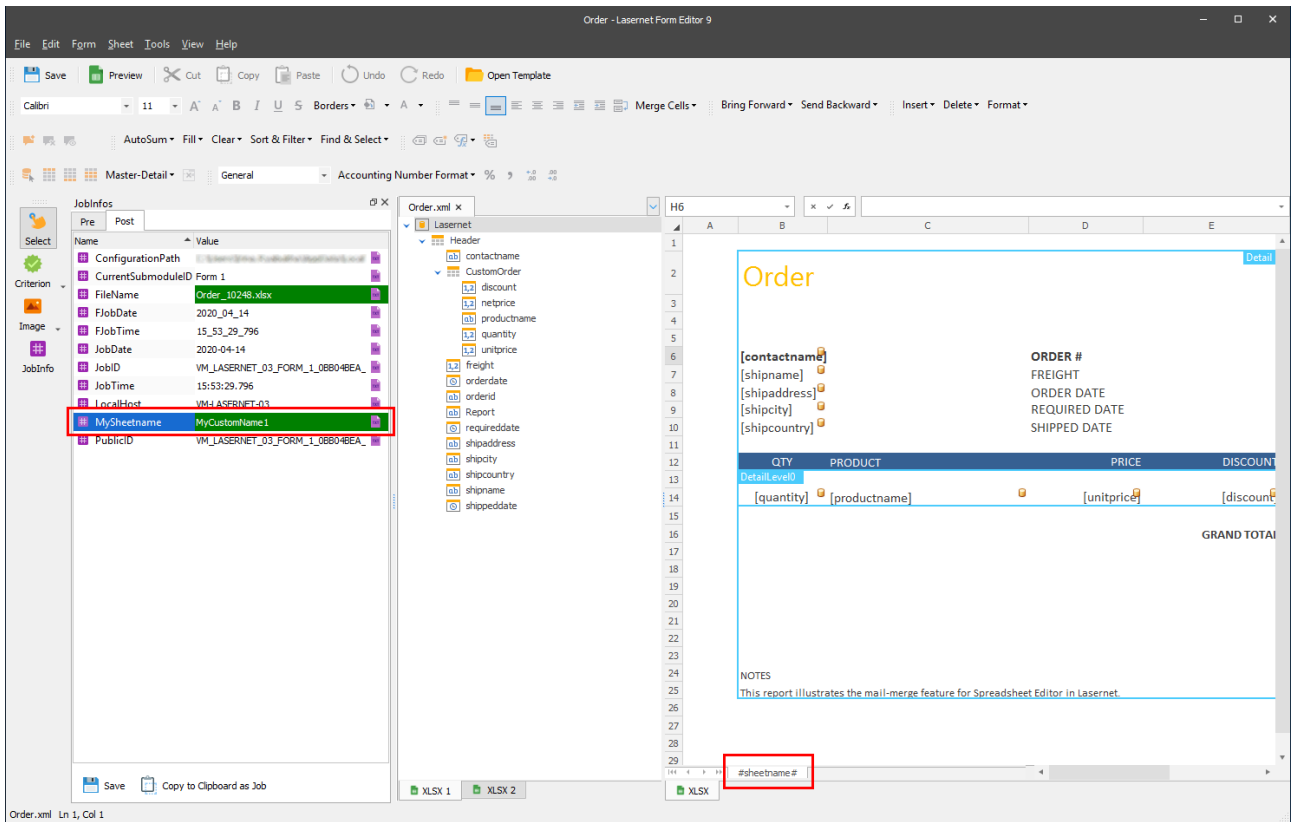
### 3.5.5.1.2 Sheet Properties for XLSX Forms

The XLSX output format properties can be accessed via the **XLSX** tab of the **Sheet Options** dialog by right-clicking the sheet tab and then clicking **Sheet Option** on the context menu.



### 3.5.5.1.3 JobInfo for Sheet Name Substitution

You can use a JobInfo to substitute a name of a sheet in the XSLX file. It means that a sheet of the XSLX file can have not a fixed name, but the one you can change when running the corresponding JobInfo.





### 3.6 Keyboard Shortcuts

You can use keyboard shortcuts to perform different operations in Lasernet. The list of keyboard shortcuts is provided in the table below.

| Action                | Shortcut          |
|-----------------------|-------------------|
| Close grab file       | CTRL + F4         |
| Switch to right grab  | CTRL + Tab        |
| Switch to left grab   | CTRL + SHIFT +Tab |
|                       |                   |
| Bold set/unset        | CTRL + B          |
| Italic Set/unset      | CTRL + I          |
| Underline set/unset   | CTRL + U          |
|                       |                   |
| Align Left            | CTRL + L          |
| Align Right           | CTRL + R          |
| Align Center          | CTRL + E          |
| Align Justify         | CTRL + J          |
|                       |                   |
| Copy                  | CTRL + C          |
| Cut                   | CTRL + X          |
| Paste                 | CTRL + V          |
| Undo                  | CTRL + Z          |
| Redo                  | CTRL + Y          |
|                       |                   |
| Sheet Save            | CTRL + S          |
| Create New Sheet      | CTRL + N          |
| Print Sheet           | CTRL + P          |
| Save XML              | CTRL + M          |
|                       |                   |
| Switch to Select Tool | CTRL + ALT + S    |

|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Insert Rearrange                                                                 | CTRL + ALT + R                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Insert Text                                                                      | CTRL + ALT + T                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Insert Keyword (JobInfo)                                                         | CTRL + ALT + J                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Insert Barcode                                                                   | CTRL + ALT + B                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Insert Image                                                                     | CTRL + ALT + I                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Define Cond Area                                                                 | CTRL + ALT + A                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Insert Shape                                                                     | CTRL + ALT + H                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Pattern Select                                                                   | CTRL + ALT + P                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Select multiple (only for the XML and JSON input and output)                     | <ol style="list-style-type: none"> <li>1. Click an object.</li> <li>2. Press the SHIFT or CTRL key.</li> <li>3. Click other objects while you continue to press the SHIFT or CTRL key.</li> </ol> <p>The order you use to select objects does not matter if you hold the CTRL key. If you use the SHIFT key, first click the first object and then the last one, as a result all the objects available between these two objects are selected.</p> |
| Switch between entities available on the same position or added to the same node | ALT + click an object                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Find                                                                             | CTRL + F                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Find Next                                                                        | F3                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Find Previous                                                                    | SHIFT + F3                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Preview                                                                          | CTRL + F2                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Styles                                                                           | CTRL + D                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Save as                                                                          | F11                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| In-place edit of fixed text rearrange                                            | F2                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

|                                   |                  |
|-----------------------------------|------------------|
|                                   |                  |
| Show Property Browser             | CTRL + SHIFT + B |
| Show Logger Window                | CTRL + SHIFT + L |
| Show Thumbnails View              | CTRL + SHIFT + T |
| Grab JobInfos                     | CTRL + SHIFT + G |
| Show Objects panel                | CTRL + SHIFT + O |
|                                   |                  |
| Show/hide object boxes            | ALT + F5         |
| Show/hide Conditional Area guides | ALT + F6         |
| Show/hide Region guides           | ALT + F7         |
| Show/hide Ruler guides            | ALT + F8         |
| Show/hide all boxes/guides        | ALT + F9         |
|                                   |                  |
| Recalculate output                | F5               |
| Run JavaScript                    | SHIFT + F5       |

## 4 CHARTS

## 4.1 Charts

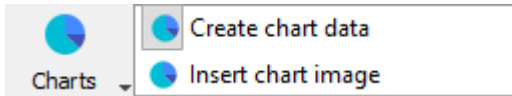
---

Charts are an easy way to graphically represent your data and can be used to ease the understanding of large quantities of data and the relationships between the constituent parts. There are 10 different chart types available in Lasernet; these are:

- Area
- Bar
- Donut
- Line
- Pareto
- Pie
- Spline
- Stacked Bar
- StepLine
- Trend
- Bar + Line

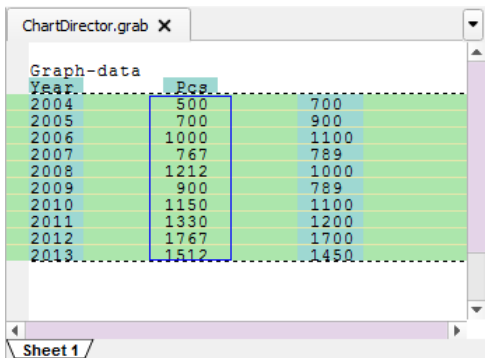
## 4.2 Charts Tool

The **Charts** tool allows you to define the data for a chart in the input and insert a chart image in the output.



To define chart data in the input, proceed through the steps listed below:

1. On the toolbar, click the little arrow next to the **Charts** tool and then click **Create chart data**.
2. When the pointer becomes a cross, mark the area to define the data to be shown in the chart.

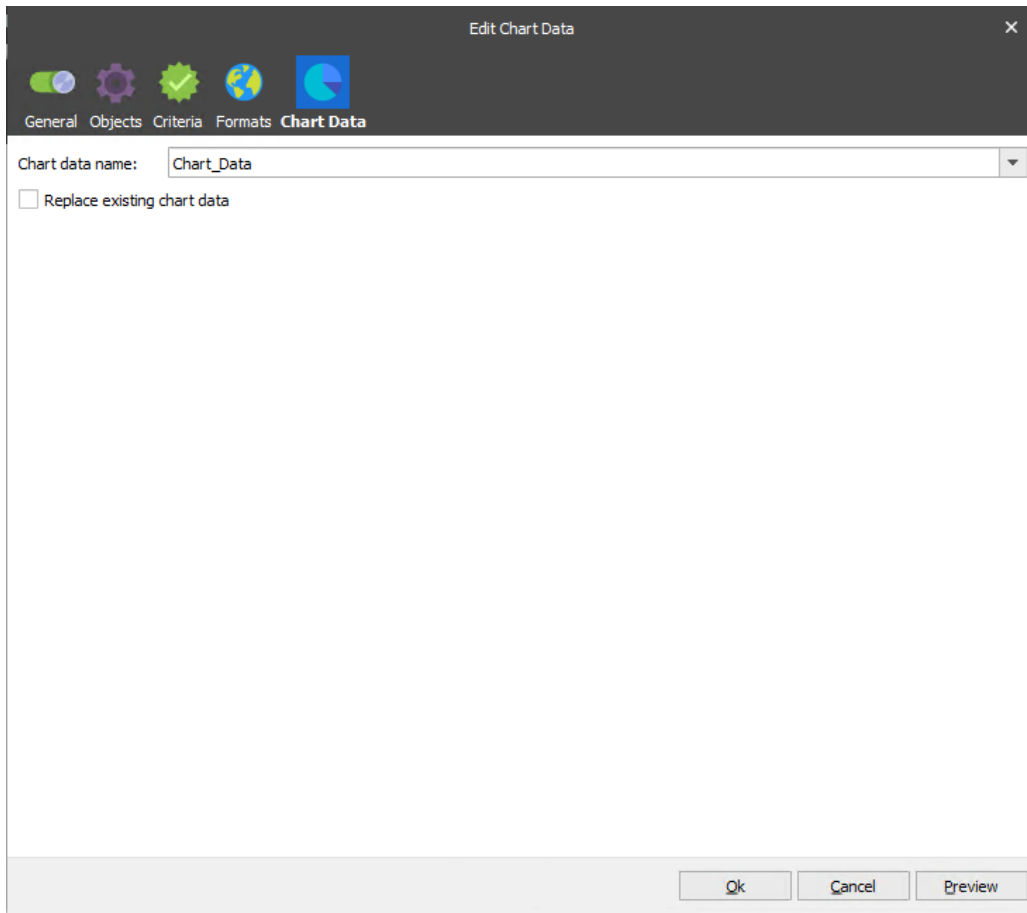


The image shows a spreadsheet window titled 'ChartDirector.grab X'. The spreadsheet contains a table with the following data:

| Year | Pcs  |      |
|------|------|------|
| 2004 | 500  | 700  |
| 2005 | 700  | 900  |
| 2006 | 1000 | 1100 |
| 2007 | 767  | 789  |
| 2008 | 1212 | 1000 |
| 2009 | 900  | 789  |
| 2010 | 1150 | 1100 |
| 2011 | 1330 | 1200 |
| 2012 | 1767 | 1700 |
| 2013 | 1512 | 1450 |

The 'Pcs' column is highlighted in green, and a blue selection box is drawn around the data from 2004 to 2013 in the 'Pcs' column. The spreadsheet is titled 'Sheet 1' at the bottom.

3. If you want to edit the chart data, double-click the defined area. From the **Edit Chart Data** dialog, switch to the **Chart Data** tab.



See the table below to learn more about the tab controls:

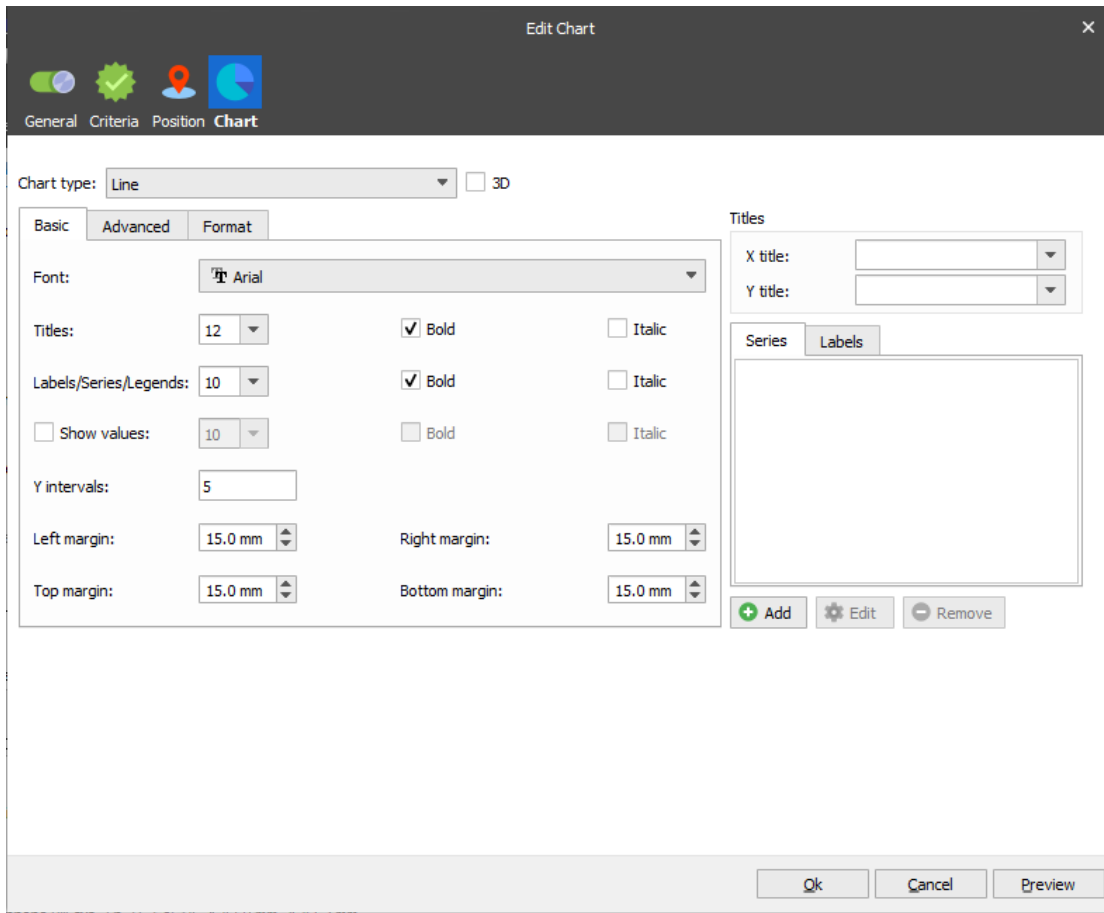
| Control                     | Description                                                       |
|-----------------------------|-------------------------------------------------------------------|
| Chart data name             | A descriptive name for the chart data as defined in the input.    |
| Replace existing chart data | If selected, any other chart data with the same name is replaced. |

The next step is to define all of the data sets for the chart type. For example, label data is required for all chart types; XTitle and YTitle data is required for xy-charts only.

To create the output object (a chart image), proceed through the steps listed below:

**Note:** A chart is an absolute rearrange and cannot be added to a pattern. It can only be added to the output. However, a chart can be located relative to different entities (for more details, see 3.3.6.2, *Rearrange Tool*).

1. On the toolbar, click the little arrow next the **Charts** tool and then click **Insert chart image**.
2. When the pointer becomes a cross, mark the area to define the chart position in the output.
3. When releasing the mouse, the **Edit Chart** dialog opens with the **Chart** tab.



For detailed information about common controls see 3.3.6.2, *Rearrange Properties*.

The table below has more information about output specific controls:

| Control    | Description                                                                                                                                                                                                                                                                             |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chart type | Using the drop-down list it is possible to select a chart type.                                                                                                                                                                                                                         |
| 3D         | Select the check box to change the chart from a 2D to a 3D representation                                                                                                                                                                                                               |
| X Title    | Use the drop-down list to select the chart data value or add a fixed text title for the X-axis.                                                                                                                                                                                         |
| Y Title    | Use the drop-down list to select the chart data value or add a fixed text title for the Y-axis.<br>The Y Title can contain an index with two values for "Pareto" and "Bar + Line" charts. The first value for the Y-axis title is positioned to the left and second value to the right. |
| Series     | Allows you to define a series for the chart.<br>Use the Add, Edit, and Remove buttons to manipulate the chart data values available in the tab.                                                                                                                                         |
| Labels     | Allows you to specify the chart data value or add fixed text labels for the chart.<br>Use the Add, Edit, and Remove buttons to manipulate the chart                                                                                                                                     |



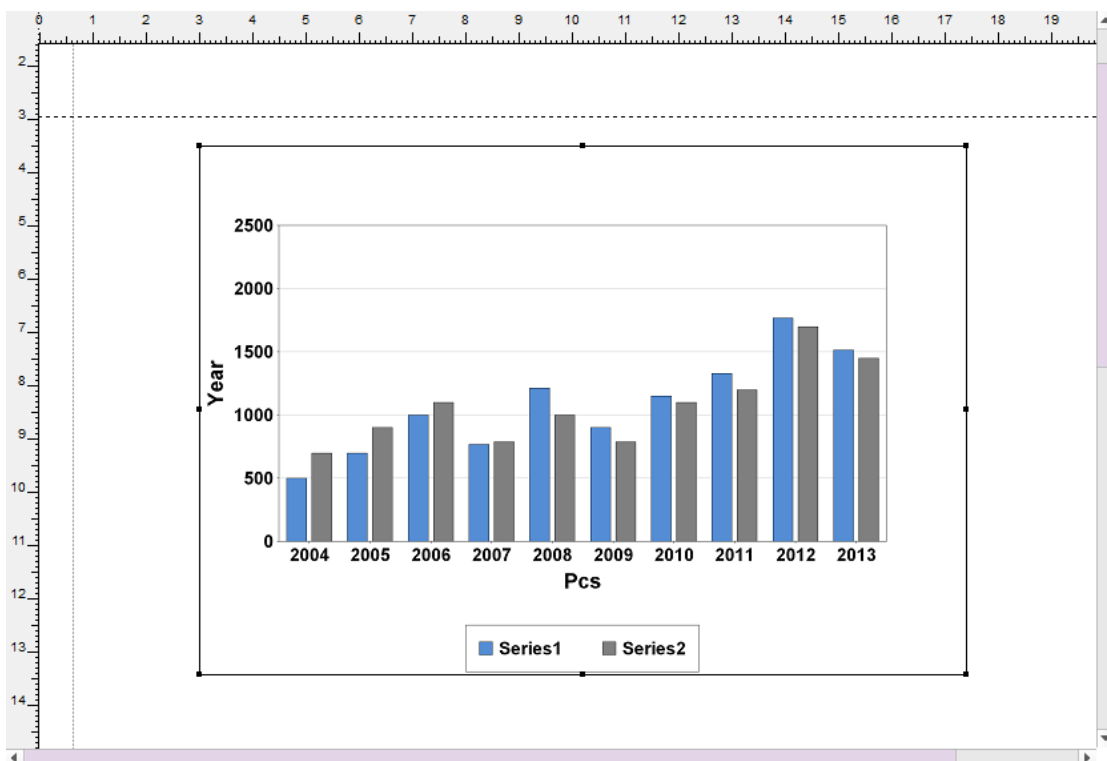
| Control                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | data values available in the tab.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Basic</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Font                         | Use the drop-down list to select the font to be applied to the X,Y Titles, Labels, Series and Legends.                                                                                                                                                                                                                                                                                                                                                                                            |
| Titles                       | Use the drop-down list to select the font size to be applied to the X and Y Titles.                                                                                                                                                                                                                                                                                                                                                                                                               |
| Labels/Series/Legends        | Use the drop-down list to select the font size to be applied to the Labels, Series and Legends.                                                                                                                                                                                                                                                                                                                                                                                                   |
| Show values                  | Select the check box to show the data labels for the data points for xy charts.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Bold                         | Select the check boxes to set the font style to bold for Titles and/or Labels/Series.                                                                                                                                                                                                                                                                                                                                                                                                             |
| Italic                       | Select the check box to set the font style to italic for Titles and/or Labels/Series.                                                                                                                                                                                                                                                                                                                                                                                                             |
| Y Intervals                  | Use to add the number of intervals available on the Y axis.                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Inner Radius                 | Defines inner radius of the donut chart type.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Left/Right/Top/Bottom Margin | Use to define the margin for each chart side.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Advanced</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Labels                       | <p>Use the drop-down list to define how labels should be shown. The following options are available:</p> <p>XY charts:</p> <ul style="list-style-type: none"> <li>• Horizontal</li> <li>• Vertical</li> <li>• Custom. If selected, you can set the angle (in degrees) at which the labels should be positioned, relative to the plot area.</li> </ul> <p>Pie charts:</p> <ul style="list-style-type: none"> <li>• Horizontal</li> <li>• Hide</li> </ul> <p>Default value is <i>Horizontal</i></p> |
| Hide border                  | Selecting the check box allows you to hide the borders of the plot area.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Show Legend                  | <p>Use the drop-down list to determine the legend location and visibility. The following options are available:</p> <ul style="list-style-type: none"> <li>• Hide</li> <li>• Top</li> </ul>                                                                                                                                                                                                                                                                                                       |

| Control            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <ul style="list-style-type: none"> <li>• Bottom</li> <li>• Left</li> <li>• Right</li> </ul> Default value is <i>Hide</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Hide legend border | Select the check box to hide the legend borders.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Transparent        | Use the drop-down list to set the transparency of the chart ( <i>Yes/No</i> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Y Axis             | Sets the position of the y-axis on the plot area (left/right). The default is to the left.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Gap                | <p>The amount of space between the bars (or between bar groups for multi-bar layers).</p> <p>Example: a bar gap of 0.2 equates to 20% of the distance between two adjacent bars.</p> <p>A bar gap of 0 means there is no gap in between the bars. The bar gap can be negative. In this case, the bars will overlap.</p> <p>For multi-bar layers the Gap refers to the amount of space between bar groups, while Spacing refers to the amount of space between bars within the bar group.</p>                                                                                                                                              |
| Spacing            | This parameter only applies to multi-bar charts. It is the amount of space between the bars in a bar group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Format</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Left Y-Axis        | The format string, using {value} to denote the axis labels for the left Y axis. For example, $\${value 2.}$ can be used to format the value to 2 decimal points, using "." as the thousand and "," as the decimal separators respectively, and with a '\$' sign in front.                                                                                                                                                                                                                                                                                                                                                                 |
| Right Y-Axis       | The format string, using {value} to denote the axis labels for the right Y axis. The option is enabled for "Bar + Line" and "Pareto" chart types only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Values             | The format string, using {value} to denote data labels for the data points.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Legend             | <p>Defines format of legend text. Parameter substitution is used to allow you to configure exactly what information is contained in the text and its format.</p> <p>For example, when drawing a pie chart with side label layout, the default sector label format string is: "{label} ({percent})%".</p> <p>When the sector label is actually drawn, Lasernet will replace "{label}" with the sector name and "{percent}" with the sector percentage. So the above label format will result in output that looks similar to "ABC (34.56%)".</p> <p>You can change the sector label format by changing the format string. For example:</p> |

| Control              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | <p>{label}: US\${value 2} {percent}%<br/>           The sector label will then become something like "ABC: US\$123.00 (34.56%)".<br/> <b>Note.</b> This option only applies to Pie and Donut charts.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Use regional profile | <p>Select the check box to use the regional profile (for details, see <i>Lasernet Developer, Chapter 1.27 Regional Profiles</i>). It works as follows:</p> <ul style="list-style-type: none"> <li>- The regional profile specified for the chart data object (<b>Input</b> tab → <b>Format</b> category is <b>Number</b> → <b>Output Format</b> tab → <b>Select Regional Profile</b> field) in the <b>Series values</b> option (see below) for the top most series is used.</li> <li>- Format default values are overruled by the regional profile values.</li> <li>- If the default values are overruled manually (like {value 2.,}) regional profiles values are overruled.</li> </ul> |

Once you have specified the required properties for the chart, click the **OK** button to insert a chart image.

If you want to preview a chart in the output with properties you have specified without applying them, click the **Preview** button.



Once you have added the chart, you can resize and move it if necessary.

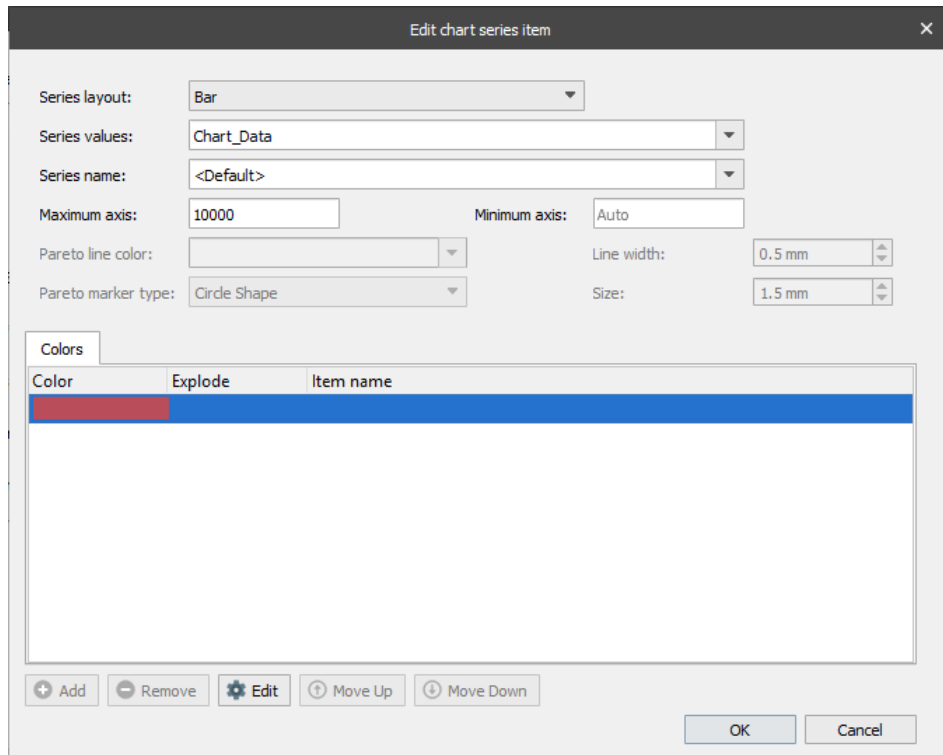
To resize the chart, hover over it and a sizing handle (a little square) will appear. Click and drag the handle to make the table larger or smaller. The height and width ratio is maintained.

To move the chart, hover over it and a chart move handle will appear. Using the chart move handle, drag the chart to the new location.

In addition, you can also change the corresponding values in the **Edit Rearrange** dialog to move and/or resize the chart.

To edit the chart you have created, right-click it and then click **Properties** or double-click the chart. The [Edit Rearrange](#) dialog opens. Use the controls described above to change the chart as required.

You can change a series you have specified using the [Series](#) tab of the **Edit Rearrange** dialog. To edit a series, select it in the list and click the **Edit** button, or double-click the series record. The **Edit chart series item** dialog appears.



**Note:** The list of controls and their availability varies depending on selected chart type.

The table below has more information about the various dialog controls:

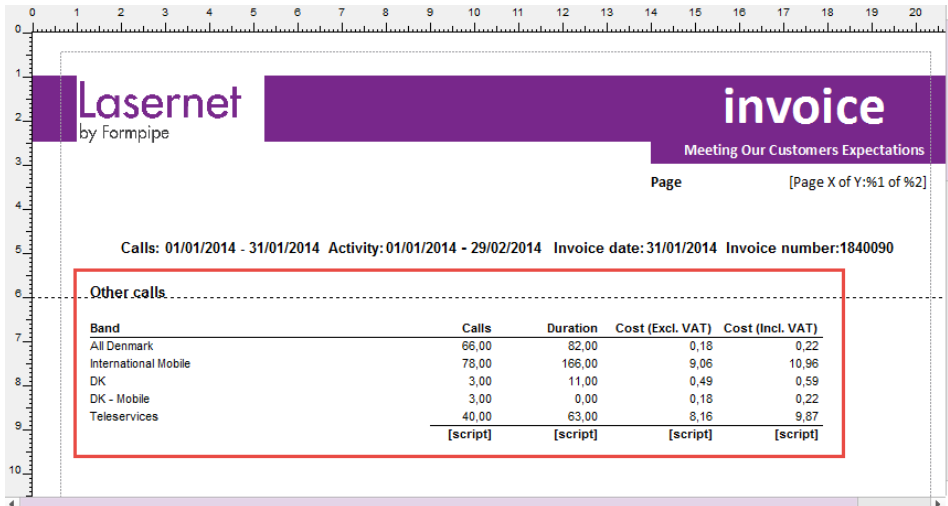
| Control       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series layout | Available only for Bar + Line chart type. Defines which layout series is used for Bar or Line.                                                                                                                                                                                                                                                                                                                                                                                                     |
| Series values | Use the control to specify the chart data to be applied as a data set for the current series.                                                                                                                                                                                                                                                                                                                                                                                                      |
| Series name   | Use the control to specify the name for the current series in the legend. By default, the name of the chart data selected within the <b>Series values</b> control is set. In addition, you can select another chart data available in the drop-down list, or type a fixed text to define a series name. If several colors are defined for the series (see Colors description below in this table) the selected chart data will be used to define the item names if they are not already specified. |
| Format labels | For pie chart types only. Defines the format of label text. Parameter substitution is used to allow you to configure the information displayed and its format. The behaviour is similar to that of Format Legend control described above.                                                                                                                                                                                                                                                          |

| Control            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum Axis       | Use the control to specify the upper bounds of the Y-axis. Both negative and positive values are allowed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Minimum Axis       | Use the control to specify the lower bounds of the Y-axis. Both negative and positive values are allowed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Pareto line color  | Pareto chart type only. Use the control to specify color of the accumulated line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Line width         | Use the control to set the width of the line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Pareto marker type | Pareto chart type only. Using the drop-down list, you can select a marker type for the accumulated line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Size               | Pareto chart type only. Use the control to specify the size of a marker.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Colors             | <p>Use the tab to define the color of a series (for all chart types) or for each segment\value of the series (only for bar, pareto, donut and pie chart types) or the exploded segment (only for pie and donut chart types) of the chart.</p> <p><b>Note.</b> If the chart data contains more values than there are colors available, the colors will be recycled. Only one segment can be exploded for the series.</p> <p>Use the Add, Edit, Move Up, Move Down and Remove buttons to manipulate the items available in the tab.</p> <p>If you define colors for each of series segments you can also define the item names which will be shown in legend box for the segment\value.</p> |

### 4.3 How to locate a chart relative to

The following example will show you how to locate a chart relative to the bottom of a region. For more details about the *relative to* options, see the Edit [Rearrange Properties](#).

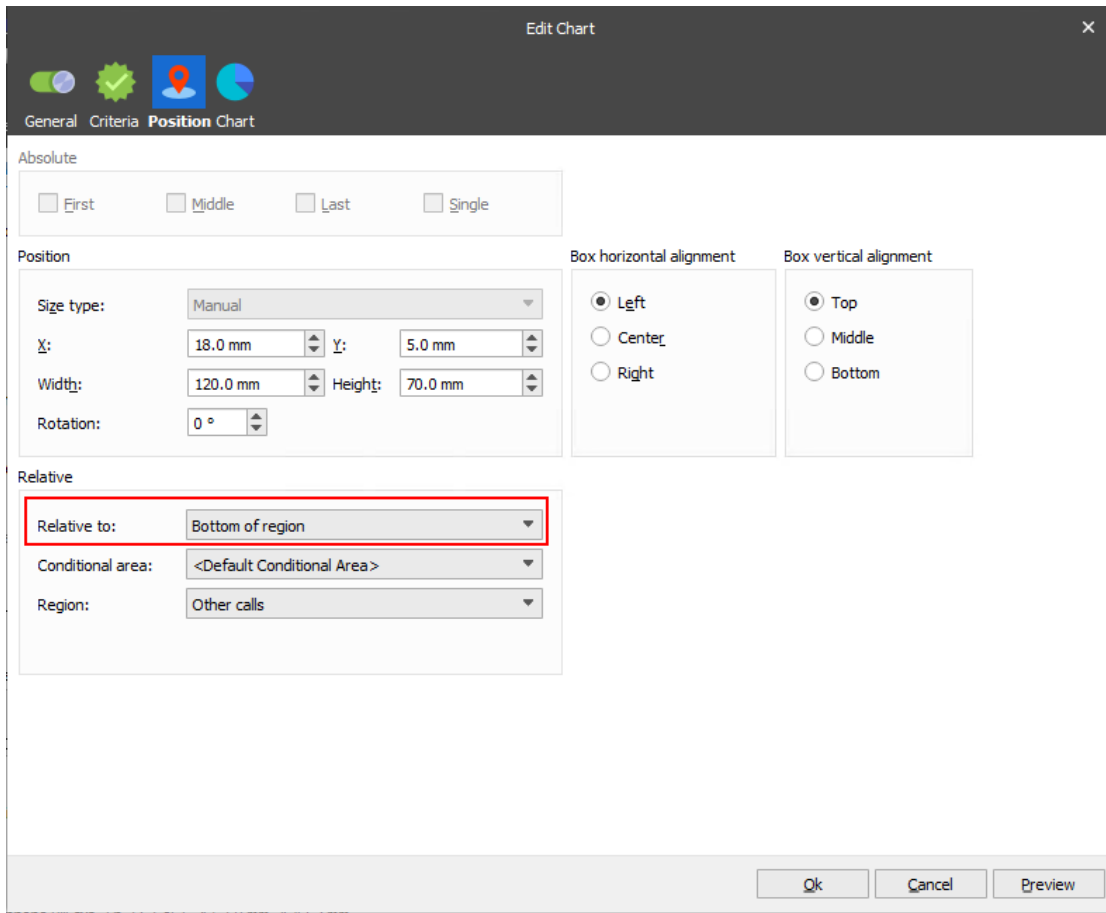
1. In the output, define the region of data relative to where you want to locate a chart. The picture below shows a region of data to locate our chart against:



The screenshot shows a form titled "Lasernet by Formpipe" and "invoice Meeting Our Customers Expectations". Below the header, there is a line of text: "Calls: 01/01/2014 - 31/01/2014 Activity: 01/01/2014 - 29/02/2014 Invoice date: 31/01/2014 Invoice number:1840090". A red box highlights a table titled "Other calls." with the following data:

| Band                 | Calls    | Duration | Cost (Excl. VAT) | Cost (Incl. VAT) |
|----------------------|----------|----------|------------------|------------------|
| All Denmark          | 66,00    | 82,00    | 0,18             | 0,22             |
| International Mobile | 78,00    | 166,00   | 9,06             | 10,96            |
| DK                   | 3,00     | 11,00    | 0,49             | 0,59             |
| DK - Mobile          | 3,00     | 0,00     | 0,18             | 0,22             |
| Teleservices         | 40,00    | 63,00    | 8,16             | 9,87             |
|                      | [script] | [script] | [script]         | [script]         |

2. Add a chart and then edit it, if required (for more information, see 4.2, *Charts Tool*).
3. Open the [Edit Rearrange](#) dialog by right-clicking the chart and then clicking **Properties** or double-clicking the chart you have added.



4. With the **Edit Rearrange** dialog open, switch to the **Relative** tab.
5. From the **Relative to** drop-down list, select **Bottom of region**.
6. Once you are done, click the **OK** button.

On the picture below, you can see the result of locating the chart relative to the bottom of the region:

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

1 **Lasernet** **invoice**  
by Formpipe Meeting Our Customers Expectations

2

3 Page 4 of 7

4

5 Calls: 01/01/2014 - 31/01/2014 Activity: 01/01/2014 - 29/02/2014 Invoice date: 31/01/2014 Invoice number: 1840090

6 **Other calls**

| Band                 | Calls | Duration | Cost (Excl. VAT) | Cost (Incl. VAT) |
|----------------------|-------|----------|------------------|------------------|
| All Denmark          | 66,00 | 82,00    | 0,18             | 0,22             |
| International Mobile | 78,00 | 166,00   | 9,06             | 10,96            |
| DK                   | 3,00  | 11,00    | 0,49             | 0,59             |
| DK - Mobile          | 3,00  | 0,00     | 0,18             | 0,22             |
| Teleservices         | 40,00 | 63,00    | 8,16             | 9,87             |
|                      |       |          |                  | <b>21,86</b>     |

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**Note:** Once you have located the chart relative to the bottom of the region, the location of the chart is changed if a region is relocated.

See the picture below to view the difference (the Y-position for the region is modified):

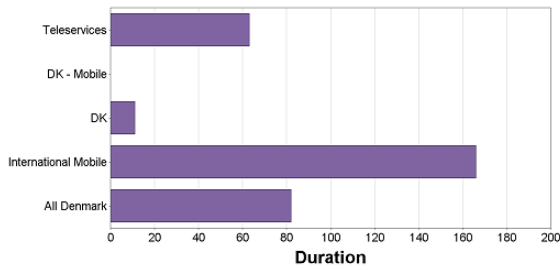


Calls: 01/01/2014 - 31/01/2014 Activity: 01/01/2014 - 29/02/2014 Invoice date: 31/01/2014 Invoice number:1840090

Other calls

| Band                 | Calls | Duration | Cost (Excl. VAT) | Cost (Incl. VAT) |
|----------------------|-------|----------|------------------|------------------|
| All Denmark          | 66,00 | 82,00    | 0,18             | 0,22             |
| International Mobile | 78,00 | 166,00   | 9,06             | 10,96            |
| DK                   | 3,00  | 11,00    | 0,49             | 0,59             |
| DK - Mobile          | 3,00  | 0,00     | 0,18             | 0,22             |
| Teleservices         | 40,00 | 63,00    | 8,16             | 9,87             |

[script]

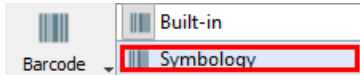


## 5 BARCODES

## 5.1 Barcodes

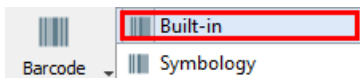
A large range of built-in barcodes can be inserted into the output view of a text form. A barcode can be inserted and delivered as a print output or embedded into PDF or TIFF files for archiving, mailing etc.

### 5.1.1 Symbology barcode (TrueType fonts)



Inserting barcodes via TrueType fonts is compatible with barcode fonts from [www.elfring.com](http://www.elfring.com), which must be bought and installed separately. Lasernet is able to calculate the symbology for a list of linear, insert stop, start code and check sums. The symbology for a TrueType font can only be maintained via profiles and cannot be added in the settings of a barcode rearrange, like the built-in barcodes.

### 5.1.2 Built-in barcode (images)



Built-in barcodes are inserted as images and included as a standard feature in Lاسernet.

### 5.1.3 Working with built-in barcodes

Click the **Barcode** → **Built-in** tool in the Form Editor and move to where you want to insert the barcode in your form. A label saying “No barcode assign yet” appears. Enter the output properties of this label via double-click or right-click and choose **Properties**. In the output properties of this Rearrange/barcode click **Add** to create:

**Barcode as profile** A global profile which can be added to other forms with same settings. Settings can be maintained in the Barcode Profile list (Lاسernet Developer) and will work globally in other forms.

**Embedded barcode** Settings will be embedded and work for this rearrange/barcode only.



In this example, we have embedded a barcode. The settings are not available for other rearranges/forms which will require the addition of another barcode profile.

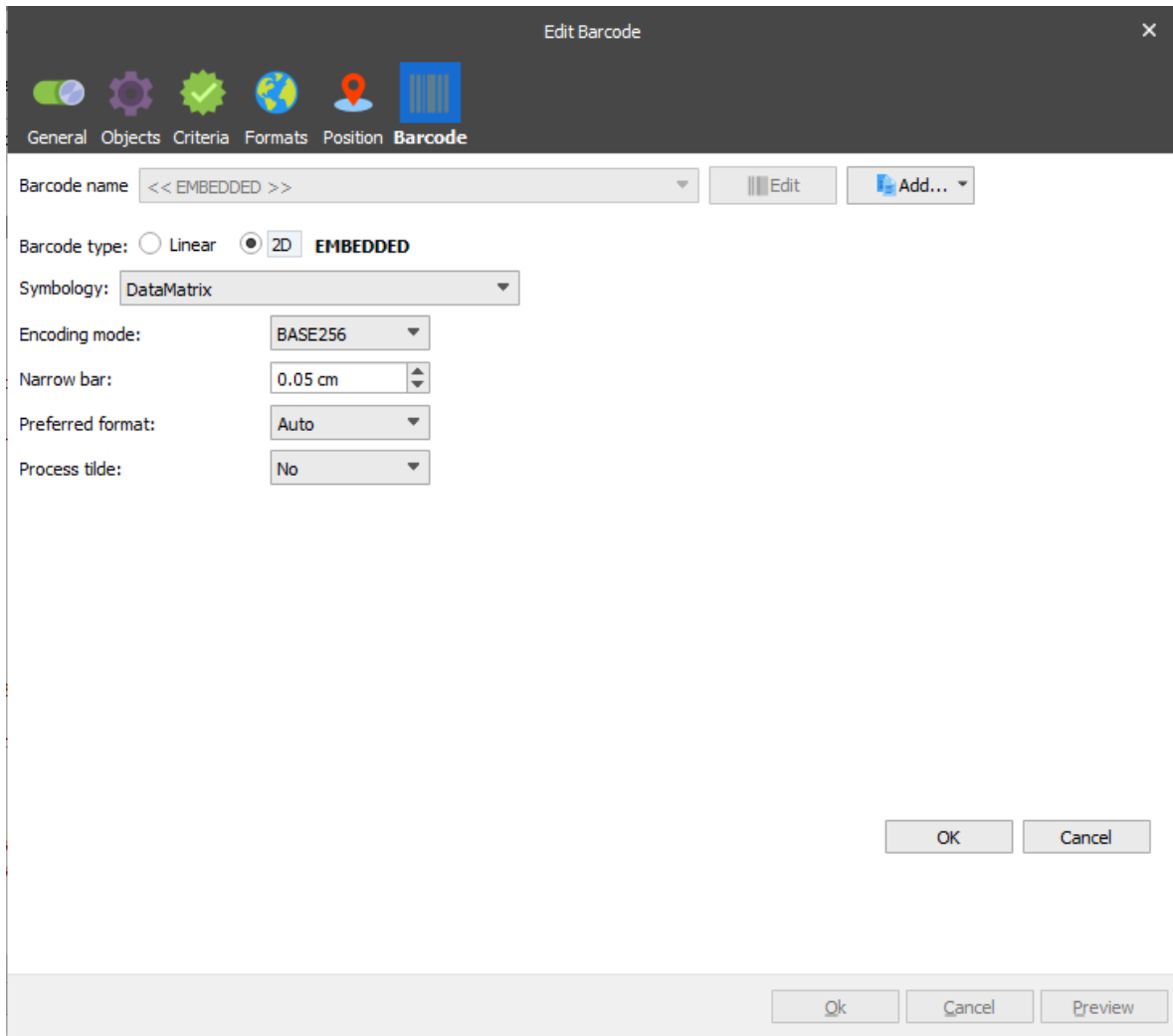
Select either a Linear:

The screenshot shows the 'Edit Barcode' dialog box with the following settings:

- Barcode name: << EMBEDDED >>
- Barcode type:  Linear,  2D, **EMBEDDED**
- Symbology: Code 128
- Code 128 charset: Auto
- Apply tilde:
- Dimensions:
  - Height: 1.0 cm
  - Narrow bar: 0.030 cm
  - Bearer bar horizontal: 0.0 cm
  - Bearer bar vertical: 0.0 cm
- Human readable:
  - None,  Below
  - Font: Arial
  - Size: 8

Buttons: OK, Cancel (in the main dialog area); Ok, Cancel, Preview (in the footer area).

or 2D barcode:



Then select the symbology for the barcode you want to insert. Settings can vary from barcode to barcode. If you want more information about the barcodes, please read the specifications in the manual “Lasernet 9 - Developer”.

#### 5.1.3.1 *Dimensions – basic settings for linear barcodes*

Most settings are common for linear barcodes.

|                              |      |                                                                                                                                                                                                                                                                               |
|------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Bar Height</b>            | 1    | The height of the barcode in centimeters (CM).                                                                                                                                                                                                                                |
| <b>Narrow Bar Width</b>      | 0.03 | NarrowBarWidth is the width in centimeters of the narrow bars. This is also referred to as the X dimension. The default is 0.03 CM, which is about .012" or 12mm. This value may need to be increased if the scanner being used cannot read barcodes with small X dimensions. |
| <b>Bearer Bar Horizontal</b> | 0    | The width of the horizontal bearer bars as a multiple of the XDimension; valid options are 0-10.                                                                                                                                                                              |
| <b>Bearer Bar Vertical</b>   | 0    | The width of the vertical bearer bars as a multiple of the XDimension; valid options are 0-10.                                                                                                                                                                                |

### 5.1.3.2 Human readable

If the barcode has support for human readable characters, you can turn the setting on and define the font type and size you want to use.

### 5.1.3.3 Application Identifiers for Code 128

May be encoded with ~202 as the FNC1 before each application identifier (AI). For example, (01)4075600255149 (30)96 should be entered as: ~2020104075600255149~2023096.

| Object name | XPath | Object type | Object value | Run as first pass |
|-------------|-------|-------------|--------------|-------------------|
|             |       | Fixed text  | ~202         |                   |
|             |       | JobInfo     | BCEANVE01    |                   |
|             |       | Fixed text  | ~202         |                   |
|             |       | JobInfo     | BCQUANTITYVE |                   |

Barcode type:  Linear  2D **EMBEDDED**  
 Symbology: Code 128 Code 128 charset: Auto  Apply tilde



The example shows data included in JobInfos. Data can also be included in rearranges.

### 5.1.3.4 Application Identifiers for UCC128

Automatic encoded with FNC1 for a single element. May be encoded with ~202 as the FNC1 before each additional application identifier (AI). For example, (01)4075600255149 (30)96 should be entered as: 0104075600255149~2023096.

Edit Barcode ✕

General **Objects** Criteria Formats Position Barcode

Objects:

| Object name | XPath | Object type | Object value | Run as first pass        |
|-------------|-------|-------------|--------------|--------------------------|
|             |       | JobInfo     | BCEANVE01    | <input type="checkbox"/> |
|             |       | Fixed text  | ~202         | <input type="checkbox"/> |
|             |       | JobInfo     | BCQUANTITYE  | <input type="checkbox"/> |

Input object:

Object type: JobInfo  Run as first pass

BCEANVE01

Barcode type:  Linear  2D **EMBEDDED**

Symbology: UCC128



(01) 04075600255149 (30) 96

The example shows data included in JobInfos. Data can also be included in rearranges.

## 5.2 Linear Barcodes

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Lasernet has support for the following list of built-in linear barcodes.



**Code 128** – Alpha-numeric barcode with three-character-sets. Supports Code-128, GS1-128 (Formerly known as UCC/EAN-128) and ISBT-128.



**Code 39** – An alpha-numeric bar code that encodes uppercase letters, numbers and some symbols; it is also referred to as Barcode/39, the 3 of 9 Code and LOGMARS Code.



**Code 93** – Similar to Code 39 but requires two checksum characters.



**Codabar** – A numeric barcode encoding numbers with a slightly higher density than Code 39.



**Interleaved 2 of 5** – The Interleaved 2 of 5 barcode symbology encodes numbers in pairs, similar to Code 128 set C.



**POSTNET** – Used by US post offices for mail delivery and tracking.



**UPC, EAN & GTIN** – This is one of the most common barcode types. It is used to encode the GTIN as well as to create JAN, ISBN and Bookland barcodes.



### 5.3 2D Barcodes

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Lasernet supports for the following list of built-in 2D barcodes.



Data Matrix Fonts – A matrix symbol that allows very efficient encoding of data into a square barcode with error correction.



MaxiCode Fonts – Used primarily by UPS to route and track packages.



PDF417 Fonts – This unique 2D barcode type is commonly used on FedEx shipping.



QR-Code Fonts – A matrix symbol that is capable of encoding binary and ASCII characters. Asian/Kanji characters are not supported.