eibVision (eibNode)
Dokumentation

Art.Nr.: 10300

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1   WELCOME

eibVision is a powerful tool for…
- Parameterizing the intelligent gateway *eibNode*
- Creating ambitious and individual visualizations
- Executing visualization projects on every compatible PC.

Start now

Choose a task and browse to the page.

2   INSTALLATION

Consideration: If you had running an older version of eibVision on the target system, please deinstall it in *Start > System Settings > Software*. After that delete the programm folder *eibVision*. Are there problems with the new installed version an the dongle, please read the separate document *eibVision_deinstall_install_correctly.txt*

- Put the *eibVision* Program-CD in a CD drive. In the Windows-Explorer browse to the CD directory and click twice on the installation file *eibVision.exe*. The *eibVision*-Setup will start.
- Choose an installation language and click on *next*.
- Read carefully the considerations of the installation wizard and click on *next*.
- Choose the installation directory (default is C:\Programs\eibVision) and click on *next*.
- Follow the further instructions to install *eibVision*.

3   SIMPLE PC VISUALIZATION
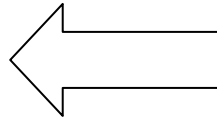
- Create Visualization
- Test Visualization offline
- Visualization ausführen

- Provide states for Visualization

3.1   THE FIRST VISUALIZATION – STEP BY STEP

Required:
- *eibVision* Software
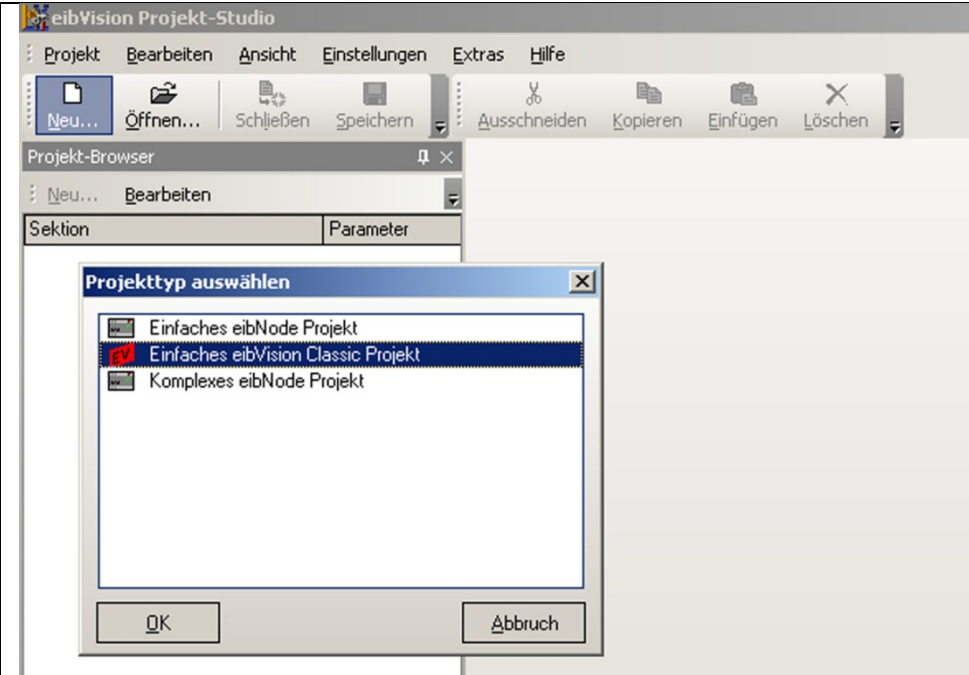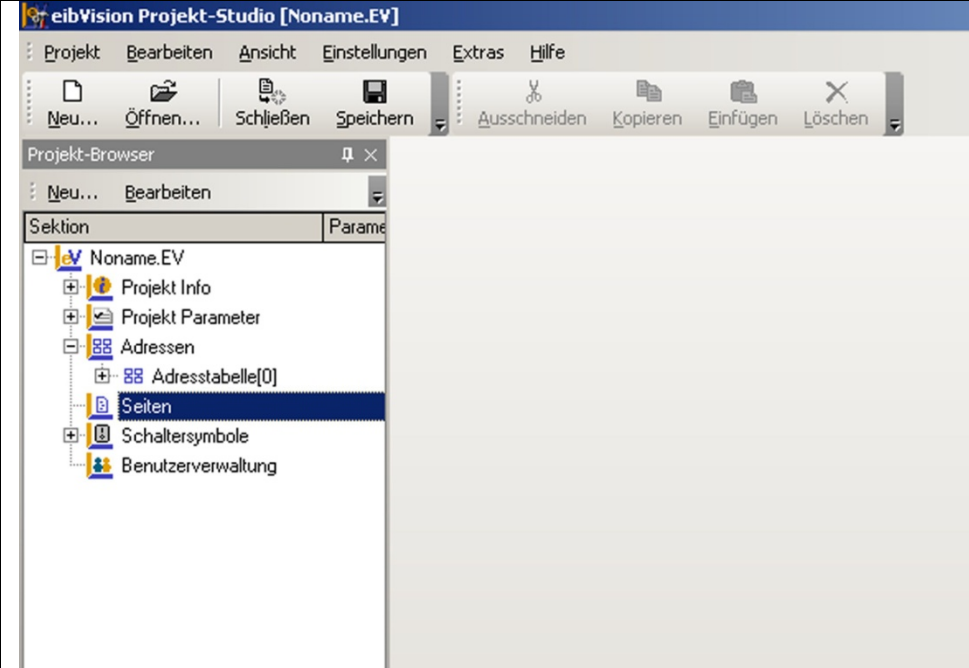
Start *eibVision Studio*

Click on *New…*
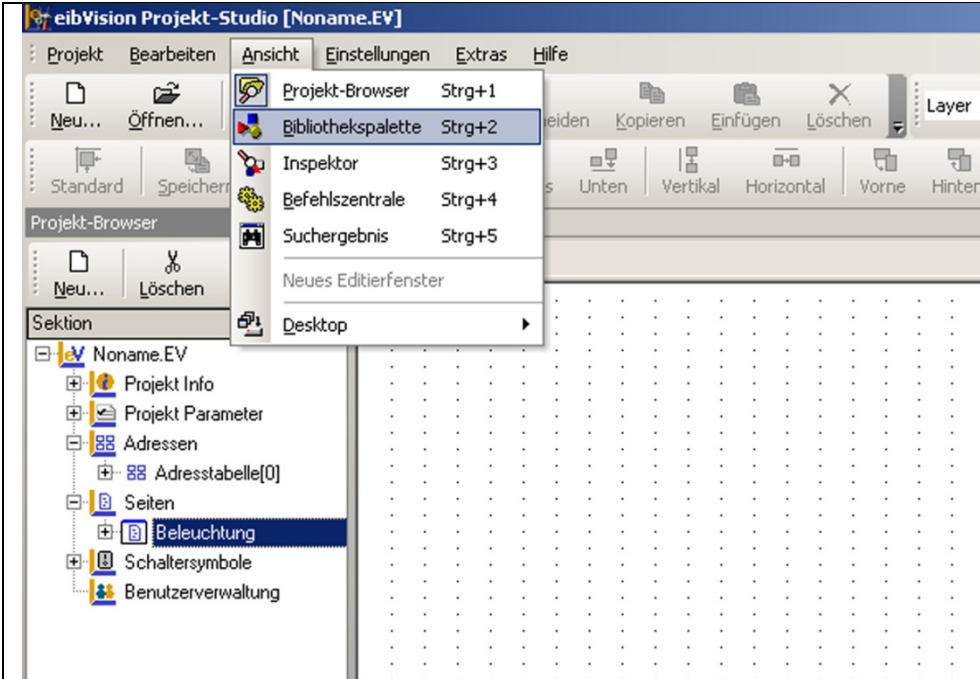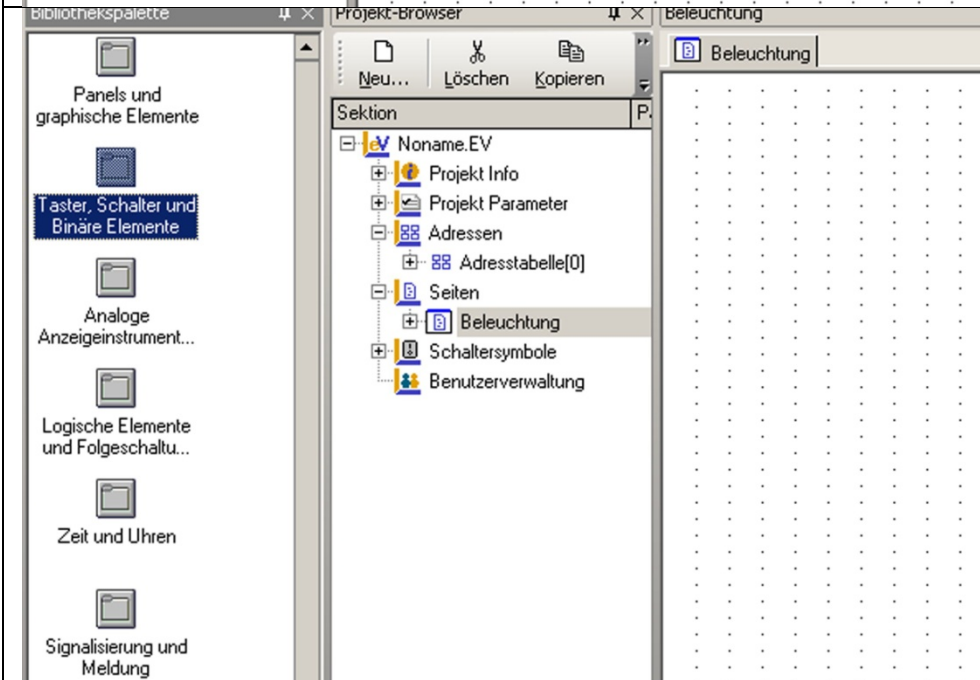
	Choose *Simple eibVision Project*
	Select *Pages* and click twice

Projekt-Browser Neu… Bearbeiten Sektion Parame Noname.EV Projekt Info Projekt Parameter Adressen Adresstabelle[0] Seiten **Seitenparameter bearbeiten** ✕ Bezeichnung	Beleuchtung Hintergrundfarbe	clWhite ▼ … ☐ Startseite Rasterweite X	20 Rasterweite Y	10 OK Abbruch	Choose a description and a background colour
eibVision Projekt-Studio [Noname.EV] Projekt Bearbeiten Ansicht Einstellungen Extras Hilfe Neu… Öffnen… Schließen Speichern Ausschneiden Kopieren Einfügen Löschen Projekt-Browser Neu… Bearbeiten Sektion Parame Noname.EV Projekt Info Projekt Parameter Adressen Adresstabelle[0] Seiten Beleuchtung Schaltersymbole Benutzerverwaltung	Select the new page and click twice

eibVision Projekt-Studio [Noname.EV]
 	
Projekt Bearbeiten Ansicht Einstellungen Extras Hilfe
 	
Neu... Öffnen...
 	
Standard Speichern
 	
Projekt-Browser
 	
Neu... Löschen
 	
Ansicht menu:
Projekt-Browser Strg+1
Bibliothekspalette Strg+2
Inspektor Strg+3
Befehlszentrale Strg+4
Suchergebnis Strg+5
Neues Editierfenster
Desktop
 	
eigene, Kopieren, Einfügen, Löschen, Layer, Unten, Vertikal, Horizontal, Vorne, Hinten
 	
Sektion
Noname.EV
 Projekt Info
 Projekt Parameter
 Adressen
  Adresstabelle[0]
 Seiten
  Beleuchtung
 Schaltersymbole
 Benutzerverwaltung
	Open the *Class Library*

Bibliothekspalette
 	
Panels und graphische Elemente
 	
Taster, Schalter und Binäre Elemente
 	
Analoge Anzeigeinstrument...
 	
Logische Elemente und Folgeschaltu...
 	
Zeit und Uhren
 	
Signalisierung und Meldung
 	
Projekt-Browser
Neu... Löschen Kopieren
 	
Sektion   P.
Noname.EV
 Projekt Info
 Projekt Parameter
 Adressen
  Adresstabelle[0]
 Seiten
  Beleuchtung
 Schaltersymbole
 Benutzerverwaltung
 	
Beleuchtung
	Select *Button*, *Switch and binary Items* and click twice
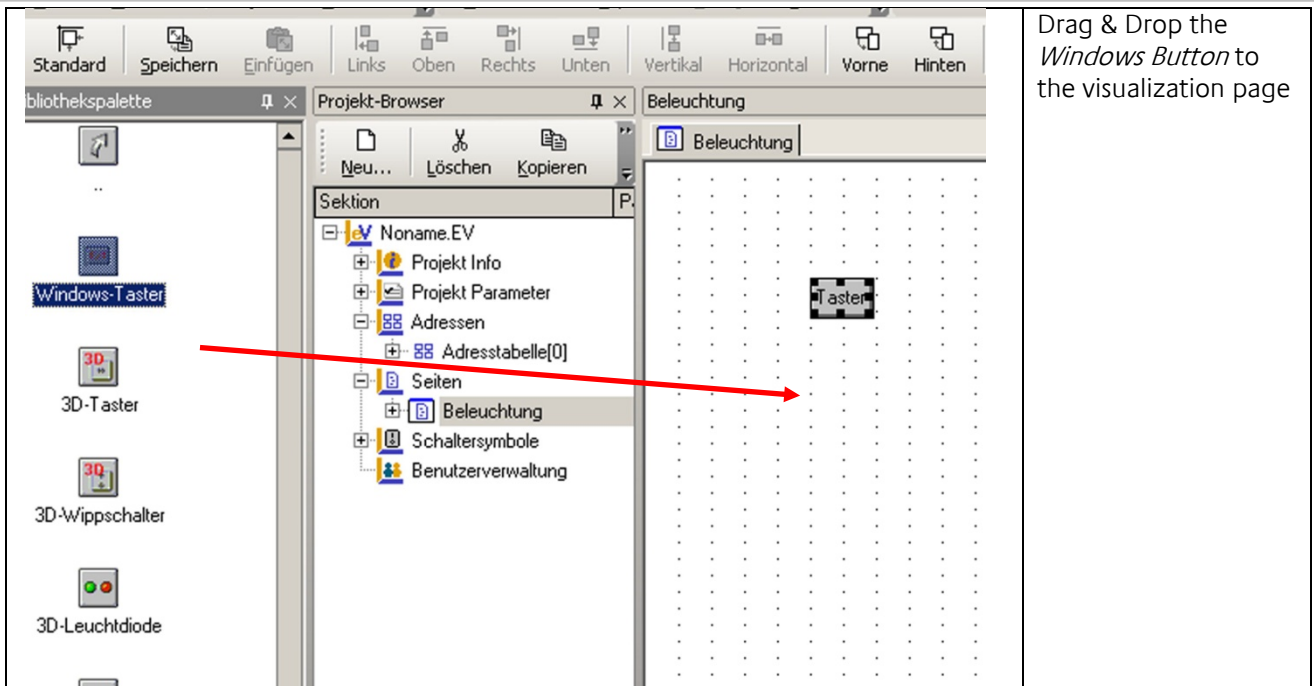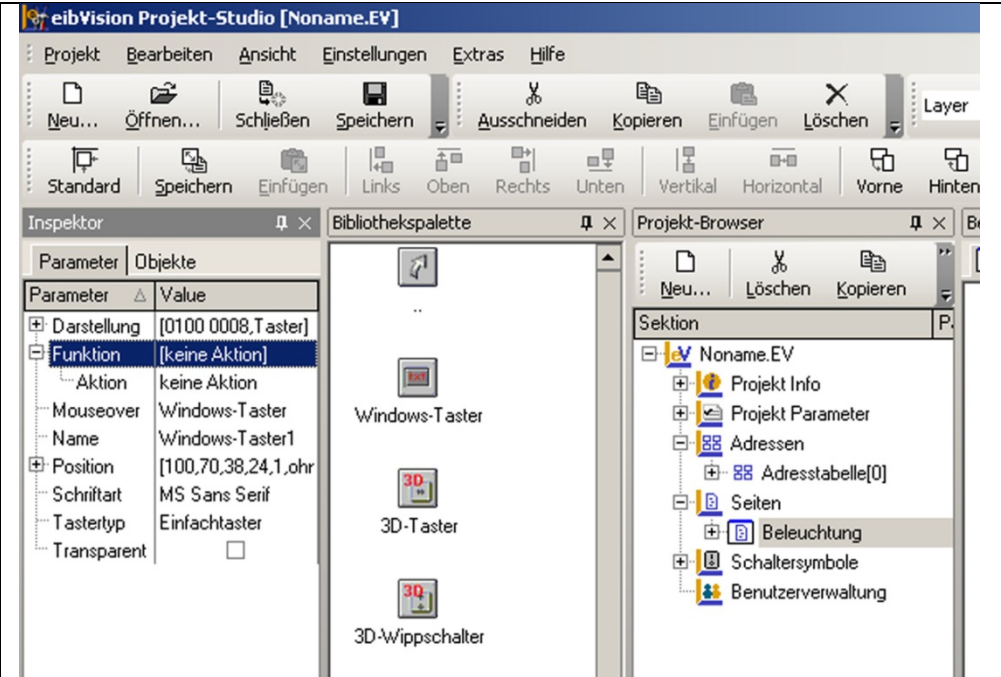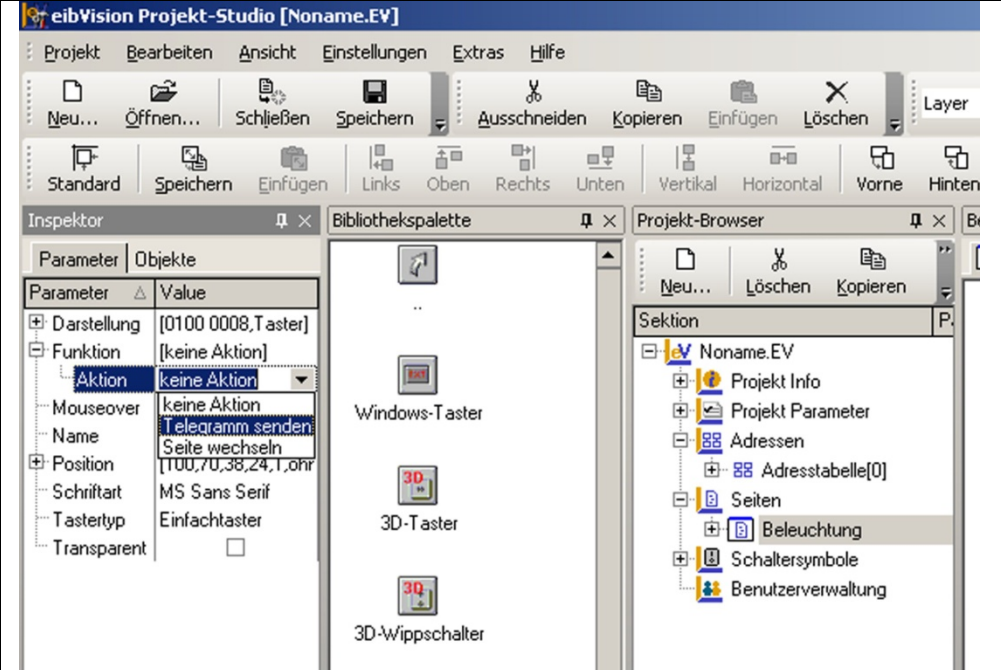
Drag & Drop the *Windows Button* to the visualization page

Open the *Inspector*

Expand *Function*

Choose *Send Telegram* as *Action*
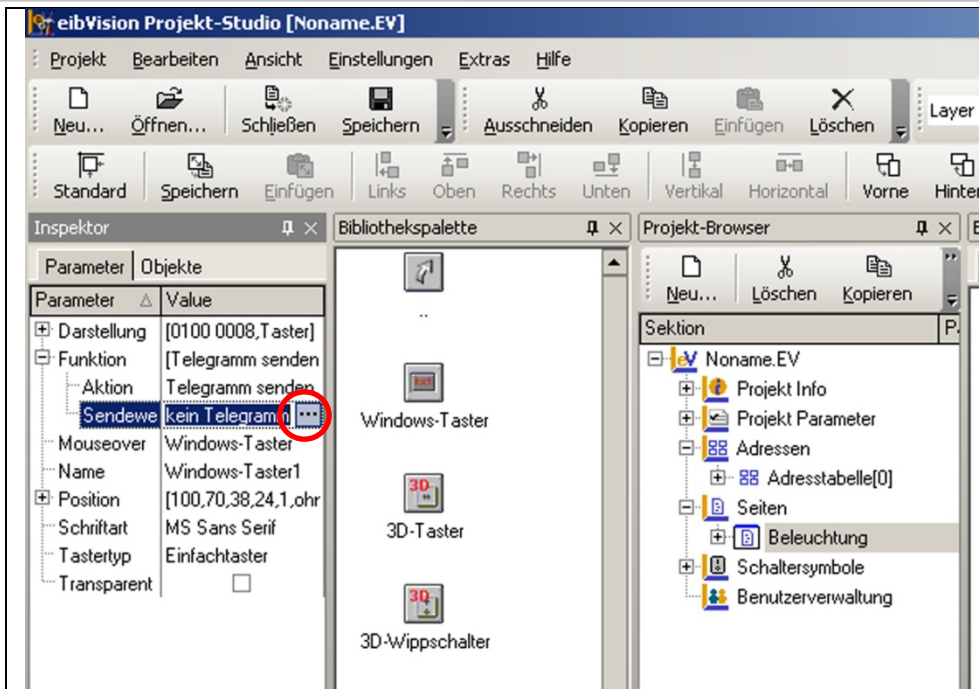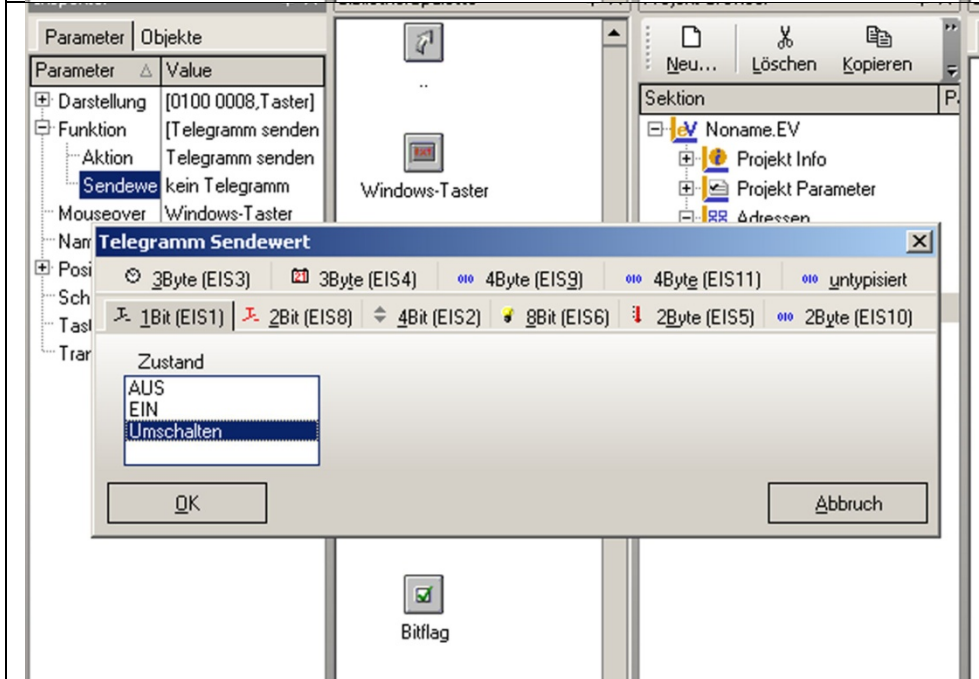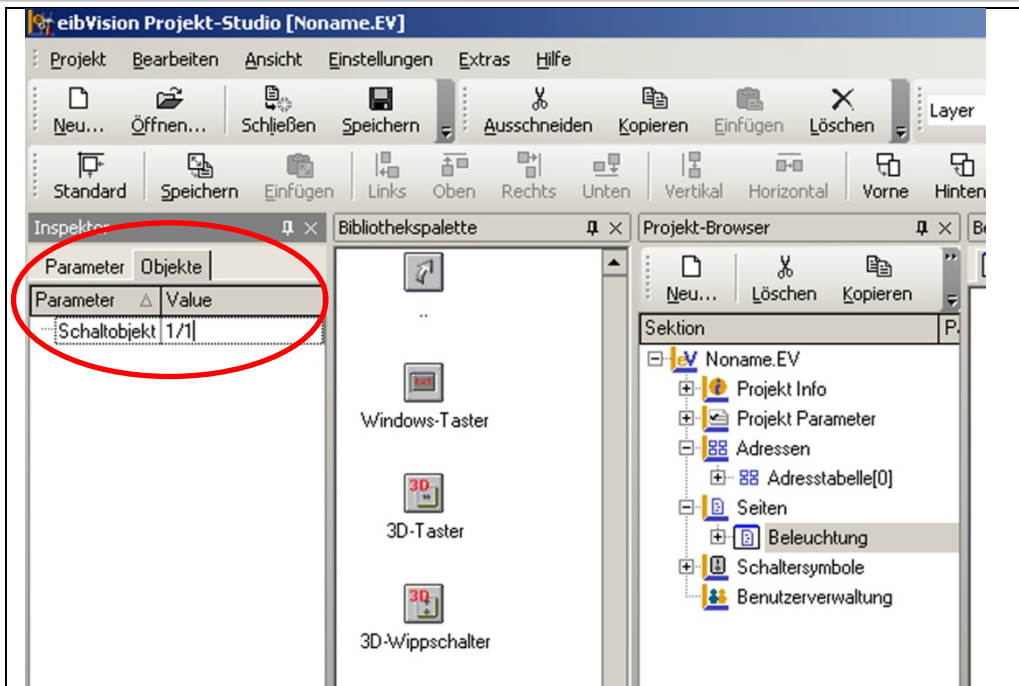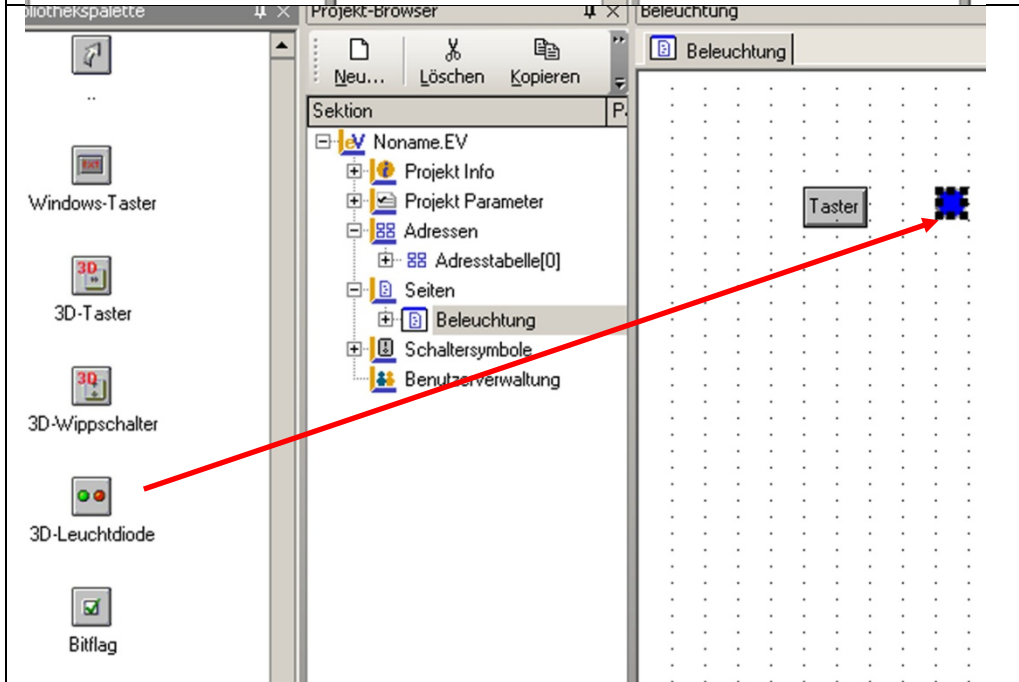
	Open the parameter window
	Choose the state *toggle*

	Enter the group address 1 / 1
	Drag & Drop the 3D LED to the page
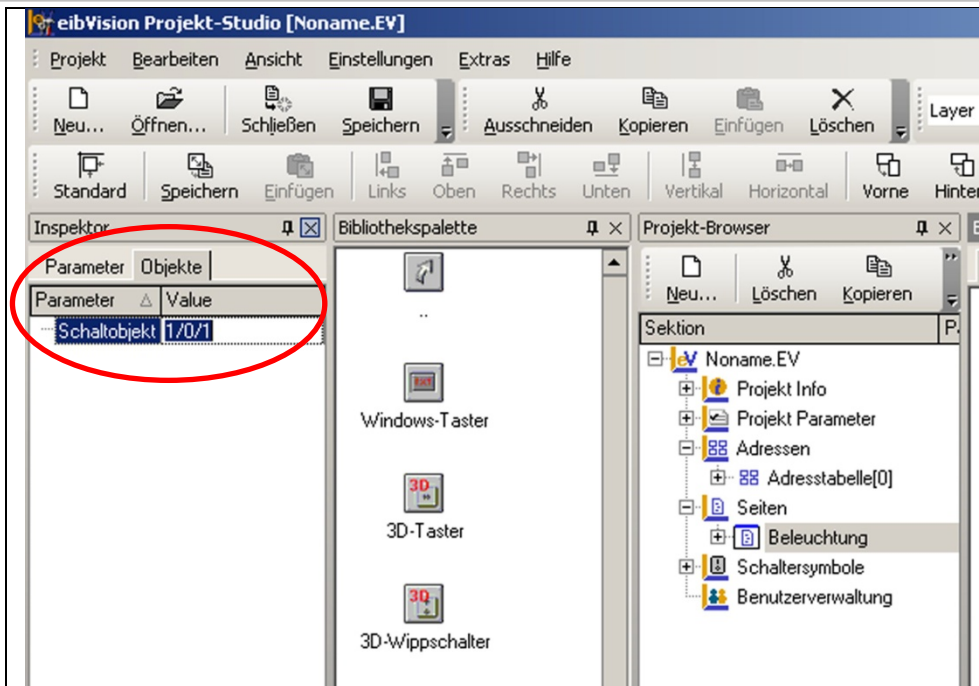
	Enter also the group address 1/1
	Close the windows *Inspector*, *Class Library* and *Project Browser*
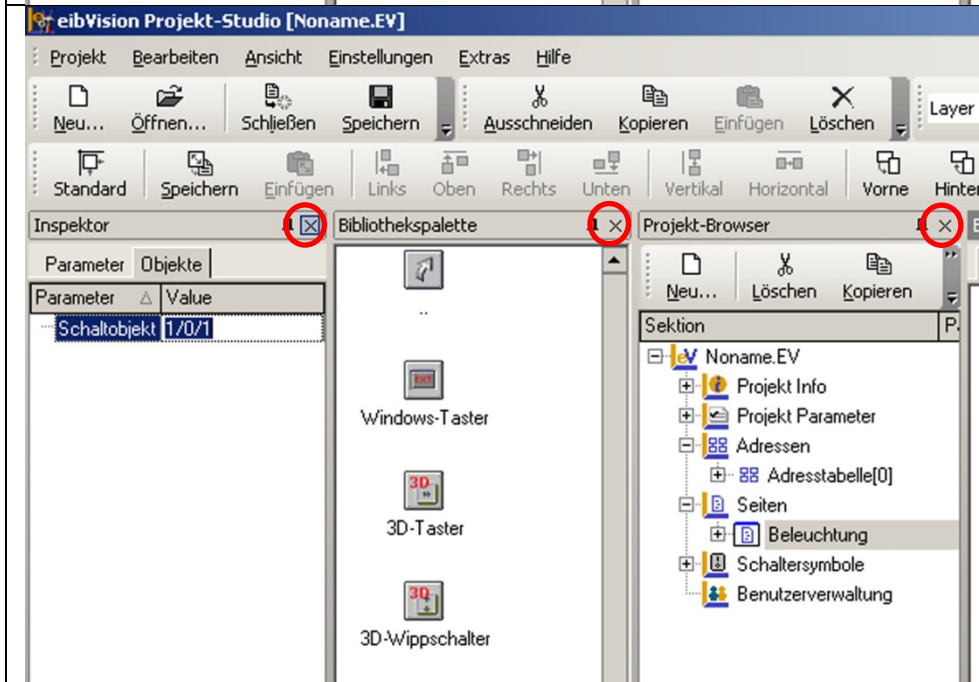
Click on *Save* and name the Project

3.2   SIMULATE VISUALIZATION
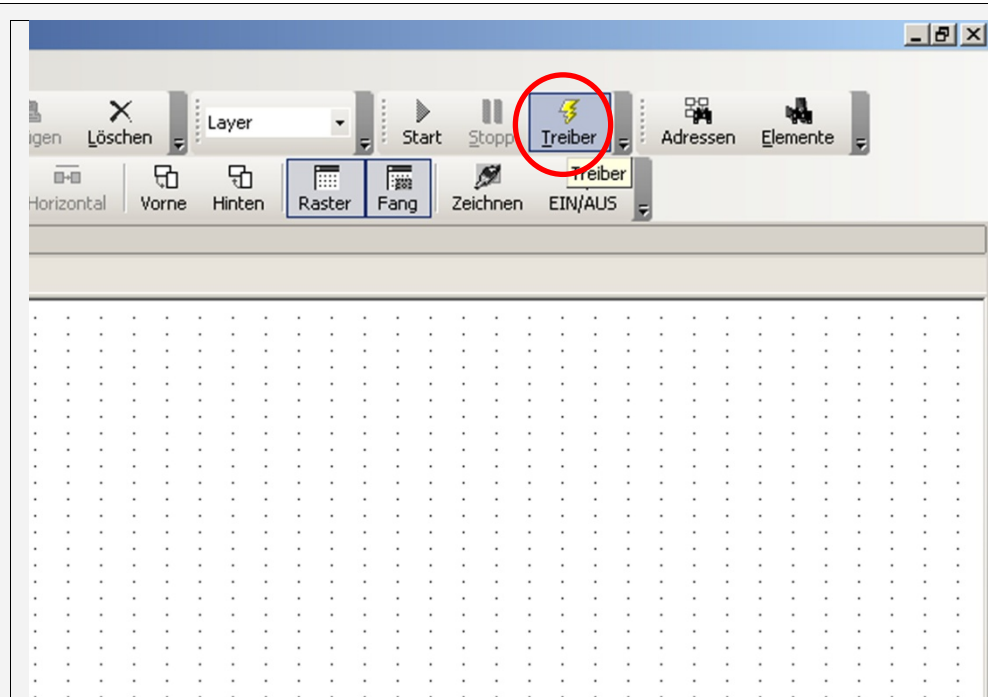
Open the window
Driver
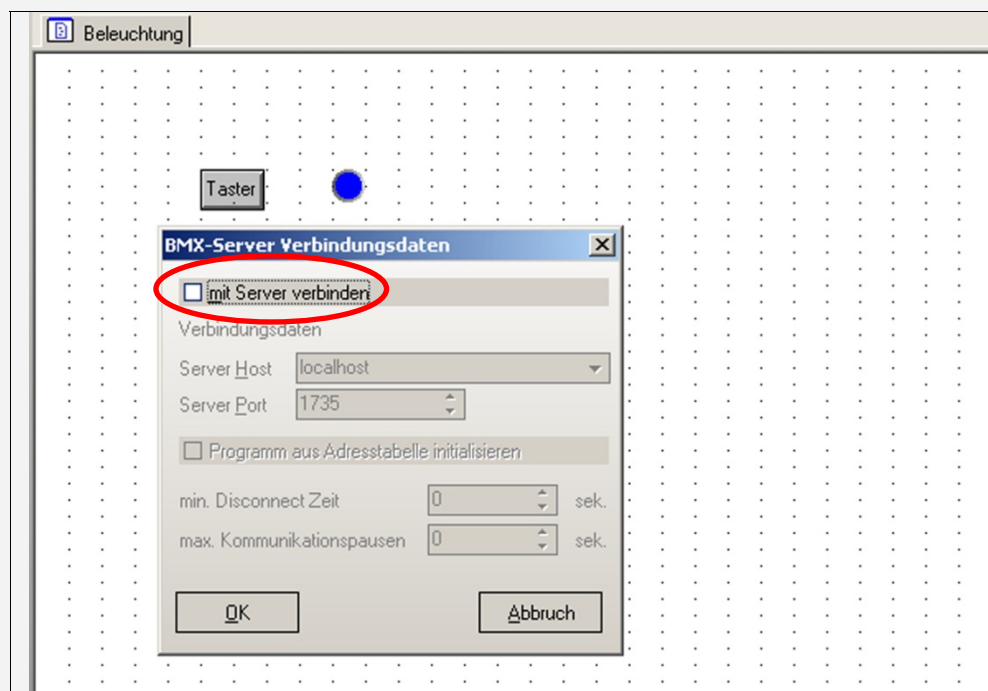
The option
connect to server
must not be
inactive
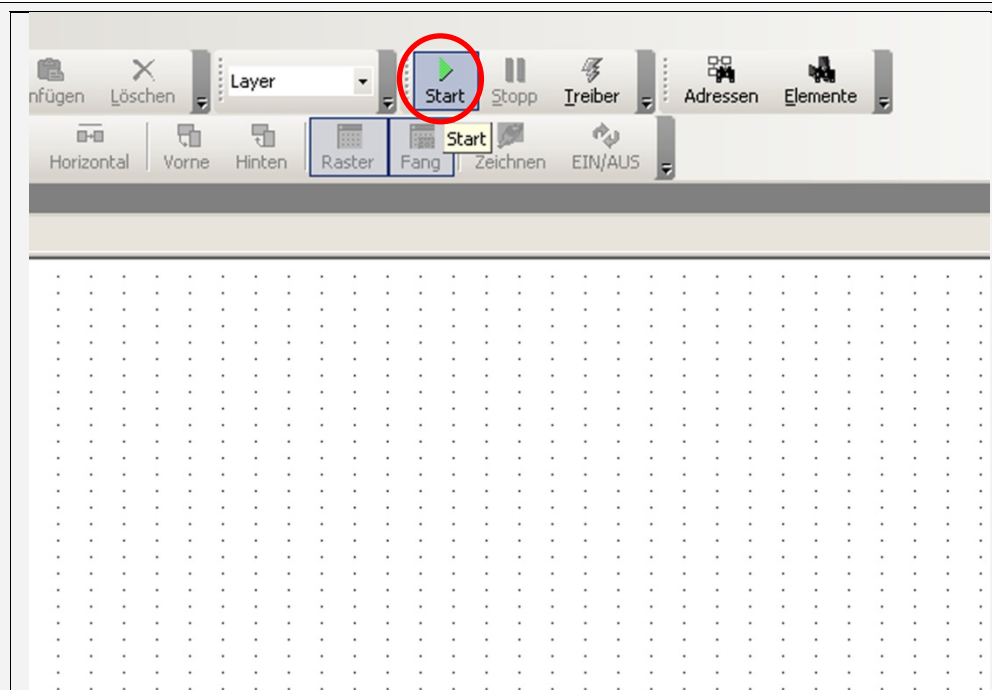
Click on *Start*
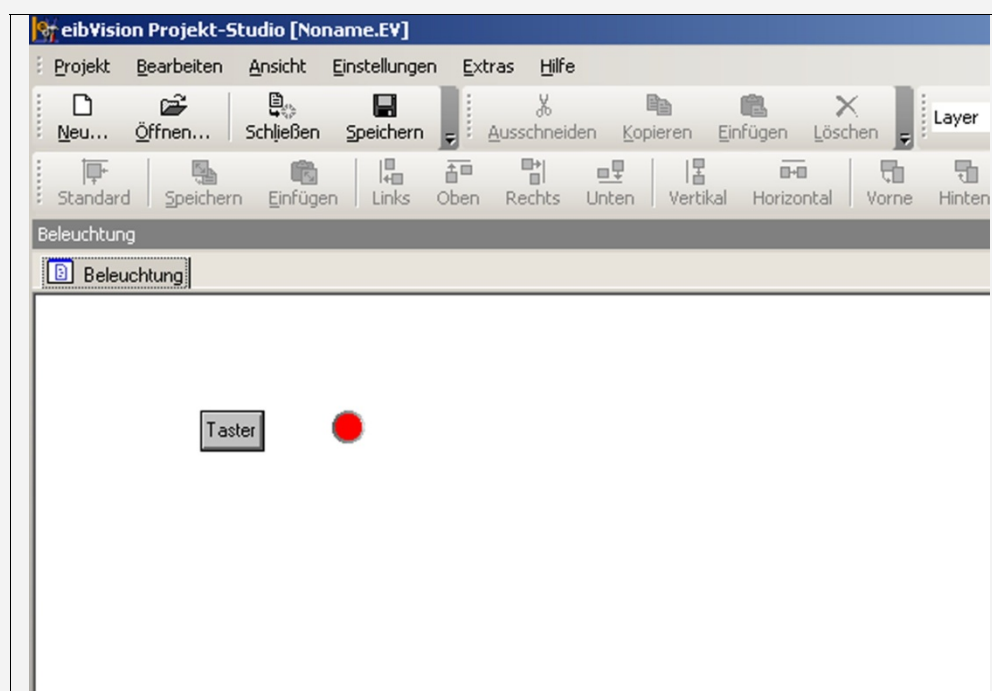
Test the functions by clicking on the button

3.3   START VISUALIZATION

Required:
- *eibVision* Software
- eibNode
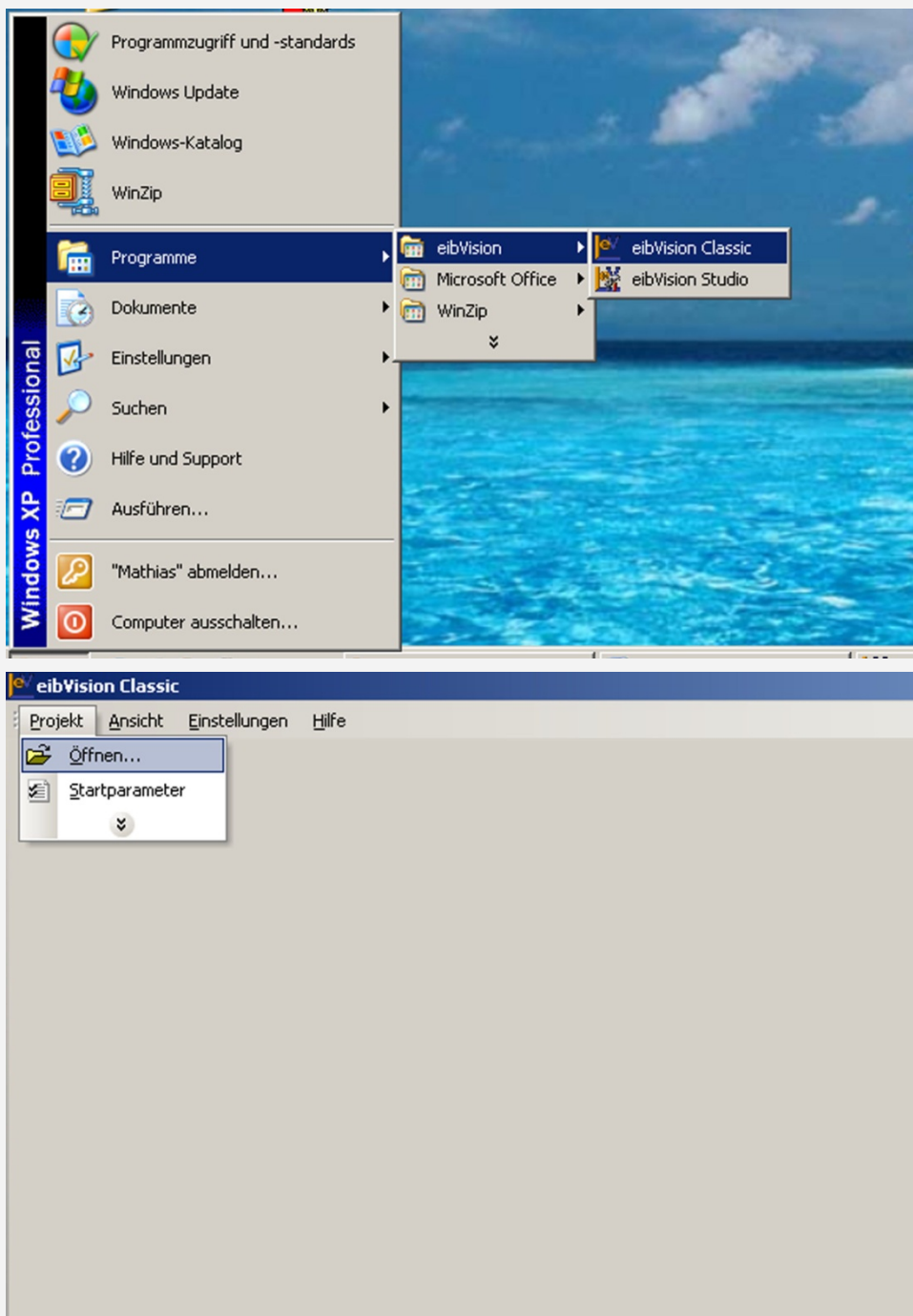
Start *eibVision*

Click on *Project* and choose *Open*...

eibVision Classic

Projekt   Ansicht   Einstellungen   Hilfe

eibVision Projekt öffnen

Suchen in: eibVision Projekte

eibVision_Beispiel.ev

Dateiname: eibVision_Beispiel.ev   Öffnen

Dateityp: eibVision Classic Projekt (*.ev)   Abbrechen

Open an *eibVision* Project

eibVision Classic [C:\Dokumente und Einstellungen\All Users.WINDOWS\Dokumente\eibVision Projek

Projekt   Ansicht   Einstellungen   Hilfe

Taster

Warnung

Das Projekt ist nicht lizensiert.

Die Laufzeit ist auf 1 Stunde begrenzt. Danach wird die Verbindung zu Fernwirksystem automatisch unterbrochen.

OK

This message appears if the project is not licensed (page 157)
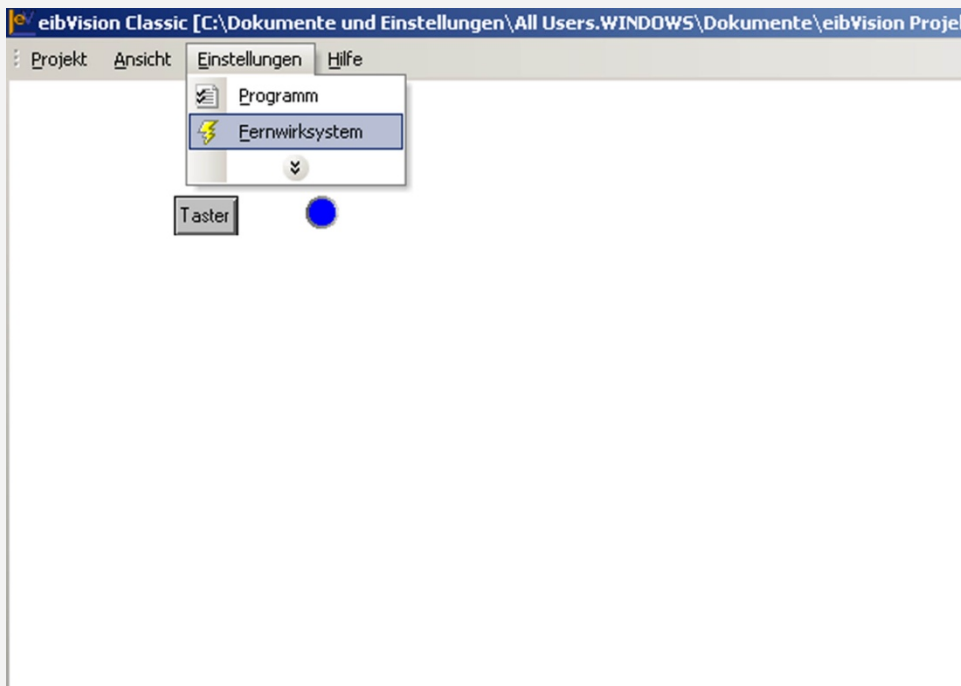
Click on *Settings* and choose *Bus system*
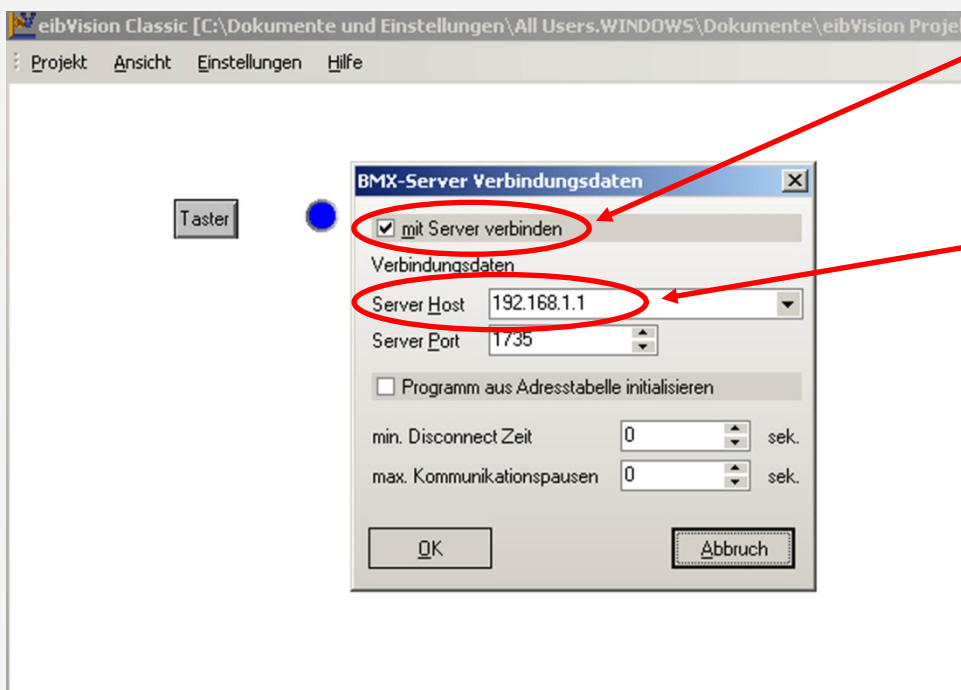
Connected with Server must be active

Enter:
Server Host: the IP-Adresse of the eibNode

eibVision Classic [C:\Dokumente und Einstellungen\All Users.WINDOWS\Dokumente\eibVision Projek

Projekt   Ansicht   Einstellungen   Hilfe

Taster   🔴
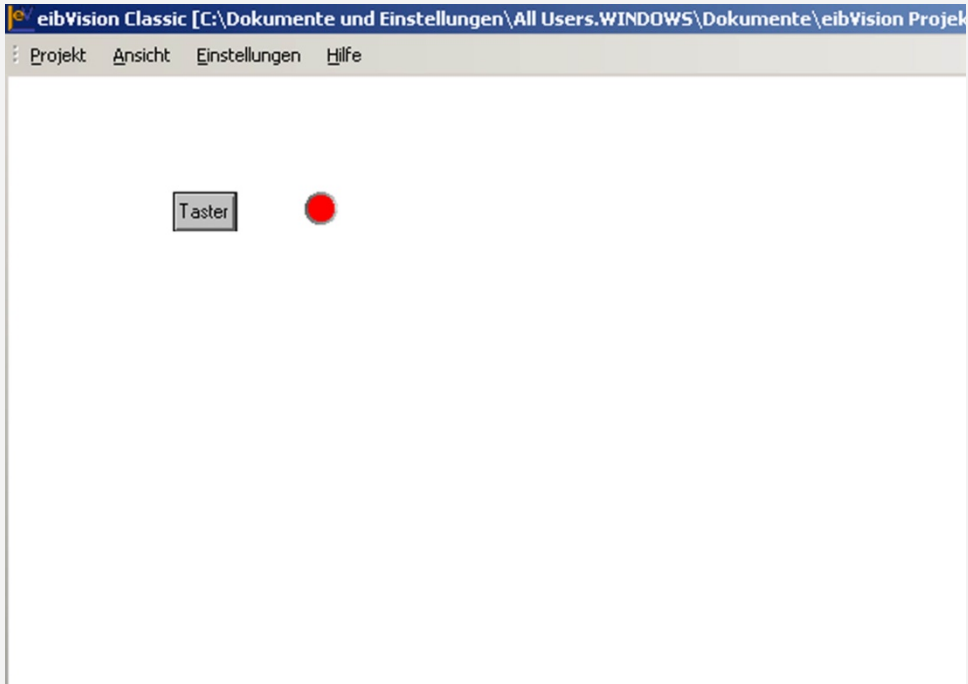
The visualization is active

3.4   NEW PROJECT

- ▪ Start a new Project by clicking on the button *New...* in the Project Toolbar or choose *New...* from the menu *Project*.
- ▪ Choose the Project type *eibVision Project*.

The new Project is shown as *Noname.EV* in the Project Browser.

3.4.1   EDIT PROJECT PARAMETER

Expand the folder *Project Parameter* to show the parameters *Project Helpfile*, *Server Host*, *Server Port* and *Desktop Size*. To change a parameter click twice on it.

Project Helpfile:	If new or updated Help files are available they can be loaded here
Server Host:	Enter the definite network address of the *eibNode*. This may be an IP-address (e.g. 192.168.1.20) or a DNS-address (e.g. http://eibNode01.ath.cx). If necessary ask the administrator to receive a free network address.
Server Port:	Enter the Port by that the *eibNode* communicates with the Project PC. The default Port is 1735.
Desktop Size:	Choose the width (resolution) of the screen the visualization is created for. Corresponding to your choice boundary lines will be displayed in the Editor window.

Confirm the settings with *OK*.

3.4.2   NEW VISUALIZATION PAGE

- Select the folder *pages* in the *Project Browser.*
- Click twice on the folder or choose *New...* from the Project Browser Toolbar. The window *Edit Page Parameters* will appear.
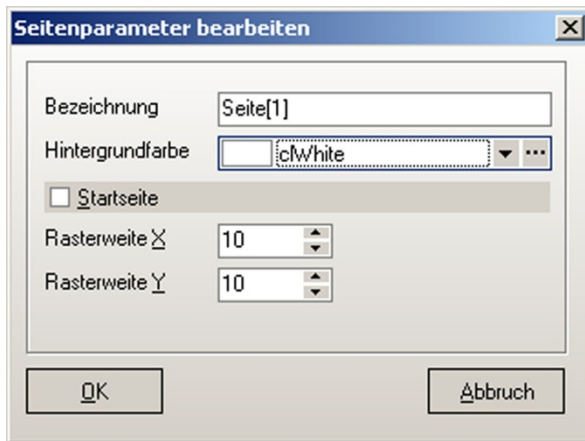
The following parameters can be edited:

Comment:	Choose a description for the page
Background Colour:	Choose a background colour for the page from the drop down menu or click on ▪▪▪ for further colours
Start Page:	If set, this page will always appear at visualization start.
Grid Width X:	The horizontal distance of the grid dots
Grid Width Y:	The vertical distance of the grid dots

Confirm the settings with *OK*. The new page will appear in the folder *Pages*.

- Click twice on the page or click with the right mouse button and choose *Open* to open the visualization page.

3.4.3   EDIT VISUALIZATION

- For a comfortable edit of a visualization page place the visualization page window, the *Class Library* and the *Inspector* next to each other on the desktop. Closed windows can be opened by the menu *View*.
- Open an element category of the Class Library,
- select an element and drag and drop it into the visualization window (or click twice on an element to insert it).
- For support at precious positioning of the elements you can use the functions of the editor Toolbar (see xxx).
- If you select an element all its parameters and communication objects will be listed in the *Inspector*.
- Edit the parameters (see Inspector, page 152).
- Enter the group addresses directly or with help of the address table [Link]
- Parameterized elements can be copied.

3.4.4   SAVE PROJECT

After editing a visualization page you should save the Project.
- Click on the button *Save* from the project Toolbar or choose *Save* from the menu *Project*.

3.4.5   PROJECT INFO

- In the folder *Project Info* you can check all information about the Project. Expand the view to show some data.
- To bring up an info window with more detailed information click with the right mouse button and choose *Info...* .

3.4.6   TESTMODE WITHOUT *EIBNODE*

You can test your visualization pages with its functions on the PC. An *eibNode* is not necessary.
- Click on the button *Driveri* in the toolbar
- The option *connect to server* must be disbled
- To start the Testmode click on *Start* in the Testmode Toolbar or bring up the *Message Center* from the menu *view* and click on *Start* in the Toolbar. The visualization window now shows a simulation of the visualization. All interactive elements can be operated and the indication and status elements show the parameterized values.
- With help of the *Message Center* you can check the status of the Testmode and the sent / received telegrams
- To stop the Testmode click on *Stop* in the Toolbar.

3.5   ASSIGN LICENSE

Unlicensed eibVision Projects are limited to one hour runtime in eibVision.
An *eibVision* Project licensed by a Project Key cannot be edited. To make a Project editable again the Project Key must be deleted. You can define who is allowed to delete a Project Key.
For licensing the USB Dongle must be connected to a USB Port. At the first use of the USB Dongle a driver must be installed. See Page [Link].

To license an *eibVision* Project do the following:

- Create an *eibVision* visualization project or open an existing Project.

- Choose *Lizenzvergabe* from the menu *Extras, eibVision Project*.

- Choose the license version and the delete authorisation. Check the option *Lizenz auf 4 Wochen zeitbegrenzt* to limit the license to 4 weeks.

3.5.1   DELETE LICENSE

To delete a Project Key you must be authorised and the USB Dongle must be connected to the PC.
Choose *delete License* from the menu *Extra*
Execute Visualization
- Start eibVision
- Choose the item Fernwiksystem from the menu Settings
- Activate the option connect to server
- Confirm with OK
- Choose open from the menu Project and choose a eibVision Project

3.5.2   LOAD BUTTON SYMBOLS

The Bitmap elements (see page Link) can be designed with own graphics. See also the chapter button Symbols on page Link.

- ▪ To load own graphic files expand the folder *Button Symbols* in the *Project Browser*.
- ▪ Click with the right mouse button on a folder (2 States, 4 States, 6 States) and choose *New.*.
- ▪
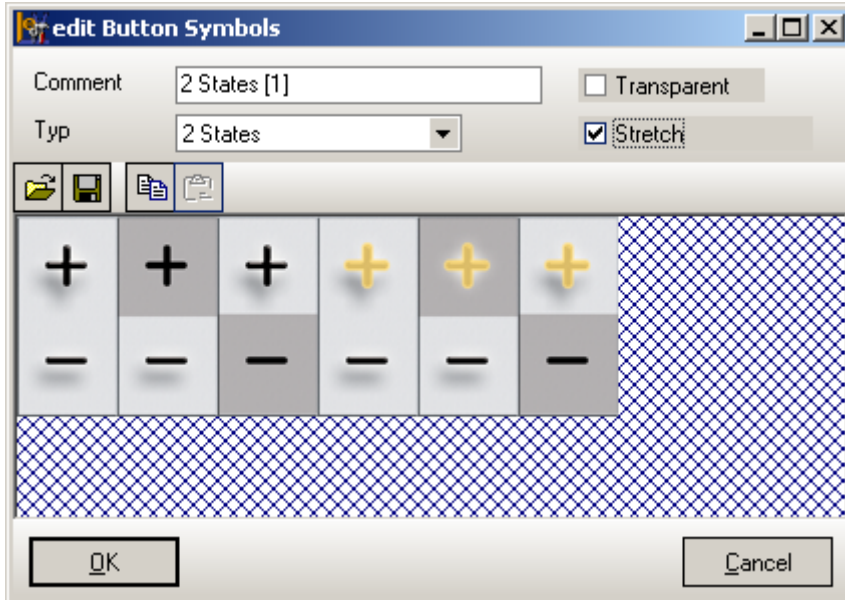
	Choose a Bitmap file
	Save a graphic file
Comment:	Description of the file
Type:	Choose how many states the file represents
Transparent:	All white pixels of the graphic file will be displayed transparent
Stretch:	Larger graphics will be resized to fit the edit Button Symbols window.

3.6   ADDRESSTABLE

The *Addresstable* provides two different indications of all group addresses of a Project. New addresses and address structures can be inserted. Group addresses can be assigned to the communication objects by drag&drop. EIB group addresses can be imported from the ETS (see Import group addresses, page 33)

3.6.1   OPEN ADDRESSTABLE

The *Addresstable* can be found in the *Project Browser*. Click on ⊞ to expand the view. Click twice on the folder *Address* or click with the right mouse button and choose *Open* or *Open in new window* from the context menu.

3.6.2   OPTIONS FOR THE ADDRESSTABLE

To change the options for the *Addresstable* click with the right mouse button on the item *Addresstable* and choose *Parameters* from the context menu. A window with the following options will appear:

Comment: enter a description for the Addresstable

NetID: enter the NetID of the *eibNode* (see page Link). The entry is just for documentation.

Design: if set, the group addresses will be displayed in the 3 level indication.

3.6.3   TREE VIEW

The group addresses are displayed in a tree structure according to the scheme Maingroup, Middlegroup, Subgroup. At the 2 level indication the Middlegroups drop out. The tree view can be expanded / reduced by clicking the items ⊞ / ⊟.

3.6.4   TREE VIEW - INSERT NEW ADDRESS

With the three buttons on top of the Addresstable window new Maingroups, Middlegroups and Subgroups can be inserted. If you click on *Maingroup* or *Middlegroup* a parameter window will appear. Choose a group and a description.
If you click on *Subgroup* a parameter window will appear. Choose a group, a description and the EIS type of the group address.
Alternatively you can use the button *New...* from the Toolbar or click with the right mouse button and choose *New...* from the context menu.
To change the parameters of the selected address part click on *Parameters* in the Toolbar.

3.6.5   MATRIX VIEW

In this view at 2 level indication all available group addresses of the selected Maingroup are shown. At 3 level indication all group addresses of the selected Middlegroup are shown. Group addresses used in the current Project are indicated in green colour.

3.6.6   MATRIX VIEW - INSERT NEW ADDRESS

Choose a Maingroup respectively Main- and Middlegroup from the drop down menus at the top of the window. To name the groups click on *Description*. To insert a Subgroup click twice in a cell. A parameter window will appear for entering a description and choosing the EIS type.

Both views are updated constantly.

3.6.7   ASSIGNING ADDRESSES

Group addresses can be assigned to the communication objects by drag-&-drop.
- Open the *Inspector* and the *Addresstable* in separate windows.
- Select a group address in the *Addresstable* and drag and drop it into the input field of a communication object.

3.6.8   IMPORT GROUP ADDRESSES

Group addresses can be imported from ETS projects.
- To import click on *Function* in the Toolbar and choose *Import* or click with the right mouse button and choose *Import* from the context menu *Function.*
- In the appearing window click on *Open...* and choose an ETS export file (file extension esf).
- Confirm with *OK*.

3.6.9   EXPORT GROUP ADDRESSES

The group addresses of a Project can be exported as iext files and as cfg files. Text files (extension txt) can be opened in any text editor. Cfg files can be opened in MS Excel.
- To export group addresses click on *Function* in the Toolbar and choose *Export* or click with the right mouse button and choose *Export* from the context menu *Function*. The export window will appear. At the bottom you can choose some export options.

Exports also contain all virtual group addresses (see page 34).

3.6.10   VIRTUAL GROUP ADDRESSES

The ETS just supports the maingroups 0 – 15 (real group addresses). *eibNode* additionally supports the further maingroups 16 -32 as virtual group addresses. For documentation of all group addresses you can use the export function (page 33).

3.6.11   UPDATE GROUP ADDRESSES

You can assign group addresses to the communication objects directly by typing in the group addresses. Those group addresses that have not been inserted or imported before using the *Addresstable* are not automatically added to the *Addresstable*.

- ▪ To update the *Addresstable* manually click on *Function* in the toolbar and choose *update from Project.*

3.7   BUTTON SYMBOLS

The *eibVision* elements Bitmap Button, Bitmap Switch und Bitmap Rockerswitch can be designed with own graphics in the Bitmap file format (extension .bmp). Depending on the element graphics representing 2, 4 or 6 states are required. For correct indication the graphics must have specific dimensions. The graphic files can be created using any application that supports the Bitmap file format (e.g. MS Paint).
A graphic consists of single graphics that each represents one state. A graphic for 2 states consists of 2 single graphics, for example. The base of one single graphic must be quadratic. The background can be displayed transparent; non quadratic symbols on the quadratic base are possible. The total width of a graphic determines from the width of one state graphic multiplicated with the number of states. The graphics should be created in the width that they shall be displayed in the visualization. The Bitmap elements are scale able indeed but the display may become worse.
The following specifications are examples and provide a basis for own graphics.

3.7.1   BUTTON SYMBOLS FOR 2 STATES

The element Bitmap Button requires Button Symbols for 2 states. The graphic must have the following dimensions:

Example

Total width:	100 Pixel
Total height:	50 Pixel
Height of a state graphic:	50 Pixel
Width of a state graphic:	50 Pixel

Order of the states:
1. graphic: state OFF
2. graphic: state ON

100 Pixel

50 Pixel

50 Pixel
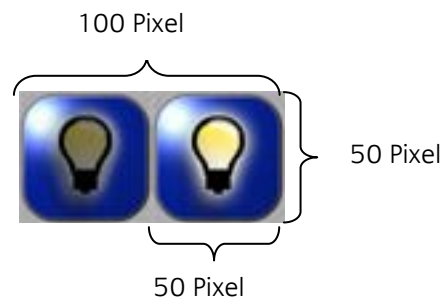
3.7.2   BUTTON SYMBOLS FOR 4 STATES

The element Bitmap Switch requires Button Symbols for 4 states. The graphic must have the following dimensions:

Example

Total width:	128 Pixel
Total height:	32 Pixel
Height of a state graphic:	32 Pixel
Width of a state graphic:	32 Pixel

Order of the states:
1. graphic: state OFF, switch not pressed
2. graphic: state OFF, Schalter pressed
3. graphic: state ON, switch not pressed
4. graphic: state ON, switch pressed

128 Pixel

32 Pixel

32 Pixel
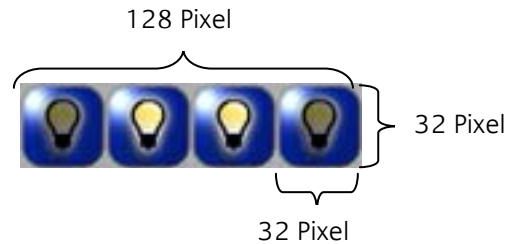
3.7.3   BUTTON SYMBOLS FOR 6 STATES

The element Bitmap Rockerswitch requires Button Symbols for 6 states. The graphic must have the following dimensions:

Example

Total width:	300 Pixel
Total height:	50 Pixel
Height of a state graphic:	50 Pixel
Width of a state graphic:	50 Pixel

Order of the states:
1. graphic: state OFF, Rockerswitch not pressed
2. graphic: state OFF, Rockerswitch top pressed
3. graphic: state OFF, Rockerswitch down pressed
4. graphic: state ON, Rockerswitch not pressed
5. graphic: state ON, Rockerswitch top pressed
6. graphic: state ON, Rockerswitch down pressed

50 Pixel

300 Pixel

300 Pixel
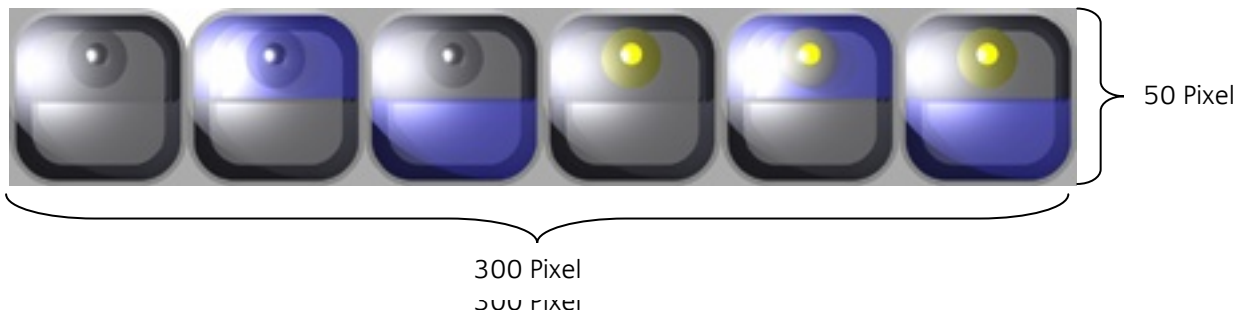
3.8   STANDART PARAMETER

Every element has the folloeing standard parameters.

Cursorhelp:	Help text that is displayed in the Tesmode and in the visualization when pointing on an element with the cursor. The help text can contain up to 30 characters in one row.
Name:	Name or description of the element (max. 30 characters). Each element must have an unique name.
Position:	A parameter combination including the following items:

Position X:	The horizontal position of the upper left edge of the element in pixels.
Position Y:	The vertical position of the upper left edge of the element in pixels.
Frame width:	Thickness for the frame display *raised| lowered*. The thickness can be between 1 and 15 pixels.
Frame type:	*none:* the element will be displayed without frame. *raised:* the element will be displayed perspectively raised. *lowered:* the element will be displayed perspectively lowered.
Height:	The height of the element in pixels. The minimum height is 13 pixels.
Layer:	*hidden* - only visible in the editor *background* – lowest layer *passive* - default layer for indication elements *active* - default layer for operation elements *on top*– highest layer An element of a higher layer always covers an element of a lower layer.
Width:	The width of the element in pixels. The minimum width is 13 pixels.
User:	*always visible*: the element is visible in the visualization. This parameter does not affect the parameter *Layer*. An element on the Layer *hidden* also is not visible when *always visible* is set. *Always hidden*: the element is not visible in the visualization.
Enabling Object:	By this Object the Enabling can be controlled. If no group address has been entered the element is always enabled. If an address has been entered the element is only enabled when the Object state is 1. If the state is 0 the element ignores all telegrams.

3.9   PANELS FOR GRAPHICAL ITEMS

3.9.1   RECTANGLE

Parameter

3D Style: The element will be displyed in 3D style.

Fill: If set, the element area can be coloured.

Fill colour: Choice of a colour. Only available if *Fill* is set.

Frame colour: Choice of a frame colour. Only available if *3D Style* is not set.

Frame Inner: Only if *3D Style* is set the perspective style of the inner frame can be chosen.

Frame outer: Only if *3D Style* is set the perspective style of the outer frame can be chosen.

Frame width: Frame width in pixels.

Show: *always*: the element is always visible.
                                             at on: the element is only visible when the object value is 0.
                                             at on: the element is only visible when the object value is 1.

Objects

Show (EIS1 1Bit):   The element will be displayed when receiving a telegram depending on the parameter *Show.*

3.9.2 ROUNDED RECTANGLE

Parameter

3D Style:	The element will be displyed in 3D style.
Fill:	If set, the element area can be coloured.
Fill colour:	Choice of a colour. Only available if *Fill* is set.
Frame colour:	Choice of a frame colour. Only available if *3D Style* is not set.
Frame Inner:	Only if *3D Style* is set the perspective style of the inner frame can be chosen.
Frame outer:	Only if *3D Style* is set the perspective style of the outer frame can be chosen.
Frame width:	Frame width in pixels.
Rounding:	Rounding of the element edges.
Show:	*always*: the element is always visible. *at on:* the element is only visible when the object value is 0. *at on:* the element is only visible when the object value is 1.

Objects

Show (EIS1 1Bit):	The element will be displayed when receiving a telegram depending on the parameter *Show.*

3.9.3   CIRCLE

Parameter

3D Style: The element will be displyed in 3D style.

Fill: If set, the element area can be coloured.

Fill colour: Choice of a colour. Only available if *Fill* is set.

Frame colour: Choice of a frame colour. Only available if *3D Style* is not set.

Frame Inner: Only if *3D Style* is set the perspective style of the inner frame can be chosen.

Frame outer: Only if *3D Style* is set the perspective style of the outer frame can be chosen.

Frame width: Frame width in pixels.

Show: *always*: the element is always visible.
at on: the element is only visible when the object value is 0.
at on: the element is only visible when the object value is 1.

Objects

Show (EIS1 1Bit):   The element will be displayed when receiving a telegram depending on the parameter *Show.*

3.9.4   BACKGROUND PICTURE

Parameter

Dialog: Choice of a picture file in the format BMP or JPG.

Open picture file

Save picture as Bitmap

Stretch: fits the picture to the window

At the bottom the file format (BMP/JPG) and the file size are indicated.

Show: *always*: the element is always visible.
                                                 at on: the element is only visible when the object value is 0.
                                                 at on: the element is only visible when the object value is 1.

Objects

Show (EIS1 1Bit):   The element will be displayed when receiving a telegram depending on the parameter *Show.*

3.9.5   ANIMATION

Parameter
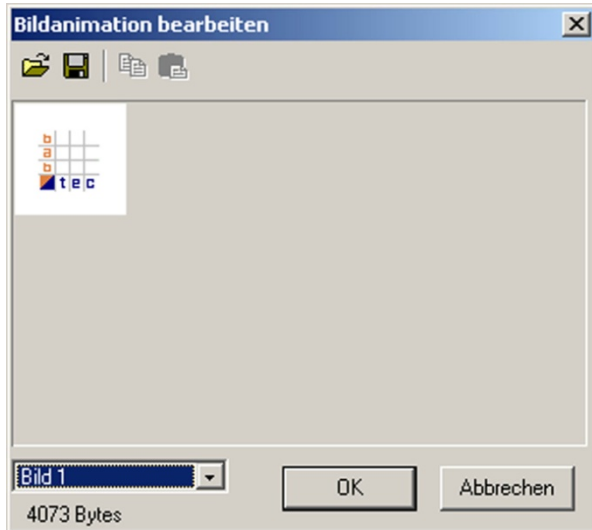
Dialog: Choice of a GIF file

📂 Open animation file

💾 Save animation as GIF file

Picture 1: Choice of a single picture

At the bottom the file size is indicated.

Show: *always*: the element is always visible.
at on: the element is only visible when the object value is 0.
at on: the element is only visible when the object value is 1.

Objects

Show (EIS1 1Bit):   The element will be displayed when receiving a telegram depending on the parameter *Show.*

3.9.6   TEXT

Parameter

Font: Choice of the font

Numerical value: Parameter combination for numerical values: EIS
                                               format and parameters depending on the chosen
                                               format.

Text: Enter of the Text. If a numerical value shall be
                                               indicated the following syntax must be
                                               considered:

Syntax: „%#" [„#"] [„."] [„#"]
Example: „%###.###"

%   Each format statement starts with the percent sign

The hash represents one digit before the decimal point

. | ,   If digits after the decimal point shall be indicated either a point or a comma
           has to follow

The hash represents one digit after the decimal point

For negative numbers one digit of the digits before the decimal point is used for the
minus sign.
If the number of digits before the decimal point (incl. minus sign) is larger than the
number of digits before the decimal point in the format statement the indication will
be extended.
If the number of digits after the decimal point is larger than the number of digits after
the decimal point in the format statement the number will be approximated.

Examples:

Format statement	Value	Display
Outside temperature%###.# Degrees°	18,53	Outside temperature18,5 Degrees°
Numerial value is %###	2048,8	Numercal value is 2048
Humidity is %## %	45,5	Humidity is 45 %

Text colour: Choice of the text colour

Objects

OBJECT FOR VALUE: OBJECT FOR NUMERICAL VALUES

3.9.7   TEXT ON/OFF

This element indicates switching states. The text and the text format for the states ON and OFF can be defined.

Parameter

Color Off: Choice of a colour for the state OFF.

Color On: Choice of a colour for the state ON.

Font: Choice of the font.

Text Off: Enter of the text for the state OFF.

Text On: Enter for the text for the state ON.

Objects

Switching Object: Switching Object

3.10   BUTTON, SWITCH AND BINARY ITEMS WINDOWS TASTER

3.10.1   WINDOWS BUTTON

For the Windows Button four types are available:
Simple Button: for sending telegrams and changing pages
Colour Button: with adjustable indications for the states
Edge Button: responds to rising and trailing edges
Colour Edge Button: like Edge Button, with adjustable indications for the states

Parameter

Button type: Choice of the button type

Design: Parameter combination, depending on the chosen
                                      button type.
                                      Colour: Choice of a text colour
                                      Title: Enter of the button name

Design Off: Parameter combination, depending on the chosen
                                      button type.
                                      Colour Off: Choice of a text colour
                                      Title Off: Enter of the button name

Design On: Parameter combination, depending on the chosen
                                      button type.
                                      Colour On: Choice of a text colour
                                      Title On: Enter of the button name

Font: Choice of the font

Function: Parameter combination, depending on the chosen
                                      button type.
                                      Action:
                                      none: no action when opening the button
                                      send telegram: sends a telegram when opening
                                      the button
                                      send value: choice of the EIS type
                                      change page: changes the page when opening
                                      the button
                                      Destination Page: choice of a project page

Function close: Parameter combination, depending on the chosen
                                      button type.
                                      Action:
                                      none: no action when opening the button
                                      send telegram: sends a telegram when opening
                                      the button
                                      send value: choice of the EIS type

Function open: Parameter combination, depending on the chosen
                                      button type.

	Action:
	none: no action when opening the button
	send telegram: sends a telegram when opening the button
	send value: choice of the EIS type
	change page: changes the page when opening the button
	Destination Page: choice of a project page
State of item:	Only available for the button types *colour button* and *colour edge button*; appears when the parameter *With confirmation object* is set. Choice to which object(s) the element shall respond to for changing the state:
	Switching object: Only the Switching Object assigns the state.
	Confirmation object: Only the confirmation object assigns the state.
	Switching object and Confirmation object: The logical link AND of the objects assigns the state.
	Switching object or Confirmation object: The logical link OR of the objects assigns the state.
Transparent	If set, the button will be displayed transparent.
With confirmation object:	Only available for the button types *colour button* and *colour edge button*. If set, a confirmation object is available and the parameter *State of item* appears.

Objects

Confirmation Object:	Input Object
Switching Object:	Output Object

3.10.2   3D BUTTON

Edge button for sending telegrams and changing pages.

Parameter

Button design:	Choice of a geometrical design.
Color at border:	Choice of the colour for the border of the element.
Color in the middle:	Choice for the colour of the middle of the element.
Font:	Choice of the text font.
Function close:	Parameter combination *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type
Funktion öffnen*:*	Parameter combination *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type *change page*: changes the page when opening the button *Destination Page*: choice of a project page
Style:	Choice of the perspective display
Symbol:	Choice of a button symbol
Text color:	Choice of a text colour
Title:	Enter of a title

Objects

Switching Object:	Output Object

3.10.3   3D ROCKER SWITCH

Rocker Switch with dimming and switching object.

Parameter

Align:	Turning of the element in 90 degree steps
Color:	Choice of the element color
LED Color:	Choice of the LED colour
Dimming speed:	Choice of the dimming speed between 1 and 7
Style:	Choice of the perspective display
With LED:	If set, a status LED will be displayed in the element

Objects

Dimming:	Dimming Object
Switching:	Switching Object

3.10.4   3D LED

Element for indication of binary states. Can also be used as edge button.

Parameter

Blink at Off:	If set, the LED will blink at the state OFF.
Blink at ON:	If set, the LED will blink at the state ON.
Color:	Parameter combination:

Color Off: Choice of a color for the state OFF.
Color On: Choice of a color for the state ON.
Frame color: Choice of a color for the frame
Text color: Choice of a color for the text

Font:	Choice of a font
Function close:	Parameter combination:

Action:
none: no action when opening the button
send telegram: sends a telegram when opening the button
send value: choice of the EIS type

Function open: Parameter combination, depending on the chosen button type.
Action:
none: no action when opening the button
send telegram: sends a telegram when opening the button
send value: choice of the EIS type
change page: changes the page when opening the button
Destination Page: choice of a project page

Send telegram: If set, telegrams can be sent. The parameters *Function open / Function close* will appear.

Style:	Choice of the perspective display
Title:	Enter of a title

Objects

Switching Object:	Switching Object

3.10.5   BITFLAG

Indicates the state of a certain bit in the telegram and is able to send telegrams.

Parameter

Bit position: Choice of the bit. The bits are counted from the lowest order to the highest order position. A value from 0 to 127 is possible. The bit position is independend from the format. If the element is just used for state indication a format is ot needed.

Flag color: Choice of a color for the flag.

Flag style: Choice of a symbol for displaying in the flag.

Function: *Format*: this parameter will only be displayed when the parameter *Send telegram* is set. Choice of the EIS format of the telegram.
Other Bits: this parameter will only be displayed when the parameter *Send telegram* is set. Choice how the other Bits in the telegram shall behave: *following Bits unchanged, following Bits = 0, following Bits = 1*.
Send telegram: if set, the element reacts on pushing the element.

Objects

Input: Input Object

3.10.6 BINARY SWITCH

Simple switch.

Parameter

Align:	Turning of the element in 90 degrees steps
Color:	Choice of a color for the element
Only in case of change:	A real switch with the state ON cannot be switched on again without having been switched off before. This behaviour is activated / deactivated by this flag. If set, the switch can only be switched to the other position. Otherwise the current state can be sent again.
Switch symbol:	Choice of a switch symbol

Objects

Switching	Switching Object

3.10.7   BITMAP BUTTON

The bitmap elements can be designed with own graphics. See page **Fehler! Textmarke nicht definiert.**
for furhter considerations.

Parameter

3D Frame:	If set, depending on the operation with the mouse a 3-dimensional frame will be displayed.
Function close:	Parameter combination: *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type
Function open:	Parameter combination, depending on the chosen button type. *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type *change page*: changes the page when opening the button *Destination Page*: choice of a project page
Painting Function:	*Direct*: when switching, the button symbol will be displayed directly on the screen without regarding the current display. This method is the fastest and recommendable if there are no transparent areas within the graphic symbols. If there are transparent areas and the single symbols have different forms parts of the former symbol will still be visible. *With Background*: the new graphic symbol will be painted with background. Display errors are possible. *Complete*: the most complex method. All elements will be redrawed in order of the layers. The display will always be correct.
Symbol:	Choice of a bitmap file from the folder *Button Symbols for 2 States* (see page 35).
Transparent:	If set, the color of the upper left pixel of the bitmap graphic will be set transparent. All pixels of this color will be displayed transparent.

Objects

Output:	Output Object

3.10.8   BITMAP SWITCH

The bitmap elements can be designed with own graphics. See page **Fehler! Textmarke nicht definiert.** for furhter considerations.

Parameter

3D Frame:	If set, depending on the operation with the mouse a 3-dimensional frame will be displayed.
Function close:	Parameter combination: *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type
Function open:	Parameter combination, depending on the chosen button type. *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type *change page*: changes the page when opening the button *Destination Page*: choice of a project page
Painting Function:	*Direct*: when switching, the button symbol will be displayed directly on the screen without regarding the current display. This method is the fastest and recommendable if there are no transparent areas within the graphic symbols. If there are transparent areas and the single symbols have different forms parts of the former symbol will still be visible. *With Background*: the new graphic symbol will be painted with background. Display errors are possible. *Complete*: the most complex method. All elements will be redrawed in order of the layers. The display will always be correct.
Symbol:	Choice of a bitmap file from the folder *Button Symbols for 2 States* (see page 35).
Transparent:	If set, the color of the upper left pixel of the bitmap graphic will be set transparent. All pixels of this color will be displayed transparent.

Objects

Output:	Output Object

3.10.9   BITMAP-WIPPE

The bitmap elements can be designed with own graphics. See page **Fehler! Textmarke nicht definiert.** for furhter considerations.

Parameter

3D Frame:	If set, depending on the operation with the mouse a 3-dimensional frame will be displayed.
Function down close:	Parameter combination: *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type
Function down open:	Parameter combination, depending on the chosen button type. *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type *change page*: changes the page when opening the button *Destination Page*: choice of a project page
Function up close:	Parameter combination: *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type
Function up open:	Parameter combination, depending on the chosen button type. *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type *change page*: changes the page when opening the button *Destination Page*: choice of a project page
Painting Function:	*Direct*: when switching, the button symbol will be displayed directly on the screen without regarding the current display. This method is the fastest and recommendable if there are no transparent areas within the graphic symbols. If there are transparent areas and the single symbols have different forms parts of the former symbol will still be visible. *With Background*: the new graphic symbol will be painted with background. Display errors are possible.

Complete: the most complex method. All elements will be redrawed in order of the layers. The display will always be correct.

Symbol:

Choice of a bitmap file from the folder *Button Symbols for 2 States* (see page 35).

Transparent:

If set, the color of the upper left pixel of the bitmap graphic will be set transparent. All pixels of this color will be displayed transparent.

Objects

Output:

Output Object

3.10.10 ICON SWITCHABLE

This element behaves like a button. The symbols for the states ON and OFF can be designed in hte integrated editor.

Parameter

3D Frame: If set, depending on the operation with the mouse
                                                             a 3-dimensional frame will be displayed.

Dialog: Opens a window for designing the icons.
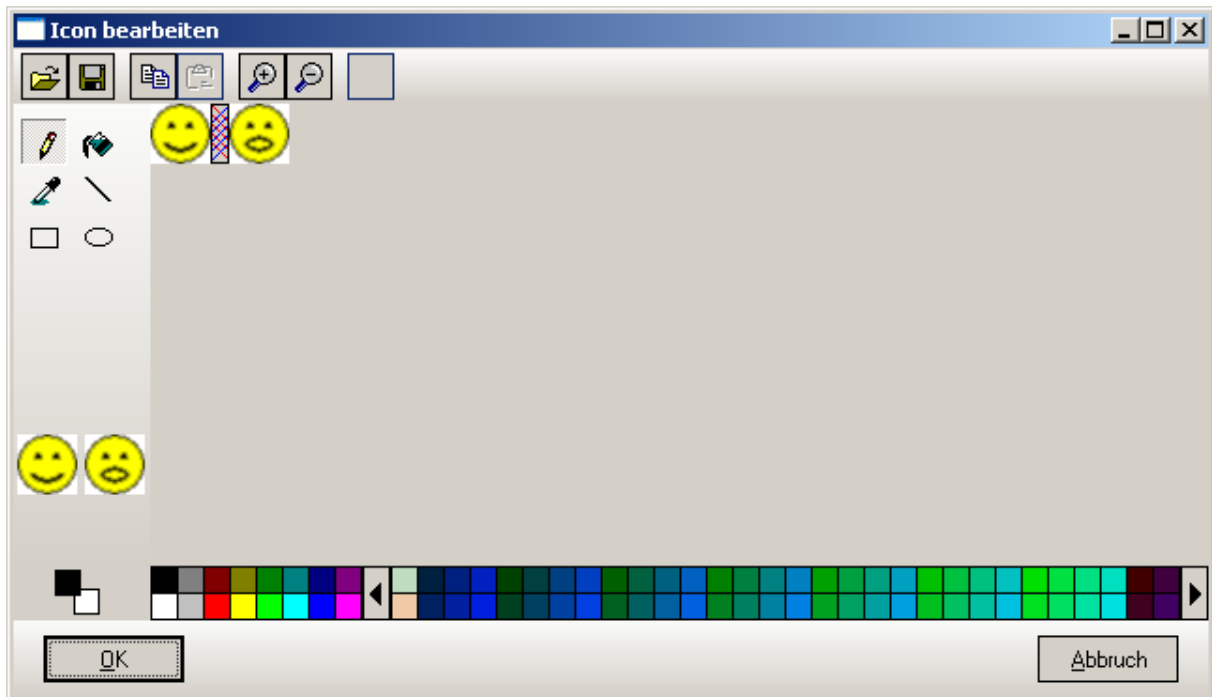
	Opens BMP files
	Saves the current icon as bitmap
	Copy
	Paste
	Zoom in
	Zoom out
	Redo last action

The tools

	Crayon - paints single pixels in the current colour
	Paint bucket- fills areas with the current colour
	Pipette - grabs the color of a pixel

Line - paints a line in the current color

Rectangle - paints rectangle filled with the current color

Circle - paints a circle filled with the current color

Indicates the current color and opens the color choice window

At the bottom the color palette is displayed

Function close:	Parameter combination: *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type
Function open:	Parameter combination, depending on the chosen button type. *Action*: *none*: no action when opening the button *send telegram*: sends a telegram when opening the button *send value*: choice of the EIS type *change page*: changes the page when opening the button *Destination Page*: choice of a project page
Painting Function:	*Direct*: when switching, the button symbol will be displayed directly on the screen without regarding the current display. This method is the fastest and recommendable if there are no transparent areas within the graphic symbols. If there are transparent areas and the single symbols have different forms parts of the former symbol will still be visible. *With Background*: the new graphic symbol will be painted with background. Display errors are possible. *Complete*: the most complex method. All elements will be redrawed in order of the layers. The display will always be correct.

3.11   ANALOG INSTRUMENTS, ANALOG INPUT

3.11.1   SLIDER

Parameter

Align:	Turning of the element in 90 degrees steps
Button increment (%):	Increment at one push of the step buttons
Color:	Color of the element
Output Factor:	The object value will be multiplicated with this factor
Output Format:	Choice of the EIS type
Output Maximum:	Maximum object value
Output Minimum:	Minimum object value
Output Offset:	This value will be added to the object value
Send circular:	If set, the element sends the current value circular
Set value:	If set, a value can be set directly with the mouse
System color:	If set, the element will be displayed in standard windows colours
With Buttons:	If set, at the bottom and at the top step buttons will be displayed

Objects

Enabling:	Enabling Object
Output:	Output Object

3.11.2   SCALE

Parameter

Color: Color of the element; only available if the
                                                parameter *System color* is not set

Horizontal: If set, the element will be turned by 90 degrees

Output Factor: The object value will be multiplicated with this
                                                factor

Output Format: Choice of the EIS type

Output Maximum: Maximum object value

Output Minimum: Minimum object value

Output Offset: This value will be added to the object value

Snap to Scale: Is set, the slide snaps to the slider snaps to the
                                                scale

Scale units: Number of scale units

Send circular: If set, the element sends the current vlaue
                                                circular.

Show Scale: If set, a scale will be dispayed

Set value: If set, a value can be set directly with the mouse

System color: If set, the element will be displayed in standard
                                                windows colours

Objects

Enabling: Enabling Object

Output: Output Object

3.11.3   ADJUSTING KNOB

Parameter

Output Factor:	The object value will be multiplicated with this factor
Output Format:	Choice of the EIS type
Output Maximum:	Maximum object value
Output Minimum:	Minimum object value
Output Offset:	This value will be added to the object value
Scale area:	Angle of the adjustable area in degree
Send circular:	If set, the element sends the current vlaue circular.
System color:	If set, the element will be displayed in standard windows colours
Zero point:	Zero point of the adjustable area

Objects

Enabling:	Enabling Object
Output:	Output Object

3.11.4   VALUE INPUT

Parameter

Button increment (%):   Increment of the value by a push of a step button

Format statement: Format of the numerical values:

Syntax: „%#" [„#"] [„."] [„#"]
Example: „%###.###"

%	Each format statement starts with the percent sign
#	The hash represents one digit before the decimal point
. / ,	If digits after the decimal point shall be indicated either a point or a comma has to follow
#	The hash represents one digit after the decimal point

For negative numbers one digit of the digits before the decimal point is used for the minus sign.
If the number of digits before the decimal point (incl. minus sign) is larger than the number of digits before the decimal point in the format statement the indication will be extended.
If the number of digits after the decimal point is larger than the number of digits after the decimal point in the format statement the number will be approximated.

Examples:

Format statement	Value	Display
Outside temperature%###.# Degrees°	18,53	Outside temperature18,5 Degrees°
Numerial value is %###	2048,8	Numercal value is 2048
Humidity is %## %	45,5	Humidity is 45 %

Output: Choice of the EIS type of the object value

Objects

Enabling: Enabling Object

Output: Output Object

3.11.5   LIQUID LEVEL

Parameter

Color: Color of the element

Input: Choice of the EIS type of the Input Object

Objekte

Input: Input Object

3.11.6   ANALOG DISPLAY

This element displays analog values. Depending on thresholds it can be displayed in different colors.

Parameter

Caption:	Parameter combination for the caption *Color by Value*: if set, the caption color will be changed depending on the thresholds. *Color normal*: default color *Color overstep*: color when overstepping the upper threshold. *Color fall below*: color when falling below the lower threshold. *Show Caption*: if set, the caption will be displayed. *Title*: Input of the caption.
Color threshold:	Input of the lower and the upper threshold values.
Font:	Choice of a font.
Input:	EIS type of the input object
Numerical value:	Parameter combination for the numerical value *Color by Value*: if set, the caption color will be changed depending on the thresholds. *Color normal*: default color *Color overstep*: color when overstepping the upper threshold. *Color fall below*: color when falling below the lower threshold. *Show Caption*: if set, the caption will be displayed. *Format statement*: Input of the format statement according to the following syntax:

Syntax: „%#" [„#"] [„."] [„#"]
Example: „%###.###"

%	Each format statement starts with the percent sign
#	The hash represents one digit before the decimal point
.	,	If digits after the decimal point shall be indicated either a point or a comma has to follow
#	The hash represents one digit after the decimal point

For negative numbers one digit of the digits before the decimal point is used for the minus sign.
If the number of digits before the decimal point (incl. minus sign) is larger than the number of digits before the decimal point in the format statement the indication will be extended.
If the number of digits after the decimal point is larger than the number of digits after the decimal point in the format statement the number will be approximated.

Examples:

Format statement	Value	Display

Outside temperature%###.# Degrees°	18,53	Outside temperature18,5 Degrees°
Numerial value is %###	2048,8	Numercal value is 2048
Humidity is %## %	45,5	Humidity is 45 %

Style: Choice of the perspective display

Objects

Input: Input Object

3.11.7   PEN RECORDER

Parameter

Background Color: Color of the background

Caption: Parameter combination for the caption
Color normal: color for the caption background
Show caption: if set, the caption will be displayed
Title: input of the caption text

Color graphs: Color of the graphs

Division lines: *Color*: Color of the lines
Color timestamp: color of the timestamps
Lines: number of division lines
Timestampl: if set, timestamps will be displayed

Eingang: EIS type of the input object

Scale: *Background Color*: background color of the scale
Exponent(10^): the values will be multiplicated with the exponent for better indications of very high/low values.
Show Scale: if set, the scale will be displayed
Text color: color of the scale caption

Style: Perpsective display of the element

Time period: Time period for the display of values

Objects

Input: Input Object

3.12   SIGNALING AND MESSAGES

3.12.1   FAULT INDICATOR

The element provides fault indication and error processing. For error processing the element can be linked to the element **Fehler! Verweisquelle konnte nicht gefunden werden.** (page 80).

Parameter

Acknowledge in case of:	Choice which event requires an acknowledgement. *Disturbance appears*: when a disturbance appears. *Disturbance disappears*: when a disturbance disappears.
Acknowledge on item:	If set, faults can be confirmed by clicking on the element.
Audible Signal:	If set, the element releases a sound each second when an acknowledge is required.
Automatic page change:	???
Automatic repeat time (Min):	Time in minutes after that a confirmed but not eliminated fault must be confirmed again. The maximum time is 32767 minutes (22 days, 18 hours and 7 minutes). Only available if *Use error processing* is not set.
Color:	Choice of colors for the states: *At off*: color for the default state *At on*: color for a fault *Text color*: color for the text
Disturbance appears at:	Choice which event at the Object *Disruption sensor* shall release an error message. *none*: never *rising Edge*: when the Object state changes from 0 to 1. *Trailing Edge*: when the Object state changes from 1 to 0. *ON*: when the Object state is 1. *OFF*: when the Object state is 0.
Disturbance disappears at:	Choice which event at the Object *Disruption sensor* shall stop the error message. *None*: never *Rising Edge*: when the Object state changes from 0 to 1. *Trailing Edge*: when the Object state changes from 1 to 0. *ON*: when the Object state is 1. *OFF*: when the Object state is 0.
Font:	Choice of a font.

Item form: Choice of a geometrical design.

Use Error Processing: If set, the state of the fault indication is operated by the element Error Processing (see page 80).

Title: Input of a title

Objects

Acknowledge: Confirming Object

Enabling: Enabling Object

Input: Input Object

3.12.2   E-MAIL

Sends E-Mails. Numerical values can be integrated. To send e-mails the service E-Mail must be configured and a PC must run.

Parameter

E-Mail Content: Input of the message

E-Mail Recipient: E-Mail address of the recipient

EIS Type of the values: Choice of the EIS type of the numerical value

Start at On: If set, a e-mail is sent as soon as a ON telegram is sent to the Input.

Objects

Enabling: Enabling Object

Start: Start Object

3.12.3   SMS

Sends SMS. Numerial values can be included. For sending SMS the servcie SMS must be configured and the PC with enabled ISDN connection must run.

Parameter

EIS Type of the numerical value: Choice of the EIS type and the format of
                                                thenumerical value

SMS content: Input of the message

SMS Recipient: Mobile phone number of the recipient

Start at On: If set, a sms will be sent as soon as the Input
                                                Object receives an ON telegram

Objects

Enabling: Enabling object

Start: Start object

4   VISUALIZATION WITH AUTOMATIC FUNCTIONS
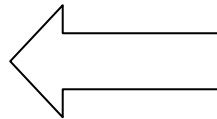
- Create Visualization
- Configuration of automatic functions
- Testing Visualization & functions offline
- Transfer of automatic functions
- Execution of Visualization

- Provides states for Visualization
- Execution of automatic functions independent from a PC

The automatic functions like logical items, time functions and sequences are executed in eibNode independent from a visualization. That means, the PC can be switched off.

For creating a visualization browse to page Link.

4.1   ADD AUTOMATIC FUNCTIONS

- Open a visualization project

The automatic functions are added like the visualization elements (see page Link)

4.2   SHOW AUTOMATIC ELEMENTS IN EIBVISION

The automatic elements are not visible in eibVision by default. But the visible status can be set:

- Select an automatic element from the visualization page
- In the Inspektor: expand the parameter combination *Position*
- Change the parameter *Layer*

4.3   SIMULATION OF THE AUTOMATIC FUNCTIONS WITH THE PC

In the Testmode all the automatic functions are executed by the PC.

- Choose *Option* from the menu *Settings*
- Choose the flag *Testmode*
- Enable the option *Enable logical and time functions*
- Confirm with *OK*
- Choose *BMX Server* fro the menu *Settings*
- The option *connect to server* must be not enabled
- Confirm with *OK*
- Choose *Message Center* from the menu *View*
- Start the Testmode by clicking on the button *Start* in the toolbar

Important consideration: before executing the visualization with eibVision deactivate the option Enable logical and time functions. Otherwise the functions will be executed by theeibNode and the PC the same time and errors may occur.

4.4   TESTMODE WITH EIBNODE

Before you start a visualization make sure that the *eibNode* and the PC are connected directly by a cross-over cable or via the network and that the settings of the PC are correct. Click on *Driver* in the Message Center Toolbar.

4.5   COMPILING AND TRANSFER

In order to execute the automatic functions the project has to be compiled and transferred.

- Save the project
- Choose *BMX Compiler* from the menu *extras, eibVision Project*. If the Project contains errors corresponding messages will be shown. Correct the errors and compile the Project again. After successful compiling the Project can be transferred to the *eibNode*.
- Make sure that the *eibNode* and the PC are connected directly via a cross-over cable or via the network and that the network settings of the *eibNode* and the PC are correct. Choose *Project Transfer* from the menu *Extras, Function*.

- Enter the IP-Adress of the eibNode and click on *next* to transmit the Project. After the transfer the *eibNode* restarts automatically.

4.6   EXECUTION OF A VISUALIZATION WITH AUTOMATIC FUNCTIONS

Important consideration: before executing the visualization with eibVision deactivate the option Enable logical and time functions. Otherwise the functions will be executed by theeibNode and the PC the same time and errors may occur.
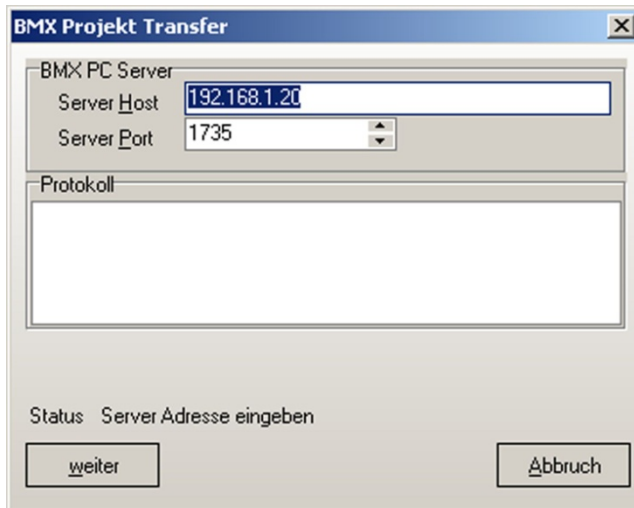
- Start eibVision
- Choose the item *Fernwirksystem* from the menu *Settings*
- Enable the option *connect to server*
- As *Server Host* enter the IP address of the eibNode
- Confirm with *OK*
- Choose *Open* from the menu *Project* and choose a *eibVision Project*

The automatic functions are executed independent from a PC.

5   THE AUTOMATIC ELEMENTS

5.1   LOGICAL ITEMS AND SEQUENCES

5.1.1   BINARY LOGIC

With this element EIS 1 telegrams can be linked logically. There are the binary Logic gates and, or, exclusive or, Objectvalue, not and, not or, not exclusive or, not Objectvalue are available.

Parameters

Delay Off (s)	Delay time in seconds for OFF telegrams at the Output.
Delay On (s)	Delay time in seconds for sending ON telegrams at the Output.
Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
Filter	Choice which kind of telegrams shall be operated: *Send On and Off*: all telegrams will be operated *Send only On*: only ON telegrams will be operated. *Send only Off*: only OFF telegrams will be operated.
Function	Choice of logic operation
Input	*invert Input*: Choice of Input Object sates that shall be inverted. *Not calculate Off*: Choice which Inputs shall not be operated when receiving an OFF telegram. *Not calculate ON*: Choice which Inputs shall not be operated when receiving an ON telegram.
Number Inputs	Number of Input Objects. There are maximum 30 Inputs.
Output Control	If set, the element controls the state of the Output Object. If the Output Object receives a telegram that has not been generated by the element itself the element controls if the logic operation is still valid. If not, the valid state will be sent at the Output immediately.
Send always	If *true* is set, the Output of the logic gate will send its value as soon as there is a value at at least one of the Inputs. If *false* is set, the Output only sends its value if the value has changed compared to the former value. Advantage: less telegram traffic.
Trim at gate enabling	If set, the logic operation will be executed as soon as the Enable Object receives an ON telegram.

Objects

Enabling	Enabling Object
Input x	Input Objects
Output	Output Object

5.1.2   SCENE

In a scene several telegrams are combined and sent at once. A scene can consist of up to 28 Output group addresses. By the save function a scene can be changed at any time. The parameter Delay time allows sending the telegrams with delay.

Parameter

Delay time (s)	Delay time for sending the single telegrams. The first telegram will be sent immediately.
Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
Number Outputs	Number of Outputs. There are maximun 28 Outputs.
Output X Start value	Enter of start value for the Output Objects.
Save by On	*true*: the current states of the Output Objects will be saved as new scene when the Save Object receives an ON telegram. The predefined states will be overwritten. *false*: new scenes cannot be saved.
Start by On	*true*: the scene will start when an ON telegram is sent to the Start/Stop Object. *false*: the scene will start when an OFF telegram is sent to the Start/Stop Object.
Stop allowed	*true*: the scene will be stopped as soon as another telegram is sent to the Start/Stop Object. *false*: the scene cannot be stopped.
User dialog	no function

Objects

Enabling	Enabling Object
Output x	Output Objects
Save	By this Object the states of the Output Objects will be saved as new scene.
Start/Stop	By this Objects scenes are started/stopped.

5.1.3   STAIRCASE TIME SWITCH

This element emulates a staircase time switch. If a button for the staircase light is pushed the light switches on and turns off after a specific time. Pushing a button while the light is switched on the time will restart. The time is adjustable. The time can be also be stopped early.

Parameter

Delay time (s)	Delay time in seconds for sending telegrams from the Output.
Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
Invert Output	*true*: the state of the Output will be inverted *false*: the state will be not inverted.
Restart possible	*true*: by sending another ON telegram to the Input Object the Delay time will be restarted. *false*: a restart is not possible.
Time base object	EIS format and corresponding parameters for the Time base object.
Untimely Cancel possible	*true*: by sending an OFF telegram to the Input Object the Output will be set to 0 immediately. *false*: the untimely cancel is not possible.
Use Object for time base	If set, the Delay time will be affiliated from the telegram value of the Object *Time base*. The parameter *Time base Object* will appear; the parameter *Delay time* will be ignored.

Objects

Enabling	Enabling Object
Input	Input Object
Output	Output Object
Time base	Time base object

5.1.4   DELAY

This element delays the forwarding of a teloegram from the Input to the Output.

Parameter

Delay item	Choice of telegram type to forward. *all*: All telegrams will be delayed. *Off Telegram*: only OFF telegrams will be delayed. *On Telegram*: only ON telegrams will be delayed.
Delay time(s)	Delay time in seconds for the forwarding of telegrams.
Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.

Objects

Enabling	Enabling Object
Input	Input Object
Output	Output Object

5.1.5   TRANSFORMER

The Transformer turns the Input telegram into a specific Output telegram. The transfer function is parameterized graphically. Typical application: interior lighting control depending on the daylight.

Parameter

Dialog	Window for parameterizing the transfer function.
Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
Input	Choice of the EIS format of the Input Object.
Only in case of change	If *true* is set, the conversion only is operated as soon as the Input Object state changes. At *false* every telegram will be converted.
Output	Choice of the EIS format of the Output Object.
User dialog	no function

Objects

Enabling	Enabling Object
Input	Input Object
Output	Output Object

5.1.6   GATE ITEM

The gate item lets pass a telegram from the Input to the Output or blocks it. Thr gate can be opened/closed by the Gate Object.

Parameter

Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
Gate open by On	*true*: the gate opens when sending an ON telegram to the Gate Object. *false*: The gate closes when sending an ON telegram to the Gate Object.
Gate open in both directions	If set, the gate works in both directions (Input to Output, Output to Input).
Only in case of change	If *true* is set, the Output telegram will only be sent as soon as the state at the Input changes. At *false* the Ouput telegram will always be sent.
Trim at gate enabling	If *true* is set, the element checks at gate enabling if the states at the Input and the Output are the same. If not, the telegram from the Input will be forwarded to the Output. At *false* there is no trim.

Objects

Enabling	Enabling Object
Gate Object	Gate Object
Input	Input Object
Output	Output Object

5.1.7   COMPARATOR

This element compares the value of two telegrams or the value of one telegram and of a constant value. There are 5 comparator types available: equal, greater, greater equal, less, less equal. As result the element sends the telegram value ON if the condition is fulfilled. Only telegrams with the same EIS format can be compared.
The reference Input is Input 2. Example: the condition greater is fulfilled when the value of Input 1 is greater than the value of Input 2.

Parameter

Comparator Type	Choice of the comparator type.
Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
Input 1	Choice of the EIS type of the Input. If *untyped* is chosen a constant valöue can be entered.
Input 2	Choice of the EIS type of the Input. If *untyped* is chosen a constant valöue can be entered.
Only in case of change	If *true* is set, the result will only be sent in case of changes of the Input states. At *false* will be sent always.

Objects

Enabling	Enabling Object
Input 1, Input 2	Input Objects. If a constant value is entered a group address must not be entered.
Output	Output Object

5.1.8   HYSTERESIS

Mit diesem Element wird durch Bestimmen von oberer und unterer Schaltschwelle ein Toleranzbereich
With this element by defining an upper and lower threshold a range of tolerance is defined wihtin that
telegrams will not be sent. The EIS types of the Input and the threshold must be the same.

Example:
The interior lighting is linked to a brightness sensor. When a specific brightness value is fallen below the
lighting switches on; when this value is exceeded again the lighting switches off. At constantly changing
brightness conditions (sun - clouds) within the range of the threshold the lighting will switch on and off
constantly. To avoid this a hysteresis with an upper and lower threshold is defined. Between the
thresholds there is a range of tolerance. Brightness fluctuations within the range of tolerance do not
release switching. Only at falling below the lower threshold the lighting switches on; at exceeding the
upper threshold the lighting switches off.

Parameter

Input	Choice of the EIS type of the Input.
Invert Output	If *true* is set, the telegrams at the Output will be inverted.
Lower Threshold	Choice of the EIS type of the lower threshold. If *untyped* is chosen a constant value must be entered.
Only in case of change	If *true* is set, the Output telegram will only be sent in case of a change at the Input. At *false* the Output telegram will be sent always.
Upper Threshold	Choice of the EIS type of the upper threshold. If *untyped* is chosen a constant value must be entered.

Objects

Enabling	Enabling Object
Input	Input Object
Lower Threshold	Object for lower threshold
Output	Output Object
Upper Threshold	Object for upper threshold

5.1.9   CIRCULAR REPEATER

This element repeats 1 Bit telegrams in an adjustable cyclic time.

Parameter

Delay time (s)	Delay time for repeating telegrams.
Repeat State <> 0	If *true* is set, telegrams with the value 1 will be repeated.
Repeat State = 0	If *true* is set, telegrams with the value 0 will be repeated.
Repeater Object	*Repeat Input*: telegrams at the Input Object will be repeated *Repeat Output*: telegrams at the Output Object will be repeated.
Send Input directly	If set, the output value will be sent immediately at start of the program ignoring the delay time. Although the delay time goes on when the element is not enabled, at enabling the Output value will be sent immediately.

Objects

Enabling	Enabling Object
Input	Input Object
Output	Output Object

5.1.10   BINARY FILTER

With this element 1 Bit telegrams (EIS 1) can be filtered. Only telegrams with the value 1 respectively 0 will be forwarded to the Output.

Parameter

Transfer State = 0	If *true* is set, all telegrams with the value 0 will be forwarded to the Output (the parameter *Transfer State <> 0* must be set to *false*).
Transfer State <> 0	If *true* is set, all telegrams with the value 1 will be forwarded to the Output (the parameter *Transfer State = 0* must be set to *false*).

Objects

Enabling	Enabling Object
Input	Input Object
Output	Output Object

5.1.11   MATH

With this element mathematical operations (add, subtract, multiply, divide) can be done.

Parameter

Function	Choice of mathematical operation.
Input x	Choice of the EIS format of the Input x.
Number Inputs	Number of Inputs. There are maximum 10 Inputs available.
Output	Choice of the EIS format of the Output Object.
Send always	If true *true* is set, the result of a mathematical operation will always be sent. If *false* is set, the result will only be sent as soon as the result changes.

Objects

Enabling	Enabling Object
Input X	Input Objects
Output	Output Object

5.1.12   ERROR PROCESSING

This element is used for processing error messages. It can work alone or in connection to the visualization element *Fehler! Verweisquelle konnte nicht gefunden werden.* (Seite 58).

Acknowledge in case of:	Choice which event requires an acknowledgement. *Distiurbance appears*: when a disturbance appears. *Disturbance disappears*: when a disturbance disappears. *TimeOut*: when the TimeOut time has expired.
Automatic repeat time (min):	Time after that an acknowledged but not yet changed state has to be acknowledged again. The maximum time is 32767 minutes (22 days, 18 hours and 7 minutes).
Confirmation state:	Choice which event acknowledges an error message. *Confirmation with ON*: when the telegram state is ON. *Confirmation with OFF*: when the telegram state is OFF.
Disturbance appears at:	Choice which event at the Object *Disruption sensor* shall release an error message. *none*: never *rising Edge*: when the Object state changes from 0 to 1. *Trailing Edge*: when the Object state changes from 1 to 0. *ON*: when the Object state is 1. *OFF*: when the Object state is 0.
Disturbance disappears at:	Choice which event at the Object *Disruption sensor* shall stop the error message. *None*: never *Rising Edge*: when the Object state changes from 0 to 1. *Trailing Edge*: when the Object state changes from 1 to 0. *ON*: when the Object state is 1. *OFF*: when the Object state is 0.
Extended display:	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
TimeOut (min):	Only used when the disruption sensor sends circularly. If the Object *disruption sensor* does not receive a telegram while the *TimeOut* runs, an ON telegram will be sent from the Object *Output timeout status*. Consideration: at circular disruption sensors for the parameters *Disturbance appears at* and *Disturbance disappears at* the item *rising Edge* or *trailing Edge* must be chosen.

Objects

Confirmation Input:	Confirmation Object
Disruption sensor:	Input Object for disruptions
Enabling:	Enabling Object
Output confirmation status(EIS 1):	Sends an ON telegram when an achnowledgement is required
Output disruption (EIS 1):	Sends an ON telegram at a disruption
Output Status (1 Byte):	Output Object (linked to the Input Object of the visualization element *Fehler! Verweisquelle konnte nicht gefunden werden.*).
Output timeout status(EIS 1):	sends an ON telegram when the timeout time has expired.

5.1.13   MULTIPLEXER

The multiplexer has two Input Objects and one Output Object. By the Gate Object one can switch between the two Inputs. An OFF telegram at he Gate Object activates the Input 1; an ON telegram at the Gate Object activates the Input 2. The state at the Output only changes when the state of the current activated Input changes. Switching by the Gate Object does not effect any changes at the Output.

Parameter

Extended display	If set, the element will be displayed with LEDs indicating the telegram actions of the element.
Format	Choice of the EIS format
Only in case of change	If set, the telegram of the current activated Input will only be forwarded to the Output if the state at the Input changes.
Trim at gate enabling	If set, the element will be operated as soon as the Enabling Object receives an ON telegram.

Objects

Enabling	Enabling Object
Gate Object	Switching Object
Input x	Input Objects
Output	Output Object

5.1.14 TELEGRAMM- UND WERTEZÄHLER

The element counts telegrams or telegram values

Parameter

Counter Type:	Choice of the counter type: *Telegram Counter*: the number of telegrams independent from the contents will be counted. The input formats do not need to be specified. *Value counter*: the telegram values will be counted. The input formats must be specified.
Negative Input:	Telegrams respectively telegram values will be subtracted from the current output value. In case of the *Value Counter* choose an EIS type.
Ausgang:	EIS type of the Output
Positive Input:	Telegrams respectively telegram values will be added to the current output value. In case of the *Value Counter* choose an EIS type.

Objects

Enabling:	Enabling Object
Negative Input:	Subtracter Object
Output:	Outout Object
Positive Input:	Adder Input
Reset:	Object for resetting the counter

5.1.15   VALUE STORAGE

The element consists of two storages for telegram values. There are called *Storage* and *Storage Default Value*. The *Storage Default Value* is parameterized and cannot be changed in the runtime. The *Storage* can be overwritten by a *Store Event*. Both storage values can be sent by corresponding *Send Events*.

Typical example:
The set value for a single room temperature control has the format EIS 6, 8 Bit. When someone opens a window the heating shall be switched off. If the window is closed again the last set value that was set before the window was opened shall be set again. The window is equipped with a window contact which sends a 1 when opening the window. The *Storage Default Value* is parameterized to EIS 6 value 0. As *Store Event* "*Rising Edge*" is chosen. The *Default Value Send Event* is set to ON and the *Send Event* is set to OFF.
If a window is opened the contact releases an ON telegram. The Value Storage detects a Rising Edge, stores the current set value and sends the value of the *Storage Default Value* (value 0). The heating switches off. When the window is closed again the Value Storage detects the *Send Event "OFF"* and sends the stored value.

Parameter

Default Send Value	Choice of the Default send Value. It will be sent when the *Default Value Send Event* is released.
Default Value Send Event	Choice when the *Default Send Value* shall be sent.
Send Event	Choice when the *Storage Default Value* shall be sent.
Storage Default Value	Choice of the Default Value. It will be sent when the *Send Event* is released.
Store Event	Choice when the state of the Output Object shall be stored.

Objects

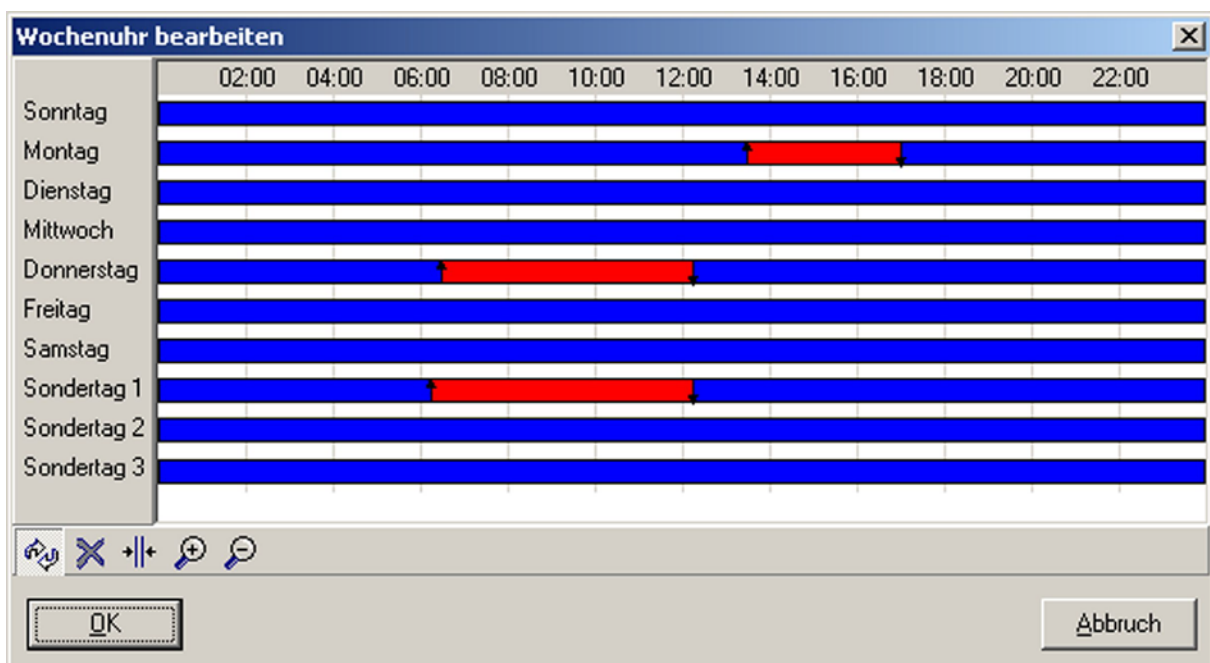|	
Enabling	Enabling Object
Input	Input Object
Output	Output Object

5.2   TIME AND CLOCK

5.2.1   WEEK TIMER

With this element for each day of a week and additionally for up to three special days (e.g. holidays) times for sending telegrams can be defined. With the *Year Timer* each day of a year a profile (standard times Sunday - Saturday, special days 1 - 3) can be assigned to. The Output group address of the *Year timer* must be the same as the Enabling group address of the *Week Timer*. The *Year Timer* always sends at 0 o'clock of a new day.

Parameter

Dialog   Opens a window for parameterizing the switching times graphically:

Set switching times: A click on a blue coloured row sets a start time (indicated by an arrow pointing up). A further click sets a stop time (indicated by an arrow pointing down). Periods with the state ON are indicated by red colour.

Delete switching times: By a click on a swtiching time it will be deleted.

Move switching times: Switching times can be moved by dragging with pushed mouse button.

Zoom View: To zoom in select a period; to zoom out click on the time bar.

Output Control   If *true* is set, the Output telegram will be sent again as soon as the state has been changed manually (e.g. by switching manually). Otherwise the Output Object will not be controlled.

Send at mode change	This parameter is only available when the parameter *With Speacial Days* is set. If *true* ist set, the Output value will be sent immediately at the beginning of a new day if the switching profile changes (according to the *Year Timer*).
Send at Start	If *true* is set, the Output telegram will be sent immediately at startup. Otherwise the Output telegram will be sent at 0 o'clock of the next day.
User Dialog	no function
With Special Days	If *true* is set, additionally times for up to three special days can be defined.

Objects

Enabling	Enabling Object
Output	Output Object

5.2.2   YEAR TIMER

With this element each day in a year a switching profile from a *Week Timer* can be assigned to. The Output group address of the *Year timer* must be the same as the Enabling group address of the *Week Timer*. The *Year Timer* always sends at 0 o'clock of a new day.

Parameter

Dialog   Opens a window for parameterizing the switching times graphically:
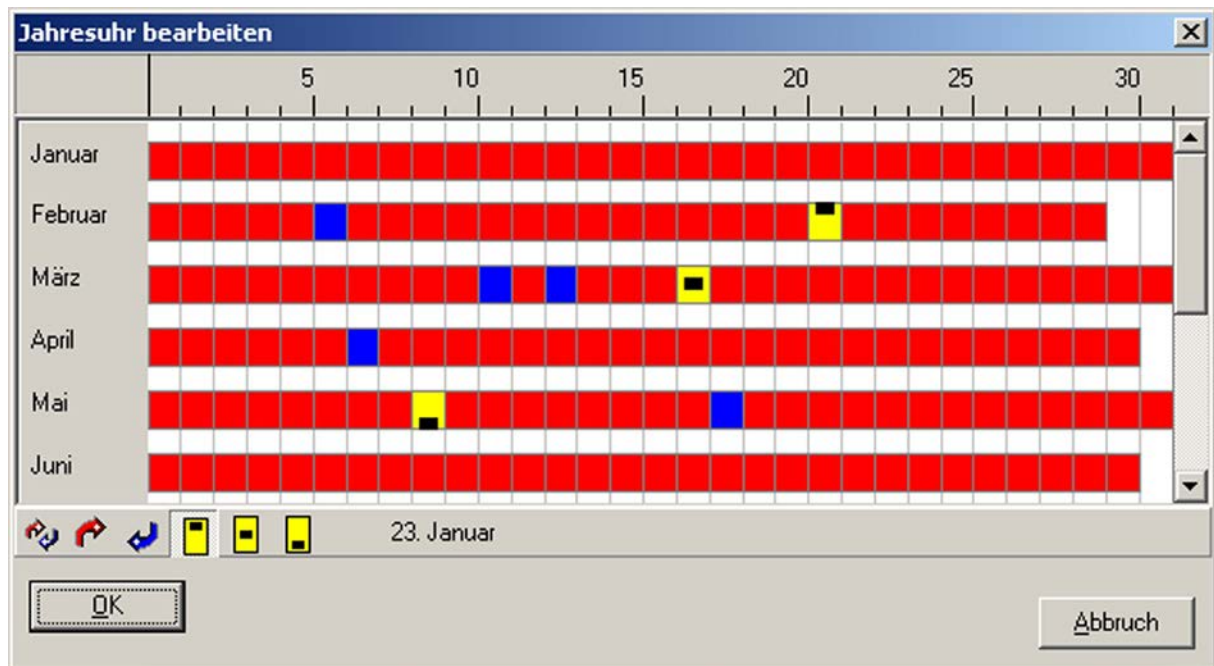
Each day of a year a switching profile can be assigned to. Red cells mean "no profile"; blue cells mean "standard profile" (Sunday - Saturday).

These symbols represent the three special days profiles of the Week Timer.

Output Control   If *true* is set, the Output telegram will be sent again as soon as the state has been changed manually (e.g. by switching manually). Otherwise the Output Object will not be controlled.

Send at start   If *true* is set, the Output telegram will be sent at startup.

User Dialog   no function

With Special Days   If set, switching profiles for special days can be assigned.

Objects

Enabling   Enabling Object

Output   Output Object

5.2.3   SEND TIME TELEGRAM

With this element time telegrams (EIS 3) can be sent.

Parameter

Interval(s)   Interval time in seconds for sending time.

With week day   If *true* is set, also the week day will be sent.

Objects

Enabling   Enabling Object

Output   Output Object

5.2.4   SEND DATE TELEGRAM

With this element date telegrams (EIS 4) can be sent.

Parameter

Interval(s)   Interval time in seconds for sending date.

Objects

Enabling   Enabling Object

Output   Output Object

5.2.5   CIRCULAR SENDER

The circular Sender is a binary element that sends telegrams at regular time intervals.

Parameter

Delay Time(s)   Interval time of the circular sender

Extended display   If set, the element will be displayed with LEDs indicating the telegram actions of the element.

Reset at Enabling   The circular time always runs, even when the element is not enabled. If set, at enabling a telegram will be sent immediately and the delay time will be resetted.

Send   Choice of the sending type:
                                             Send only Off, send only On, toggle

Objects

Enabling   Enabling Object

Output   Output Object

5.3   SYSTEM

5.3.1   WEB BROWSER

With this element a web browser window can be integrated into a visualization page. The displayed web page is defined by the parameter URL and cannot be changed in the visualization.

Parameter

URL: Input of the URL of the page taht will be displayed in the browser window. The URL cannot be changed in eibVision.

5.3.2   RECEIVE TIME TELEGRAM

By this time telegrams can be received (EIS 3). The element compares the internal clock of the eibNode to the time that is sent to the EIB from a EIB clock. At a devoation greater than max. Delta the eibNode time will be set to the EIB time.

Parameter

Check date: If set, the date will be also be regarded

Max Delta (s):   Maximum tolerable deviation of the eibNode time from the EIB time.

Objects

Enabling: Enabling Object

Input: Input Object

5.3.3   RECEIVE DATE TELEGRAM

By this element date telegrams can be received (EIS 4). The element compares the internal date of the eibNode to the date that is sent to the EIB from a EIB clock. At a devoation greater than max. Delta the eibNode date will be set to the EIB date.

Parameter

Max Delta (s):   Maximum tolerable deviation of the eibNode date from the EIB date

Objects

Enabling: Enabling Object

Input: Input Object

5.3.4   ADRESS-INIT

By this element group addresses can be initiated with a specific value. At the startup of a EIB plant the states of the objects are unknown. To avoid faults or unintended actions the states can be predefined.

Parameter

Dialog: Opens a window for input of the initiate values.
                                                  Init: If set, this object will be initiated
                                                  Value: Choice of the initiate value by double click

Number Output: Choice of the number of outputs

Objekte

Output x: Enter the address of the object that shall be initiated

5.3.5   FILTER EIB

By this element filter tables can be edited that define which address telegrams the eibNode lets pass in direction to the EIB and which telegrams are blocked.

Parameter

Dialog: Opens a window to select the group addrresses that shall be filtered.
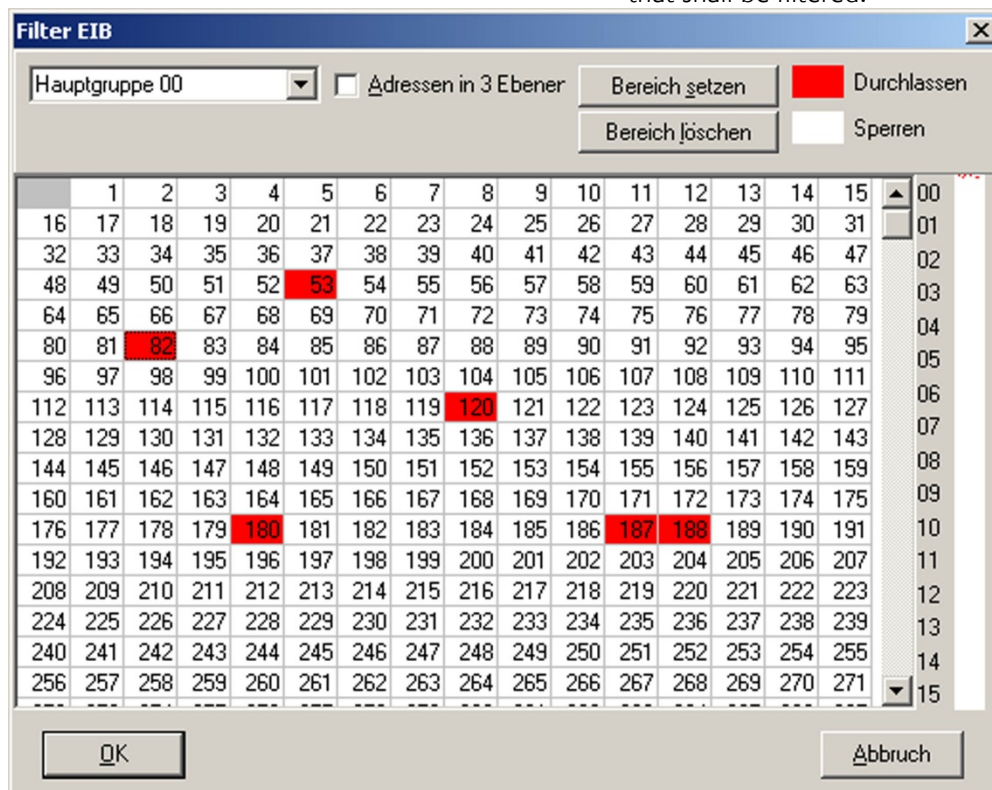
Single group addresses are selected by the mouse. To block or allow a hole address area click on the buttons Set Area respectively Clear Are.

6   AUTOMATIC FUNKTIONS WITHOUT VISUALIZATION
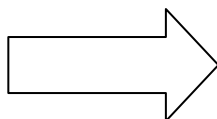
- ▪ Configuration of the automatic functions
- ▪ Transfer of the automatic functions

- ▪ Execution of the automatic functions independent from a PC

6.1   THE FIRST EIBNODE PROJECT – STEP BY STEP

Sie benötigen:
- *eibVision* Software
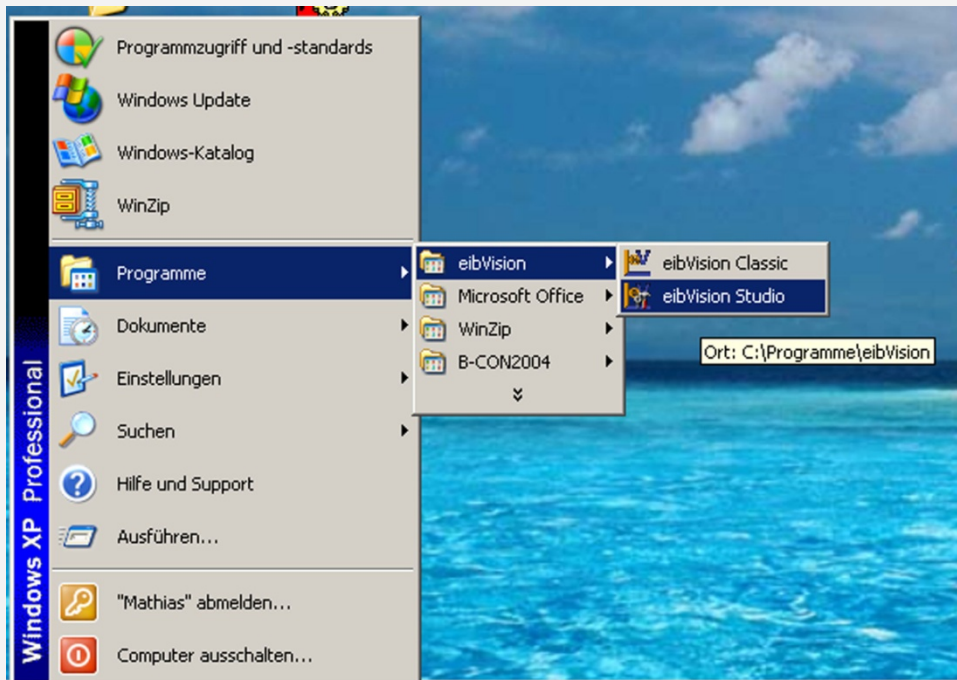
Start *eibVision* Studio
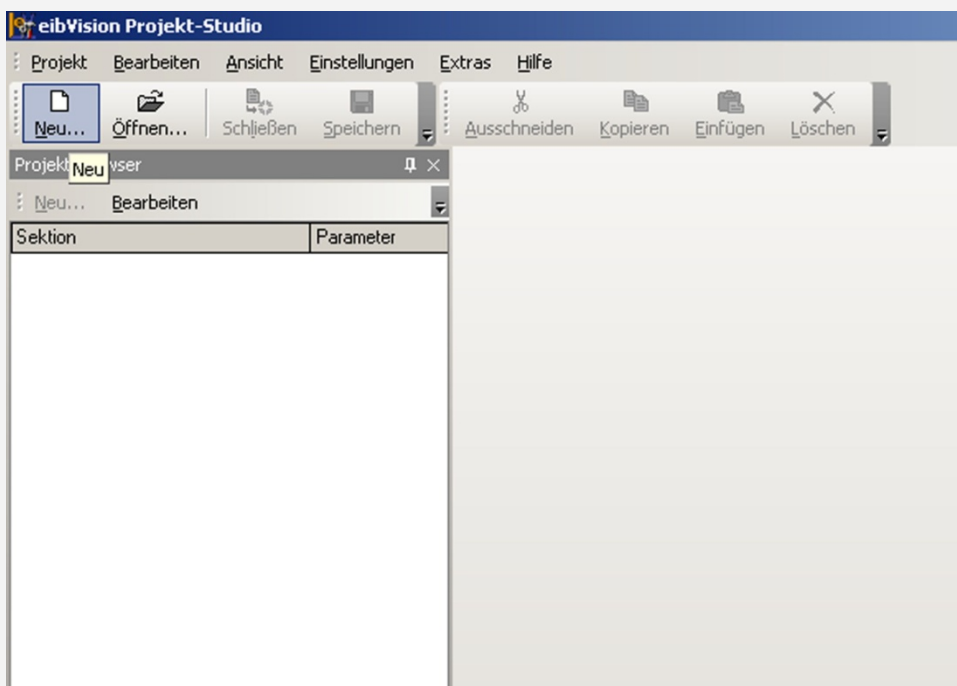
Click on New
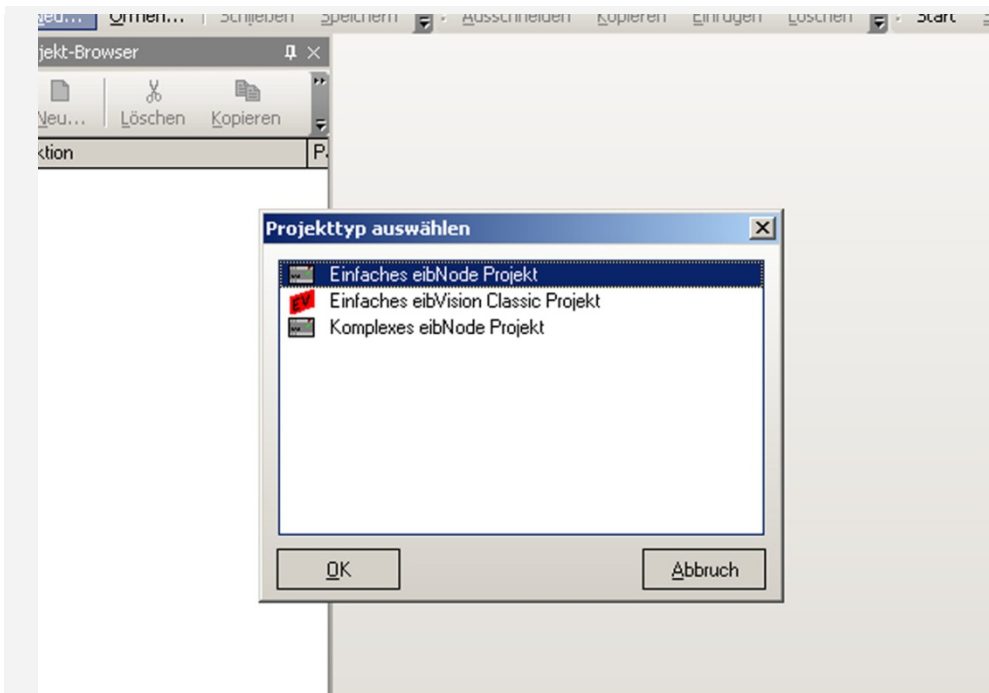
Choose *Simple eibNode Project*
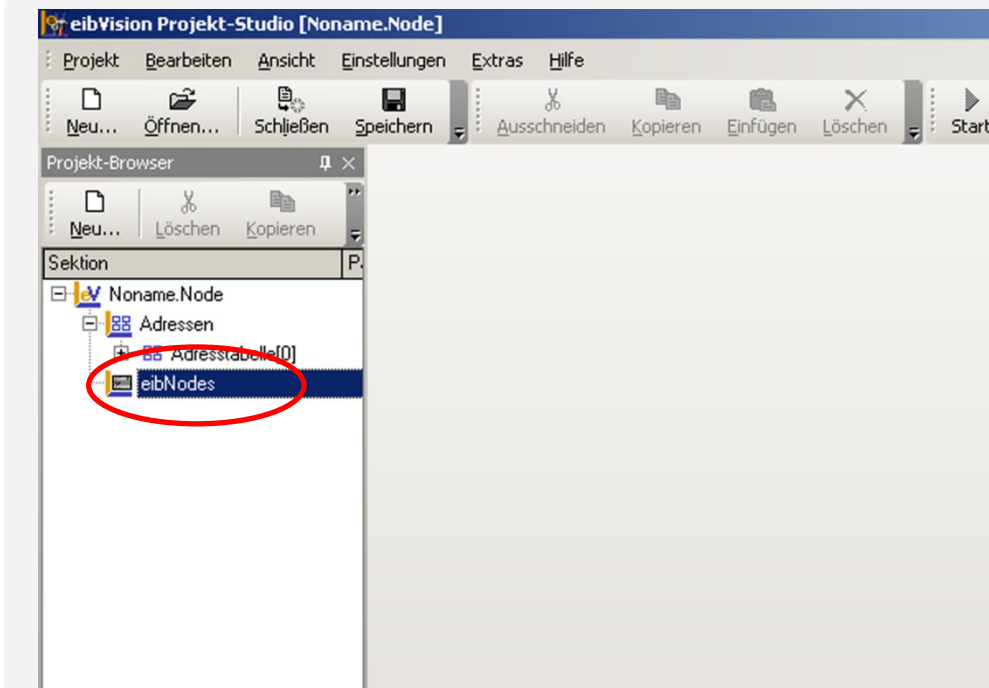
Click twice on *eibNodes*

Enter:
A description

Server Host: The
IP-address of the
eibNode

NetID: page
**Fehler! Textmarke
nicht definiert.** or
eibNode
handbook

Click twice on the
new eibNode
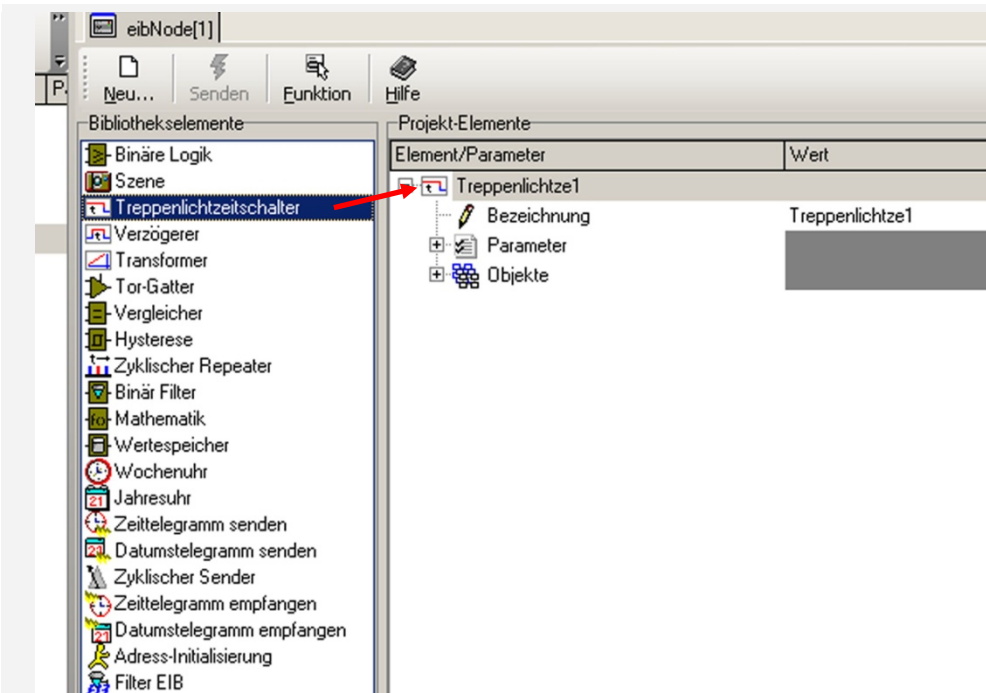
Drag an element with pushed left mouse button into *Project Items*
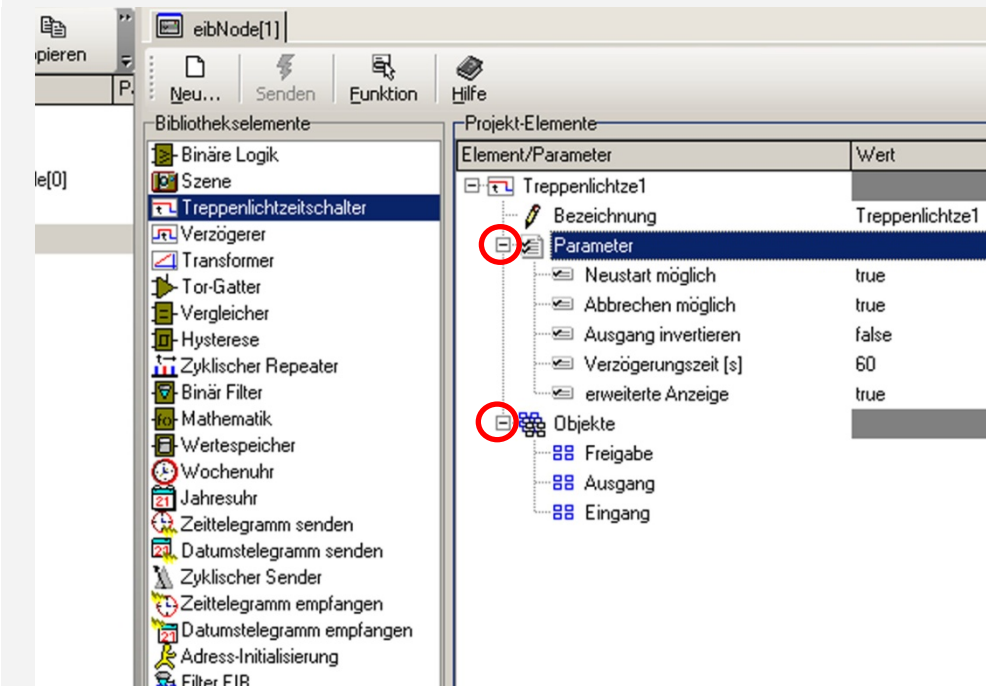
Expand the view for *Parameter* and *Objects*

Enter:

Comment

Parameter

Objects (
)

Click on *Save* and name the project.

6.1.1 PROJEKT TRANSFER

Required:

- *eibVision* Software
- eibNode
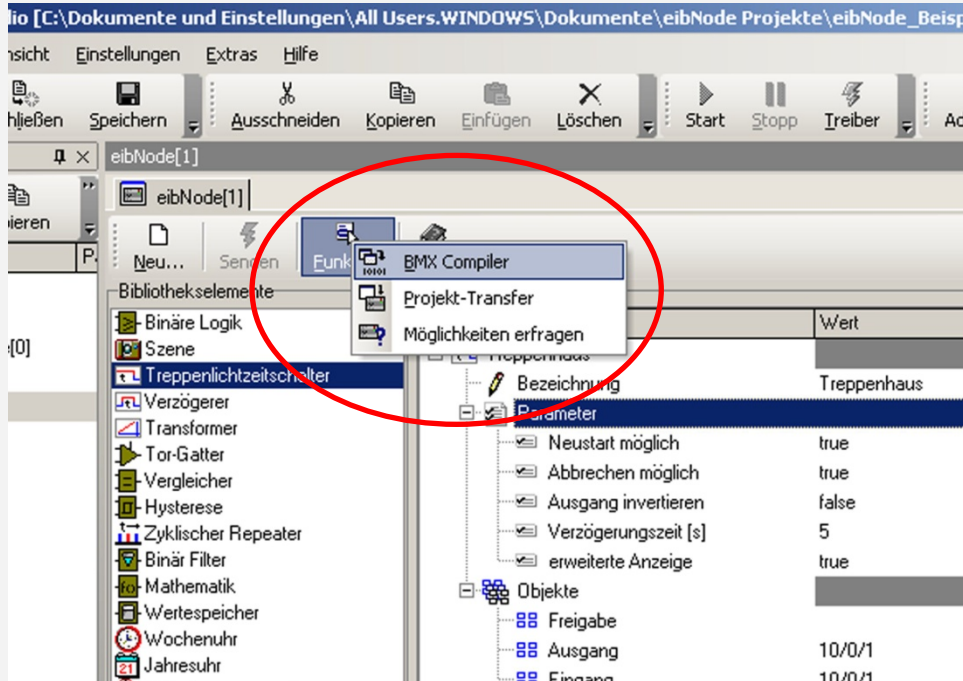
Click on *Function* and choose *BMX Compiler*
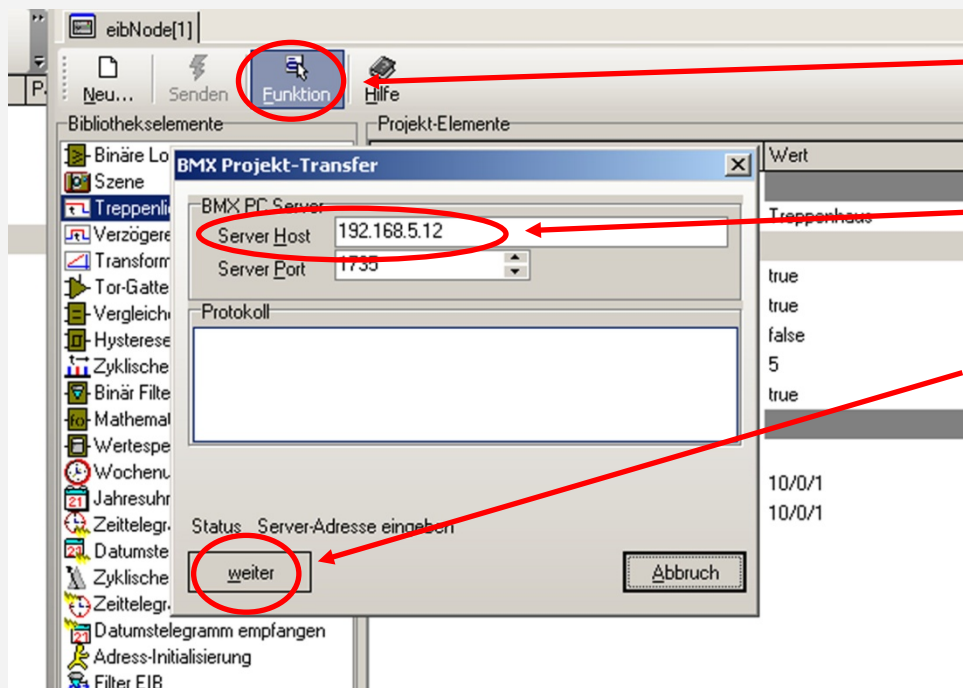
Click on *Function* and choose *Project Transfer*

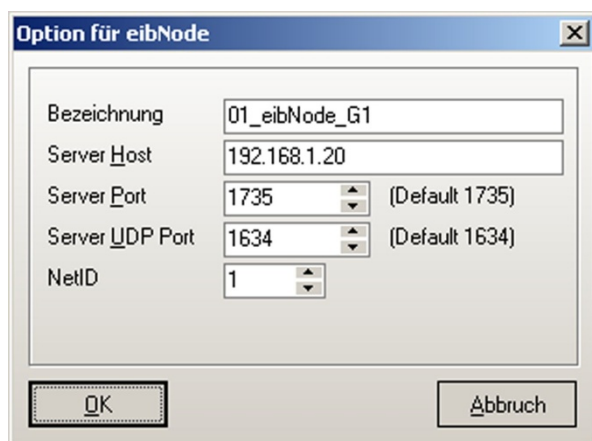Check if *Server Host* is correct

Click on *OK*

6.2   CONFIGURATION OF THE AUTOMATIC FUNCTIONS

6.2.1   NEW PROJECT

- Start a new Project by clicking on the button *New...* (Shortcut STRG+N).
- Choose the project type *Simple eibNode Project* and confirm with *OK*. The new Project will be shown as Noname.Node in the Project Browser.

6.2.2   *EIBNODE* INSERT

- Select the folder *eibNodes* in the Project Browser.
- Click twice on the folder or click on the button *New...* from the Project Browser Toolbar and the option window appears.

Enter the following data:

|	
Comment:	Choose as possible a clear description (e.g. sequential Number, Name, Assembly Place) *Consideration: For better overview always start the comment with a sequential number, if required.*
Server Host:	Enter the definite network address of the *eibNode*. This may be an IP-address (e.g. 192.168.1.20) or a DNS-address (e.g. http://eibNode01.ath.cx). If necessary ask the administrator to receive a free network address.
Server Port:	Enter the Port by that the *eibNode* communicates with the Project PC. The default Port is 1735.
Server UDP Port:	This option is not needed for this project type.
NetID:	This option is not needed for this project type.

6.2.3   ASK POSSIBILITIES

The software *eibVision* and the gateway *eibNode* are constantly expanded with new functions. Perhaps your *eibVision* version already supports new functions and your *eibNode* has not been updated, yet. Before configuring the functions and services you always should check the possibilities:

- click twice on an *eibNode* in the Project Browser to open the parameter window (if not already open),
- click on the button *Function* and choose *Ask Possibilities*.
- Enter *Server Host* and *Server* and click on *next*. *eibVision* now checks the possibilities and shows a message. Elements that are not yet supported by the *eibNode* will be deleted from the library of available elements.

6.2.4   INSERT AUTOMATIC FUNCTIONS

- Click twice on an *eibNode* in the Project Browser to open the parameter window.
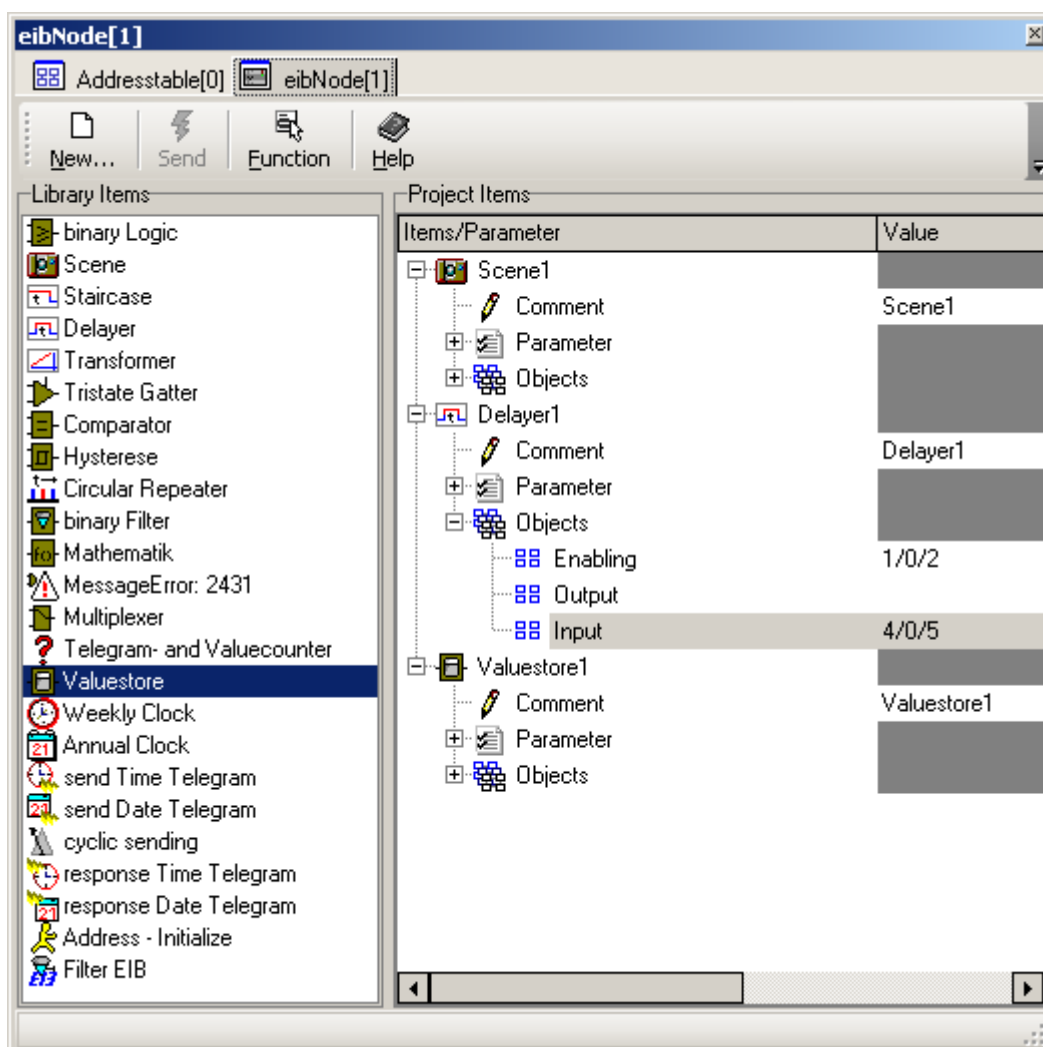
The left panel shows the library of the available elements. The right panel includes the inserted elements and parameters.

- Insert an element by Drag & Drop. By clicking on ⊞ / ⊟ the parameters and objects can be shown / hidden.
- Enter the parameters

- Enter the group addresses directly or with help of the address table (Link).
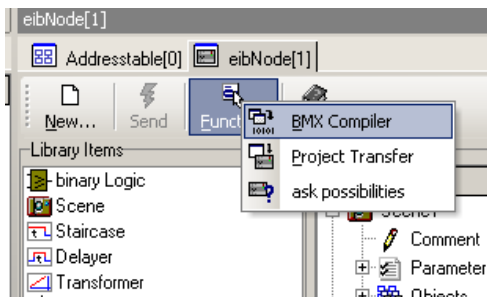
6.2.5 SAVE PROJECT

After configuring *eibNode* and its functions you should save the Project.
- Click on the button *Save* in the project toolbar or choose *Save* from the menu *Project*.
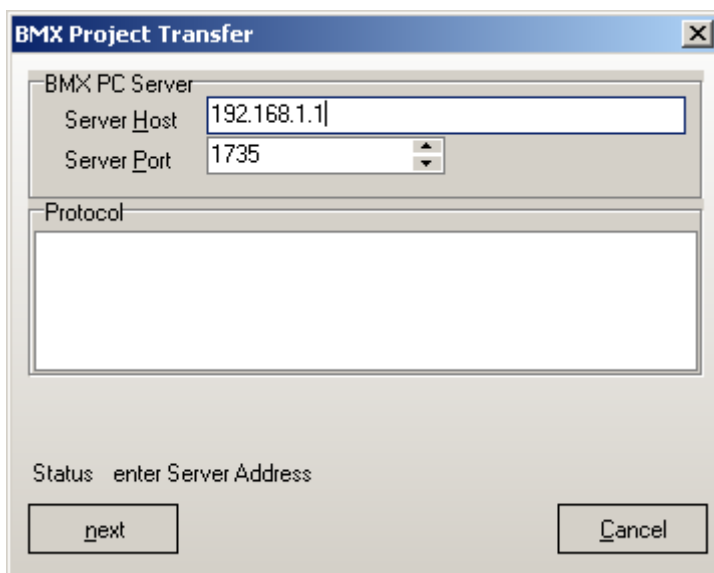
6.2.6 PROJEKT COMPILING AND TRANSFER

- Open the parameter window of an *eibNode*,
- click on *Function* from the toolbar and choose *BMX-Compiler*.

If the Project contains errors, corresponding messages will be shown. Correct the errors and compile the Project again. After successful compiling, the Project can be transferred to the *eibNode*.
- Make sure that the *eibNode* and the PC are connected directly via a cross-over cable or via the network and that the network settings of the *eibNode* and the PC are correct.
- Choose *Project Transfer* from the toolbar menu *Function*.

- Check the settings *Server Host* and *Server Port*
- Click on *next* to transmit the Project. After the transfer the *eibNode* restarts.

- Hier können Sie noch einmal die Einstellungen *Server Host* und *Server Port* überprüfen (s. *eibNode* hinzufügen).

- Klicken Sie auf *weiter*, um das Projekt zu übertragen. Nach der Übertragung startet der *eibNode* neu und alle parametrierten Funktionen und Dienste werden im *eibNode* ausgeführt.

6.3   ADDRESSTABLE

The *Addresstable* provides two different indications of all group addresses of a Project. New addresses and address structures can be inserted. Group addresses can be assigned to the communication objects by drag&drop. EIB group addresses can be imported from the ETS (see Import group addresses, page 33)

6.3.1   OPEN ADDRESSTABLE

The *Addresstable* can be found in the *Project Browser*. Click on ⊞ to expand the view. Click twice on the folder *Address* or click with the right mouse button and choose *Open* or *Open in new window* from the context menu.

6.3.2   OPTIONS FOR THE ADDRESSTABLE

To change the options for the *Addresstable* click with the right mouse button on the item *Addresstable* and choose *Parameters* from the context menu. A window with the following options will appear:

Comment: enter a description for the Addresstable

NetID: enter the NetID of the *eibNode* (see page Link). The entry is just for documentation.

Design: if set, the group addresses will be displayed in the 3 level indication.

6.3.3   TREE VIEW

The group addresses are displayed in a tree structure according to the scheme Maingroup, Middlegroup, Subgroup. At the 2 level indication the Middlegroups drop out. The tree view can be expanded / reduced by clicking the items ⊞ / ⊟.

6.3.4   TREE VIEW - INSERT NEW ADDRESS

With the three buttons on top of the Addresstable window new Maingroups, Middlegroups and Subgroups can be inserted. If you click on *Maingroup* or *Middlegroup* a parameter window will appear. Choose a group and a description.
If you click on *Subgroup* a parameter window will appear. Choose a group, a description and the EIS type of the group address.
Alternatively you can use the button *New...* from the Toolbar or click with the right mouse button and choose *New...* from the context menu.
To change the parameters of the selected address part click on *Parameters* in the Toolbar.

6.3.5   MATRIX VIEW

In this view at 2 level indication all available group addresses of the selected Maingroup are shown. At 3 level indication all group addresses of the selected Middlegroup are shown. Group addresses used in the current Project are indicated in green colour.

6.3.6   MATRIX VIEW - INSERT NEW ADDRESS

Choose a Maingroup respectively Main- and Middlegroup from the drop down menus at the top of the window. To name the groups click on *Description*. To insert a Subgroup click twice in a cell. A parameter window will appear for entering a description and choosing the EIS type.

Both views are updated constantly.

6.3.7   ASSIGNING ADDRESSES

Group addresses can be assigned to the communication objects by drag-&-drop.
- Open the eibNode *parameter window* and the *Addresstable* in separate windows.
- Select a group address in the *Addresstable* and drag and drop it into the input field of a communication object.

6.3.8   IMPORT GROUP ADDRESSES

Group addresses can be imported from ETS projects.
- To import click on *Function* in the Toolbar and choose *Import* or click with the right mouse button and choose *Import* from the context menu *Function.*
- In the appearing window click on *Open...* and choose an ETS export file (file extension esf).
- Confirm with *OK.*

6.3.9   EXPORT GROUP ADDRESSES

The group addresses of a Project can be exported as iext files and as cfg files. Text files (extension txt) can be opened in any text editor. Cfg files can be opened in MS Excel.
- To export group addresses click on *Function* in the Toolbar and choose *Export* or click with the right mouse button and choose *Export* from the context menu *Function.* The export window will appear. At the bottom you can choose some export options.

6.3.10   VIRTUAL GROUP ADDRESSES

The ETS just supports the maingroups 0 – 15 (real group addresses). *eibNode* additionally supports the further maingroups 16 -32 as virtual group addresses. For documentation of all group addresses you can use the export function (page 33).

6.3.11   UPDATE GROUP ADDRESSES

You can assign group addresses to the communication objects directly by typing in the group addresses. Those group addresses that have not been inserted or imported before using the *Addresstable* are not automatically added to the *Addresstable*.

- ▪ To update the *Addresstable* manually click on *Function* in the toolbar and choose *update from Project.*

7　　THE *EIBNODE* PROJECT ELEMENTS

7.1　　GENERAL PARAMETER

Comment　　　　　　　　　　　　Name or description of the element

7.1.1　　BINARY LOGIC

With this element EIS 1 telegrams can be linked logically. There are the binary Logic gates and, or, exclusive or, Objectvalue, not and, not or, not exclusive or, not Objectvalue are available.

Parameters

Function	Choice of logic operation
Number Inputs	Number of Input Objects. There are maximum 30 Inputs.
Send always	If *true* is set, the Output of the logic gate will send its value as soon as there is a value at at least one of the Inputs. If *false* is set, the Output only sends its value if the value has changed compared to the former value. Advantage: less telegram traffic.
Filter	Choice which kind of telegrams shall be operated: *Send On and Off*: all telegrams will be operated *Send only On*: only ON telegrams will be operated. *Send only Off*: only OFF telegrams will be operated.
Extended display	no function
Trim at gate enabling	If set, the logic operation will be executed as soon as the Enable Object receives an ON telegram.
Output Control	If set, the element controls the state of the Output Object. If the Output Object receives a telegram that has not been generated by the element itself the element controls if the logic operation is still valid. If not, the valid state will be sent at the Output immediately.
Delay On (s)	Delay time in seconds for sending ON telegrams at the Output.
Delay Off (s)	Delay time in seconds for OFF telegrams at the Output.
Input	*invert Input*: Choice of Input Object sates that shall be inverted. *Not calculate Off*: Choice which Inputs shall not be operated when receiving an OFF telegram.

Not calculate ON: Choice which Inputs shall not be operated when receiving an ON telegram.

Objects

Enabling	Enabling Object
Output	Output Object
Input x	Input Objects

7.1.2   SCENE

In a scene several telegrams are combined and sent at once. A scene can consist of up to 28 Output group addresses. By the save function a scene can be changed at any time. The parameter Delay time allows sending the telegrams with delay.

Parameter

Number Outputs	Number of Outputs. There are maximun 28 Outputs.
Start by On	*true*: the scene will start when an ON telegram is sent to the Start/Stop Object. *false*: the scene will start when an OFF telegram is sent to the Start/Stop Object.
Stop allows	*true*: the scene will be stopped as soon as another telegram is sent to the Start/Stop Object. *false*: the scene cannot be stopped.
Save by On	*true*: the current states of the Output Objects will be saved as new scene when the Save Object receives an ON telegram. The predefined states will be overwritten. *false*: new scenes cannot be saved.
User dialog	no function
Delay time (s)	Delay time for sending the single telegrams. The first telegram will be sent immediately.
Extended display	no function
Output X Start value	Enter of start value for the Output Objects.

Objects

Enabling	Enabling Object
Start/Stop	By this Objects scenes are started/stopped.
Save	By this Object the states of the Output Objects will be saved as new scene.
Output x	Output Objects

7.1.3   STAIRCASE TIME SWITCH

This element emulates a staircase time switch. If a button for the staircase light is pushed the light switches on and turns off after a specific time. Pushing a button while the light is switched on the time will restart. The time is adjustable. The time can be also be stopped early.

Parameter

Restart possible	*true*: by sending another ON telegram to the Input Object the Delay time will be restarted. *false*: a restart is not possible.
Untimely Cancel possible	*true*: by sending an OFF telegram to the Input Object the Output will be set to 0 immediately. *false*: the untimely cancel is not possible.
Invert Output	*true*: the state of the Output will be inverted *false*: the state will be not inverted.
Delay time (s)	Delay time in seconds for sending telegrams from the Output.
Extended display	no function
Use Object for time base	If set, the Delay time will be affiliated from the telegram value of the Object *Time base*. The parameter *Time base Object* will appear; the parameter *Delay time* will be ignored.
Time base object	EIS format and corresponding parameters for the Time base object.

Objects

Enabling	Enabling Object
Output	Output Object
Input	Input Object
Time base	Time base object

7.1.4 DELAY

This element delays the forwarding of a teloegram from the Input to the Output.

Parameter

Delay time(s)	Delay time in seconds for the forwarding of telegrams.
Delay item	Choice of telegram type to forward. *all*: All telegrams will be delayed. *Off Telegram*: only OFF telegrams will be delayed. *On Telegram*: only ON telegrams will be delayed.
Extended display	no function

Objects

Enabling	Enabling Object
Output	Output Object
Input	Input Object

7.1.5 TRANSFORMER

The Transformer turns the Input telegram into a specific Output telegram. The transfer function is parameterized graphically. Typical application: interior lighting control depending on the daylight.

Parameter

Input	Choice of the EIS format of the Input Object.
Output	Choice of the EIS format of the Output Object.
User dialog	no function
Extended display	no function
Only in case of change	If *true* is set, the conversion only is operated as soon as the Input Object state changes. At *false* every telegram will be converted.
Dialog	Window for parameterizing the transfer function.

Objects

Enabling	Enabling Object
Output	Output Object
Input	Input Object

7.1.6 GATE ITEM

The gate item lets pass a telegram from the Input to the Output or blocks it. Thr gate can be opened/closed by the Gate Object.

Parameter

Gate open by On

true: the gate opens when sending an ON telegram to the Gate Object.
false: The gate closes when sending an ON telegram to the Gate Object.

Gate open in both directions

If set, the gate works in both directions (Input to Output, Output to Input).

Trim at gate enabling

If *true* is set, the element checks at gate enabling if the states at the Input and the Output are the same. If not, the telegram from the Input will be forwarded to the Output.
At *false* there is no trim.

Only in case of change

If *true* is set, the Output telegram will only be sent as soon as the state at the Input changes. At *false* the Ouput telegram will always be sent.

Extender display

no function

Objects

Enabling

Enabling Object

Gate Object

Gate Object

Output

Output Object

Input

Input Object

7.1.7   COMPARATOR

Dieses Element vergleicht den Inhalt von zwei Telegrammen oder den Inhalt eines Telegramms mit This element compares the value of two telegrams or the value of one telegram and of a constant value. There are 5 comparator types available: equal, greater, greater equal, less, less equal. As result the element sends the telegram value ON if the condition is fulfilled. Only telegrams with the same EIS format can be compared.
The reference Input is Input 2. Example: the condition greater is fulfilled when the value of Input 1 is greater than the value of Input 2.

Parameter

Input 1	Choice of the EIS type of the Input. If *untyped* is chosen a constant valöue can be entered.
Input 2	Choice of the EIS type of the Input. If *untyped* is chosen a constant valöue can be entered.
Extended display	no function
Only in case of change	If *true* is set, the result will only be sent in case of changes of the Input states. At *false* will be sent always.
Comparator Type	Choice of the comparator type.

Objects

Enabling	Enabling Object
Output	Output Object
Input 1, Input 2	Input Objects. If a constant value is entered a group address must not be entered.

7.1.8   HYSTERESIS

With this element by defining an upper and lower threshold a range of tolerance is defined wihtin that telegrams will not be sent. The EIS types of the Input and the threshold must be the same.

Example:
The interior lighting is linked to a brightness sensor. When a specific brightness value is fallen below the lighting switches on; when this value is exceeded again the lighting switches off. At constantly changing brightness conditions (sun - clouds) within the range of the threshold the lighting will switch on and off constantly. To avoid this a hysteresis with an upper and lower threshold is defined. Between the thresholds there is a range of tolerance. Brightness fluctuations within the range of tolerance do not release switching. Only at falling below the lower threshold the lighting switches on; at exceeding the upper threshold the lighting switches off.

Parameter

Only in case of change	If *true* is set, the Output telegram will only be sent in case of a change at the Input. At *false* the Output telegram will be sent always.
Invert Output	If *true* is set, the telegrams at the Output will be inverted.
Input	Choice of the EIS type of the Input.
Upper Threshold	Choice of the EIS type of the upper threshold. If *untyped* is chosen a constant value must be entered.
Lower Threshold	Choice of the EIS type of the lower threshold. If *untyped* is chosen a constant value must be entered.

Objects

Enabling	Enabling Object
Output	Output Object
Input	Input Object
Upper Threshold	Object for upper threshold
Lower Threshold	Object for lower threshold

7.1.9   CIRULAR REPEATER

This element repeats 1 Bit telegrams in an adjustable cyclic time.

Parameter

Delay time (s)	Delay time for repeating telegrams.
Repeat State = 0	If *true* is set, telegrams with the value 0 will be repeated.
Repeat State <> 0	If *true* is set, telegrams with the value 1 will be repeated.
Repeater Object	*Repeat Input*: telegrams at the Input Object will be repeated *Repeat Output*: telegrams at the Output Object will be repeated.
Send Input directly	If set, the output value will be sent immediately at start of the program ignoring the delay time. Although the delay time goes on when the element is not enabled, at enabling the Output value will be sent immediately.

Objects

Enabling	Enabling Object
Output	Output Object
Input	Input Object

7.1.10   BINARY FILTER

With this element 1 Bit telegrams (EIS 1) can be filtered. Only telegrams with the value 1 respectively 0 will be forwarded to the Output.

Parameter

Transfer State = 0	If *true* is set, all telegrams with the value 0 will be forwarded to the Output (the parameter *Transfer State <> 0* must be set to *false*).
Transfer State <> 0	If *true* is set, all telegrams with the value 1 will be forwarded to the Output (the parameter *Transfer State = 0* must be set to *false*).

Objects

Enabling	Enabling Object
Output	Output Object
Input	Input Object

7.1.11 MATH

With this element mathematical operations (add, subtract, multiply, divide) can be done.

Parameter

Function	Choice of mathematical operation.
Number Inputs	Number of Inputs. There are maximum 10 Inputs available.
Send always	If true *true* is set, the result of a mathematical operation will always be sent. If *false* is set, the result will only be sent as soon as the result changes.
Output	Choice of the EIS format of the Output Object.
Input x	Choice of the EIS format of the Input x.

Objects

Enabling	Enabling Object
Output	Output Object
Input X	Input Objects

7.1.12 ERROR PROCESSING

This element is used for processing error messages. It can work alone or in connection to the visualization element.

Extended display:	no function
TimeOut (min):	Only used when the disruption sensor sends circularly. If the Object *disruption sensor* does not receive a telegram while the *TimeOut* runs, an ON telegram will be sent from the Object *Output timeout status*. Consideration: at circular disruption sensors for the parameters *Disturbance appears at* and *Disturbance disappears at* the item *rising Edge* or *trailing Edge* must be chosen.
Automatic repeat time (min):	Time after that an acknowledged but not yet changed state has to be acknowledged again. The maximum time is 32767 minutes (22 days, 18 hours and 7 minutes).
Disturbance appears at:	Choice which event at the Object *Disruption sensor* shall release an error message. *none*: never *rising Edge*: when the Object state changes from 0 to 1. *Trailing Edge*: when the Object state changes from 1 to 0. *ON*: when the Object state is 1.

OFF: when the Object state is 0.

Disturbance disappears at:	Choice which event at the Object *Disruption sensor* shall stop the error message. *None*: never *Rising Edge*: when the Object state changes from 0 to 1. *Trailing Edge*: when the Object state changes from 1 to 0. *ON*: when the Object state is 1. *OFF*: when the Object state is 0.
Acknowledge in case of:	Choice which event requires an acknowledgement. *Distiurbance appears*: when a disturbance appears. *Disturbance disappears*: when a disturbance disappears. *TimeOut*: when the TimeOut time has expired.
Confirmation state:	Choice which event acknowledges an error message. *Confirmation with ON*: when the telegram state is ON. *Confirmation with OFF*: when the telegram state is OFF.

Objects

Enabling:	Enabling Object
Disruption sensor:	Input Object for disruptions
Confirmation Input:	Confirmation Object
Output Status (1 Byte):	Output Object (linked to the Input Object of the visualization element)*.*
Output disruption (EIS 1):	Sends an ON telegram at a disruption
Output confirmation status(EIS 1):	Sends an ON telegram when an achnowledgement is required
Output timeout status(EIS 1):	sends an ON telegram when the timeout time has expired.

7.1.13   MULTIPLEXER

The multiplexer has two Input Objects and one Output Object. By the Gate Object one can switch between the two Inputs. An OFF telegram at he Gate Object activates the Input 1; an ON telegram at the Gate Object activates the Input 2. The state at the Output only changes when the state of the current activated Input changes. Switching by the Gate Object does not effect any changes at the Output.

Parameter

Extended display	no function
Only in case of change	If set, the telegram of the current activated Input will only be forwarded to the Output if the state at the Input changes.
Trim at gate enabling	If set, the element will be operated as soon as the Enabling Object receives an ON telegram.
Format	Choice of the EIS format

Objects

Enabling	Enabling Object
Gate Object	Switching Object
Output	Output Object
Input x	Input Objects

7.1.14   V

7.1.15   ALLUE STORAGE

The element consists of two storages for telegram values. There are called *Storage* and *Storage Default Value*. The *Storage Default Value* is parameterized and cannot be changed in the runtime. The *Storage* can be overwritten by a *Store Event*. Both storage values can be sent by corresponding *Send Events*.

Typical example:
The set value for a single room temperature control has the format EIS 6, 8 Bit. When someone opens a window the heating shall be switched off. If the window is closed again the last set value that was set before the window was opened shall be set again. The window is equipped with a window contact which sends a 1 when opening the window. The *Storage Default Value* is parameterized to EIS 6 value 0. As *Store Event* "*Rising Edge*" is chosen. The *Default Value Send Event* is set to ON and the *Send Event* is set to OFF.
If a window is opened the contact releases an ON telegram. The Value Storage detects a Rising Edge, stores the current set value and sends the value of the *Storage Default Value* (value 0). The heating switches off. When the window is closed again the Value Storage detects the *Send Event "OFF"* and sends the stored value.

Parameter

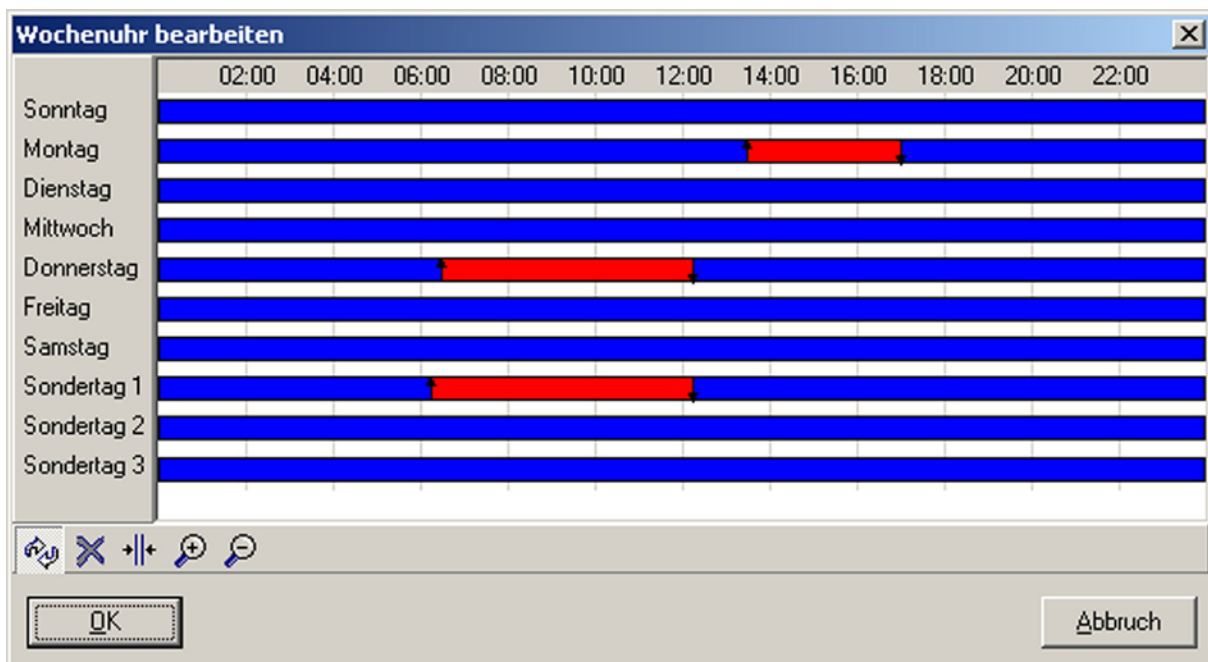|	
Store Event	Choice when the state of the Output Object shall be stored.
Send Event	Choice when the *Storage Default Value* shall be sent.
Default Value Send Event	Choice when the *Default Send Value* shall be sent.
Storage Default Value	Choice of the Default Value. It will be sent when the *Send Event* is released.
Default Send Value	Choice of the Default send Value. It will be sent when the *Default Value Send Event* is released.

Objects

Enabling	Enabling Object
Output	Output Object
Input	Input Object

7.1.16   WEEK TIMER

With this element for each day of a week and additionally for up to three special days (e.g. holidays) times for sending telegrams can be defined. With the *Year Timer* each day of a year a profile (standard times Sunday - Saturday, special days 1 - 3) can be assigned to. The Output group address of the *Year timer* must be the same as the Enabling group address of the *Week Timer*. The *Year Timer* always sends at 0 o'clock of a new day.

Parameter

User Dialog	no function
With Special Days	If *true* is set, additionally times for up to three special days can be defined.
Senden beim Start	If *true* is set, the Output telegram will be sent immediately at startup. Otherwise the Output telegram will be sent at 0 o'clock of the next day.
Output Control	If *true* is set, the Output telegram will be sent again as soon as the state has been changed manually (e.g. by switching manually). Otherwise the Output Object will not be controlled.
Dialog	Opens a window for parameterizing the switching times graphically:

Set switching times:	A click on a blue coloured row sets a start time (indicated by an arrow pointing up). A further click sets a stop time (indicated by an arrow pointing down). Periods with the state ON are indicated by red colour.
Delete switching times:	By a click on a swtiching time it will be deleted.

Move switching times: Switching times can be moved by dragging with pushed mouse button.

Zoom View: To zoom in select a period; to zoom out click on the time bar.

Send at mode change   This parameter is only available when the parameter *With Speacial Days* is set. If *true* ist set, the Output value will be sent immediately at the beginning of a new day if the switching profile changes (according to the *Year Timer*).

Objects

Enabling   Enabling Object

Output   Output Object

7.1.17   YEAR TIMER

With this element each day in a year a switching profile from a *Week Timer* can be assigned to. The Output group address of the *Year timer* must be the same as the Enabling group address of the *Week Timer*. The *Year Timer* always sends at 0 o'clock of a new day.

Parameter

User Dialog   no function

With Special Days   If set, switching profiles for special days can be assigned.

Send at start   If *true* is set, the Output telegram will be sent at startup.

Output Control   If *true* is set, the Output telegram will be sent again as soon as the state has been changed manually (e.g. by switching manually). Otherwise the Output Object will not be controlled.

Dialog   Opens a window for parameterizing the switching times graphically:

Each day of a year a switching profile can be assigned to. Red cells mean "no profile"; blue cells mean "standard profile" (Sunday - Saturday).

These symbols represent the three special days profiles of the Week Timer.

Objects

Enabling   Enabling Object

Output   Output Object

7.1.18   SEND TIME TELEGRAM

With this element time telegrams (EIS 3) can be sent.

Parameter

With week day	If *true* is set, also the week day will be sent.
Interval(s)	Interval time in seconds for sending time.

Objects

Enabling	Enabling Object
Output	Output Object

7.1.19   SEND DATE TELEGRAM

With this element date telegrams (EIS 4) can be sent.

Parameter

Interval(s)	Interval time in seconds for sending date.

Objects

Enabling	Enabling Object
Output	Output Object

7.1.20   CIRCULAR SENDER

The circular Sender is a binary element that sends telegrams at regular time intervals.

Parameter

Delay Time(s)	Interval time of the circular sender
Send	Choice of the sending type: *Send only Off, send only On, toggle*
Reset at Enabling	The circular time always runs, even when the element is not enabled. If set, at enabling a telegram will be sent immediately and the delay time will be resetted.
Extended display	no function

Objects

Enabling	Enabling Object
Output	Output Object

7.1.21   RECEIVE TIME

With this element time telegrams (EIS 3) can be received. The element compares the internal clock of the *eibNode* to the EIB time (requires a EIB clock in the EIB network). At a difference greater than *max. Delta* the internal clock will be set.

Parameter

Check Date	If *true* is set, also the date will be checked.
Max. Delta (s)	The tolerated difference in seconds between the internal clock and the EIB time. Because EIB clocks normally send the time every 60 seconds *max Delta* should be greater than 60 seconds.

Objects

Enabling	Enabling Object
Input	Input Object

7.1.22   RECEIVE DATE

With this element date telegrams (EIS 4) can be received. The element compares the internal date of the *eibNode* to the date of a EIB clock. At differences the internal date will be set.

Parameter

Max. Delta (s)	no function

Objects

Enabling	Enabling Object
Input	Input Object

7.1.23   ADRESS - INIT

With this element group addresses can be initialized with specific values. A first startup of an EIB facility the states of the group addresses are unknown. To avoid failures or unintentional functions at the first startup states can be predefined.

Parameter

Number Outputs	Number of Output Objects (max 31)
Dialog	Choice of initialisation values.

Objects

Output x	Output Objects

7.1.24   FILTER EIB

With this element filter tables can be generated. Filter tables define which telegrams the *eibNode* gateway lets pass towards the EIB and which not.

Parameter

Dialog   Opens a window for editing a filter table:
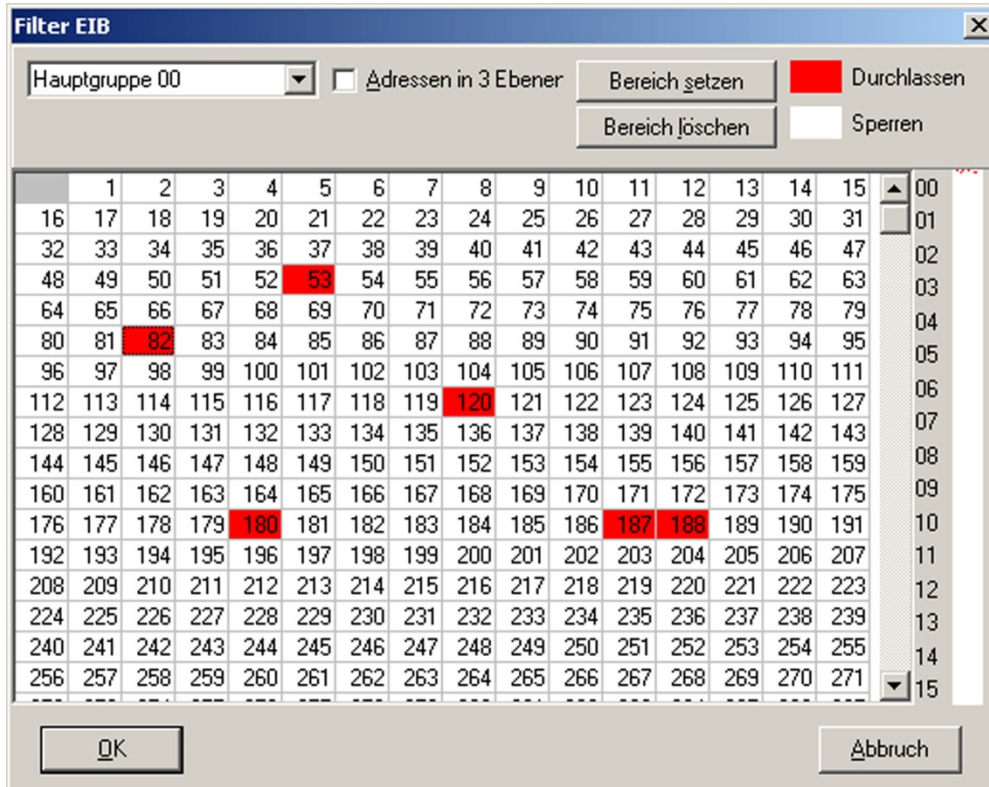
Single group addresses are selected by clicking. Click on the buttons above to set or clear complete areas

8   *EIBNODE* AS INTELLIGENT AREA-/LINE COUPLER
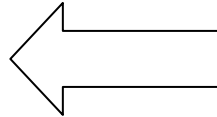
- Configuration of the automatic functions
- Regard special parameters
- Transfer of the automatic functions

- Execution of the automatic functions independent from a PC
- Function area/line coupler

IMPORTANT CONSIDERATION:
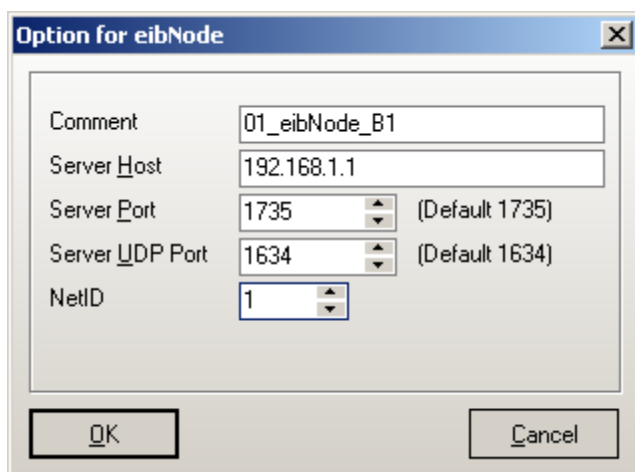
The parameter NetID and BC NetID are <u>not</u> configured by eibVison. They are just for documentation.
For configuring the parameters use the html page of the eibNode (see eibNode instruction sheet).
The function area/line coupler is also configured by the html page.

8.1   NEW PROJECT

- Start a new Project by clicking on the button *New...* (Shortcut STRG+N).
- Choose the project type *Simple eibNode Project* and confirm with *OK*. The new Project will be shown as Noname.Node in the Project Browser.

8.2   INSERT EIBNODE

- Select the folder *eibNode's* in the Project Browser.
- Click twice on the folder or click on the button *New...* from the Project Browser Toolbar and the option window appears.

Enter the following data:

Comment:	Choose as possible a clear description (e.g. sequential Number, Name, Assembly Place) *Consideration: For better overview always start the comment with a sequential number, if required.*
Server Host:	Enter the definite network address of the *eibNode*. This may be an IP-address (e.g. 192.168.1.20) or a DNS-address (e.g. http://eibNode01.ath.cx). If necessary ask the administrator to receive a free network address.
Server Port:	Enter the Port by that the *eibNode* communicates with the Project PC. The default Port is 1735.
Server UDP Port:	Enter the UDP Port by that several *eibNodes* communicate in the network. The default UDP Port is 1634.
NetID:	Enter the NetID of the *eibNode* (see page **Fehler! Textmarke nicht definiert.**). The Entry is just for documentation.
BC NetID:	Enter the NetBroadCastID of the *eibNode* (see page **Fehler! Textmarke nicht definiert.**). The Entry is just for documentation.

8.3   ASK POSSIBILITIES

The software *eibVision* and the gateway *eibNode* are constantly expanded with new functions. Perhaps your *eibVision* version already supports new functions and your *eibNode* has not been updated, yet. Before configuring the functions and services you always should check the possibilities:

- click twice on an *eibNode* in the Project Browser to open the parameter window (if not already open),
- click on the button *Function* and choose *Ask Possibilities*.
- Enter *Server Host* and *Server Port* (see **Fehler! Verweisquelle konnte nicht gefunden werden.**, page **Fehler! Textmarke nicht definiert.**) and click on *next*. *eibVision* now checks the possibilities and shows a message. Elements that are not yet supported by the *eibNode* will be deleted from the library of available elements.

8.4   INSERT AUTOMATIC FUNCTIONS

- Click twice on an *eibNode* in the Project Browser to open the parameter window.
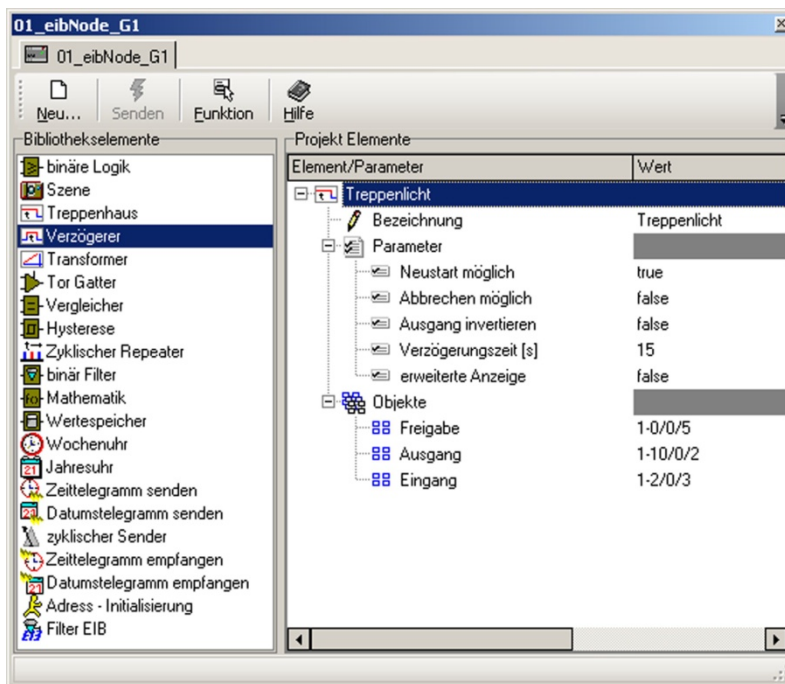
The left panel shows the library of the available elements. The right panel includes the inserted elements and parameters.

- Insert an element by Drag & Drop. By clicking on ⊞ / ⊟ the parameters and objects can be shown / hidden.
- Enter the parameters (see page **Fehler! Textmarke nicht definiert.**)
- Enter the group addresses manually or with help of the address table.

8.5   SAVE PROJECT

After configuring *eibNode* and its functions you should save the Project.
 ▪ Click on the button *Save* in the project toolbar or choose *Save* from the menu *Project*.

8.6   PROJECT COMPILING AND TRANSFER

 ▪ Open the parameter window of an *eibNode*,
 ▪ click on *Function* from the toolbar and choose *BMX-Compiler*.

If the Project contains errors, corresponding messages will be shown. Correct the errors and compile the Project again. After successful compiling, the Project can be transferred to the *eibNode*.
 ▪ Make sure that the *eibNode* and the PC are connected directly via a cross-over cable or via the network and that the network settings of the *eibNode* and the PC are correct.
 ▪ Choose *Project Transfer* from the toolbar menu *Function*.

 ▪ Check the settings *Server Host* and *Server Port*
 ▪ Click on *next* to transmit the Project. After the transfer the *eibNode* restarts.

8.7   ADDRESSTABLE

The *Addresstable* provides two different indications of all group addresses of a Project. New addresses and address structures can be inserted. Group addresses can be assigned to the communication objects by drag&drop. EIB group addresses can be imported from the ETS (see Import group addresses, page 33)

8.7.1   OPEN ADDRESSTABLE

The *Addresstable* can be found in the *Project Browser*. Click on ⊞ to expand the view. Click twice on the folder *Address* or click with the right mouse button and choose *Open* or *Open in new window* from the context menu.

8.7.2   OPTIONS FOR THE ADDRESSTABLE

To change the options for the *Addresstable* click with the right mouse button on the item *Addresstable* and choose *Parameters* from the context menu. A window with the following options will appear:

Comment: enter a description for the Addresstable

NetID: enter the NetID of the *eibNode* (see page Link). The entry is just for documentation.

Design: if set, the group addresses will be displayed in the 3 level indication.

8.7.3   TREE VIEW

The group addresses are displayed in a tree structure according to the scheme Maingroup, Middlegroup, Subgroup. At the 2 level indication the Middlegroups drop out. The tree view can be expanded / reduced by clicking the items ⊞ / ⊟.

8.7.4   TREE VIEW - INSERT NEW ADDRESS

With the three buttons on top of the Addresstable window new Maingroups, Middlegroups and Subgroups can be inserted. If you click on *Maingroup* or *Middlegroup* a parameter window will appear. Choose a group and a description.
If you click on *Subgroup* a parameter window will appear. Choose a group, a description and the EIS type of the group address.
Alternatively you can use the button *New...* from the Toolbar or click with the right mouse button and choose *New...* from the context menu.
To change the parameters of the selected address part click on *Parameters* in the Toolbar.

8.7.5   MATRIX VIEW

In this view at 2 level indication all available group addresses of the selected Maingroup are shown. At 3 level indication all group addresses of the selected Middlegroup are shown. Group addresses used in the current Project are indicated in green colour.

8.7.6   MATRIX VIEW - INSERT NEW ADDRESS

Choose a Maingroup respectively Main- and Middlegroup from the drop down menus at the top of the window. To name the groups click on *Description*. To insert a Subgroup click twice in a cell. A parameter window will appear for entering a description and choosing the EIS type.

Both views are updated constantly.

8.7.7   ASSIGNING ADDRESSES

Group addresses can be assigned to the communication objects by drag-&-drop.
  ▪ Open the eibNode *parameter window* and the *Addresstable* in separate windows.
  ▪ Select a group address in the *Addresstable* and drag and drop it into the input field of a communication object.

8.7.8   IMPORT GROUP ADDRESSES

Group addresses can be imported from ETS projects.
  ▪ To import click on *Function* in the Toolbar and choose *Import* or click with the right mouse button and choose *Import* from the context menu *Function.*
  ▪ In the appearing window click on *Open...* and choose an ETS export file (file extension esf).
  ▪ Confirm with *OK*.

8.7.9   EXPORT GROUP ADDRESSES

The group addresses of a Project can be exported as iext files and as cfg files. Text files (extension txt) can be opened in any text editor. Cfg files can be opened in MS Excel.
  ▪ To export group addresses click on *Function* in the Toolbar and choose *Export* or click with the right mouse button and choose *Export* from the context menu *Function*. The export window will appear. At the bottom you can choose some export options.
Exports also contain all virtual group addresses (see page 34).

8.7.10   VIRTUAL GROUP ADDRESSES

The ETS just supports the maingroups 0 – 15 (real group addresses). *eibNode* additionally supports the further maingroups 16 -32 as virtual group addresses. For documentation of all group addresses you can use the export function (page 33).

8.7.11   UPDATE GROUP ADDRESSES

You can assign group addresses to the communication objects directly by typing in the group addresses. Those group addresses that have not been inserted or imported before using the *Addresstable* are not automatically added to the *Addresstable*.

- To update the *Addresstable* manually click on *Function* in the toolbar and choose *update from Project.*

9 PROJECT WITH SEVERAL EIBNODES

- Configuration of the automatic functions
- Regard special parameters
- Transfer of the automatic functions

- Execution of the automatic functions independent from a PC
- Function area/line coupler

IMPORTANT CONSIDERATION:

The parameter NetID and BC NetID are <u>not</u> configured by eibVison. They are just for documentation.
For configuring the parameters use the html page of the eibNode (see eibNode instruction sheet).
The function area/line coupler is also configured by the html page.
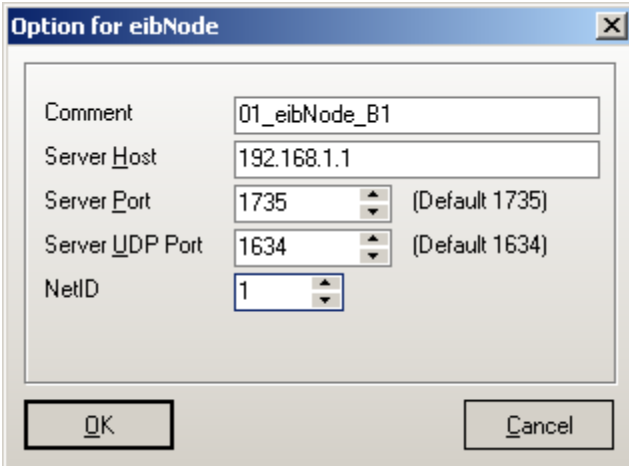
9.1 NEW PROJECT

- Start a new Project by clicking on the button *New...* (Shortcut STRG+N).
- Choose the project type *Simple eibNode Project* and confirm with *OK*. The new Project will be shown as Noname.Node in the Project Browser.

9.2 INSERT EIBNODE

- Select the folder *eibNode's* in the Project Browser.
- Click twice on the folder or click on the button *New...* from the Project Browser Toolbar and the option window appears.

Enter the following data:

|	
Comment:	Choose as possible a clear description (e.g. sequential Number, Name, Assembly Place) *Consideration: For better overview always start the comment with a sequential number, if required.*
Server Host:	Enter the definite network address of the *eibNode*. This may be an IP-address (e.g. 192.168.1.20) or a DNS-address (e.g. http://eibNode01.ath.cx). If necessary ask the administrator to receive a free network address.
Server Port:	Enter the Port by that the *eibNode* communicates with the Project PC. The default Port is 1735.
Server UDP Port:	Enter the UDP Port by that several *eibNodes* communicate in the network. The default UDP Port is 1634.
NetID:	Enter the NetID of the *eibNode* (see page **Fehler! Textmarke nicht definiert.**). The Entry is just for documentation.
BC NetID:	Enter the NetBroadCastID of the *eibNode* (see page **Fehler! Textmarke nicht definiert.**). The Entry is just for documentation.

9.3   ASK POSSIBILITIES

The software *eibVision* and the gateway *eibNode* are constantly expanded with new functions. Perhaps your *eibVision* version already supports new functions and your *eibNode* has not been updated, yet. Before configuring the functions and services you always should check the possibilities:

- click twice on an *eibNode* in the Project Browser to open the parameter window (if not already open),
- click on the button *Function* and choose *Ask Possibilities*.
- Enter *Server Host* and *Server Port* and click on *next*. *eibVision* now checks the possibilities and shows a message. Elements that are not yet supported by the *eibNode* will be deleted from the library of available elements.

9.4   INSERT AUTOMATIC FUNCTIONS

- Click twice on an *eibNode* in the Project Browser to open the parameter window.
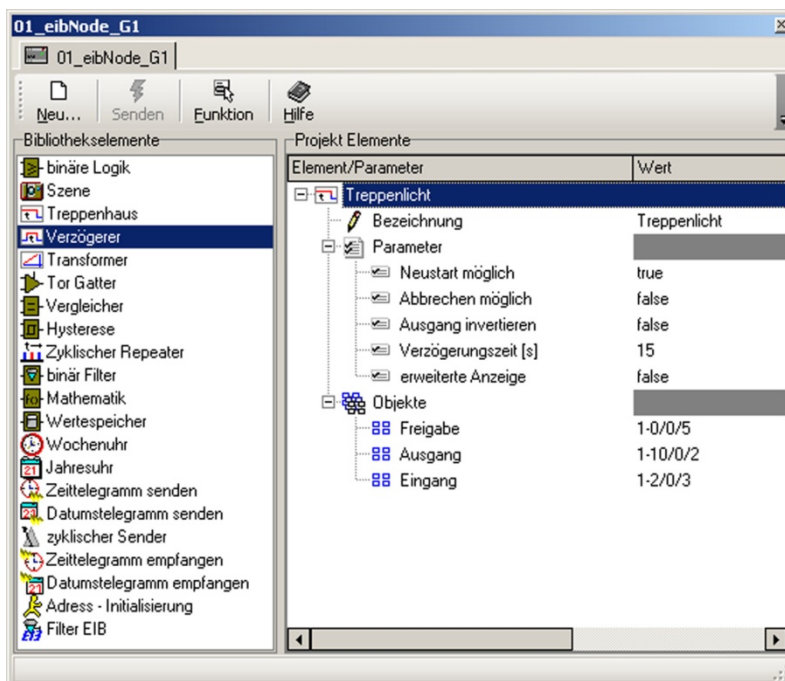
The left panel shows the library of the available elements. The right panel includes the inserted elements and parameters.

- Insert an element by Drag & Drop. By clicking on ⊞ / ⊟ the parameters and objects can be shown / hidden.
- Enter the parameters (see page **Fehler! Textmarke nicht definiert.**)
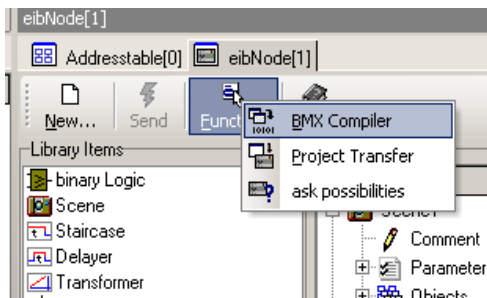- Enter the group addresses manually or with help of the address table.

9.5   SAVE PROJECT

After configuring *eibNode* and its functions you should save the Project.
  ▪ Click on the button *Save* in the project toolbar or choose *Save* from the menu
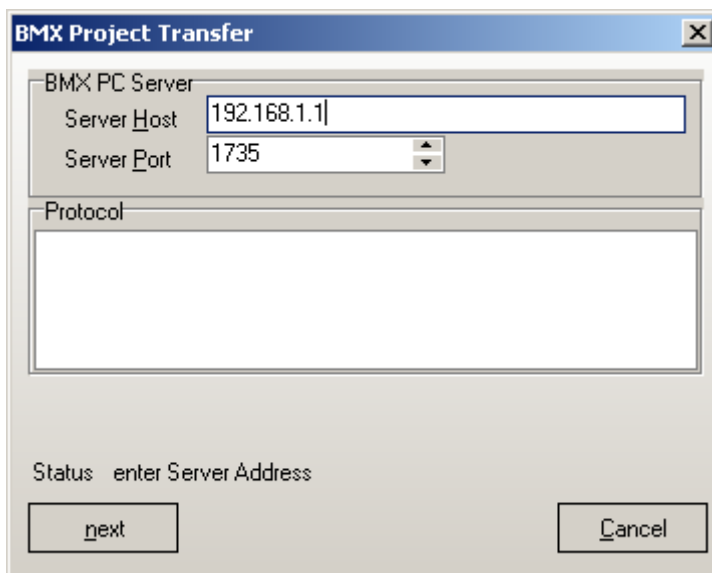   *Project*.

9.6   PROJECT COMPILING AND TRANSFER

  ▪ Open the parameter window of an *eibNode*,
  ▪ click on *Function* from the toolbar and choose *BMX-Compiler*.

If the Project contains errors, corresponding messages will be shown. Correct the
errors and compile the Project again. After successful compiling, the Project can be
transferred to the *eibNode*.
  ▪ Make sure that the *eibNode* and the PC are connected directly via a cross-
    over cable or via the network and that the network settings of the *eibNode* and
    the PC are correct.
  ▪ Choose *Project Transfer* from the toolbar menu *Function*.

  ▪ Check the settings *Server Host* and *Server Port*
  ▪ Click on *next* to transmit the Project. After the transfer the *eibNode* restarts.

9.7 ADRESSTABLE

The *Addresstable* provides two different indications of all group addresses of a Project. New addresses and address structures can be inserted. Group addresses can be assigned to the communication objects by drag&drop. EIB group addresses can be imported from the ETS (see Import group addresses, page 33)

9.7.1 OPEN ADDRESSTABLE

The *Addresstable* can be found in the *Project Browser*. Click on ⊞ to expand the view. Click twice on the folder *Address* or click with the right mouse button and choose *Open* or *Open in new window* from the context menu.

9.7.2 OPTIONS FOR THE ADDRESSTABLE

To change the options for the *Addresstable* click with the right mouse button on the item *Addresstable* and choose *Parameters* from the context menu. A window with the following options will appear:

Comment: enter a description for the Addresstable

NetID: enter the NetID of the *eibNode* (see page Link). The entry is just for documentation.

Design: if set, the group addresses will be displayed in the 3 level indication.

9.7.3 TREE VIEW

The group addresses are displayed in a tree structure according to the scheme Maingroup, Middlegroup, Subgroup. At the 2 level indication the Middlegroups drop out. The tree view can be expanded / reduced by clicking the items ⊞ / ⊟.

9.7.4 TREE VIEW - INSERT NEW ADDRESS

With the three buttons on top of the Addresstable window new Maingroups, Middlegroups and Subgroups can be inserted. If you click on *Maingroup* or *Middlegroup* a parameter window will appear. Choose a group and a description.
If you click on *Subgroup* a parameter window will appear. Choose a group, a description and the EIS type of the group address.
Alternatively you can use the button *New...* from the Toolbar or click with the right mouse button and choose *New...* from the context menu.
To change the parameters of the selected address part click on *Parameters* in the Toolbar.

9.7.5   MATRIX VIEW

In this view at 2 level indication all available group addresses of the selected Maingroup are shown. At 3 level indication all group addresses of the selected Middlegroup are shown. Group addresses used in the current Project are indicated in green colour.

9.7.6   MATRIX VIEW - INSERT NEW ADDRESS

Choose a Maingroup respectively Main- and Middlegroup from the drop down menus at the top of the window. To name the groups click on *Description*. To insert a Subgroup click twice in a cell. A parameter window will appear for entering a description and choosing the EIS type.

Both views are updated constantly.

9.7.7   ASSIGNING ADDRESSES

Group addresses can be assigned to the communication objects by drag-&-drop.
- Open the eibNode *parameter window* and the *Addresstable* in separate windows.
- Select a group address in the *Addresstable* and drag and drop it into the input field of a communication object.

9.7.8   IMPORT GROUP ADDRESSES

Group addresses can be imported from ETS projects.
- To import click on *Function* in the Toolbar and choose *Import* or click with the right mouse button and choose *Import* from the context menu *Function.*
- In the appearing window click on *Open...* and choose an ETS export file (file extension esf).
- Confirm with *OK.*

9.7.9   EXPORT GROUP ADDRESSES

The group addresses of a Project can be exported as iext files and as cfg files. Text files (extension txt) can be opened in any text editor. Cfg files can be opened in MS Excel.
- To export group addresses click on *Function* in the Toolbar and choose *Export* or click with the right mouse button and choose *Export* from the context menu *Function*. The export window will appear. At the bottom you can choose some export options.

Exports also contain all virtual group addresses (see page 34).

9.7.10   VIRTUAL GROUP ADDRESSES

The ETS just supports the maingroups 0 – 15 (real group addresses). *eibNode* additionally supports the further maingroups 16 -32 as virtual group addresses. For documentation of all group addresses you can use the export function (page 33).

9.7.11   UPDATE GROUP ADDRESSES

You can assign group addresses to the communication objects directly by typing in the group addresses. Those group addresses that have not been inserted or imported before using the *Addresstable* are not automatically added to the *Addresstable*.

- To update the *Addresstable* manually click on *Function* in the toolbar and choose *update from Project.*

10   *EIBVISION* PROGRAMMENVIROMENT

10.1   EIBVISION EDITOR

The program surface of *eibVision* Studio consists of the main window and freely movable windows.
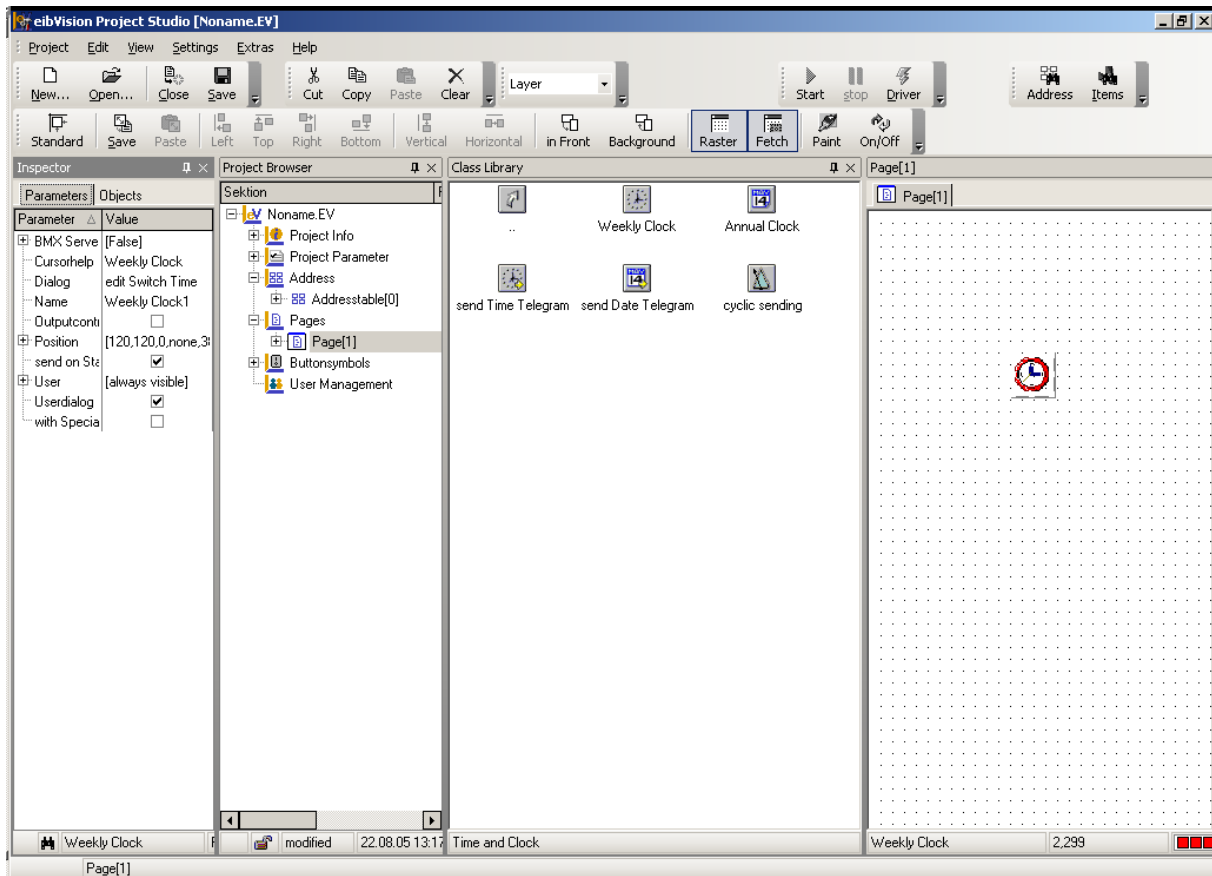
In the main window there are the menu and the tool bars. All bars can be positioned on any edge of the main window. Grab a bar with the mouse on the left side (the mouse curser appears as an arrow-cross) and drag it to an edge.

The program windows can be shown / hidden by the menu *view* or by the shortcuts *STRG+1* to *STRG+5*. The program surface has a function for docking the windows to the main window or other windows. Drag a window to the upper edge of the main window or onto another program window. The windows can also be undocked by dragging. If a program window is docked to the main window this symbol ⊞ appears in the head of the window. Click on it and the window will be minimized to a flag at the edge of the main window. Point on the symbol and the window will appear again. By clicking on ⊟ this function will be disabled.

10.1.1   THE MENU BAR

| Project | Edit | View | Settings | Extras | Help |
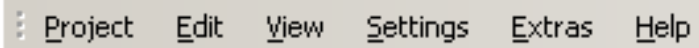
Project

New...	starts a new Project
Open...	opens a saved Project
Close	closes a Project
Save	saves a Project
Save as...	the file name and the directory can be chosen
Printer Setup...	menu for choosing and configuring a printer
Exit	Quits the program

Edit

Cut	removes the selected element from the editor and stores it in the clipboard
Copy	copies the selected element from the editor and stores it in the clipboard
Paste	inserts an element from the clipboard
Delete	deletes the selected element
Search	searches for group addresses or element types and presents the results in the Search Result window
Redraw	redraws all elements in the editor
Activate Items	shows the state ON of elements that are able to indicate states
Position Tools	support tools for positioning and alignment of elements
Paint Order	sets an element to the foreground/background

View

Project Browser	shows/hides the Project Browser
Class Library	shows/hides the Class Library
Inspector	shows/hides the Inspector
Message Center	shows/hides the Message Center
Search Result	shows/hides the Search Result
New Editor window	opens the active Editor window in a new window. Only available if at least two windows are open.
Desktop	menu for saving/restoring the window positions

Save...	saves the current desktop settings
Open...	opens a file with the desktop settings
Reset...	resets the desktop settings to default (after restart)

Settings

Option	opens the program settings window (see *eibVision* Settings*)*
Language	opens the change language window (see Change Language

10.1.2   THE TOOLBARS

The toolbars contain essential and useful program functions. To show/hide a toolbar right-click on the toolbar and set or remove the check mark before the corresponding toolbar name.
You can customize the toolbars. Click on ⊟ at the right edge of a toolbar and choose
Add or Remove Buttons ▾. A menu with the available tools will open. Remove the check mark of the tool symbols not needed. Choose Reset Toolbar to show all tools.

Toolbar Project

The symbols correspond with the items in the menu *Project* (see The Menu bar):
New...
Open...
Close
Save

Toolbar Edit

The symbols correspond with the items in the menu *Edit* (see *Die Menüleiste*):
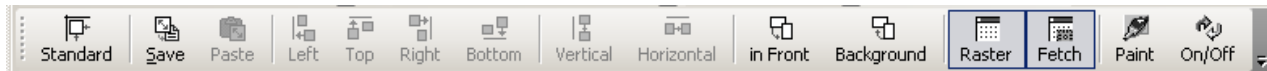Cut
Copy
Paste
Delete

Toolbar Message Center

The symbols correspond with the items of the Message Center (see Message Center):
Start
Stop
Driver

Toolbar Editor (only for *eibVison* Projects)

Standard	resets elements to their default width
Save	saves the current width of the selected element
Paste	sets the selected element to the saved width
Left	aligns the selected elements to the furthermost left positioned element
Top	aligns the selected elements to the top element
Right	aligns the selected elements to the furthermost right positioned element
Bottom	aligns the selected elements to the top bottom element
Vertical	aligns the selected elements in the same vertical distance
Horizontal	aligns the selected elements in the same horizontal distance
In Front	sets the selected element to the foreground
Background	sets the selected element to the background
Raster	shows/hides the grid
Fetch	activates/deactivates the snap to grid function
Paint	repaints all elements
On/Off	shows the state ON of elements that indicate the state

Toolbar Layer

Here parameters for the layers that control the display of the elements can be set. Visible layers will be displayed in the Editor; all elements on this layer are visible. If the option visible is not set, all elements on this layer will be not displayed.
Elements on fixed layers cannot be edited.
The status of the layers is indicated at the bottom of an Editor window.

The five small boxes on the left indicate the visible status of the layers 0 - 4. A red box represents a visible layer.
The five small boxes on the right indicate the fixed status of the layers 0 - 4. A blue box represents a fixed layer.

Toolbar Search

The search function can be used to search directly for one group address or for an element type. To search for a group address click on the button *Address* and enter the group address. With the option *only sending addresses* you can reduce the search. Click on *OK*. As search result all elements linked to this address will be listed in the search result window. Clicking twice on an element will activate it in the editor.
To search for an element type click on *items* and choose a type from the drop down list. Click on *OK*. As search result all elements of the searched type will be listed in the search result window. Clicking twice on an element will activate it in the editor.

10.2   *EIBVISION* SETTINGS

10.2.1   SETTINGS

General
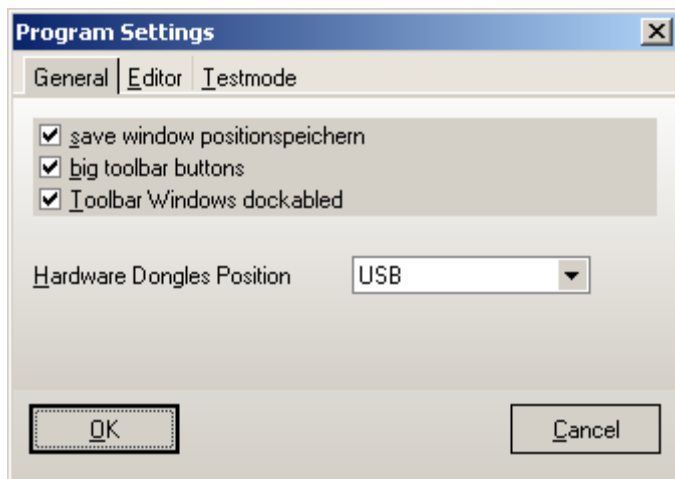
|	
Save window positions	If set, the positions of the windows will be saved at program exit.
Big toolbar buttons	The buttons in the Toolbars will be displayed larger and with description.
Enable docking windows	activates / deactivates the docking function of the program windows
Hardware Dongle Position	Choose the interface which the Hardware Dongle is connected to (USB, LPT to LPT3). Also see Part VII: Dongle, page 157.

Editor
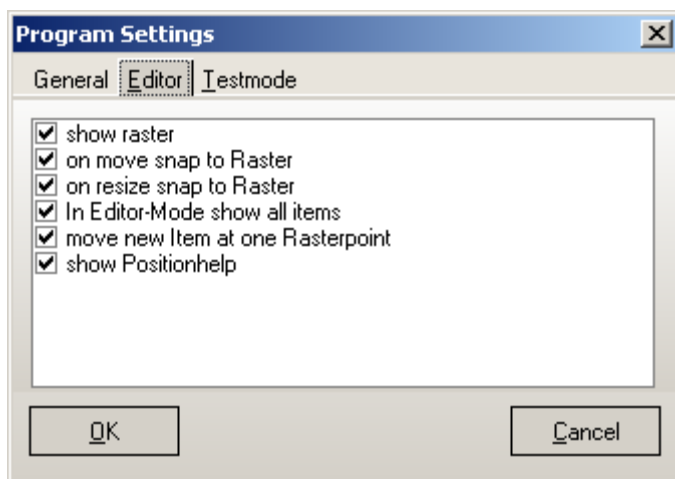
|	
Show grid	actives / deactivates the grid
On move snap to grid	activates / deactivates the function that elements snap to the grid when dragged with the mouse

| At resize snap to the grid	activates / deactivates the function that elements snap to the grid when resizing
In Editor-Mode show all elements	displays all elements in editor mode
Move new item at one grid point	elements inserted by double-click are automatically moved at one grid point
Show position help	activates / deactivates the indication of the X-Y-coordinates of the lower right edge of an element. The origin is the upper left edge of a visualization page.

Testmode
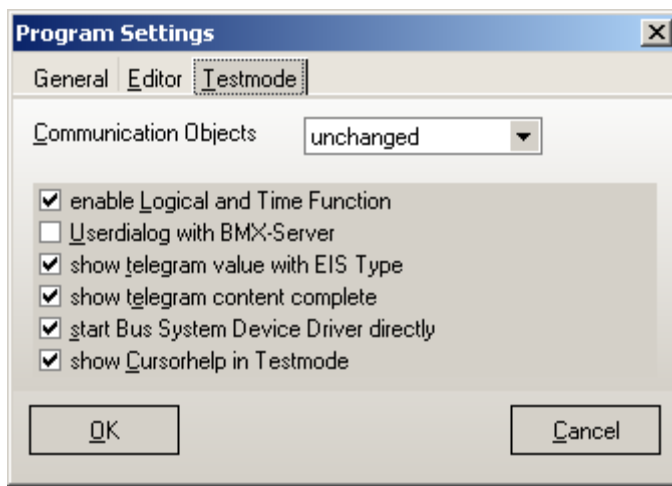
| Communication Objects	Choose how the Communication Objects shall behave at start of the Testmode. Unchanged - all Object states stay Set 0 - all Object states are set to 0 Set 1 - all Object states are set to 1
Enable logical and time Functions	Only if this option is set existing Logical and Time Functions will be operated in the Testmode
Show telegram value with EIS type	The telegrams in protocols will be sorted by EIS type
Show telegram value complete	All bits will be shown in protocols
Start Bus System Device Driver directly	If set, at start of the Testmode a connection to the server will be established directly. Otherwise the connection has to be built up manually from the window BMX Server Connection Data.
Show Cursorhelp in Testmode	If set, the Cursorhelp will be shown in Testmode.

10.2.2   CHANGE LANGUAGE

In the menu *Settings* → *Language* the language can be changed.
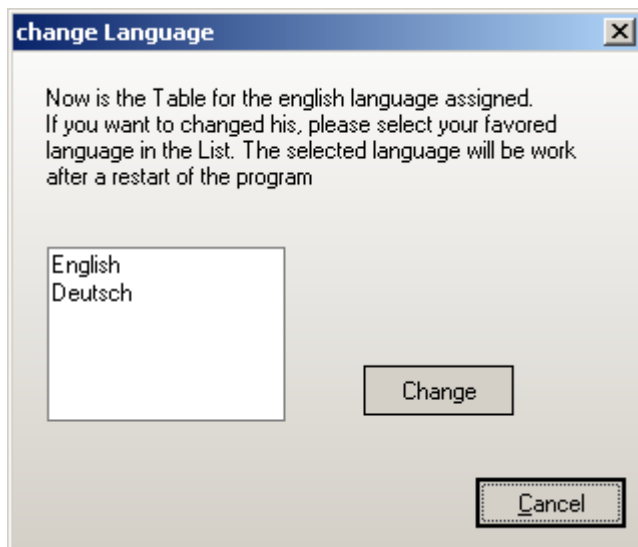
Choose a language from the list and click on *change*. The change will be done after restart of the program.

10.2.3   BMX SERVER CONNECTION DATA

In the window *BMX Server Connection Data* (in the menu *Settings* → *BMX-Server*) the data for the connection to an *eibNode* gateway is entered.
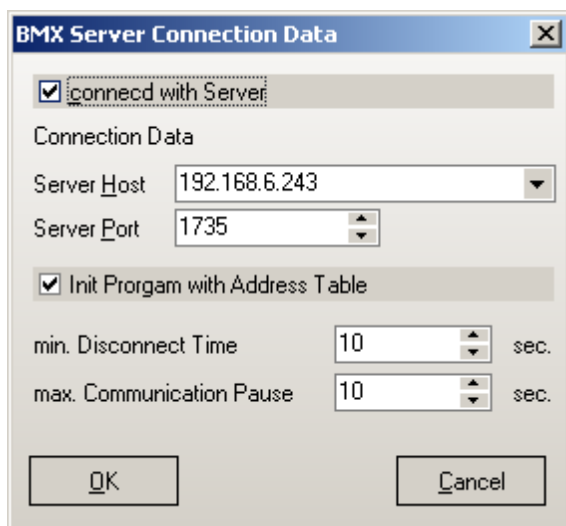
Connect to Server	This option has to be set for enabling a connection to *eibNode*.
Server Host	Enter the IP-address of the *eibNode* (see page **Fehler! Textmarke nicht definiert.**)
Server Port	Enter the Server Port; Default is1735 (see page *Fehler! Textmarke nicht definiert.*).

|	
Init Program with Address Table	If set, the Communication Objects are set to the values stored in the Address State Table at restart of the *eibNode*.
Min. Disconnect Time	Minimum Disconnect time. Standard: 10 s.
Max. communication Pause	Maximum time of no communication between PC and Server until an error message appears. Standard: 10 s.

10.2.4   SERVICE

In the window *Edit Services* (in the menu *Settings* → *Service*) the services Database, E-Mail and SMS are configured.

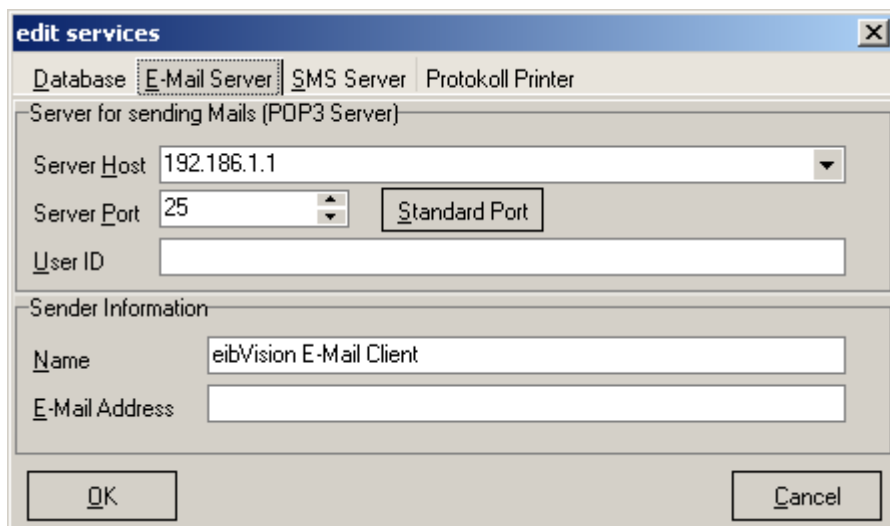> ***Consideration: The Services are functions of Windows and only available when the PC is running.***

Database
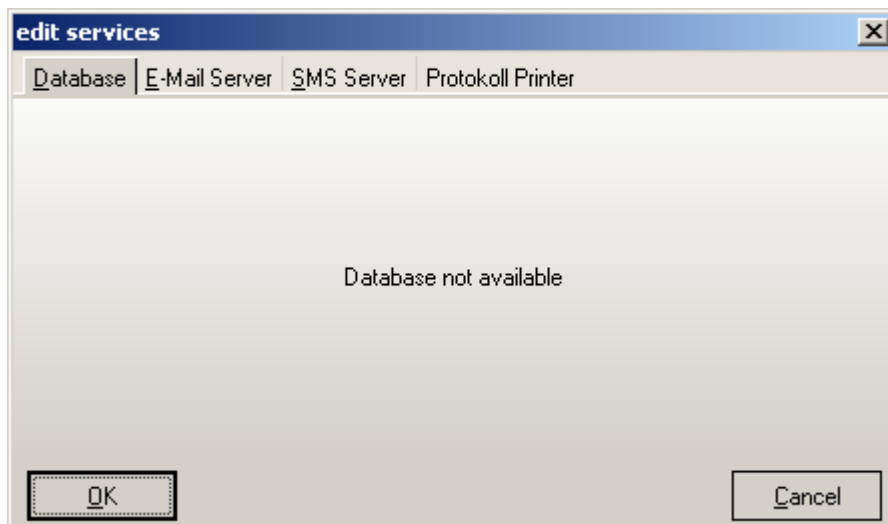
This Service is not available yet.

E-Mail Server

These Settings configure the element *E-Mail* and are required for sending E-Mails.

> **Consideration: An E-Mail-Account at an Internet Service Provider is required to use this function.**

Server for sending mails (POP3 Server)

Server Host	Enter the address of the POP3 Server
Server Port	Enter the Server Port; the default value is 25.
User ID	User ID for authentication at the E-Mail-Server (if required)

Sender Information

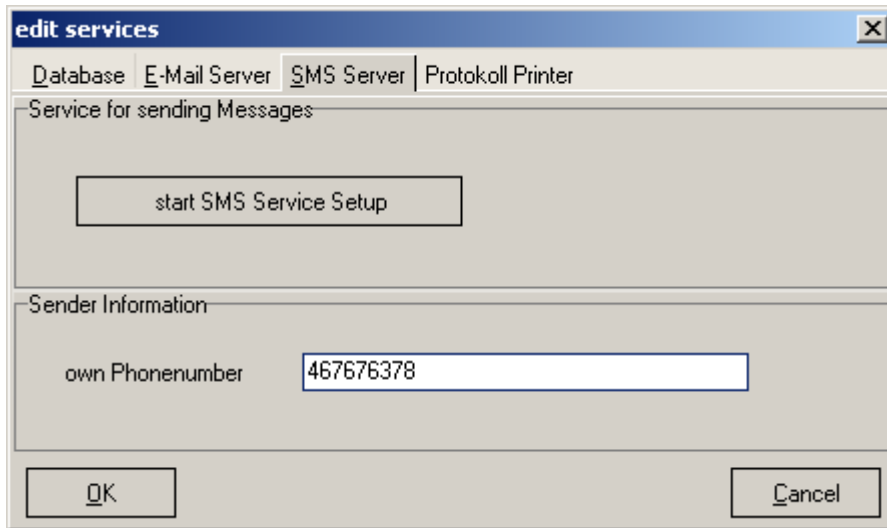|	
Name	Enter a Sender Name
E-Mail Address	Enter a Sender E-Mail Address

SMS-Server

These settings configure the element *SMS* and are required for sending SMS.

> **Consideration: For sending SMS the PC must be equipped with an ISDN-Card!**
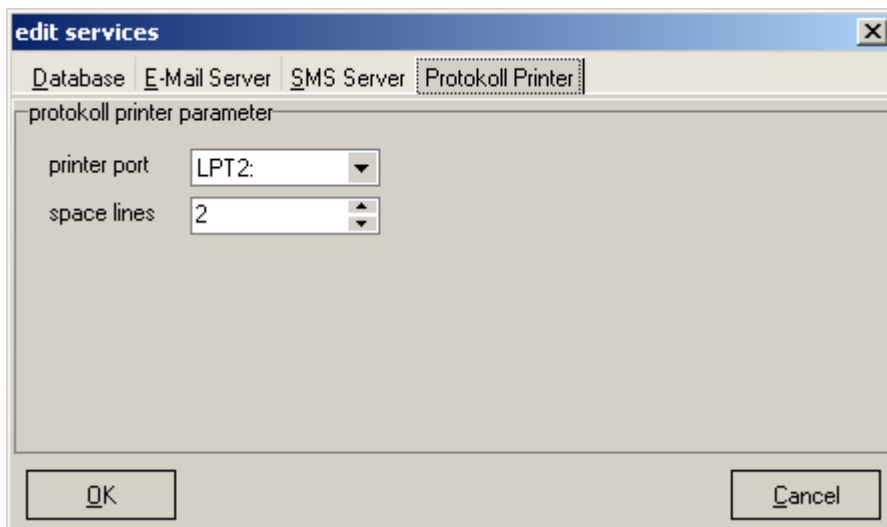
Server for sending Messages

The configuration of the SMS-Service is not a part of *eibVision* but is done by a Microsoft Windows wizard. Start the wizard and follow the instructions.

Sender Information

Own Phone number   Enter the ISDN phone number that is linked to the PC.

Protocol Printer

These settings configure the element Protocol Printer (page **Fehler! Textmarke nicht definiert.**).

Printer Port   Choose the Port the printer is connected to.

Space Lines   Choose a number of space lines before the text begins.

10.2.5   CHANGE ADDRESS LEVEL

The group addresses in *eibVision* can be indicated in 2 levels (e.g. 1/10) or in 3 levels (e.g. 1/5/10). The default option is the two level indication. To change the indication go to the *Project Browser*. Expand the folder *Address*, click on *Addresstable* with the right mouse button and choose *Parameters*. Check the option *Address in 3 planes* and confirm with *OK*.
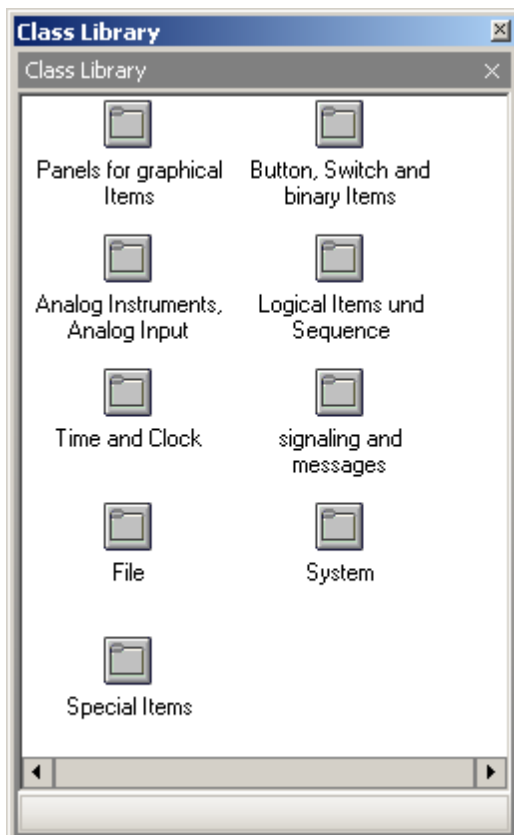
10.3   *EIBVISION* PROGRAM WINDOWS

10.3.1   PROJECT BROWSER
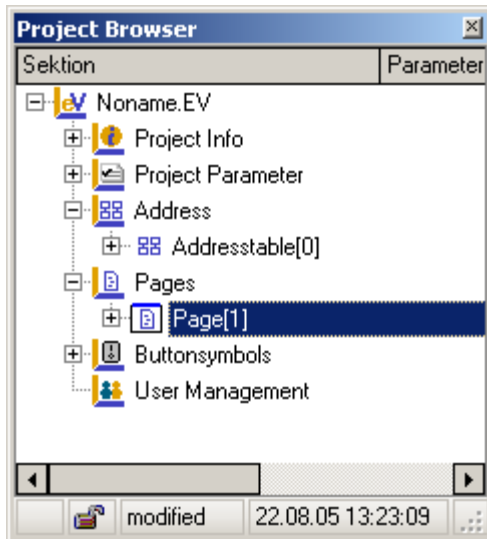
In the Project Browser the data of a Project is shown and administrated (see also New Project
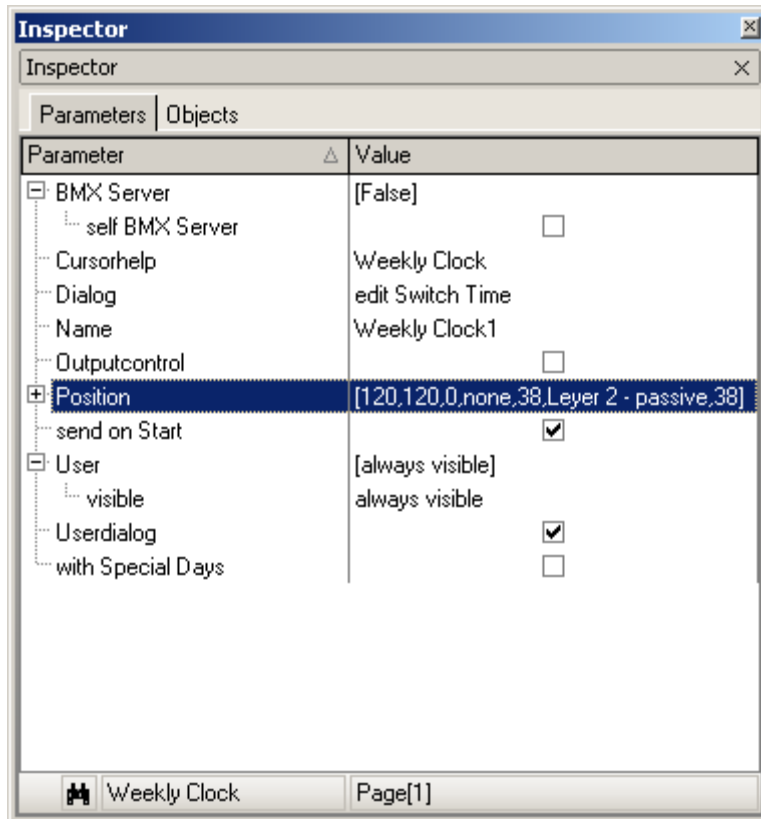
10.3.2   CLASS LIBRARY

The Class Library includes all visualization elements sorted in categories. After clicking twice on a category its elements are shown. The elements can be inserted

into a visualization page by clicking twice or by Drag & Drop. By clicking twice on the arrow button in the element view you get back to the category view.

10.3.3   INSPECTOR

In the Inspector window the parameters and the communication objects of the elements are parameterized. By clicking the flags *Parameters* and *Objects* you can change the views.

The displayed parameters and communication objects depend on the selected element (see *Die Elemente*) and are indicated in a file tree. Some parameters are combined to a group or parameter combination. Click on ⊞ to show all parameters of a group; click on ⊟ to hide them again.

To enter parameters there are Input fields, drop down menus, check boxes and parameter windows.

In input fields text or numbers are typed in with the keyboard.

Drop down menu: Choose an option from the menu.
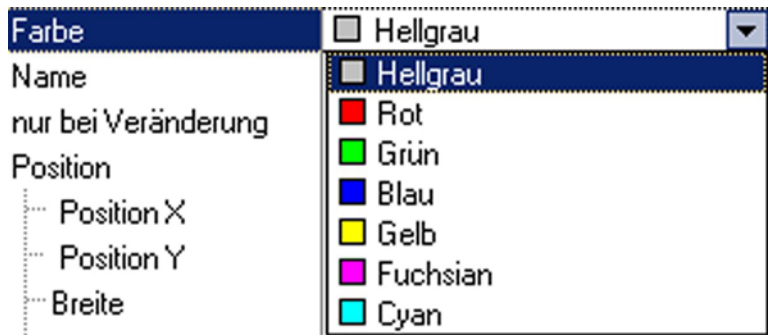
Check boxes: check the option

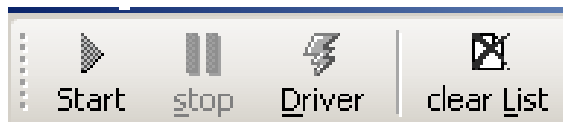Parameter windows are symbolized by . Click on the button for further parameters.

In the Object view the group addresses are entered. The address parts are separated by a „ / ".

> **Tip: the slash „ / " can be generated with the space key.**

10.3.4   MESSAGE CENTER

With the Message Center all functions of the Testmode are controlled. Protocols and the current status are indicated.

The functions of the toolbar:


Start   starts the Testmode

Stop   stops the Testmode

Driver   opens the window for entering the Server Connection Data (see BMX Server
                 Connection Data, page 146). For the Testmode there is no connection data
                 required. The option *connect to server* must be inactive.

Clear List   Clears the current protocol view

The Message Center provides four views:

Status   shows the current status of the Testmode. The send LED indicates sent telegrams,
                 the received LED indicates received telegrams and the Status LED indicates the
                 Testmode being active. The number of the sent / received telegrams is indicated.

Command   records all sent and received telegrams and displays them according to the
                 following:
                 Command: type of telegram
                 Date: date and time of sending / receiving
                 Content: Group Address, Source and Destination of the telegram, Data Width, all
                 Bits of the telegram

Project   <unknown>

Protocol   Server connection protocol
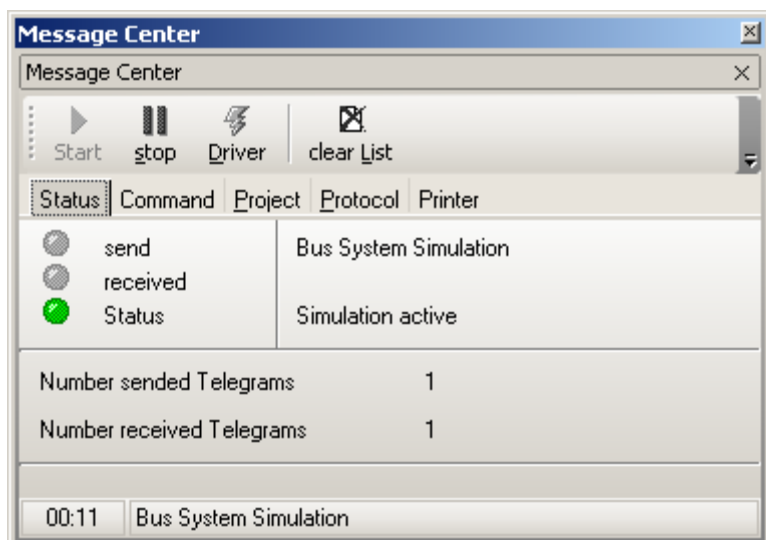
11　　EIBVISION RUNTIME

11.1　　THE MENU BAR

Project

	Open...	opens an *eibVision* Project
	Startparameter	opens the window Startparameter
	Exit	quits eibVision

View

	Message Center	opens the message center
	Addresstable	opens the addresstable
	Protocol	opens the protocol window
	Message Trace	opens the message trace
	Debug window	opens the protocol windows for fault diagnosis

Settings

	Program	opens the program options
	Bus system	opens the BMX server settings
	Servcie	opens the service settings

Help

	Info...	shows information about the eibVision

11.2　　OPEN PROJECT

- ▪ Start eibVision and choose Open.. from the menu Project.
- ▪ Choose a an *eibVision* Project (extension.ev)
- ▪ Confirm with *OK*

11.3　　STARTPARAMETER

For the start of *eibVision Runtime* parameters can be set.
- ▪ Choose Startparameter from the menu Project

Program start

	Startproject:	start without Project
		Start with last Project. The directory of the last used Project is indicated.
		Start with following Project. Click on search and choose a Project.
	Include Start Parameter	
		If set, the paramaters in *Project Start* will also be regarded.
	Bus System	

On start connect directly to the Server.

Program Start Actions

A group address that is sent at start of the Project can be entered.

Project Start
Step 1   If set, at startup all communication objects will be set to 0.

Step 2   If set, at startup the communication objects will be set to the states saved in the address state table of the eibNode.

11.4   SETTINGS

Program   The settings correspond to the general settings in eibVision Studio (see page 144).

Bus System   Settings for the connection to an eibNode (see page 146).

Service   Configuration of the services (see page 147).

11.5   PROTOCOLS

There are several protocol windows for e.g. error analysis.

Message Center   *command*: Lists all sent and received telegrams with date and time.
                          Project: Shows the Project Protocol
                          Protocol: Shows the BMX-Server protocol.

Addresstable   *Tree*: Shows the addresses in a tree view. To send a telegram click twice on an address, choose a format and click on *OK*.
                          Matrix: Shows the addresses in a matrix view. Addresses with the state 1 appear in red colour. Addresses with the state 0 appear in blue colour. Addresses with states unequal 0 appear in green colour. To send a telegram click twice on a cell, choose a format and click on *OK*.

Protocol   *Program*: Shows the eibVision Runtime Protocol
                          Projcet: Shows the Project protocol
                          Printer: Shows the printer protocol

Message Trace   *Status*: Shows information about the data base status. Clear: deletes the data base
                          Change: sets the maximum size of the data base
                          Data: Shows the recorded telegrams. By the buttons the telegrams can be listed in different ways, deleted and copied to the clipboard. The functions of the buttons are indicated when pointing on with the mouse.
                          Filter: enter an address or a date to list the corresponding telegrams.

Debug window
E-Mail Protocol   logs the sent E-Mails

SMS Protokoll   logs the sent SMS

Protocol Printer   logs the printed messages from the element Printout Protocol

12   DONGLE

12.1   INSTALL THE DONGLE

- After having installed the eibVision software, plug in the USB dongle into a free USB interface.

- The hardware detection of Windows starts automatically: When the wizard asks, if an internet connection should be established answer *NO*.
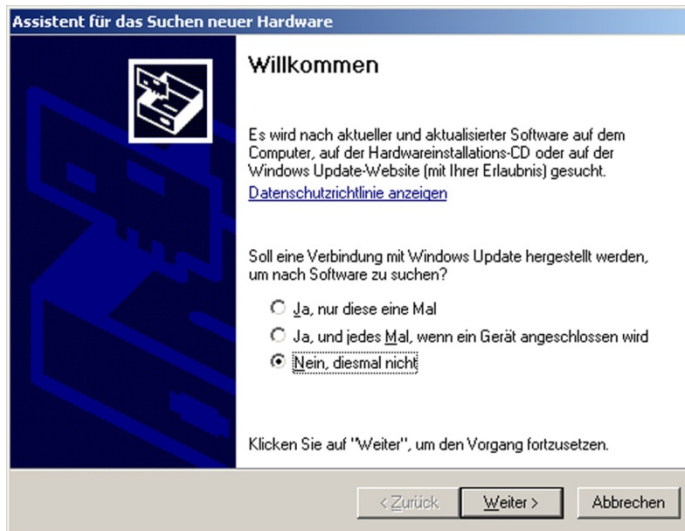
- Choose *Install software automatically*.
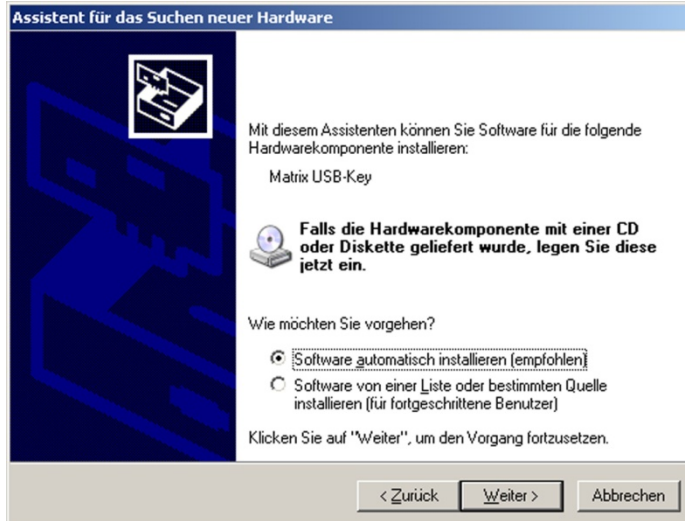
- Does the dialog ask for the *IwUSB* driver give him the one you find in *C:|Program Files|system32*

- Now install the *update.exe* which you find in the installation folder

- Please reboot your system in any case. After that, the dongle works.

12.2   SPECIFY POSITION OF DONGLE

In *eibVision* Studio choose *Options* from the menu *Settings*. Choose the position of the Dongle from the list. Default is *USB*.

In *eibVision* choose *Program* from the menu *Settings* and choose the position of the Dongle from the list. Default is *USB.*

12.3   INFORMATION ABOUT USED DONGLE

In *eibVision* Studio choose *License* from the menu *Help*.

13   THE FUNCTIONS OF EIBNODE

13.1   WHAT DOES *EIBVISION*?

- Parameterizing the logic functions of *eibNode* (Logic, Scenes, Comparator, Timers, Math, etc.)
- Creating visualizations for EIB facilities with *eibNode* (Push-Buttons, Switches, Pictures, Text, Displays, Alert functions, etc.)
- Administration of *eibNode* Projects and visualization projects
- Parameterizing of virtual group addresses (page 34)
- Executing of visualizations
- Test of visualizations without a connection to *eibNode*

13.2   WHAT DOES *EIBNODE*?

- Connection of EIB and LAN (10000 telegrams per second in the LAN)
  - ✓ Advantage: no data traffic jam in the EIB
- Virtual group addresses
  - ✓ Advantage: more freedom in address assignment
- Logic, Timers, Staircase time switch, send/receive Date and Time, Delay unit, Filter function, etc.
  - ✓ Advantage: PC can be switched off, all functions are still operated
- Address state table: stores the last address states
  - ✓ Advantage: no initialization via EIB after reset
- Telegram buffer: records the last 30000 telegram
  - ✓ Advantage: recorded data for error analysis and data computing
- Line and area coupling
  - ✓ Advantage: replacement of line and area couplers
- NetID (page **Fehler! Textmarke nicht definiert.**)
  - ✓ Advantage: flexible division and extension of EIB facilities
- NetBroadcast (page 160)
  - ✓ Advantage: central calls

13.2.1   WHAT IS NETID?

The NetID is an additional parameter that allows using the same group addresses within an EIB facility with *eibNodes* several times and dividing a facility into several autonomous part-facilities.

- All *eibNodes* with the same NetID form a part-facility that runs independently from the other part-facilities.
- Within the different part-facilities the same group addresses may occur
- For each part-facility a separate ETS-Project can be set up. Several installers can program parallel and don't need to line up the ETS-projects.
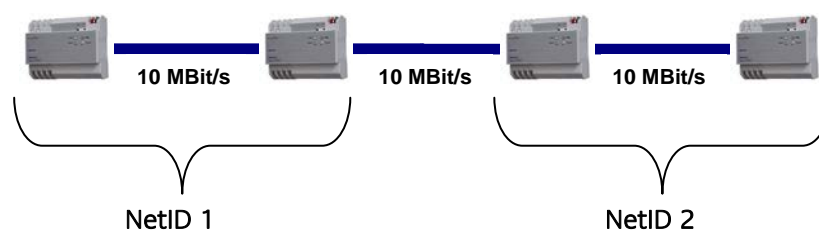
13.2.2   WHAT IS NETBROADCAST AND NETBROADCASTID ?

A NetBroadCast (short: NetBC) is a central call to all *eibNodes* in the facility. Central functions via a central visualization can be implemented.

- Central calls can be sent from each visualization that is connected to *eibNode*.
- With the NetBroadCastID (short: NetBCID) groups of *eibNodes* can be defined that are reached directed by a NetBC.
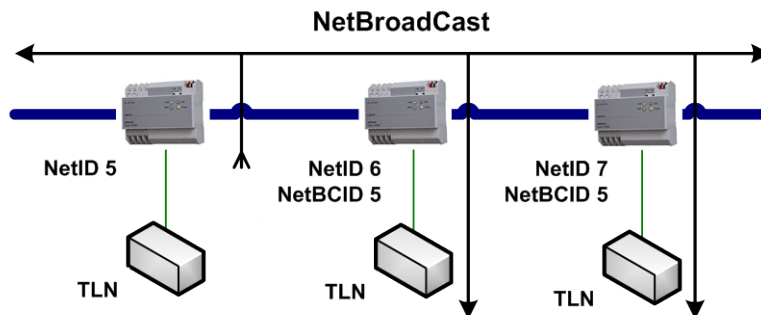
13.2.3   WHY CONNECTING *EIBVISION* AND *EIBNODE*?

- Easy parameterizing and test of functions with the PC
   - ✓ Advantage: ride to the customer not necessary
- Comfortable administration of Projects
- Parameterizing of the virtual group addresses
   - ✓ Advantage: not possible with the ETS
- Import of group addresses from the ETS
   - o Advantage: use of the descriptions of the ETS Project
- Documentation of *all* group addresses
   - ✓ Advantage: ETS doesn't know virtual group addresses