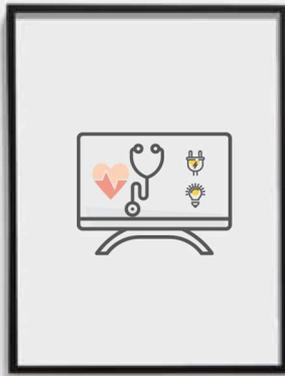




EisBaer BASICS MANUAL



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1. Basics

1.1. System requirements

The individual software parts require different software and hardware requirements. EisBär software was developed for Microsoft® Windows® operating systems. The systems are to be used as a standard installation. The user must have full administrator rights locally. No standard Windows services may be deactivated.

Minimum requirements for the editor

Microsoft® Windows 10, 11 or Windows Server 2016, 2019, 2022 each with Microsoft® .NET Framework 4.8 and all updates

- Working memory 2048 MB or more (recommended: 4096 MB)
- CPU 2.0 GHz DualCore or higher
- Free disk space from 2 GB (recommended: 10 GB)

Minimum requirements for the server

Microsoft® Windows 10, 11 or Windows Server 2016, 2019, 2022 each with Microsoft® .NET Framework 4.8 and all updates

- Working memory from 4096 MB
- CPU 2.0 GHz DualCore or higher
- Free disk space from 10 GB (recommended: 20 GB)

Note: If virtual environments such as VMWare ESXI or Microsoft Hyper-V do not have a physical USB interface, a USB dongle server must be used to connect the EisBär licence dongle.

The use of KNX-Net-IP routers is recommended for connecting a KNX system. No KNX USB interface can be used.

Minimum requirements for the client

Microsoft® Windows 10, 11 or Windows Server 2016, 2019, 2022 each with Microsoft® .NET Framework 4.8 and all updates

- Working memory from 2048 MB (recommended 4096 MB)
- CPU from 1.7 GHz
- Free memory from 2 GB (recommended: 10 GB)

1.2. EisBär SCADA- Programme parts



EisBär - Editor

With the Editor, you create and edit your visualisation project under the Microsoft® Windows™ operating system. Furthermore, it is possible to test the project live during the creation phase using the simulation mode that can be switched on.



EisBär - Server Configuration Console

This is used to configure the server, start it and transfer the desired project to the server service. The EisBär server starts automatically (delayed) as a Windows system service when the computer is started. A Windows user login is not required. The installation of the service requires administrator authorisation on the PC or server.



EisBär - Client

The EisBär SCADA client is the actual display and operating program for the visualisation created on the above-mentioned Windows operating systems. The connection to the EisBär SCADA server is realised both locally and via the LAN/WLAN/WAN or via a VPN tunnel. Multiple connections are possible, of course also with different user logins, which can be defined in advance in the editor project.



Client auto-update service

The client auto-update service is of interest to all users who operate EisBär SCADA on a server PC and use other remote client PCs. If the EisBär SCADA server and the project loaded in it are brought up to date by an update, the clients can also be automatically updated to the latest version the next time they are started or a connection is established. The update process runs fully automatically in the background.

In order for this to work, you must install the EisBär client auto-update service on the client machines with administrator rights. This will reduce the time and costs for larger installations to a minimum.

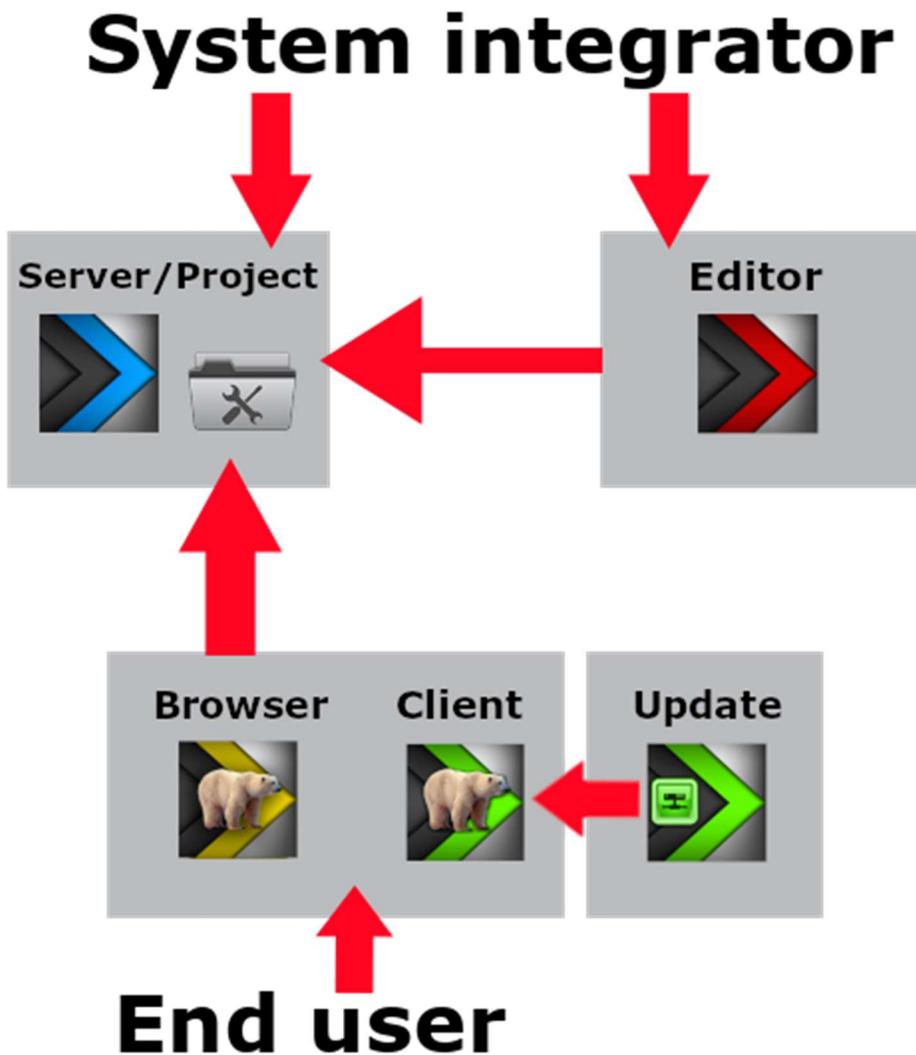
For the client auto-update service to function, the installation file must be located in the subfolder C:\ProgramData\Alexander Maier GmbH\EisBär\deploy\EisBaer SCADA 3.0en.msi on the server. If the update of the EisBär SCADA Suite is carried out via the auto update from the editor or server, the installation file is copied directly to the correct location.



Mobile clients

Smart clients (app clients) are available for iOS and Android. These are available free of charge in the corresponding stores of the platforms. The smart clients behave like "normal" clients. This means that several users can be operated independently of each other and, as in the Windows client, with the respective user logins.

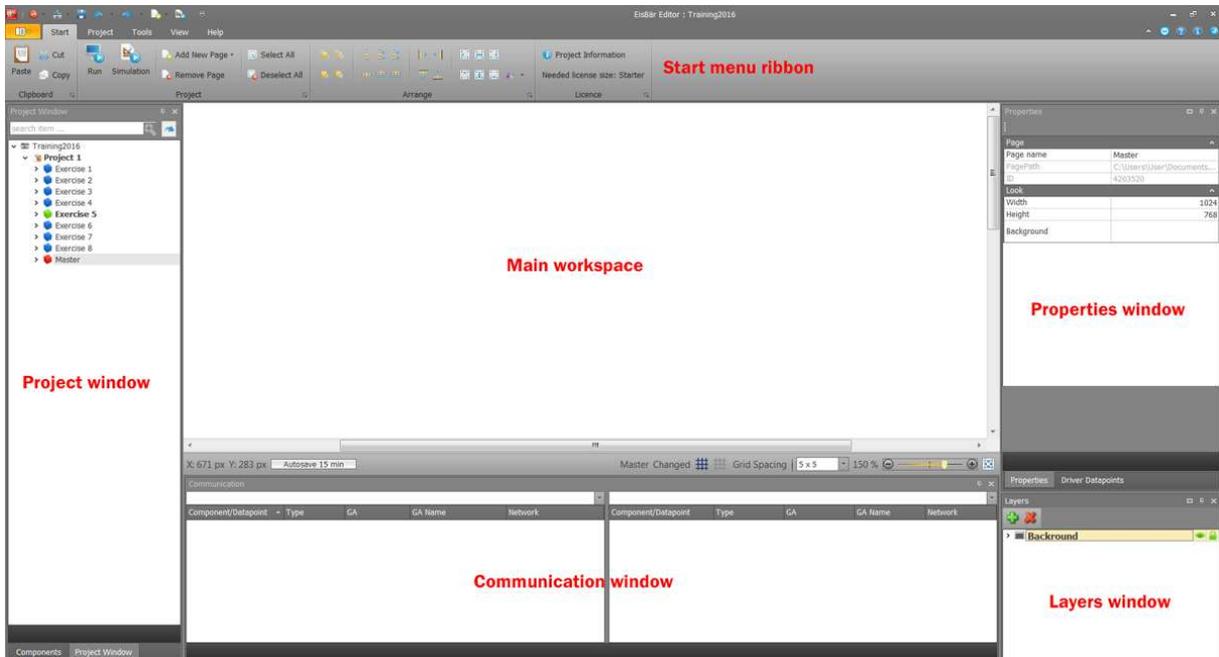
"Interaction" of the individual programme parts:



2 EisBaer SCADA – Editor



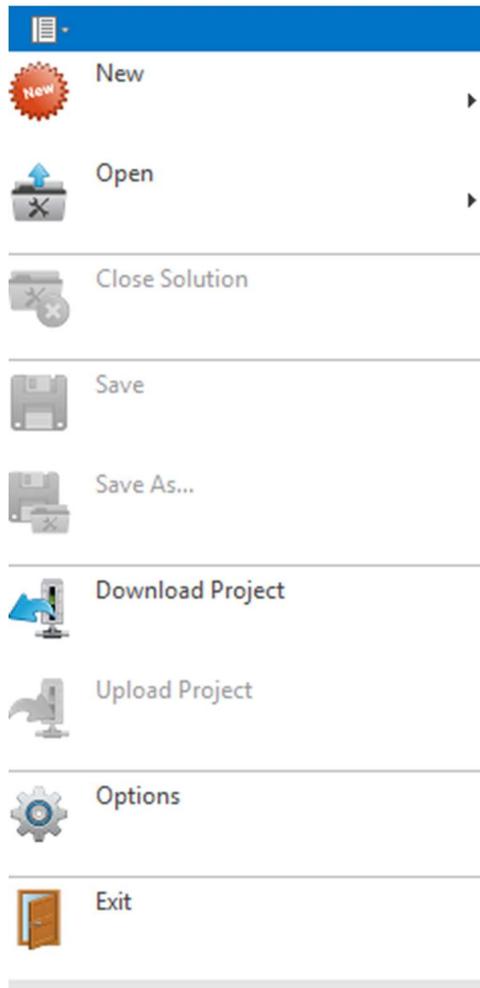
2.1 Workspace



2.2 Menu lines

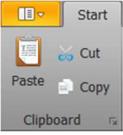
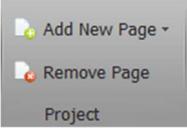
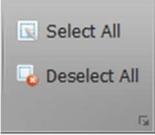
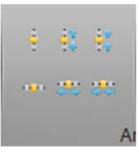
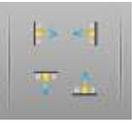
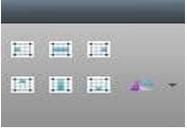
	<p>Especially when working on a notebook, the space on the screen is limited. The ribbon can be made smaller by pressing the arrow key. This provides more space for displaying and editing the page.</p>
	<p>AnyDeskr-Web Support, starts the remote maintenance application. This is also stored in the help tab.</p>
	<p>This icon opens the help.</p>
	<p>Here you can see the current version and the contact details of Alexander Maier GmbH.</p>
	<p>The blue tick stands for the latest version of the software. If an update is available, a red flag is displayed instead. This can be used to switch directly to the Update Manager.</p>

2.3 Main Menu

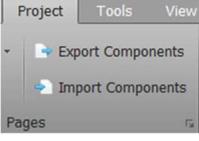
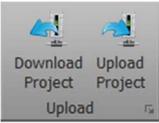


The main menu ribbon contains the most important and most frequently used functions, such as opening a project or the most recently used projects, the general settings of the editor, as well as the project download from a running server via a network connection. Other functions are only available after loading a project in the editor and are therefore greyed out.

2.3.1 Start

	<p>Clipboard like in Microsoft Office (Ctrl+x Cut, Ctrl+c Copy and Ctrl+v Paste)</p>
	<p>Simulation "switches" the editor into a live mode, so the project can be briefly tested directly in the editor without having to start the project via the server. (In simulation, drivers and components that are actually invisible to the end user are visible, but not in later client server operation)</p>
	<p>Add or removenew pages (Ctrl+N), new master page (Ctrl+M).</p>
	<p>Select all on the current page, or deselect the current selection. (Ctrl+a = select all, Ctrl+Shift+a = deselect).</p>
	<p>Change the Z-level of the selected component. The Z-level can only be changed via these buttons, not in the properties of the component.</p>
	<p>Change the arrangement of the components, distribute them evenly and increase or decrease the distances between them.</p>
	<p>Align the selected components in a line, using the leftmost/rightmost/bottom/topmost component as a basis, depending on the selected function.</p>
	<p>Define the position of the selected components on the page.</p>
	<p>Status information about the currently required licence size for the open project.</p>

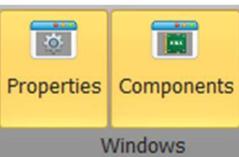
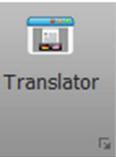
2.3.2 Project

	<p>Export and import selected components. The settings are also adopted. Optionally, new networks can be created during the import. In order to have the ScadaComp in the component list, this export must be stored under "C:\Users\UserName\Documents\Alexander Maier GmbH\EisBär 3.0\ScadaComp".</p>
	<p>Make settings for the user administration.</p>
	<p>With this function in the editor, the currently running project can be loaded directly from the server via the network (during operation), so that the settings made by the user are also available in the project (changed scenes, calendar entries, etc.). The project can be uploaded again via the network so that the server does not have to be explicitly restarted!</p>

2.3.3 Tools

	<p>Translation of component-specific labels in different languages. Further information in chapter Multi language projects</p>
---	--

2.3.4 View

	<p>Hide individual windows of the editor</p>
	<p>The user-defined texts can be translated in the Translator. If a translation is required, a translation must be available for each caption; user-defined captions are only translated if there is a \$ sign in front of the text. Further information in chapter Multi language projects</p>
	<p>Restore default settings of the Editor view or save current view. This refers to the arrangement of windows and menus.</p>

2.3.5 Multi language

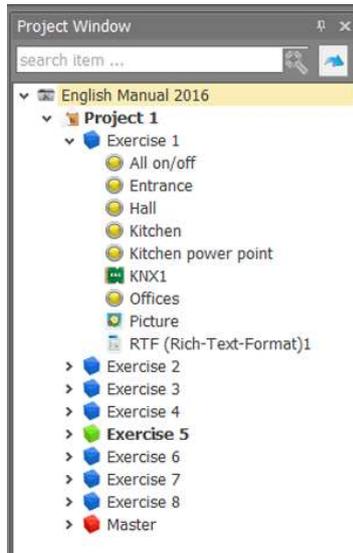
If the function is used by different languages, a translation must be created for the user-specific names of the components.

To do this, a \$ sign must be placed in front of each text that is to be translated, so that this word is searched for in the translation table and translated into the desired language, if an entry exists for it.

The translations must therefore be checked/created in the Translator under View and in the Component Translator.

The language can be switched at runtime in the client. To do this, only the component "Project language selection" must be integrated into the interface.

2.4. Project window and pages



> Master

A **master page** is a page that can serve as a background for one or more other pages. Components on a "master page" appear "behind" components on the current page. It is suitable for backgrounds, general design, for central buttons and navigation components. In the properties of each visualisation page (blue), you can assign a master page as a background (master page ID).

> Exercise 5

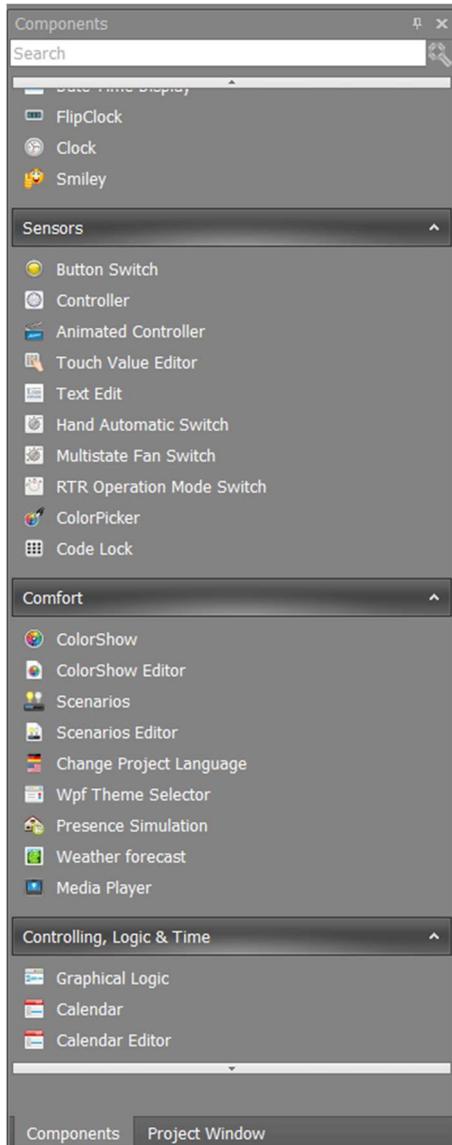
The start page can be reset by right-clicking on a (blue) page. The colour then changes from blue to green.

If permissions are assigned via the user administration, individual start pages can be defined for each user created. See chapter User management.

> Exercise 3

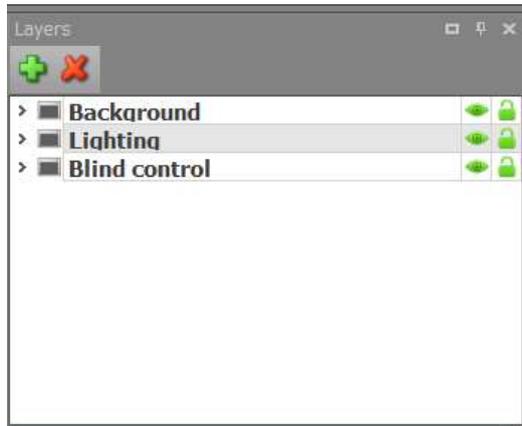
One page (blue) is the actual visualisation page and contains all operating elements for control. This page can also be copied completely via the right-click menu. Links within the page remain (new network).

2.5 Component overview



Overview of all available components and drivers. Simply drag and drop these into the currently open page of your project. Depending on the project size it can be helpful to group components onto individual layers on the respective page, you will find further details in the chapter Layer.

2.6 Layer



Add / Remove layer



Eye: Visible On/Off

Lock:

Edit On/Off

Layers can be used to structure large and complex pages in a meaningful way.

By locking or hiding individual layers or even individual components, accidental moving or re-parameterising can be prevented.

If components are to be inserted into a layer, they must first be marked in the layer window.

The layers also define the Z layer area in which the components are located. The Z-level of a component can be seen in the properties of the component.

In the example shown above, the Z-levels are defined as follows:

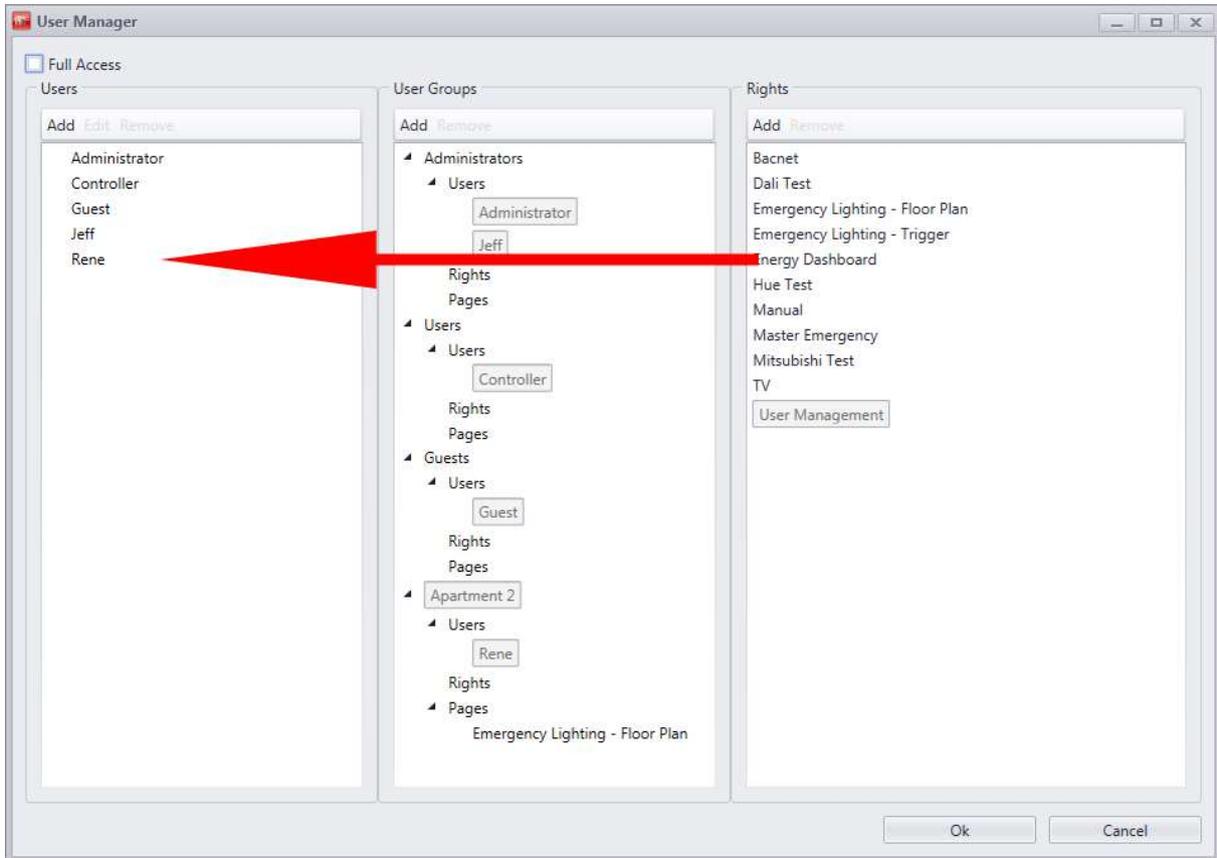
Background	0-9999	(default)
Light	10000-19999	
Blind	20000-29999	

The Z-index starts at the bottom of the page. All further levels build upwards. In the above case, a component in the Light level is always above a component in the background, regardless of which Z-level is selected within the level.

When using a master page, the contents of the master page are always displayed below the Background layer.

Important: The layer cannot be changed later or can only be changed by cutting the component and pasting it into the desired other layer. When pasting, the options for the nets must be observed.

2.7 User management



User administration is used to allow or restrict access to certain pages or components for individual users or user groups.

For example, a single server can handle the visualisation for several offices, whereby each office only has access to its own lighting groups.

User administration is inactive by default. It is only activated when the "Full-Access" checkmark is removed. In test mode, it can be reset to "Full-Access" at any time. The selected settings below remain in effect.

User: The individual users are created here. A separate password can be defined for each user.

User groups: If several users are allowed to view and operate the same pages, they can be divided into groups.

Rights: Rights can be defined here, which can then be assigned to the individual user groups. These rights can be used at component level. The individual rights can be assigned to the user groups by dragging and dropping.

Start page: If "Full-Access" is deactivated in the user administration, a start page must be defined for each user.

a start page must be defined for each user. To do this, the desired page is dragged and dropped from the rights window (right) onto the user in the user window (left). The user must also have the right to see the start page (middle column).

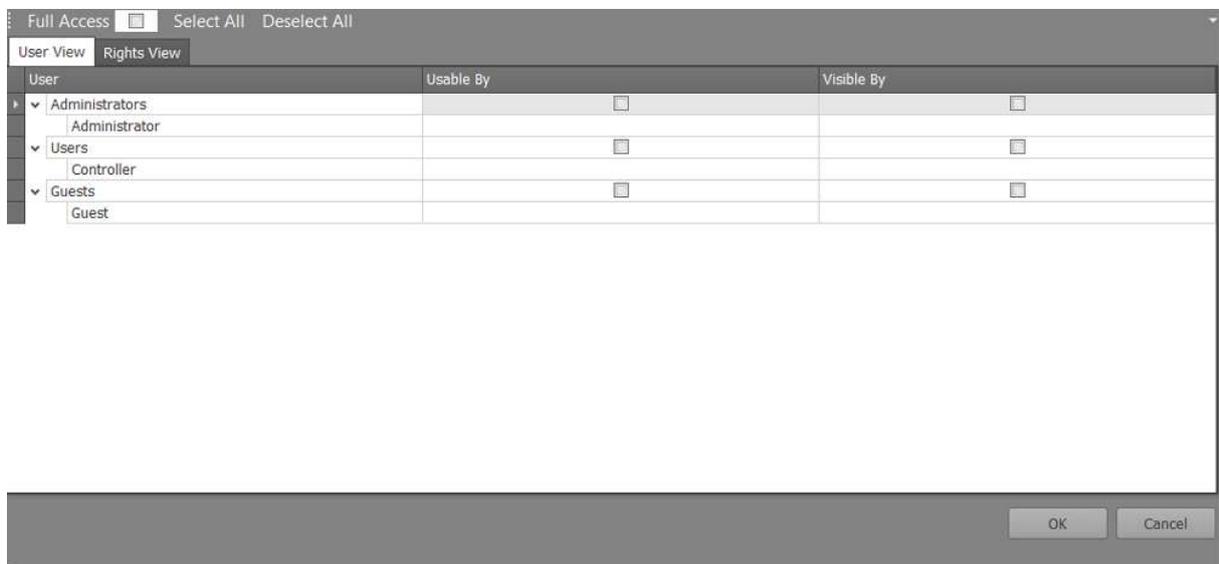
Afterwards, it is visible which user is assigned to which start page.

In the clients, the desired user must be set in the settings. The start page assigned to the user is then displayed when the clients are started.

2.8 Component-specific rights

If access is to be restricted to whole pages only, the default value can be left in the component properties, the default value can be left as it is. Only if access is also to be restricted to a component, these settings must be changed.

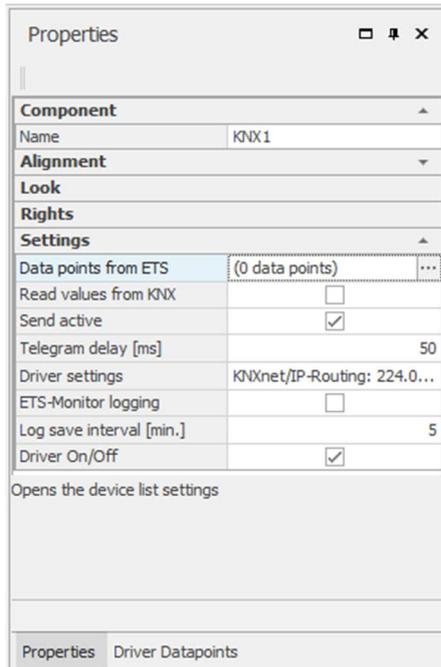
Under the properties of the respective component, in the tab Rights, the following dialogue can be opened.



In the first tab "User View", the operation and visibility of the component for the created users can be set.

If the rights view is selected, the component can be assigned to the respective rights created.

2.9 Properties



In the properties window, the component/driver specific settings can be made. As this properties dialogue differs for each component, it will not be discussed in detail in this chapter.

For text displays, this window is used to configure the formatting of the display; the following is a list of the most common types of formatting.

Examples of value displays

- #0,000 for three decimal places
- %H:%M:%S for operating hours
- hh:mm:ss for hour:minute:seconds
- dd.MM.yyyy for day/month/year. The following is valid: MM=month, dd=day, yy=year, HH=hours, mm=minutes, ss=seconds.
- "Text positive" ##0.00; "Text negative" -##0.00
- #0.0 °C for temperatures

2.10 Driver Settings

In the following, the setting of the KNX driver is explained in more detail and what must be observed. The other drivers will not be discussed in detail; in principle, the drivers all have a similar structure. The special properties of each individual driver can be found in the EisBaer manual.

Data point list:

This contains all communication objects of the KNX devices that contain at least one group address. Importing from different ETS versions is also possible here.

Read values from KNX:

Setting whether the values are read from the KNX bus at project start. This only applies to linked group addresses for which the read flag is also set.

Send active:

Whether the KNX driver should also send to the bus.

Telegram delay:

Pause between the sending of two telegrams.

ETS logging:

If this is active, log files of the KNX telegrams are saved daily. These can be imported into the group monitor of the ETS.

Log interval:

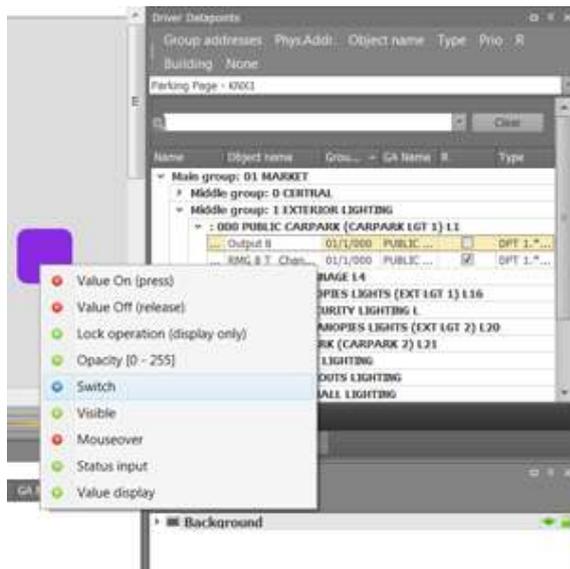
For this time, the telegrams are collected in RAM and then written to the hard disk.

Driver On/Off:

Activates or deactivates the driver at project start.

Important: If the driver is deactivated, there is no communication between EisBär and KNX!

2.11 Data Point List



A data point list is created for each driver in the project (in this example a KNX driver). In this list, all imported group addresses are listed with which the components can be linked. The display is similar to the structure in the ETS. The sorting of the list can be selected in the top line. Without sorting, the data points are displayed freely below each other.

Data points are dragged and dropped onto the component. This is then done on the desired data point of the component, which is displayed during the drop.

2.12 Communication

The Communication window is used to link the individual components with data points, e.g. from the KNX driver.

If data points are connected, networks are created. These networks are similar in principle to group addresses in the ETS, but they cannot be named and are created automatically by linking.

In the left part you can see the data points of the current selection, in the right part, for example, the data points of a component can be displayed on another page, thus making cross-page linking possible. To do this, the pull-down menu must be opened via the arrow button.

A short description is available for each data point as well as the respective data point type. If a link is present, the internal network name, the KNX group address and the KNX group address name are displayed. The arrow in front of a data point can be used to show or hide all linked components.

The colour coding can be used to identify whether it is an input, output or bidirectional data point. Linked components are displayed with a black data point.

 Lock operation (display only) On/Off, DataPointBooleanVal...	Input (Receiver only, no sender)
 Switch On/Off	In-/ Output (Bidirectional, sending and receiving)
 Value On (press) DataPointValue	Output (Sender only, no receiver)
 XT 4 Breaker.Page 2.Button Swit... DataPoint3BitControlled	linked component (project name. page name. component name. data point name). Double-click or right-click --> "Select linked component" to switch to the component page.

3 Creating a Project

3.1 Creating a folder in the editor

Start Editor and create solution

After starting the editor a project folder need to be created in the first step.

There are three options:

Use the key combination Ctrl + N, or use the buttons (A, B)



The EisBaer solution wizard opens, which leads you through the creating of a new solution.

Define solution name

Name the project

Add project (currently only one project per solution)

Add and name the first page

Optional: resolution / format of the page can be defined

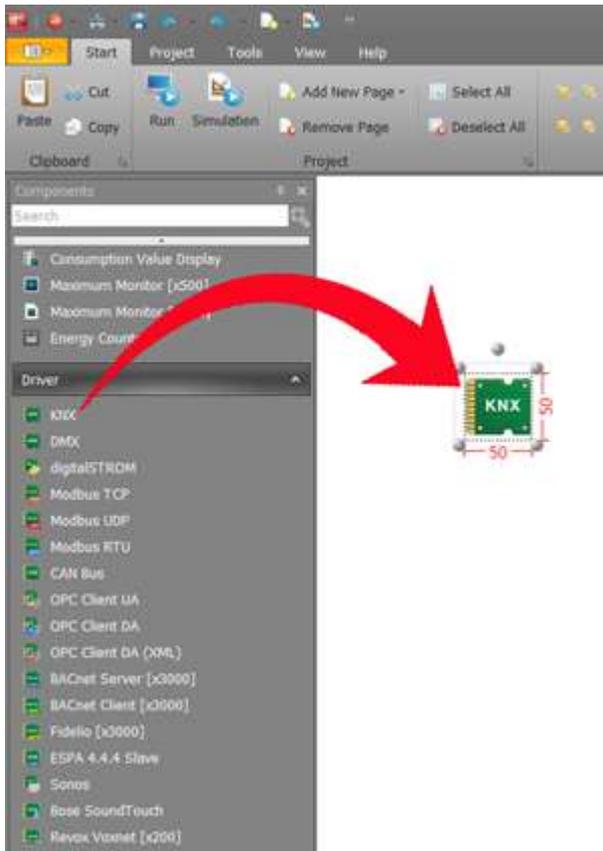
Add page(s)

Close wizard

Now you see the actual work space of the editor with the currently created page.

3.2 Insert KNX driver, configure

The first step is to insert a KNX driver on the page by drag & drop from the list of components (left side) to enable communication. To do this, click on the component with the left mouse button and drag it onto the desktop (middle field). Release the mouse button to insert the component at the location.

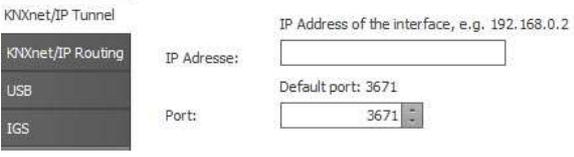


On the right side are the properties of the component, as well as the driver data points list. Each component should be given a unique name to keep track of larger projects. Otherwise, the driver can be left at the default settings. To get the data points of the KNX driver, the ETS project has to be imported. By clicking on the field Datapoint list (1) the import dialog opens.

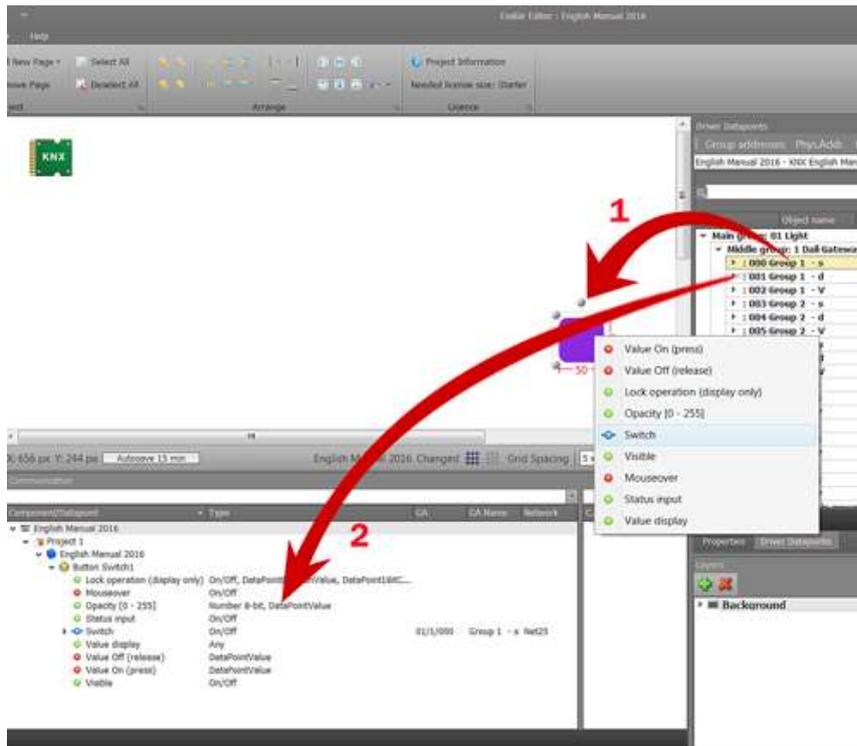
1. Select import format / ETS version
2. Select project file (eg * .knxproj)
3. Select project
4. To confirm
5. Result window is displayed
6. To confirm

Now the data point list contains all data points contained in the project.

3.3 KNX Driver Connection Settings

	<p>The IP address of the IP router must be set via KNXnet/IP Tunneling, as well as the port used (KNX standard 3671). It is best to also specify the physical address of the tunnel here.</p>
	<p>The multicast address must be entered for the IP address, the port used for the port and the physical address which is to be assigned to the polar bear as the sender address for the KNX address. (KNX standard multicast 224.0.23.12, port 3671, address 15.15.15)</p>
	<p>Here you can search for the connected KNX-USB interfaces. This must be done once in the editor on the <u>target system</u> and selected.</p>
	<p>For communication with the IGS gateways, the ID must be set here. The port 50000 + ID must then be released in the firewall. Example: ID=5 → Port 50005 in the firewall.</p>

3.4 Insert control element, configure



Once a control element has been inserted, it can be connected to a group address. To do this, select the desired group address and connect it either directly to the button (1) or to the data point window (2) of the component using drag & drop. Now these two data points are connected via a network automatically created by the editor. In the data point list of the component, you can see to which group address which command is connected, as well as to which network. Once the desired control elements have been inserted and connected, the project must be saved and then the simulation can be started in the editor.

3.5 Internal links

To link two components, first select one of the components. This displays the data points of the components in the Communication window. The link is made by dragging and dropping the desired data point from the Communication window to the target component. A selection window then opens there with all available data points of the target component. Click on the desired target data point. A network with a unique number is automatically created.

Example linking calendar and calendar editor. Data points "Calendar Editor" with data point "Calendar Component".

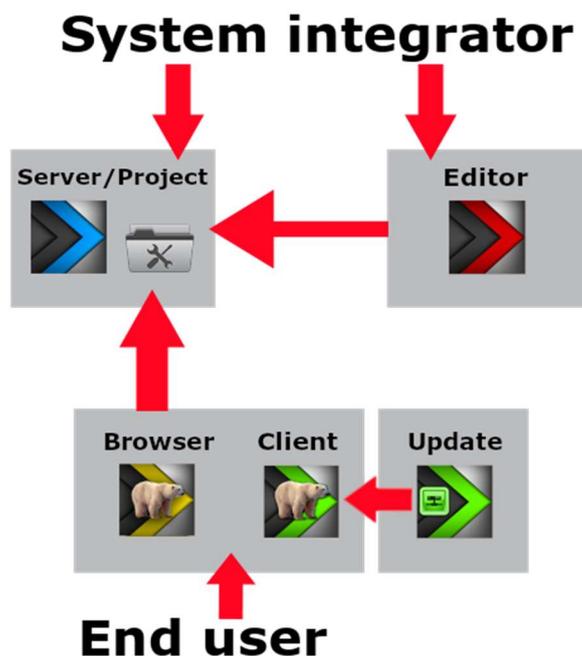
4 Server Console



This overview helps you to better understand how the actual server works and how the individual software parts interact.

The project is created in the editor as described in the previous chapters. To put the polar bear into operation, the server configuration console is started. Some important settings (described below) must be made here.

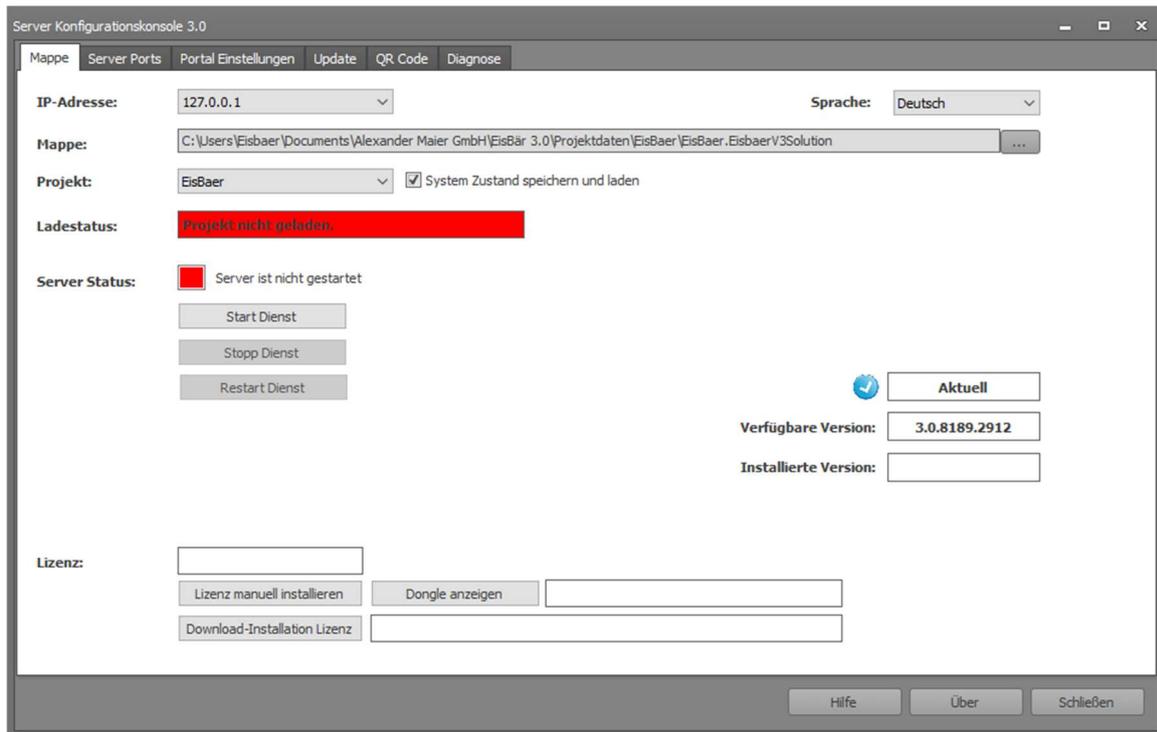
When the server service is started, it opens the project from the selected folder and loads it into the working memory. Therefore, after each change to the project, the server service must be restarted so that it loads the changed project from the hard disk into the memory.



Important: If changes are made during operation, e.g. to the calendar or scenes, these are only available in the copy of the project stored by the server service. If the project is changed and uploaded, they will be lost!

Optional: Project UP/Download from the editor.

4.1 Settings



The IP address of the computer must be set in the IP address field. (The IP 127.0.0.1 is the IP to operate the client as well as the server exclusively on the same device). It is recommended to assign a static IP address to the PC in order to always be able to reach the server.

For Folder, select Project Folder and then the desired project in this folder.

The remaining settings are not directly relevant for normal operation and can be left at the default value.

4.2 Optional Settings

	<p>This function creates a log file for the server service, in which errors or failures are logged. The storage location can be selected by the user.</p>
	<p>Here the port settings can be adjusted manually and added to the firewall as required.</p>
	<p>Language of the server configuration console (no influence on the project)</p>
	<p>Check for updates. The currently installed version and the available version are displayed. An update can also be downloaded and installed here.</p>

4.3 Starting a Project in the Server

Start the server configuration console, then:

1. First select the IP address, the IP 127.0.0.1 is selected by default, which only works with the client on the same computer. Another selection option is the IP of the computer/server, it is advisable to assign a fixed IP to the device so that it is always clear under which address the server can be reached.
2. Then the folder and the project contained in it are selected.
3. The USB licence dongle must be plugged into the server PC.
4. to effectively start the project now, the server is stopped and restarted. (After each change to the solution, this step must be carried out so that the changes become active in the server).
5. Wait for confirmation that the licence is valid, the server has been started and the project has been loaded

5 Client



When the client is started for the first time, an error message appears which can simply be confirmed because no server has been defined yet. If the message has been confirmed, the following dialogue can be opened via "Open file" and a server can be searched for or added manually (Add server).

The "Autostart" button can be used to select whether or not this project is connected each time the client is started. Do not forget the user name and password for logging in! (Note upper/lower case). Default user: Guest / without password. The setting for Https is automatically set during the server search.

The menu lines can then be hidden using the function keys:

- F6 Maximise window
- F7 Window without title and frame
- F8 Show/hide menu bar

- F10 Show/hide scaling
- F11 Zoom 100%
- F12 Resize window

5.1 Connect Client

Start client, then:

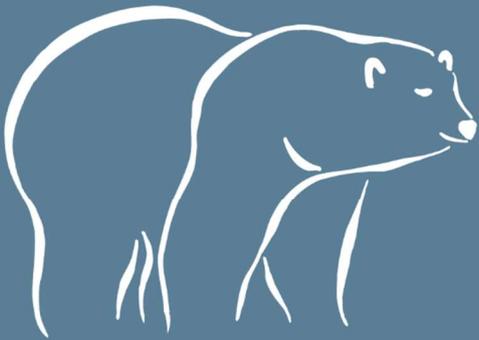
1. Start the client, takes a moment the first time because it does not yet know the server.
2. An error message also appears here indicating this. Confirm with OK.
3. Open the server search window via File - Open.
4. Use "Search Server" to find possible servers in the network. After a few seconds, the available server(s) will be displayed.

With "Add server" the server can be added manually via the IP.

5. Check the Autostart box for the desired server and confirm with Connect.
6. If necessary, change the user name and enter the password if these have been changed in the editor.

After successful completion of these steps, the project is ready for operation and can be started with "Connect".

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