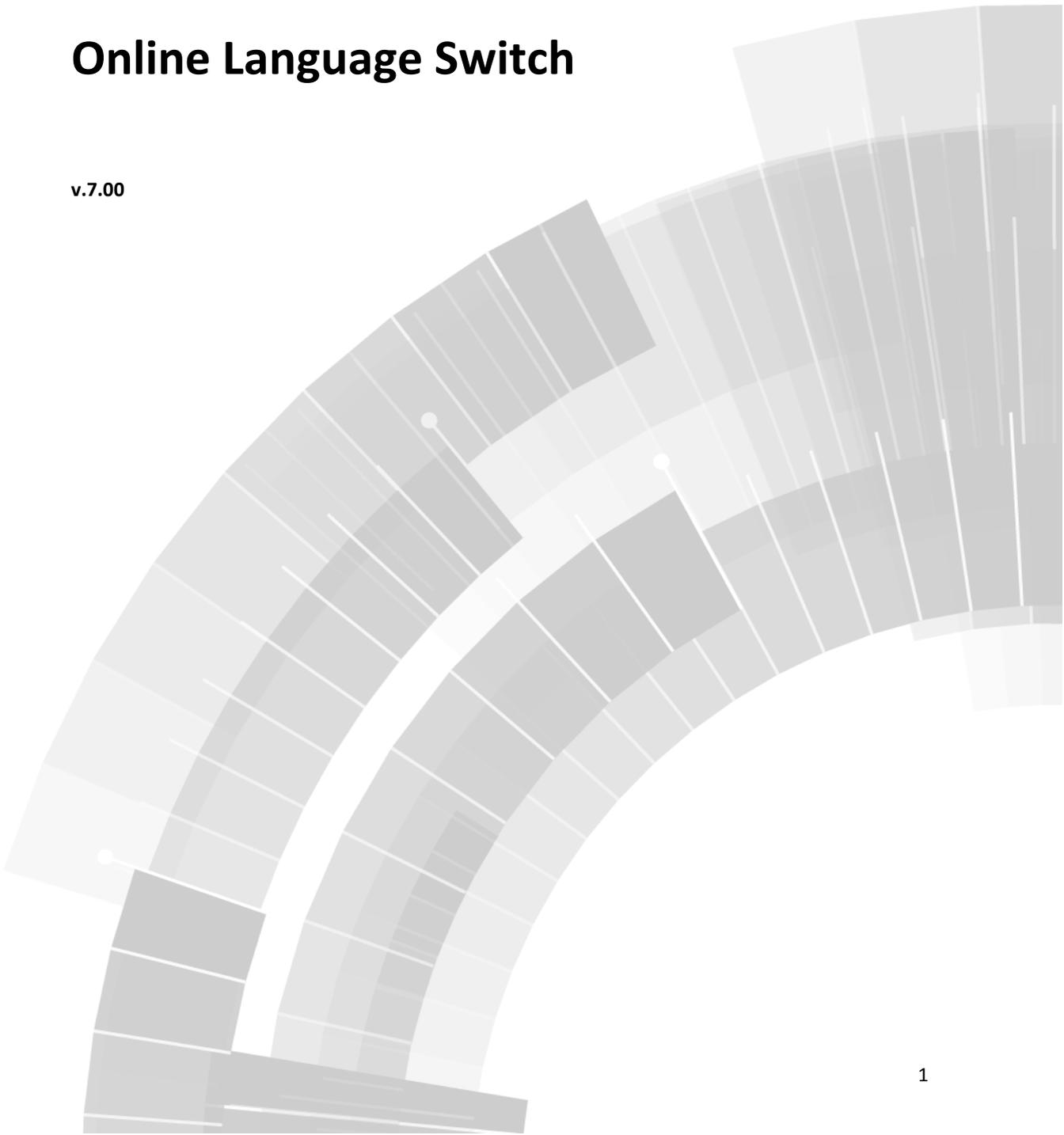


zenon tutorial

Online Language Switch

v.7.00





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1. Welcome to COPA-DATA help

GENERAL HELP

If you miss any information in this help chapter or have any suggestions for additions, please feel free to contact us via e-mail: documentation@copadata.com (<mailto:documentation@copadata.com>).

PROJECT SUPPORT

If you have concrete questions relating to your project, please feel free to contact the support team via e-mail: support@copadata.com (<mailto:support@copadata.com>)

LICENSES AND MODULES

If you realize that you need additional licenses or modules, please feel free to contact the sales team via e-mail: sales@copadata.com (<mailto:sales@copadata.com>)

2. Online Language Switch

The language change allows you to switch the language of text information between different languages in the Runtime. This functionality is essential for the realization of international projects.

Examples for the usage are:

- ▶ Delivering a project in different languages
- ▶ Central services, which can be accessed from different countries

- ▶ Decentral equipment, which can be accessed worldwide
- ▶ Language switchable operation of equipment

3. Requirements

Control system since version 6.20

Some basic knowledge about the control system is needed for this tutorial. For new users we recommend to do the tutorial Basic first.

The Project Wizard was used on creating this project. This wizard automatically creates the basic objects, which are not described here but needed for the examples (e.g. Main_Screen, Button_Bar, Functions).

The instructions for the settings in the properties window refer to the **Grouped view**.

4. Aim of this tutorial

Creating the project in this tutorial will take between 1.5 and 2 hours.

The aim of this tutorial is to give you an extensive overview over the possibilities for the language changed offered by the control system. We will start with the basic functionality of switching the language of the texts used in text elements or buttons (even in non-western character sets). Then we will proceed to different special window classes like alarms and CEL, and to the possibility to convert technical units with the help of reports. After this tutorial you should be able to solve all tasks concerning the online switching of languages.

5. Topics

| | |
|-----------|---|
| Project 1 | <p>It should be possible to switch the language of a text online.</p> <p>Switching between English and Dutch should be possible.</p> <p>Switching the language should be executed via bitmap buttons with the flags of the according countries.</p> |
| Project 2 | <p>It should be possible to switch the language of a text and the text of a button online.</p> <p>This time to an Asian language with an Asian character set.</p> <p>Switching between English and Japanese should be possible.</p> <p>Switching the language should be executed via bitmap buttons with the flags of the according countries.</p> |
| Project 3 | <p>It should be possible to switch the language of the entries in the Chronologic Event List and the texts on buttons online.</p> <p>Switching between English and Japanese should be possible.</p> <p>Switching the language should be executed via bitmap buttons with the flags of the according countries.</p> |
| Project 4 | <p>It should be possible to switch the language of the entries in the Alarm List and the texts on buttons online.</p> <p>Switching between English and Japanese should be possible.</p> <p>Switching the language should be executed via bitmap buttons with the flags of the according countries.</p> |
| Project 5 | <p>Switching technical units, e.g. temperatures.</p> <p>Switching between English and German should be executed via bitmap buttons with the flags of the according countries.</p> <p>Along with switching between the languages English and German the temperature values should also be switched between degrees Fahrenheit and degrees Celsius.</p> |

| | |
|-----------|---|
| Project 6 | Possibilities to use wizards for switching languages |
| Project 7 | Possibilities to switch the language of Runtime help, text files and media paths. |

6. Switching texts

WHAT IS DONE?

| | |
|-----------------------------|---|
| Language switching: Text | It should be possible to switch the language of a text online. |
| | Switching between English and Dutch should be possible. |
| | Switching the language should be executed via bitmap buttons with the flags of the according countries. |

6.1 Creating a screen with text

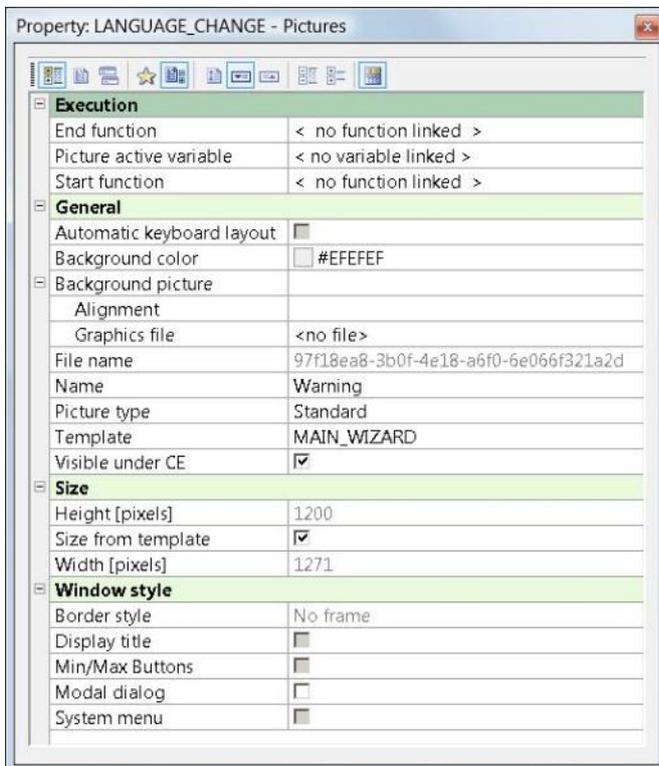
WHAT IS DONE?

| | |
|--------|--|
| Screen | The screen Warning will be created. |
| Text | A vector element Text will be created. |

6.1.1 Screen

- ▶ Open the context menu of the **screens** in the Project Manager.
- ▶ Select **Screen new**.

- ▶ “Screen_0” is created automatically.
- ▶ Change the configuration in the properties window.
- ▶ Change the properties as shown in the screenshot below:



- ▶ Under Representation / Name enter Warning.
- ▶ Select the frame Main_Frame.

This frame has automatically been created by the Project Wizard.

- ▶ Your screen Warning will now be listed in the detailview of the Project Manager.
- ▶ Open it with a doubleclick.

6.1.2 Text

- ▶ Select the element Text from the pulldown menu Vector elements and draw it in your screen Warning with the mouse.

In the screen the element `Text` now can be drawn in the desired size.

Now configure the text field in the properties window:

- ▶ Under `Representation/Text` enter `@High temperature!`.



Info

The “@” indicates, that the following text should be translated.

In the control system these texts are called Keywords.

6.2 Language table

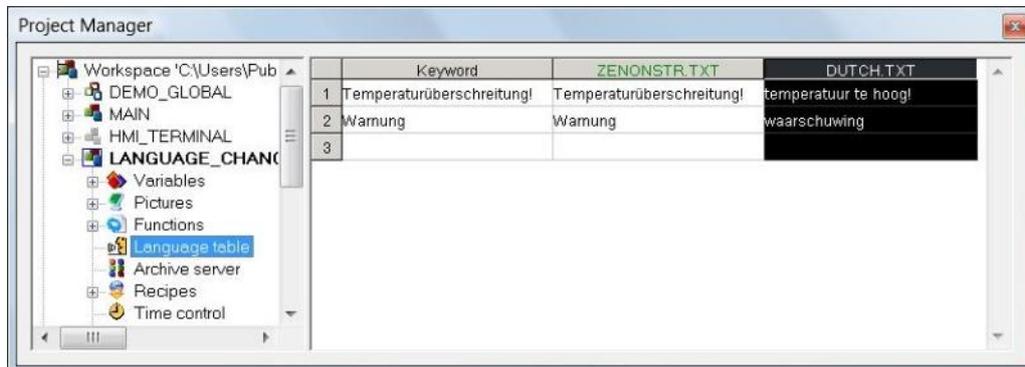
WHAT IS DONE?

| | |
|----------------|---|
| Language table | A column Dutch is created in the language table. |
| | The existing texts are added to the language table and translated to Dutch. |

6.2.1 Language table

- ▶ Open the context menu of the `Language table` in the Project Manager.
- ▶ Select `Language table new`.
- ▶ Enter `Dutch` in the now opening dialogbox.
- ▶ Confirm it with `OK`.

- ▶ Click into the cells of the table and enter the texts according to the screenshot below:



- ▶ Select “save” in the context menu of the table.



Info

In order to save the entries in the language table, select **save** from the context menu.

If you move to another line in the table, the entries are automatically saved.



Info

The sort key for the language table is the column of the keywords, which is sorted alphabetically. New entries are correctly sorted, after the table is reopened.

Via the context menu of the table header the table can be sorted ascending or descending by the according column.

*It is possible to use functions *Search and Replace*.*



Info

The keyword in the language table has to match with the keyword in the project (no leading blank, case sensitive, etc.).

6.3 Function "Screen Switch"

WHAT IS DONE?

| | |
|------------------------|--|
| Function Screen switch | In the screen <code>Button_Bar</code> a button for the screen switch to the screen <code>Warning</code> will be added. |
| | A function for the screen switch will be created and linked to the button. |

6.3.1 Function Screen switch

1. Open the screen `Button_Bar`.
2. Select the dynamic element `Text button` from the drop-down list.
3. Draw the button in your screen `Button_Bar` with the mouse.
4. In the screen the button now can be drawn in the desired size.



Info

You also can copy the existing button `Main Window` and then configure it as described below.

1. Click on the button.
2. Under `Representation / Name` in the properties window enter `@Warning`.
3. Open the context menu of the "Functions" in the Project Manager.
4. Select `Function new`.

The dialogbox for selecting a function now opens automatically.

5. Under `Screen – Functions` select `Screen switch`.
6. In the now opening dialogbox `Select screen` select the screen `Warning`.

7. Link this function to the button via Drag&Drop.



Info

*You also can link the function in the properties window of the button under **Runtime / Function**.*

6.4 Buttons

WHAT IS DONE?

| | |
|--------------------------|---|
| Bitmap button | Two bitmap buttons with flags are created. |
| Graphics | The graphic files for the flags are inserted in the Editor. |
| Function Language change | The falgls are linked with the function: Language switching: Dutch and language change: German. |

6.4.1 Bitmap Button

- ▶ Select **Bitmap button** from the drop-down list Elements.
- ▶ Add two of them to your screen Warning.

6.4.2 Graphics

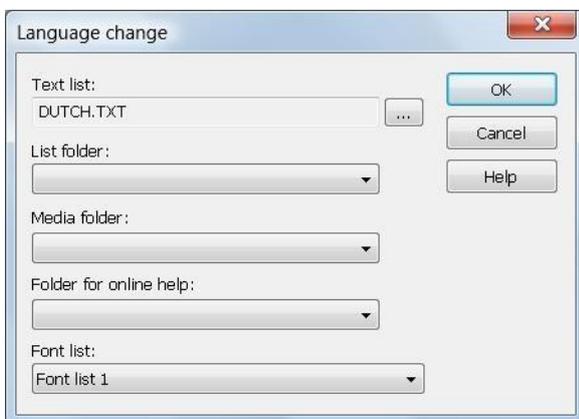
- ▶ In the Project Manager open the context menu of **File / Graphics** and select **Add file**.
- ▶ Add a Dutch and an English flag.
- ▶ In the detailview of the Project Manager now these two graphics are listed.
- ▶ Link it with Drag&Drop.

6.4.3 Function Language change

Info

The function `Language change` switches from one text list to another in the Runtime.

- ▶ In the Project Manager select **Function new** from the context menu of the Functions.
- ▶ Select the application function **Language change**.
- ▶ Change the entries in the dialogbox as shown in the screenshot below:

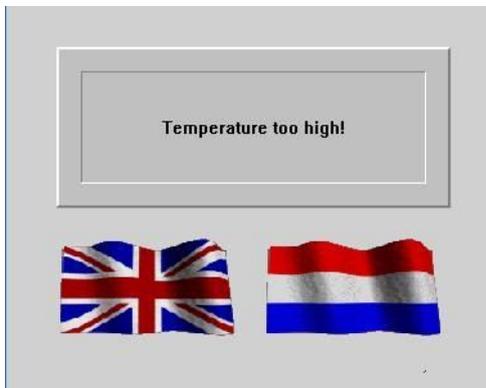


- ▶ Under Text list select `Dutch.txt`.
- ▶ Under Font list select `Font list 1`.

Example

Create another function `Language change` for English with the text list `zenonStr.txt`.

- ▶ Link the bitmap buttons with the flags to the according functions Language change. (Drag and Drop)



Info

You now are able to switch between all languages with the western character set.

6.5 Runtime

WHAT IS DONE?

| | |
|---------|---|
| Runtime | The Runtime is started and the language switch is tested. |
|---------|---|



The Runtime can be closed with the key combination ALT+F4.

7. Asiatic character sets

WHAT IS DONE?

| | |
|--------------------------------|---|
| Language switching: Unicode | It should be possible to switch the language of a text and the text of a button online. |
| | This time to an Asian language with an Asian character set. |
| | Switching between English and Japanese should be possible. |
| | Switching the language should be executed via bitmap buttons with the flags of the according countries. |

7.1 Fonts and font lists

WHAT IS DONE?

| | |
|------------|---|
| Font lists | Defining the fonts for the western and the Japanese character set |
| Fonts | Defining the fonts (western and Unicode) |
| | Selecting a font for the buttons |
| | Selecting a font for the texts |

7.1.1 Font list

<<-zenonBoxStart=INFO->>

<<-zenonBoxEnd=INFO->>

Info

If you want to use Asian characters in the Editor, you first have to activate them in the Windows settings:

Control panel / Regional settings / Languages / Install file for eastern characters.

First two different font lists have to be created. The font list for English in western format, the one for Japanese in unicode.

- ▶ Open the entry **Screens / Fonts**.
- ▶ In the context menu select **Font list new**.

In the detailview of the Project Manager two font lists are displayed now.

They can be configured in the properties window.

- ▶ Click on the column header **Font list 1**.
- ▶ In the properties window **Font list 1** is renamed to **English**.

Example

*Enter the name **Japanese** for the **Font list 2**.*

7.1.2 Font

- ▶ Open the context menu of the **font list German**.

Now a font can be selected:

- ▶ Change the properties as shown in the screenshot below:



- ▶ Select the font, the aspect and the size.
- ▶ Under Script select Western.
- ▶ In the properties window of the font list English you can rename the font to Button font.

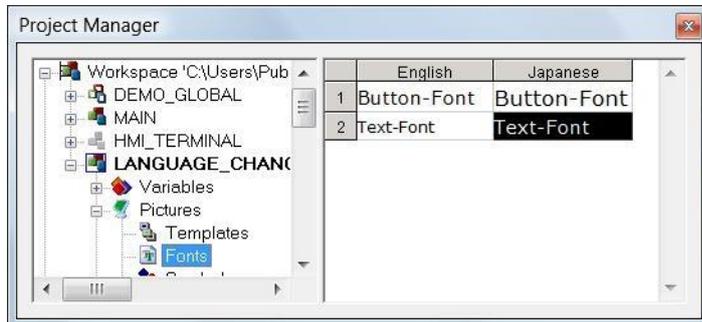
Example

Define another font Arial Unicode MS, aspect and size of your choice, and the script Unicode for the Japanese font list.

We now will define a second font for the texts in the Runtime:

- ▶ Select a smaller font size here (e.g. 8).
- ▶ Under General/Name in the properties window you now can rename the font to Text font.

Now the detailview of our Project Manager should look like shown below:



7.2 Texts

WHAT IS DONE?

| | |
|----------------|--|
| Text | A vector element <code>Text</code> will be created. |
| Text button | A dynamic element <code>Text</code> button is created. |

7.2.1 Text

- ▶ Select the vector element `Text` and draw it in your screen `Main_Screen` with the mouse.
- ▶ In the screen the element `Text` now can be drawn in the desired size.

Now configure the text field in the properties window:

- ▶ Click on the text field.
- ▶ Select the defined `Text` font under `Representation/Font`.
- ▶ Under `Text` enter `@Communication` problem with `PLC`.

7.3 Japanese

WHAT IS DONE?

| | |
|-----------------|--|
| Language tables | The language table Japanese will be added. |
| Texts | The texts will be added to the language table. |

7.3.1 Language table

- ▶ Select the entry `Language table` in the Project Manager.



Example

Create another table with the name `Japanese`.

Now the strings that should be translated can be added to the language table.

| | Schlüsselwort | zenOnStr.txt | JAPANISCH.TXT |
|---|--------------------------------------|--------------------------------------|---------------|
| 1 | Alarm | Alarm | の警報 |
| 2 | Fehler bei der Kommunikation zur SPS | Fehler bei der Kommunikation zur SPS | 指示計器 |
| 3 | | | |

The column `zenon.Str.txt` is created automatically.

 **Info**

A green text colour in the column header indicates the language that has been selected as the standard language for the Editor. So already in the Editor you are able to check, if the length of the texts does not exceed the length of the according text fields. There is no need to start the Runtime for this.

*The language for the Editor can be switched via the context menu of the language table with the command **Language file for Editor**.*

 **Info**

You have the possibility to select different fonts for the different languages in the language table. The selected font then is displayed in the language table. To do that, open the context menu of the according column and select the font.

7.3.2 Text button

- ▶ Draw a dynamic element `Text button` in your `Main_Screen`.
- ▶ Under `Text line 1` in the properties window enter `@Alarm`.
- ▶ Select `Button font` under `Representation/Font`.

7.4 Function “Language change”

WHAT IS DONE?

| | |
|----------|---|
| Bitmaps | Japanese and English flag as buttons for the language change. |
| Function | A function Language change will be created. |
| | Linking the functions to the flag buttons. |

7.4.1 Bitmap Button

- ▶ Add two new dynamic elements `Bitmap button` to your screen `Main_Screen`.
- ▶ Open `Files / Graphics` in the Project Manager.
- ▶ Select `Add file` from the context menu.



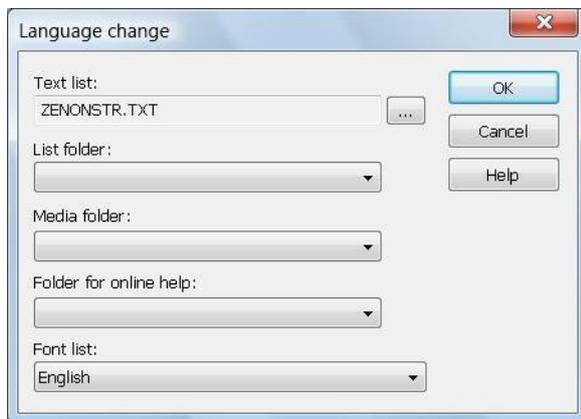
Info

You will find different flags in GIF format in the demo project on the installation CD of the control system under `Overview/Custom/Graphics`.

7.4.2 Function Language change

- ▶ In the Project Manager select `New function` from the context menu of the `Functions`.
- ▶ Select the application function `Language change`.

The following dialogbox opens:



- ▶ Under Text list select `zenonStr.txt`.
- ▶ Under Font list select `English`.

Example

Create another function `Language change`.

Select Japanese.

- ▶ With Drag&Drop the functions can easily be linked to the 2 flag buttons.

Now our screen “Main_Screen” should look like shown below:



7.5 Runtime

WHAT WILL WE DO?

| | |
|------------|---------------------|
| Runt me | Starts the Runtime. |
|------------|---------------------|

7.5.1 Runtime

- ▶ In the Runtime try out switching from one language to the other.



 Info

You now are able to switch all texts between all languages.

8. Chronologic Event List

WHAT IS DONE?

Chronologic Event
List

A screen of the screen type Chronologic event list with all its system messages is translated.

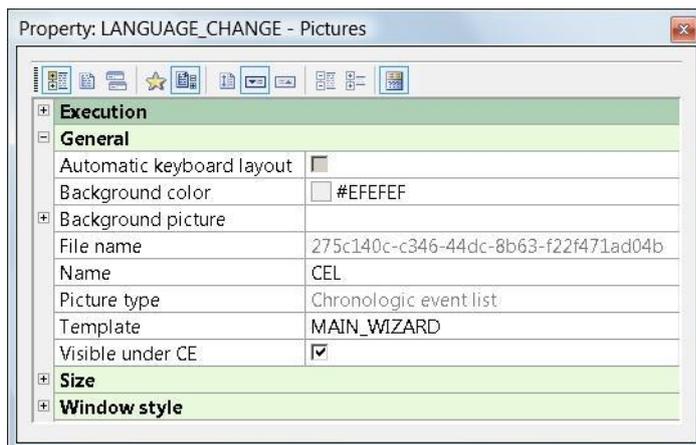
8.1 Creating the CEL

WHAT IS DONE?

| | |
|------------------------|--|
| Chronologic Event List | A screen of the screen type Chronologic event list is created. |
| | A button is linked to a function <code>Screen switch</code> to the screen CEL. |

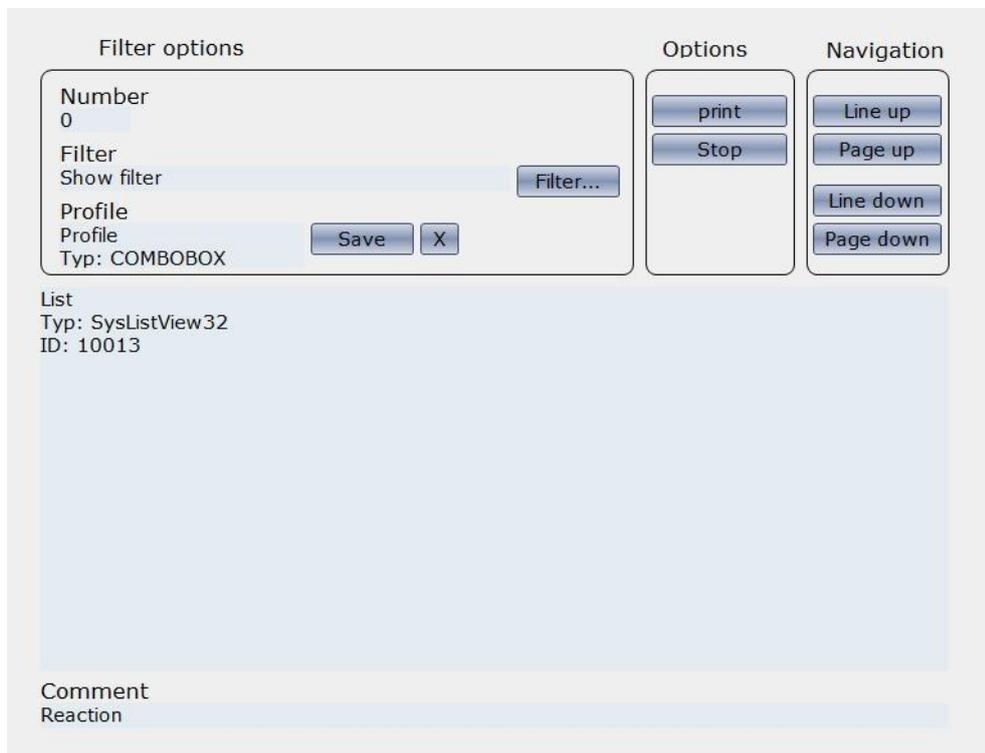
8.1.1 CEL

- ▶ In the Project Manager select `screen new` from the context menu of the Screens.
- A "Screen_0" is automatically created and can be configured in the properties window.
- ▶ Change the properties as shown in the screenshot below:



- ▶ Select the screen type Chronologic event list.
- ▶ Enter the name CEL.
- ▶ Select `Main_Frame` as the frame.
- ▶ Open the screen "CEL".
- ▶ Select `Add template ...` from the pulldown menu Control elements.

After you have selected a template, default elements are inserted in screen CEL automatically.



8.2 Function “Language change”

WHAT IS DONE?

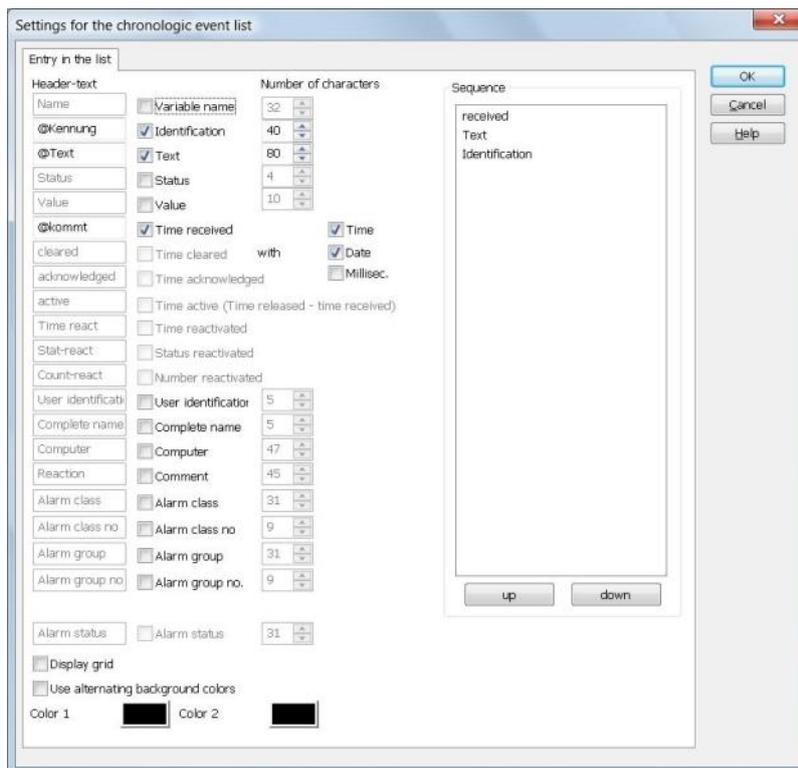
| | |
|-------------------|--|
| language switch | The column headers of the CEL are translated. |
| Texts and buttons | The default elements of the CEL (texts and buttons) are linked to the according font and are translated. |
| Bitmap button | The two bitmap buttons with the flags and the functions Language change are copied to the screen CEL. |

8.2.1 CEL administration

- ▶ Open the context menu of your project in the Project Manager.
- ▶ Select **CEL configuration**, property page **Entry in the list**.

Here you have the possibility to translate the column headers for the CEL.

- ▶ Change the properties as shown in the screenshot below:



- ▶ Activate the entry **Identification**.
- ▶ Add a "@" in front of all selected entries.

 **Attention**

You can only switch the language of the “Identification” not that of the “Name”.

A variable is identified by its name. So you can use the same identification for several variables, but the names have to be unique in the project.

8.2.2 Texts and buttons

- ▶ Open the screen “CEL”.
- ▶ Click on the text field of the CEL.
- ▶ Under Representation/Font in the properties window select Text font.

 **Info**

Select the font Text font for all texts in the screen CEL.

Multi-selection is possible: Select the elements with the key combination Ctrl+A or Shift+mouse click .

- ▶ For all the texts and buttons you use in the CEL enter a “@” in front of the their names in the properties window.

 **Example**

Also translate the other buttons in the screen CEL (**Sort**, **Filter**, **Print**, **Stop**, **Close**).

Link the button font to them.

Update your language table.

8.2.3 Bitmap Button

The two bitmap buttons with the flags and the functions `Language change` are copied to the screen CEL.

- ▶ In the `Main_Screen` select the bitmap buttons and copy them.
- ▶ Under `Representation/Font` in the properties window select `Text font`.
- ▶ Paste the bitmap buttons in the screen CEL (linked functions are also copied).

8.3 System messages

WHAT IS DONE?

| | |
|-------------------------------------|---|
| Function <code>Screen switch</code> | A button CEL is added to the button bar and is linked to the function <code>Screen switch</code> to the screen CEL. |
| Translating system messages | Add the system messages to the language table. |

8.3.1 Function screen switch

In order to be able to switch between the screens, we have to define “Screen switch” functions.

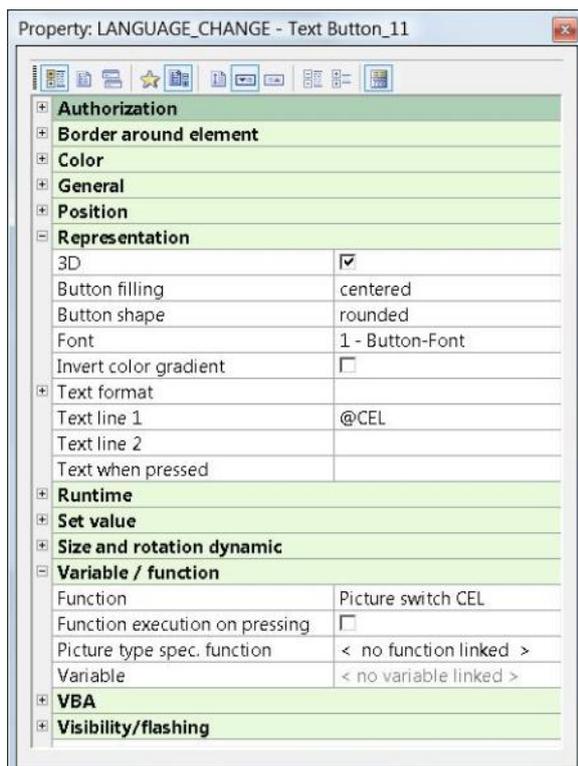
- ▶ In the Project Manager select **Function new** from the context menu of the Functions.
- ▶ Select the screen function **Screen switch**.
- ▶ Select CEL as the linked screen.

In the screen Button_Bar we now create a button for the function Screen switch to the screen CEL:

- ▶ Create a button (either as a new dynamic element or by copying the button Main Window).
- ▶ Change the configuration of the button in the properties window.

The button text CEL should be translated.

- ▶ Change the properties as shown in the screenshot below:



- ▶ Select Button font **under** Representation/Font.
- ▶ Under Representation/Text enter @CEL.
- ▶ Under Runtime/Function **select the function** Screen switch to the screen CEL.

**Info**

You can also link the function via Drag&Drop.

8.3.2 Translating system messages

There are pre-defined keywords for all texts, that are used in the Runtime as defaults.

**Info**

For an individual translation of the pre-defined keywords:

You will find an Excel file with the pre-defined keywords on the installation CE of the control system under Predefined/CEL keywords.

- ▶ The texts to be translated have to be copied to the language table.

THE PRINCIPLE OF KEYWORD TRANSLATION

The table works with the principle of keywords, which are assigned to the according translations. These keywords are always indicated with a “@”.

Here it is true:

| | |
|-------|---|
| @Text | The whole text will be translated. |
| Text | This text will not be translated. |
| @Text | <p>The text between the two "@" will be translated.</p> <p>Here it is true: After an odd number of "@" the text will be translated (start to count at the beginning of the entry):</p> <p>the text between the first and the second "@" is translated, the text between the second and the third "@" not!</p> |



Info

A sequence of text elements that should be translated and such that should not be translated is possible. @The user@ Miller @is logged out.

@Text1@Text2@Text3

Text1 and text3 will be translated, text2 not.



Info

For the entries in the language table the following is true: for each "@" a package is generated and these packages have to be entered in the language table as single entries. Thus one entry per "@"!

@The user@ Miller @is logged out.

Two entries have to be added to the language table: @The user@ Miller @is logged out.

The new keyword also can be entered directly in the language table. Here it is true: In the language table the keywords are entered without "@" or the "@" is automatically removed.

| | Schlüsselwort | zenOnStr.txt | DEUTSCH.TXT | JAPANISCH.TXT |
|----|----------------------------------|----------------------------------|----------------------------------|---------------|
| 1 | Alarm | Alarm | Alarm | ライン毎の最高の流入 |
| 2 | CEL | CEL | CEL | ください |
| 3 | Fehler bei Kommunikation zur SPS | Fehler bei Kommunikation zur SPS | Fehler bei Kommunikation zur SPS | 新しい作成しなさい |
| 4 | Main window | Main window | Main window | ただ入 |
| 5 | Sortieren | Sortieren | Sortieren | 油圧 |
| 6 | System wurde beendet | System wurde beendet | System wurde beendet | 警報を置きなさい |
| 7 | System wurde gestartet | System wurde gestartet | System wurde gestartet | システム運転中! |
| 8 | Filter | Filter | Filter | みばせゆ / ム運 |
| 9 | drucken | drucken | drucken | 普遍的なスライダー |
| 10 | Stop | Stop | Stop | 温度 |
| 11 | Schließen | Schließen | Schließen | ネットワーク |
| 12 | | | | |



Info

For the language table the following is true: The pre-defined keyword is generated by the program and depends on the selected language of the Runtime. The language of the Runtime is set in the Editor or in the `zenon6.ini` under `LANGUAGE=`.

e.g.: In an English Runtime English keywords are used.



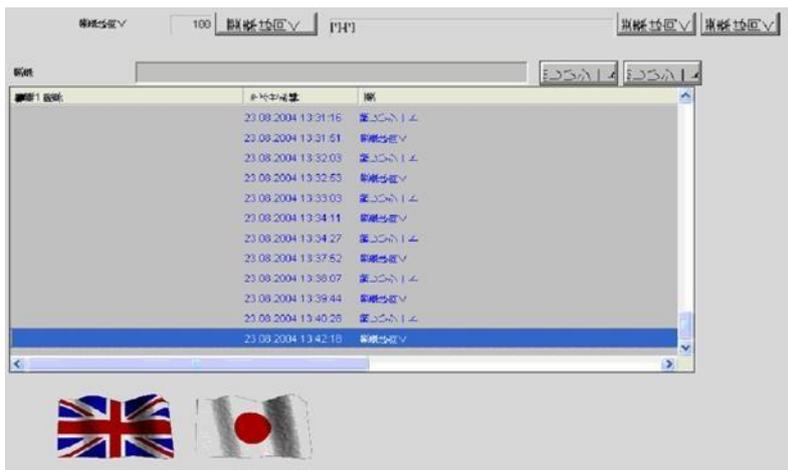
Info

The button captions in the dialogs (e.g. `OK`, `Cancel`) depend on the settings of the operating system.

8.4 Runtime

WHAT IS DONE?

| | |
|---------|--|
| Runtime | The project is started in the Runtime. |
|---------|--|



Info

The System Text Wizard can help you a lot in this part of defining the language change.

9. Alarms

WHAT IS DONE?

| | |
|------------------------------|---|
| Alarm Information List | A screen of the screen type Alarm and its entries are translated. |
|------------------------------|---|

9.1 Variable with limit

WHAT IS DONE?

| | |
|----------|--|
| Variable | A variable will be created. |
| | Limits for the variable will be defined. |

9.1.1 Variable

A variable Fill level will be created.

- ▶ In the Project Manager select **variable new** from the context menu of the Variables.

- ▶ Change the properties as shown in the screenshot below:



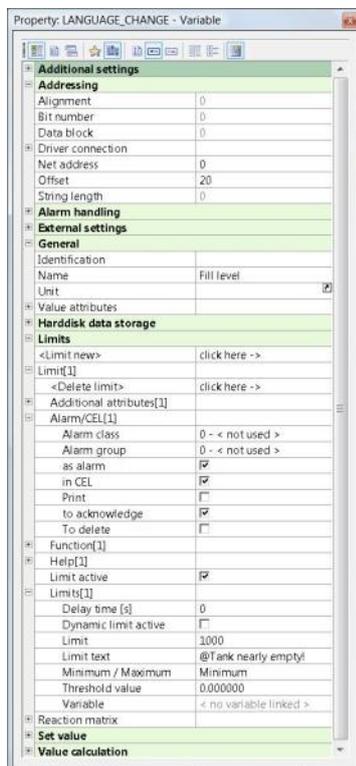
- ▶ Enter the variable name `Fill level`.
- ▶ Use the simulation driver.
- ▶ Under `Driver object type` select `PLC marker`.
- ▶ Under `Data type` select `USINT`.

Now limits are defined for the variable:

- ▶ Open the properties window of the variable.
- ▶ The context menu of the properties window allows you to add a new limit.

A new `Limit[1]` is created and can be configured.

- ▶ Change the properties as shown in the screenshot below:



- ▶ Set the Offset to 20.
- ▶ Activate in CEL and as alarm.
- ▶ Set the Set value to 1000.
- ▶ As limit text enter @Tank nearly empty! (this text should be translated!)
- ▶ Under Minimum / Maximum select Minimum.

9.2 Alarm list screen

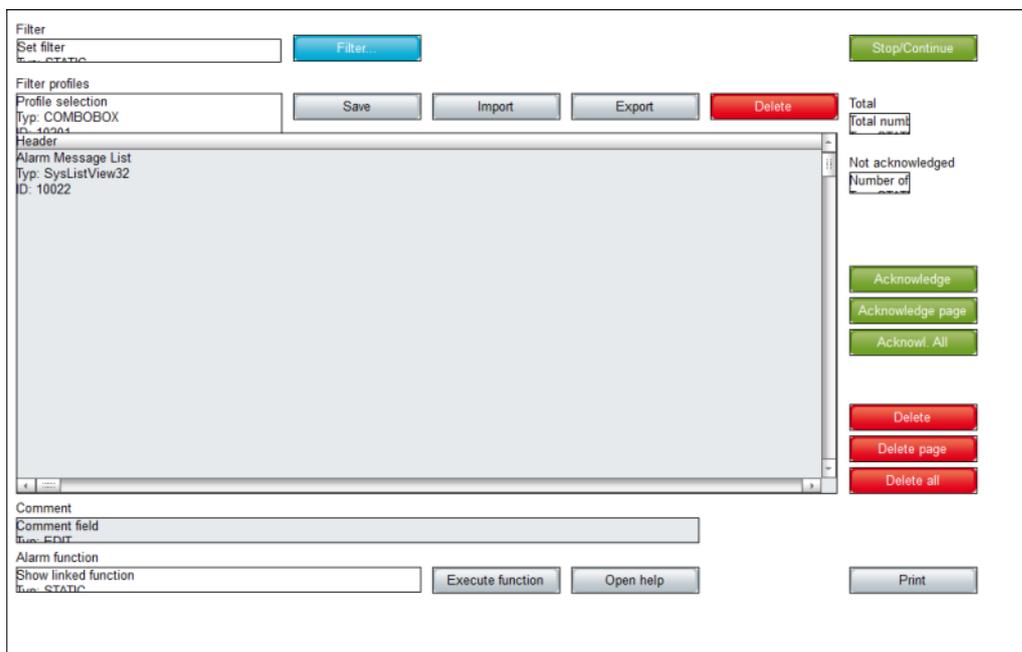
WHAT IS DONE?

| | |
|-------------------|---|
| Screen Alarm list | A screen of the screen type Alarm is created. |
| | A button is linked to a function Screen switch to the screen ALL. |
| Dynamic element | A dynamic element Bar display is added to the screen ALL. |

9.2.1 Screen

1. Create a new screen AML.
2. Under General/Screen type in the properties window set the type to Alarm.
3. Add a button AML to the screen Button-Bar.
4. Link this button to a function Screen switch to the screen AML.
5. Open the screen AML.
6. In menu Control elements click on Add template.
7. The dialog for selecting a template is opened.
8. Select the desired template.

9. The template is inserted.



10. Now add a dynamic element Bargraph to the screen of type AML.

11. Link the bar graph to the variable Fill level.

9.3 Alarm list

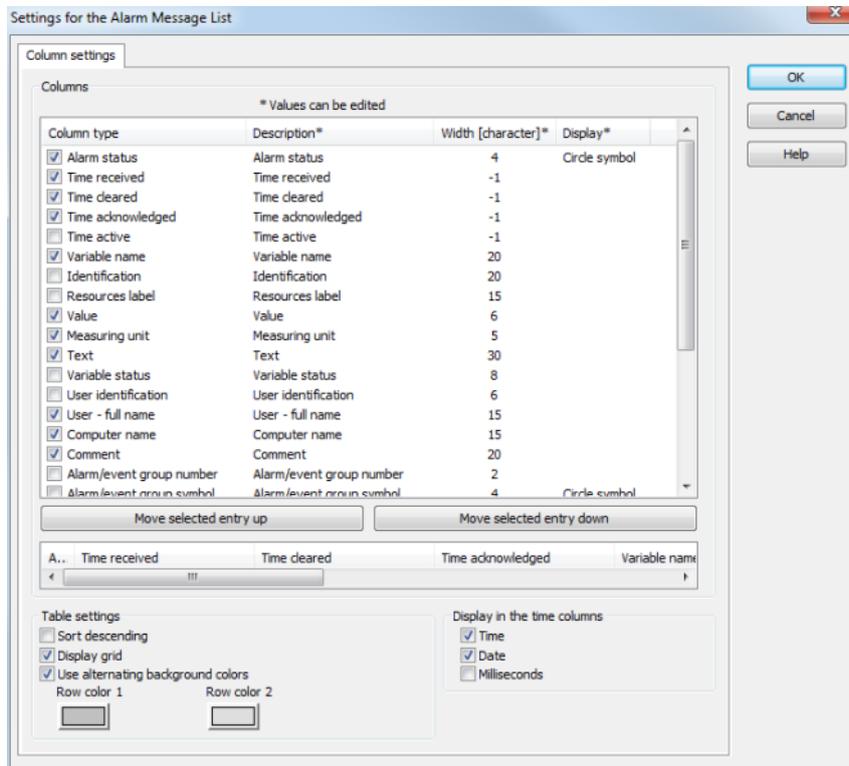
WHAT IS DONE?

| | |
|-----------------------|---|
| Alarms administration | The column headers of the alarm list are translated. |
| Texts and buttons | The default elements of the alarm list (texts and buttons) are linked to the according font and are translated. |
| Language table | The new entries are added to the language table. |
| Bitmap button | The two bitmap buttons with the flags and the functions Language change are copied to the screen AIL. |

9.3.1 Alarms administration

- ▶ Open the context menu of your project and select **Alarm administration**.

- ▶ Add a @ in front of all active entries on the property page **Entry** in the list.



9.3.2 Texts and buttons

- ▶ Link the texts and buttons to the according fonts.
- ▶ For all the texts and buttons enter a "@" in front of their names in the properties window.

9.3.3 Language table

- Update the entries in the language table.

e.g.

| | Schlüsselwort | zenOnStr.txt | DEUTSCH.TXT | JAPANISCH.TXT |
|----|----------------------------------|----------------------------------|----------------------------------|---------------|
| 2 | Alle quittieren | Alle quittieren | Alle quittieren | 振込時の負担 |
| 3 | CEL | CEL | CEL | たださい |
| 4 | Fehler bei Kommunikation zur SPS | Fehler bei Kommunikation zur SPS | Fehler bei Kommunikation zur SPS | 新しい作成しなさい |
| 5 | Filter | Filter | Filter | みばせゆ / ム選 |
| 6 | Main window | Main window | Main window | ただ入 |
| 7 | Schließen | Schließen | Schließen | ネットワーク |
| 8 | Seite quittieren | Seite quittieren | Seite quittieren | ボルト |
| 9 | Sortieren | Sortieren | Sortieren | 油圧 |
| 10 | Stop | Stop | Stop | 温度 |
| 11 | System wurde beendet | System wurde beendet | System wurde beendet | 警報を置きなさい |
| 12 | System wurde gestartet | System wurde gestartet | System wurde gestartet | システム運転者1 |
| 13 | Tank fast leer | Tank fast leer | Tank fast leer | 空気に油をさす残った時間 |
| 14 | drucken | drucken | drucken | 普通紙のスライダ |
| 15 | quittieren | quittieren | quittieren | 高 フィルター |
| 16 | AML | AML | AML | ログオンキーボード |

9.3.4 Bitmap Button

- Copy the bitmap buttons with the flags and the functions Language change to your screen ALL.

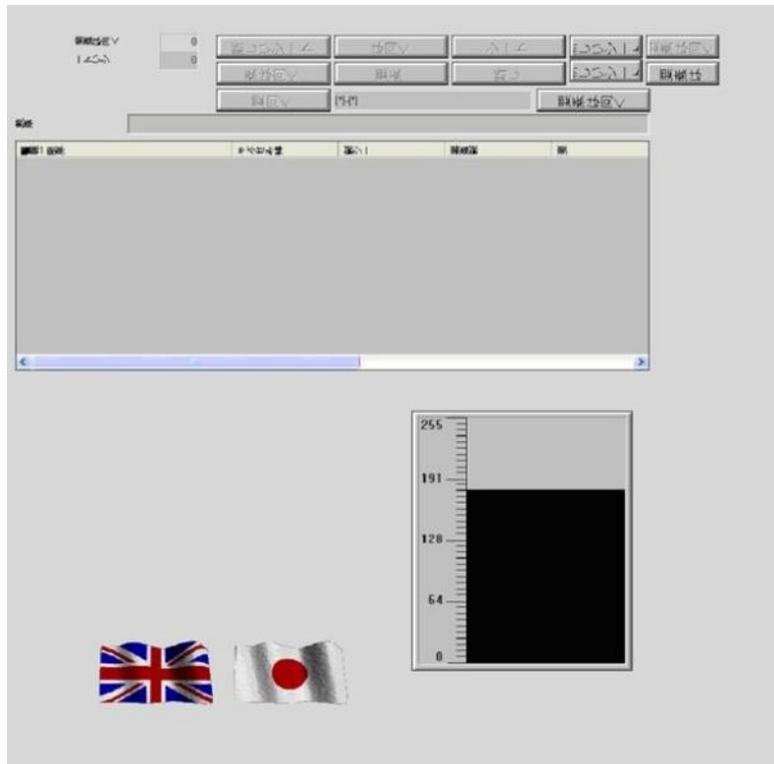
9.4 Runtime

WHAT IS DONE?

| | |
|---------|---------------------|
| Runtime | Starts the Runtime. |
|---------|---------------------|

9.4.1 Runtime

- ▶ Start the Runtime.



Info

Now you are able to create alarm and chronologic event lists and to switch their language in the Runtime.

10. Technical units

WHAT IS DONE?

| | |
|-------|---|
| Units | Along with switching the language the value of a variable should be converted from one technical unit to another. |
|-------|---|

10.1 Reports

WHAT IS DONE?

| | |
|----------------|---|
| Language table | The column German is added to the language table. |
| Report | Two Reports are created: "Liters" and "Gallons". |
| | The formulas for the conversion are defined in reports. |

10.1.1 Units

As values like length, weight, temperature or capacity in different countries are measured in different units, you have to care for that, when using the language change.

Conversion formulas can be used for the values of variables, so that along with the language change the units are converted.

Attention

Does not work under Windows CE.

The conversion is defined in the Report Generator, which is not available under Windows CE.

10.1.2 Language table

- ▶ Create a new language table German.
- ▶ Add the German translations for the entries (Fill level, Füllstand, etc.).
- ▶ Also add an entry Gallons and in German translate it with Liter.
- ▶ Create a new function Language change that switches to German.

10.1.3 Report

- ▶ Open the variable Fill level, which was created in project 4.
- ▶ Under `Description/Unit` in the properties window enter `@Gallons`.
- ▶ In the Project Manager create two new Reports.
- ▶ Enter the names Liters and Gallons.

Doubleclicking a report in the detailview of the Project Manager opens it.

The report `Liters.xls` has to be defined as shown below:

- ▶ Click on the cell A1 and open the context menu.
- ▶ Select **Functions**.
- ▶ Under Functions select `variablew` (doubleclick).
- ▶ Press the button **variable**.
- ▶ Select `Fill level` (either with a double click or with **Add**).

This variable has been created in project 4.

- ▶ Under Parameter select `mmin` (doubleclick).

The following text is displayed: `=variablerw(Fill level,mmin,0)`

- ▶ Click on the cell A2.
- ▶ Enter the same function as in A1, but this time select `mmax`.

The following text is displayed: `=variablerw(Fill level,mmax,255)`

Example

Define the report `Gallons.xls` in the same way. Here you have to use the formula:

```
Gallons = Liter * 0.26
```

*So the minimum is 0 and the maximum is 66.3 (=255*0.26).*

10.2 Creating a screen

WHAT IS DONE?

| | |
|----------------|--|
| Sc re en | A screen Fill level will be created. |
| | A function Screen switch to this screen will be created. |
| | This function will be linked to a button. |

10.2.1 Screen

- ▶ Create a new frame Fill level: left=210, top=27, right=1024, bottom=676.
- ▶ Create a new screen Fill level.
- ▶ Create a function Screen switch to the screen Fill level.
- ▶ Add a text button to the screen Button_Bar.
- ▶ Link the function to the text button.



Example

Add the title `Fill level` to the screen.

(Vector element Text, Text font, text to translate)

- ▶ Add a dynamic element Numerical value to your screen Fill level.
- ▶ Link the “Numerical value to the variable Fill level.
- ▶ In the language table translate the English word Gallons to German Liter.
- ▶ Add a vector element Text to your screen Fill level.

- ▶ Link it to the “Text font”.
- ▶ Under Representation/Text enter @Fill level.
- ▶ Create two bitmap buttons.
- ▶ Link these buttons to the English and the Austrian flag.

Example

Add another button to the screen and link it to the function `Screen switch` to the screen `Main_Screen`. Name it `Back` and add this text to the language table.

10.3 Execute report

WHAT IS DONE?

| | |
|---------|--|
| Scripts | The functions <code>Language change</code> and <code>Execute report</code> are combined in a script. |
|---------|--|

10.3.1 Scripts

Info

Scripts are used to execute several functions.

Our bitmap buttons with the flags now should not only switch the language, but also convert the technical units.

So two functions have to be linked to a button. This can be done by using a script.

- ▶ First create a new function `Execute report`.
- ▶ Select `Liters.xrs`.

 **Example**

Link another function to the Report `Gallons.xrs`.

- ▶ In the Project Manager create a new script under `Functions/Scripts`.
- ▶ Enter the name `Liters`.
- ▶ Open the context menu of `Liters` in the detailview of the Project Manager.
- ▶ Link the functions `Language change to German` and `Execute report - Liter.xrs` to the script `Liters`.

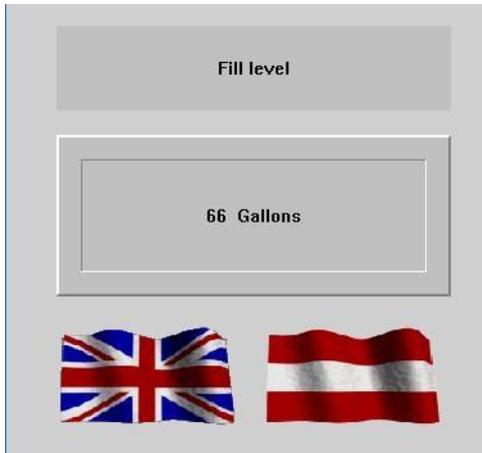
 **Example**

Create a script `Gallons` that contains the two functions `Language change to English` and `Execute report - Gallons.xrs`.

 **Example**

Create two new functions `Script: execute for the scripts Gallons and Liters`. Link the functions to the according bitmap buttons.

- ▶ Open the screen Main_Screen and link the scripts to the according flags.



10.4 Runtime

WHAT IS DONE?

| | |
|---------|--|
| Runtime | The project is tested in Runtime mode. |
|---------|--|

- ▶ Start the Runtime.
- ▶ On clicking the Austrian flag the values of the fill level is converted from Gallons to Liters and the display of the unit is switched.



Info

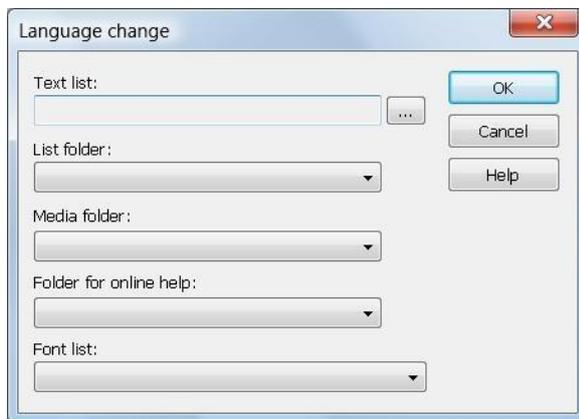
You now are able to convert the technical units of values and to switch the units along with the language. You got to know the basics on working with reports and know, what scripts are used for.

11. wizards

12. Paths for languages

12.1 Language switch for Runtime help / list path / media files

In the function “Language change” the according folder can be selected:



If the languages of Runtime help, list and media paths should be switched, be aware of the following: The files must have the same name in the different languages, but they are stored in different folders.

13. Test questions for self-control

Which character has to be added to texts for switching the language?

14. Tasks for self-control

Example

Create a screen with texts and buttons and translate it to Arabian.

 **Example**

Along with switching the language the value of a variable should be converted from degrees Fahrenheit to degrees Celsius.

The formula for the calculation is:

$$\text{Degrees Fahrenheit} = (\text{Degrees Centigrade} * 1.8) + 32.$$

 **Example**

Create a screen of the window class *Login* and translate it to a language of your choice.