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Tutorial

ETS 3 Professional

Bfe Oldenburg on behalf the EIBA cvba Brussels © 2004

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1 front pilot

This Tutorial offers a starting for the entrance and the first steps to you to the ETS 3 Professional¹, as well as a compact overview of the extensive possibilities of the software.

On-line help completing is to them an extensive on-line help at the disposal. By key F1 they always receive in the program to help to the current program section.

the Tutorial helps you **more cleanly** when starting with the software ETS 3 Professional, **start with** presupposes however founded knowledge to the EIB/KNX technology, how **EIB/KNX they** are arranged for project engineering **certificate** and line-up in the trainings standardized world-wide „EIB/KNX – “. In a check with official Termination certificate of the EIBA/Konnex Association can document the user its knowledge and receives the possibility of letting its operation register as EIB/KNX partners and of using the Logo for advertizing purposes.

EIB/KNX the Konnex Association publishes an outline of all in the Internet **Partner** EIB/KNX partner – after country and postal zip code sorts. Owners use this possibility of finding suitable operations in their region. Besides it is in the meantime in many advertisements usual to require the proof of founded knowledge by certificate.

world-wide to the EIB/KNX technology gives it a surface covering course supply. Un-EIB/KNX ter www.eiba.com or www.konnex.org can a directory for it of **training** certified training places be recalled at any time. In one ensure fältigen techniques ensures the EIBA/Konnex Association for the fact that configuration, state of training of the teachers and seminar materials at certified training places always on a uniform and a current

¹ ETS™ is an entered registered trade mark of the EIBA cvba

Status are. The formation technique is with the front pilot of the technology fixed constituent of the EIBA/Konnex activities and important building block for solid installations and the high acceptance with owners and users.

By EIBA/Konnex standardized trainings:

- . • EIB/KNX – project engineering and line-up: Function and technology, bus topology, bus hierarchy, addressing of bus users, bus telegrams, construction and function of bus devices, installation regulations, certificate check (theory and practice) the Zertifikat enable the registration as EIB/KNX partner
- . • EIB/KNX – construction course with Professional certificate: Know-how, in order to use the possibilities of the bus technique correctly: Complex systems, light controls and controls, heater controllers, visualizations, safety engineering, logic functions, etc.

more importantly

Work on electrical system and installations may only of for it

Note

trained specialists to be executed!

1,1 ETS 3 Professional compared with ETS 2

The ETS 3 Professional is the uniform program for project engineering and line-up of the EIB/KNX system. ETS is for engineering Tool Software². ETS™ is an entered registered trade mark of the EIBA cvba. The ETS 3 Professional is on the one hand a completely again developed software, with whose development however special value was put on the fact that the user surface indicates large similarity to the previous version ETS 2. On the other hand the surface (user INTERFACE) was completely reworked the ETS 3 Professional in representation and control philosophy. Representation and operation current standards adapted like it for example of the ms Windows Explorer admits are. In this way operation and orientation are simplified clearly opposite the ETS 2.

A substantial innovation of the ETS 3 Professional is thereby their constant surface, from project engineering over the line-up up to Produkt-und project management (with the ETS 2 the user had to always change between different program modules).

With the ETS 3 Professional becomes that access to the EIB/KNX system also via USB possible. This completes the access over RS232/COM of the ETS 2 practically, since Notebooks are no more equipped with COM interfaces today often. An integrated IP interface creates the prerequisites for the access to EIB/KNX installations over Ethernet, LAN or even Internet.

² formerly EIB Tool software

2 prerequisites, installation and preparing of the ETS 3

2,1 system prerequisites

System ahead setting Depending upon size of the project which can be processed different Sys becomes temvoraussetzungen recommended.

- System prerequisites for the application of the ETS 3 Professional with standard projects

Standard

	Minimum request	Recommended values
Processor clock	400 MHz	1 GHz
Workspace	128 MT	256 MT
Diagram	True color VGA 800x600	True color VGA 1024x768
Operating systems	MS WINDOWS 98/ME/2000/NT4/XP	
Celebration fixed disk	3 GB	3 GB
Interfaces	R-S 232 or USB	R-S 232 or USB

- With larger projects and projects, which contain complex devices for the special Plug in are required, the system prerequisites in the following positions should be higher:

Large projects, also Plug in

	Minimum request	Recommended values
Processor clock	1 GHz	2 GHz
Workspace	256 MT	512 MT

2.2 installing the ETS 3 and licenses

The ETS 3 Professional becomes from the start page of the ETS 3 CD from in valley

Installation liert, which appears when placing that CD. If on their computer the autostart function is not activated, then they call the start page over the Windows Explorer or executing/searching, by calling the function **executing** in the start menu. Over **searching** they look **start.exe up** on the ETS 3 CD now for the file and call this function over **OK ONE**.

With the installation they can select, as extensively they want to install the ETS on their computer. This concerns for example the question, which language versions of the ETS 3 Professional want to install her. Normally it recommends to install itself „completely “.

Licenses with the ETS 3 Professional a new license technique for the application comes. There are three versions:

Demo	a max. project, max. 20 devices, no bus access
Trainee	max. 1 project, max. 20 devices, on sonsten full function however temporally borders
Full version	Full function

The ETS 3 Professional is installed first of all completely on its computer. In which mode the ETS 3 Professional runs then afterwards, is because of which license they possess. After the installation the program runs first in the demo mode.

Into the technique for the procurement and installation of the licenses they over the menu option **help/licencing** arrive... **to the** menu strip. In itself then they mark opening dialog for the request and administration of the licenses the software package **Ets3Pro** for the full version. Now she can select, whether they call license keys, packages freely switches (i.e. received licenses to call and freely switch), or information about their licenses to display to want. In opening the dialogs they find detailed notes over the further procedure.

Note:

The license key is formed a compound with to the computer configuration. If the hardware is modified, a new code is required.

2.3 notes for users, who operated so far with the ETS 2

Parallel **Professor** can be installed for **ETS 2 and the** ETS 3 to a consisting ETS 2 on a computer **ETS 3**. Both programs can be driven parallel on a computer **parallel**. They use different data bases. Datenbantreiben ken the ETS 2 can on the format of the ETS 3 Professional converted

become (see chapter 2.5). This process does not leave itself however any longer cancel. Therefore the ETS 2 data base is recommended beforehand to protect. Over import functions projects, those leave themselves created with the ETS 2 and from the ETS 2 were exported, into the ETS 3 to import and there further process. The reverse path is not possible. Contain the projects complex functions Plug in require, then they receive with the Impor animals a special dialog. Details for this are avowed in the paragraph 2,5.

2.4 calls of the ETS 3

After the installation of the software they can call the ETS 3 on two types:

- from the Windows Startmenü over **Programs/ETS/ETS 3 Professional**



- by clicking the symbol **ETS3 Professional** on the Desktop.

Data base with the first call creates the ETS 3 Professional a data base with the term EIB.DB in the directory Ets/DATA cousin. This directory is situated in the installation directory selected by them with the installation (usually is this C:Programs, so that the full path specification reads then: C:Programs \ Ets \ DATA cousin). This data base is the central data base of all of their projects. It contains both the product data and the project data input by them of the equipment manufacturers.

Products first this data base is still empty. and the first step is therefore **imports** usually the import of product data (see chapter 2.8 products importing).

Note it is also possible to create for each project a new data base. However they must again import the product data of the devices also used by them in each case then into this new data base. This is recommended very time-consuming and from therefore not. For the technique of the creation of a data base they read please the next paragraph.

2.5 work with several data bases and converting consisting data bases, which were processed with the ETS 2

The ETS 3 Professional can operate with different data bases in any directories. They can select at any time, with which data base they would like to operate.

Data base for this they proceed as follows:

- change 1.** They select the option **data base** in the menu strip **extra/options...** and cross on register register **data base when starting open: Users inquire.**
2. ETS 3 Professional terminate and afterwards the program again start.

3. With the restart of the program now the following dialog appears:

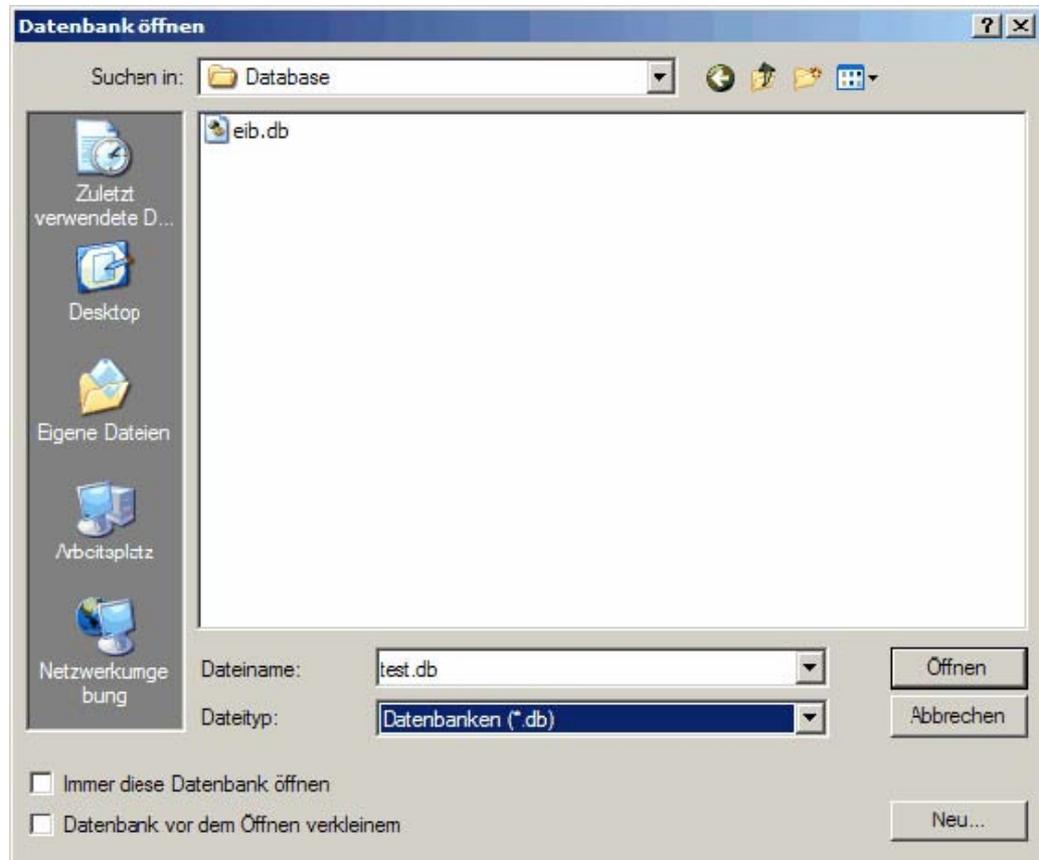


Fig. 1: The data base opening dialog of the ETS 3

4. Here they can under **searches in:** another data base select. Alternatively they can create a new data base over **new....** Over opening they leave this dialog. From now on they are asked with each build-up for the data base which can be used. If they want to again suppress the regular query, then they know in this dialog the option **this data base always open** to mark, or they cancel the adjustment in the option dialog, selected under 1., again.

Note if with earlier calls of the ETS 3 Professional the adjustments of the steps 1 just enumerated. and. were already made for 2, then they put direct with the start of the ETS 3 Professional at point 3.

Data base convert

For converting consisting ETS 2-Database they apply exactly this technique, by selecting its past ETS 2- Database as data base which can be opened (**or for security a copy of this data base**). The data base of the ETS 2 usually means eib.db and is situated normally in the directory C:\Programme\ETS2V..., dependant on where they installed the ETS 2. If the selected data base is a data base of the ETS 2, then it is converted automatically when opening into the format for the ETS 3 Professional. **Note:** This can last time depending upon size of the data base some. An inverse transform is not possible. Subsequently, they can process all further with the ETS 3 Professional their consisting projects. Another path would be that they export their consisting projects with the help of the ETS 2 and then – as required – again into the ETS 3 Professional import it individually. Attention is back not possible a path also here! If they processed thus projects in the ETS 3 Professional, then they can process these further afterwards exclusively with the ETS 3 Professional.

Data bases also Plug in

If the ETS 2 data base complex products (products also Plug in) contains in such a way appears during the conversion process a special dialog with lists of the products and notes concerned to the further procedure. With certain products it can be necessary abort first the import and import the Plug in software of the products concerned into the new ETS 3 Professional data base. To which products this applies, they see from the different lists. It depends on how the manufacturers integrated the Plug in software.

2.6 the basic opinion of the ETS 3

The basic opinion of the ETS 3 possesses from the Windows the Explorer well-known

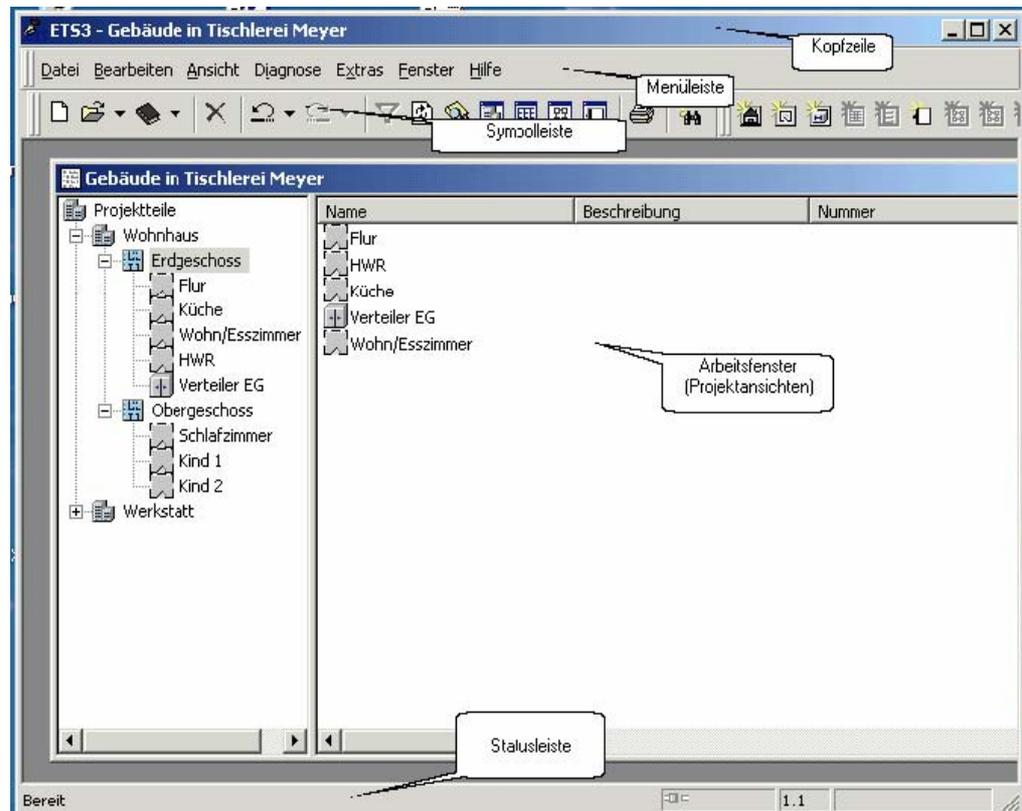


Fig. 2: Basic opinion of the ETS 3

Heading line the heading line of a window contains the designation of the current opinion and the project names.

Menu strip contains the designation of the menus.

Menu a menu becomes visible, if an entry in the menu strip were activated. The individual menus of the ETS 3-Menüleiste contain different commands. If a command is represented inverted (grey), it cannot be executed. A such command can be executed only if beforehand a suitable internal message were released. Ask

Symbol strip

Switching area

note that some menus are dependant on the current status of application. The switching areas in the symbol strip permit the direct execution of program functions.

A switching area is a small diagram symbol. The most important commands and functions of the ETS 3 released over one mouse-click on these symbols. If these switching areas should not be represented grey and colored, they can be selected only in connection with other adjustments.

Work window

On the chief work area of the ETS 3 Professional usually are one or more work windows, which represent different opinions of the project. They are called within the ETS 3 also project opinions. In these work windows actual project engineering takes place. The work windows possess Baum-und in the right window half a list structure in the left window half.

Status line

It displays status information about present/immediate statuses of the program.

When operating with the ETS 3 Professional emerge still further items on the display. Most are explained in this Tutorial in suitable position.

Only on two items is here separately referred.

- **Popup menu and**
- **Dialog window**

2.6.1 Popup menu

Popup menu = context menu



Fig. 3: Building window with Popup menu for ground floor

Popup menus are called also **context menus**. They are light up, if they press the right mouse button. The offered function range varies always, dependant on the present/immediate position of the mouse pointer. Functions are offered, which appear practical for the selected object. All functions of the Popup menu achieve you also by means of the main menu. Popup menus are to accelerate only recurring jobs.

2.6.2 dialog windows:

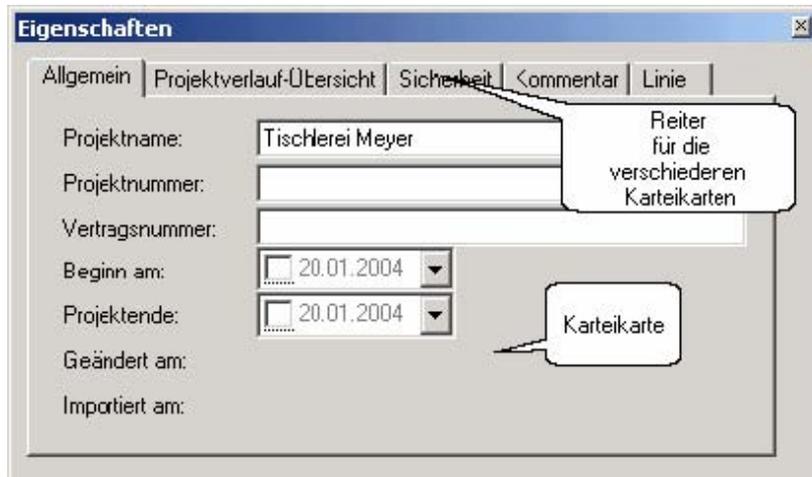


Fig. 4: Example of a dialog window with five register cards

If they actuate different functions of the ETS 3, then very often further **dialog windows** so mentioned appear on the display. Here they can make further inputs or select things.

Register register card: Many dialog windows are in or several are divided **card** ten. In order to change the register cards, you click on the suitable rider or use you the STRG+TAB combination of keys of your keyboard.

2,7 products import

Import before it a project create and process can, offer it now itself to import first of all the product data of the devices which can be used into the ETS data base. For this they require the product data bases with the applications of the manufacturers. They are made available usually free of charge by the manufacturers on CD or to the Download in the Internet.

In order to import products, they select the menu option **file/import...** and receive a dialog for the selection of the manufacturer data base. This ^{older} data base must an ending .VD? possess (? is here for ^{Produkt-1,2,3}, or X – depending upon ETS version). Hieran can detect it that ^{data bases} also application data, which develop for earlier versions of the ETS, trouble-free into the new ETS to be read in.

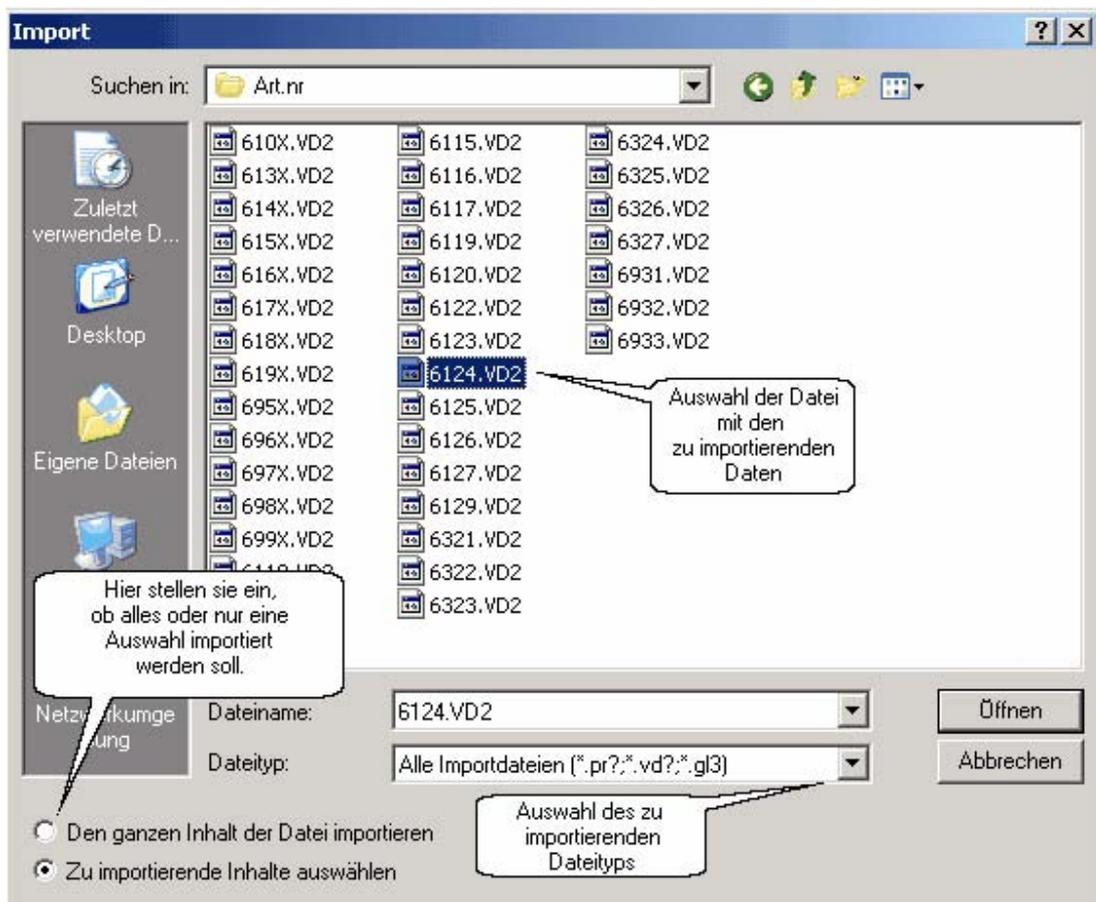


Fig. 5: Import dialog

Note of case it not all product data, but only one selection to import wants, can **sections importing** it the option **selects** to mark. They received then a list all on the manufacturer data base available products and can select, which devices want to import them.

The import starts, if they actuate the switching area **opening**.

Note files, which were created for the ETS 3, to have the file dung .vd3. If they import older application data with data formats of the ETS 2, then they are converted automatically when importing into the ETS-3-Datenbank into the correct format. The file dung .vd2 indicates the product data format of the ETS2 V1.3. If they find file endings .vd1 or .vdx, then are this product data bases, which were created for the ETS2 V1.1 or V1.0. Also these data can be imported trouble-free. Data of the ETS 1 can be imported not directly into the ETS 3 Professional, but only over „the detour “over the ETS 2

3 projecting with the ETS 3

3.1 typical operational sequence of a project engineering

Project engineering with the ETS 3 runs according to the following pattern:

- Create a new project
- Possible also different trades create building structure
- Devices select and insert
- Devices document
- Device parameters process
- Optionally: Topology determine
- Physical addresses assign
- Functions determine create (group addresses)
- Group addresses assign

It is not required always to keep this pattern exactly. If they are experienced, they can take also quite different paths, omit or in other order complete steps.

3.2 creation of a new project

They create a new project over the switching area

in the symbol strip or over the menu function **file/new project**. They receive then the characteristic catalog of the project. On the first record sheet is in



Fig. 6: Characteristic dialog to the project

On further record sheets of this dialog they can input additional documentations to the project and to the project engineering process. Further it is here possible to protect their project with a password before inadvertent access (well notice caution, password!)

Basic after leaving this dialog over the switching area of **OK ONE** automatically three windows of the new project are opened for desk (if it still nothing in modified to the defaults): The building, the topology

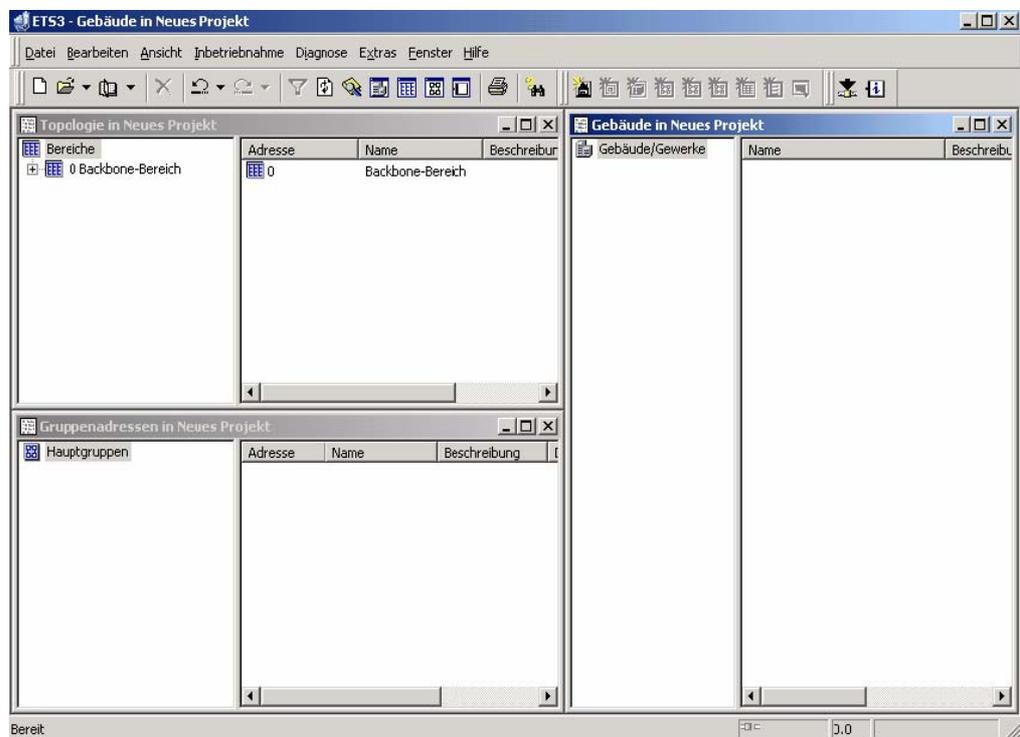


Fig. 7: ETS 3 after opening a new project

Normally it is practical to process now as the first the building window.

3,3 building structure create

Structure Items

In the building window they form first of all the structure of their Gebäu after. This building structure becomes in the left window half as in hierarchical tree represented. For this the items serve **buildings**

or **building sections** as well as **spaces** and **control cabinets**. In order to insert these items, there are four possibilities:

- over the items of the symbol strip
- over the processing menu of the menu strip
- over the context menu
- by copying

Excursion:

It occurs frequently that they have several possibilities of executing an internal message. Here once all possibilities are to be explained. In the further process of the Tutorials or two possibilities are then described in detail however only in each case.

Insert a building into their project...

Symbol strip ... over the items of the symbol strip:

If they click an item of the symbol strip with the mouse, required the internal message refers to the even active item in the active work window. In our case that means that the work window **building** must be active there and in the left window half the item **building/trades**. Then also the symbol is in the symbol strip

to inserting a building approved. They can detect this also by the colored representation of the symbol. A building to insert over now they click on the symbol

Menu strip ... over the processing menu of the menu strip:

Also in this case **building** must be active the item **building/trades** in the work window. Now they can **add a building** over the menu instruction **processing/building...** into their project to insert.

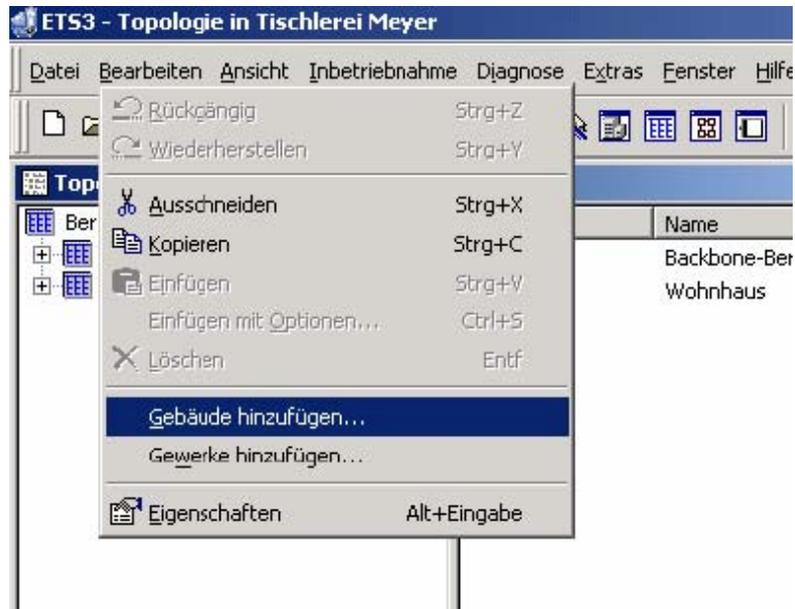


Fig. 8: Buildings insert over the processing menu

Context... over the context menu:

menu the context menu they, if they mark the position with the mouse, receive at which it a building to insert want. Click in our case thus the item **building/trades** with the left mouse button. If they press afterwards the right mouse button, then they receive the context menu to the building:



Fig. 9: Buildings insert over the context menu

... over drag & drop

Drag & drop a further possibility of inserting items consist in the extensive copying

possibilities of the ETS 3 Professional. On the one hand by the instruction **copying** and **inserting the** menus, in addition, by **dragee & drop** (pulling and dropping with the mouse, copying with help of the STRG key) from other sections of their project, from other projects or also from the favorite window. Copying is a quite complex function, and therefore is recommended to the beginner to only worry about these possibilities in a second step.

3.3.1 building sections

After they created one or more buildings in their project on one of the types just described, they know building sections in a second step into these buildings still (e.g. Projectiles) insert.

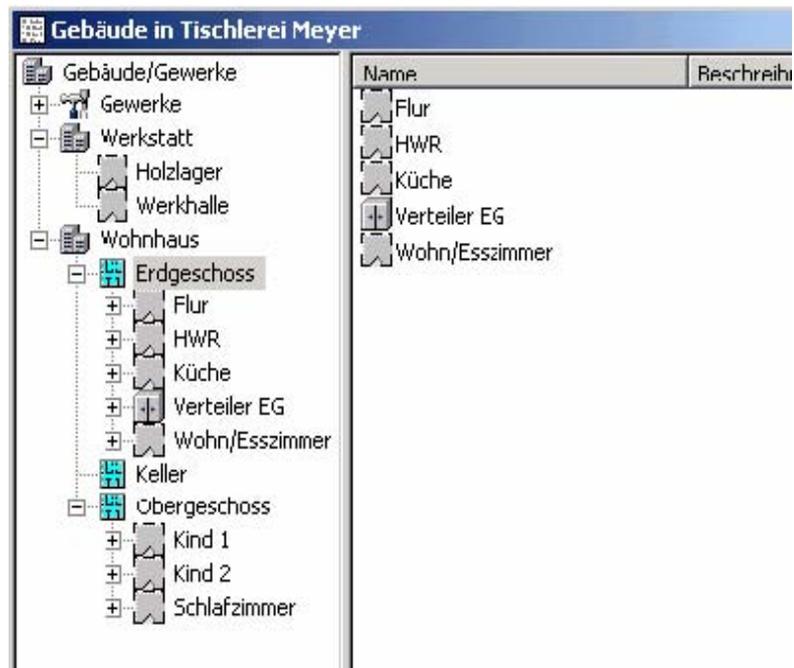
Building sections of building sections receive it, if they marked not their total project but a building as active item in the building window. If they **add** then the function **building** as above described execute, then not a new building, but a building section is inserted. This building section is subordinated to the marked building. They detect this also by the hierarchical tree structure of the items in the left building window. They, if they operated with the menu functions, can give a term to the inserted building directly when inserting. In the other case the ETS 3 Professional assigns automatically the term „new building “. They can at any time by doubleclick the characteristic dialog this item to open and a term there assign.

3.3.2 spaces and control cabinets

In the in this way created buildings and building sections they can insert spaces and control cabinets now. They make this with the same techniques as an inserting of the buildings and building sections.

Space and the following picture show an example of a building structure.

Control cabinets



and fold

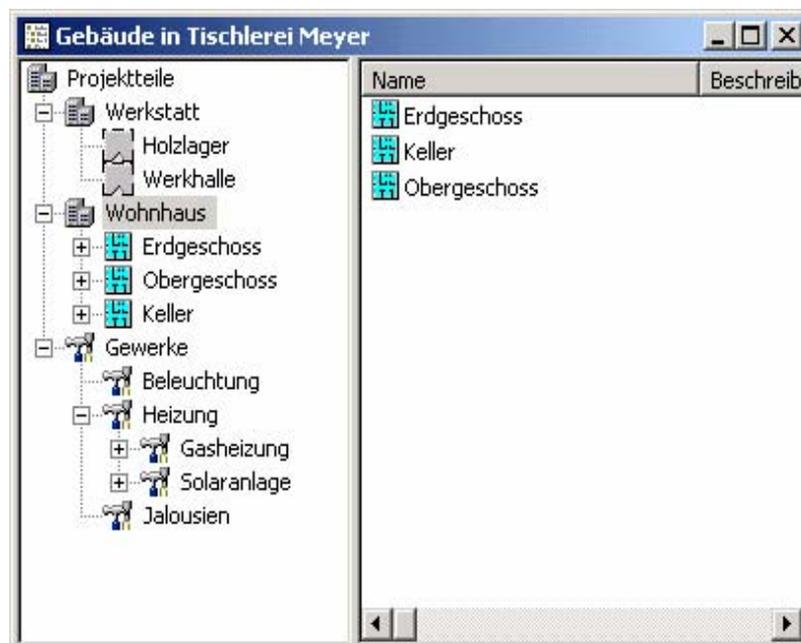
Over + and - in the left window half they can the building sections and spaces in the buildings visible make or hide (to out and fold). If it with the individual spaces or control cabinets on the character

click, to them these spaces or control cabinets assigned devices are shown. In the list structure the devices of a marked space are displayed to the right window half.

The difference between spaces and control cabinets consists only in the symbol in the tree structure of the building window. It is to help them to arrange their building structure clearer. From the function the items *space* and *control cabinet* are alike.

3.3.3 trades out

According to standard the project is arranged in the building opinion according to the building structure. With the allocation of the devices to **trades** they can introduce additional order structures or assortments. Over these allocations of their devices they have naturally the possibility, those To sort _{trades of} devices of their project additionally still according to trades. It is open them in addition, to use this column for completely different assortments. Within the trades also again hierarchical structures can be structured.

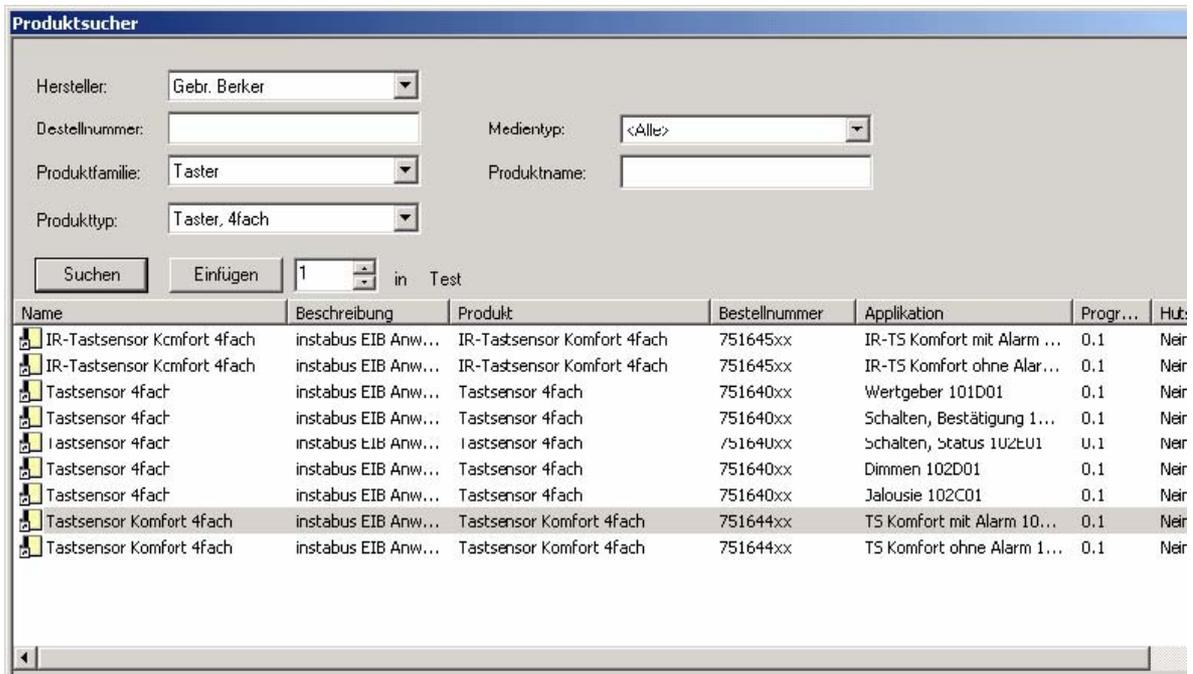


Only once late can do it devices then both a space or a control cabinet **assign** and to a trade assign, however for each device only one trade, not several (similar to the building structure – a device they can assign also there only to one space or control cabinet).

3,4 devices insert (Produktsucher)

The spaces and control cabinets are now prepared. Now they can insert the **product-required** devices. Mark for this the desired space or Schaltsucher cabinet and afterwards the Produktsucher open. This geschieht over

in the symbol strip or over **processing/devices add** in the menu.



With the help of the Produktsuchers they open a catalog in their ETS Data base of entered devices. So that the list does not become too large and un-look up-clear, it is practical, the display over search criteria in criteria.

The following criteria can give it flexibly: Manufacturer, product family, type of product and type of medium. They receive the display of the found devices by actuating the switching area **searches**.

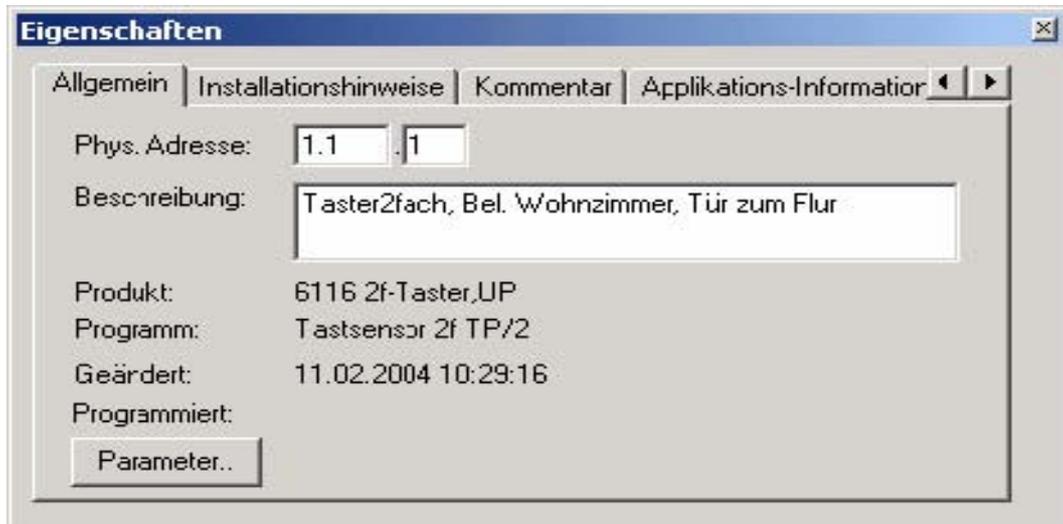
If if you **insert the** desired device made, mark the device in the list and insert it over the switching area **inserting** in the active space or control cabinet of the building window.

Another possibility a device to insert consists over the copying functions with Drag&Drop with the device of the Produktsucher into the desired space.

Note the ETS 3 permits various versions: They have also the possibility of assigning a device to a trade of inserting or in place of the building structure into the topology. The later allocation to spaces or control cabinets can be retrieved at any time easily. Here it means however: Overview retain! New A RISERs should be limited first to the standard path described above.

Note: If they did not mark a practical item in the building window (or in the topology window) for inserting a device and to actuate in the Produktsucher the switching area **inserting**, then the selected device inserted in the Ge-räte-Fenster – without designation, without space allocation or function, without physical address. Here „device corpses in this way often result “, which can assign nobody later more and who to confusion to then lead. It is advisable it to always call the Produktsucher over the context menu (right mouse button). In this way they are safe, to which position of the Produktsucher inserts the devices.

Devices

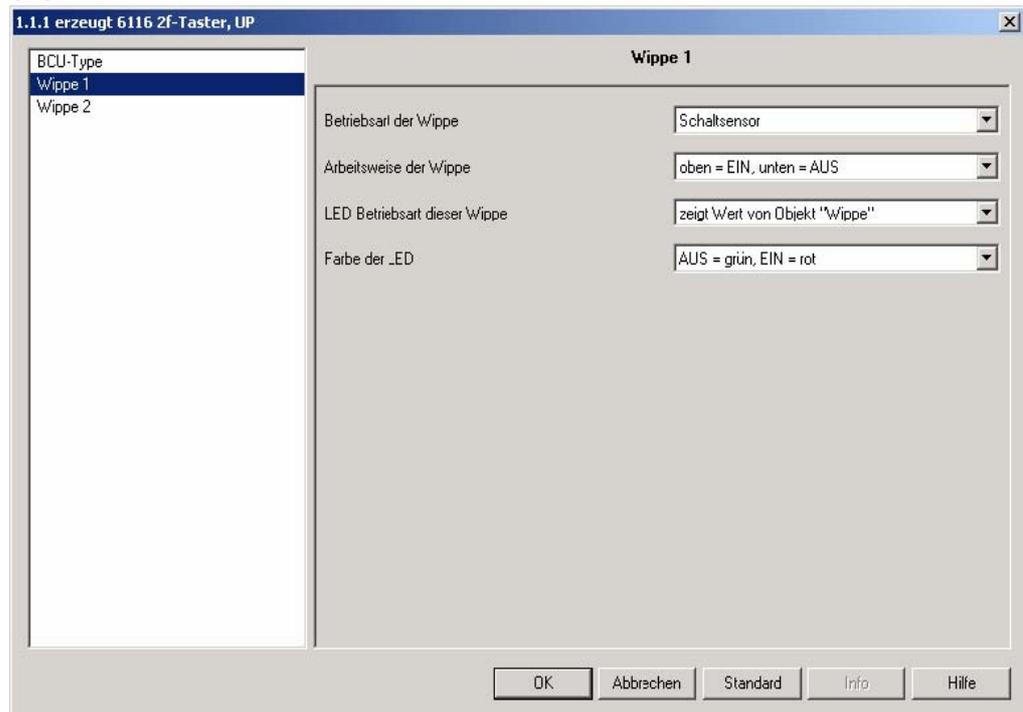


After inserting the device they should mark it as the first „“, i.e. make a practical input in the box **description of the** record sheet **general of the** device characteristics (doubleclick on the device). This could e.g. be a specification concerning the location in the building, the function of the device etc. On the further record sheets they receive further device information and can still completing comments enter.

3,5 device parameters

Next it applies to process the parameters of the inserted devices. Mark in addition the desired device and the menu instruction **parameter process...** select or over the symbol

click....



Parameter groups

The parameter dialog consists frequently of several pages. However it is not structured according to the register card principle – with riders for the individual pages –. The parameter dialog has an outline of groups of logically which are connected parameters in the left window half. In this outline they can select, which group of parameters in the right window half is to be displayed. Contents of the parameter dialog depend on the used device. Further information to the detail sections of the parameters receives it by the product informations of the manufacturers. With newer devices it can be that they arrive by call of the parameter window into a further Plug in software so mentioned. With the help of this software then a

complex programming of the suitable devices is possible.

With the processing of the device parameters inserting of a device is final.

3.6 the topology window and the assignment of the physical addresses

After inserting the devices and their handling they should as next to the devices a physical address assign. **Addressduring this process** they proceed best in two steps: **assignment** • structure in the topology window the topology of their system.

- Subsequently, they pull the devices with the mouse on the suitable lines. Here the devices receive automatically ascending addresses. They keep so a good outline, which addresses are assigned, and to what extent the lines are occupied. This technique goes very fast, since they can at one time pull also several devices on a line, in order to give them their physical address.

Topology the construction of the topology in the topology window runs as follows: **Window** in the left window half in the topology window is right at the top **areas**. If they mark this term, they can over the symbol

Areas or over the menu instruction of **areas add** one or more areas insert. They can provide these areas also with terms. This goes over the appropriate characteristic dialog. There they modify also the number of the area and determine whether it should be a Twisted Pair or a power LINE area.

Lines following can insert it into the areas lines, again over the suitable symbol

add lines from the symbol strip or over the menu instruction.
Over the characters

and
b. in the left window half they can the lines within the areas visible make or hide (to out and fold).

If it with the individual lines on the character

click, to them this line assigned devices are shown. Likewise the devices of a line are shown also in the right window half in the list structure, if they marked the suitable line.



Possibilities you can proceed with the devices in the topology window exactly the same as in the building window (characteristics to regard and modify, parameter **topology work**, etc.). Likewise they can insert new of **window of** devices here over the Produktsucher. These devices are then however first none

Space or control cabinet assigned, has for it however immediately one phy sikalische address.

3,7 group address windows

As final step during the project engineering process now still the definition of the group addresses and the allocation to the objects of the devices remain.

Group before it the objects of the devices with group addresses connect, are it **addresses** practically, the required group addresses in the group address window **create** to create.

Main group

Also in the group address window they have a tree structure in the left window section. Here they can create main groups and depending upon selected default Mittel- und sub-groups or only sub-groups. In the upper corner in the left window section always already is the term

- Main groups** entered. Here they can now by clicking the symbol
- b. Main groups insert. When inserting or later over the characteristic dialog (doubleclick on the suitable main group) they can give the group to the better outline one „to speaking “terms and/or modify the address of the main group.

Central's groups and sub-groups add them on the same path in as well-known from the main groups. Only difference: Beforehand in the tree structure mark the suitable superordinate head or central's group as active item. A group address structure could then

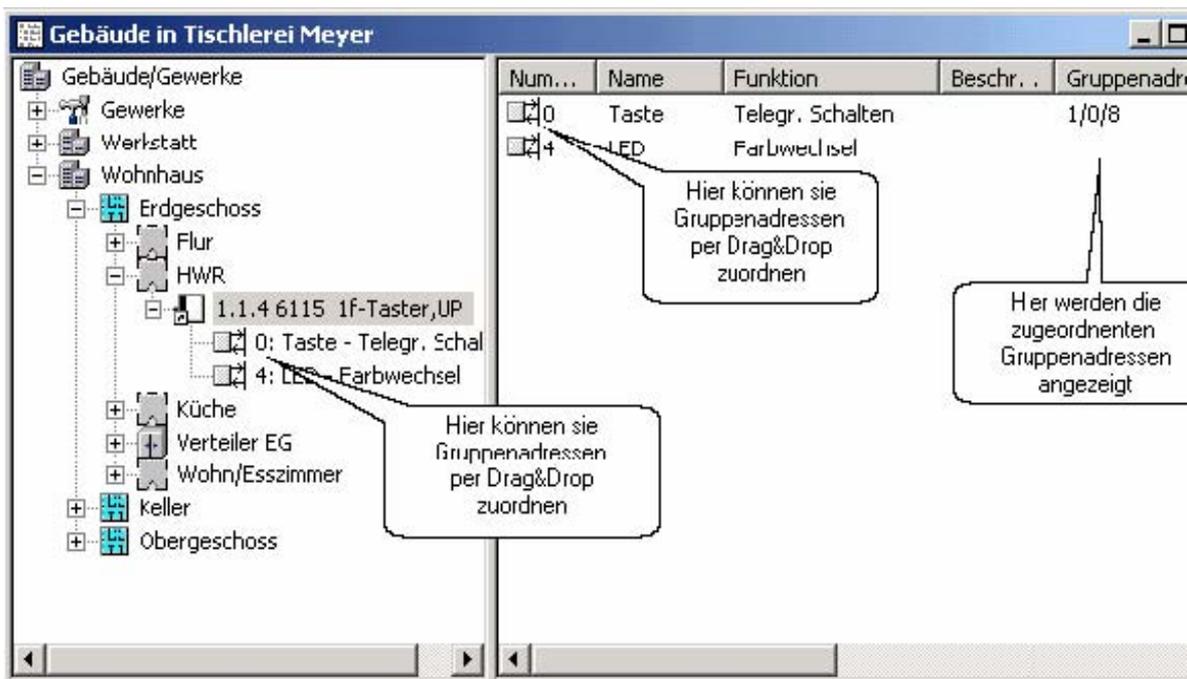
look e.g. in such a way:



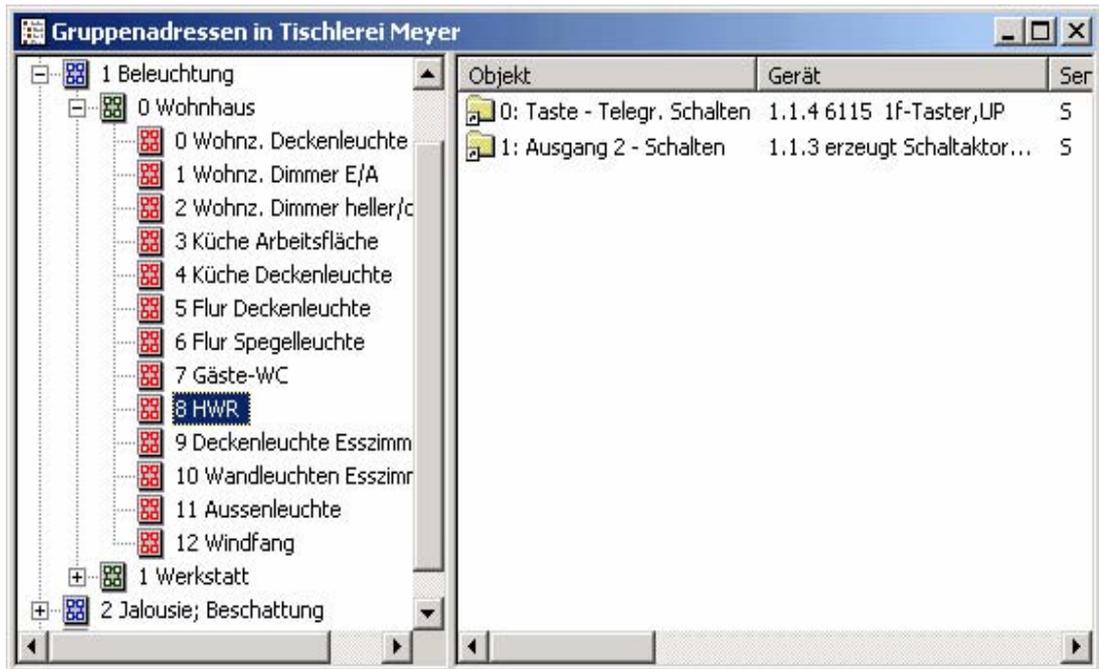
Adresse	Name	Beschreibung	Zentra
0	Wohnz. Deckenleuchte		Nein
1	Wohnz. Dimmer E/A		Nein
2	Wohnz. Dimmer heller/...		Nein
3	Küche Arbeitsfläche		Nein
4	Küche Deckenleuchte		Nein
5	Flur Deckenleuchte		Nein
6	Flur Spiegelleuchte		Nein
7	Gäste-WC		Nein
8	HWR		Nein
9	Deckenleuchte Esszimmer		Nein
10	Wandleuchten Esszimmer		Nein
11	Aussenleuchte		Nein
12	Windfang		Nein

Group addr. assign

After they defined the required group addresses, they can assign now these group addresses to the objects of the devices. For this they must have opened a further window, in which devices are to be seen beside the group address window: Either the building window, the topology window or the Geräte-Fenster. In the window, with which they want to now operate, the structure must have opened unfold so far in the left window half that they see the individual devices. If they mark an individual device now, then they see the objects of this device in the right window half. They can draw and then release the desired group address with the mouse – with pressed left mouse button – on the suitable object (or the object on the suitable group address). In this way the group addresses are assigned to the objects. They can infer from the following picture that they can draw the group addresses also on the objects in the left window half. Then they see however not direct, which are assigned to group addresses this object, because this is displayed in the right window half.



If they mark a sub-group in the left window section of the group address window, then they see a listing of the consisting allocations (devices and – objects) in the right part of the group address window. So they can detect well, which objects in which devices over this group address to communicate.



1.1.3 and 1.1.4 is assigned

With the allocation of the group addresses planning is final. They can go now to charging the projected data into the devices and to take the system into operation.

4 line-up (Download)

4.1 adjusting the interface

In order to be able to execute the Download into the devices, the selection of an interface is to be made to the EIB/KNX system. This takes place over the menu function

extra/options/register:Communication. There they can select an interface and also equal their function test or further adjustments make. If still no communication interfaces were created, then they must first the switching area **interface configure** to select. In itself then they can configure to opening dialog over the switching area **new an** interface and give her a term.

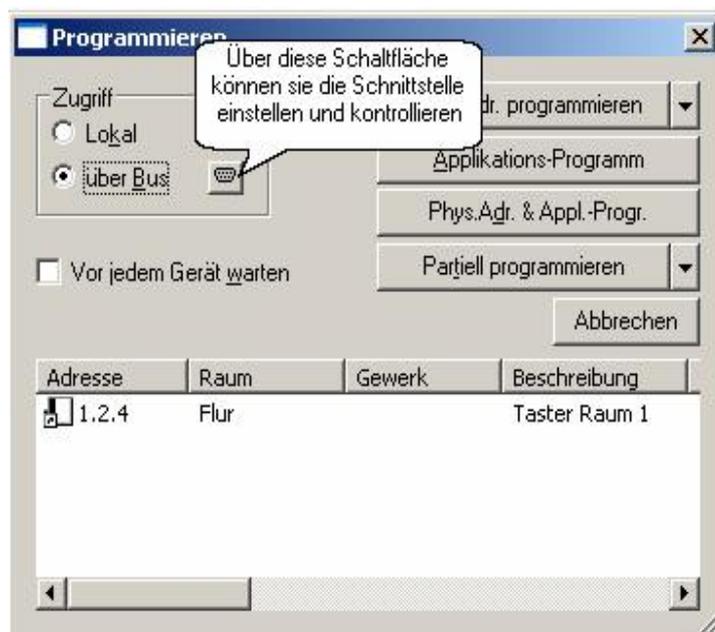
Interfaces of the EIB/KNX equipment manufacturers are offered the following interface types:

- R-S 232 standard (of all manufacturers according to standard as serial interface one offers)
- the RS232 FT1.2 as special interface on RS-232-Basis. It is offered to a visualization by different manufacturers and normally serves for the binding. In addition, it can be used for programming.
- USB this interface is today available with all PCs
- IP interface as interface of the EIB/KNX system to data networks like the Internet.

4.2 programming

Downloading into the devices takes place in two steps: First the physical addresses into the devices charge and afterwards the projected data such as application programs, parameters and assigned group addresses. It is however also possible, both steps in a pass through supplies. In order to start the programming process, they do not need to call – differently than in the previous versions of the ETS – an own program module. The programming process can be started from each opened project opinion. First in or several items with the mouse are to be marked. Depending on, which they marked even, they can at one time program such an individual device, all devices of a space (if they a space mark), in the topology windows all devices of a line or even all devices.

Program the programming process starts, if they click in the context menu or in the Beaufahren operating menu of the menu strip the instruction **programming...** On that the programming dialog opens:

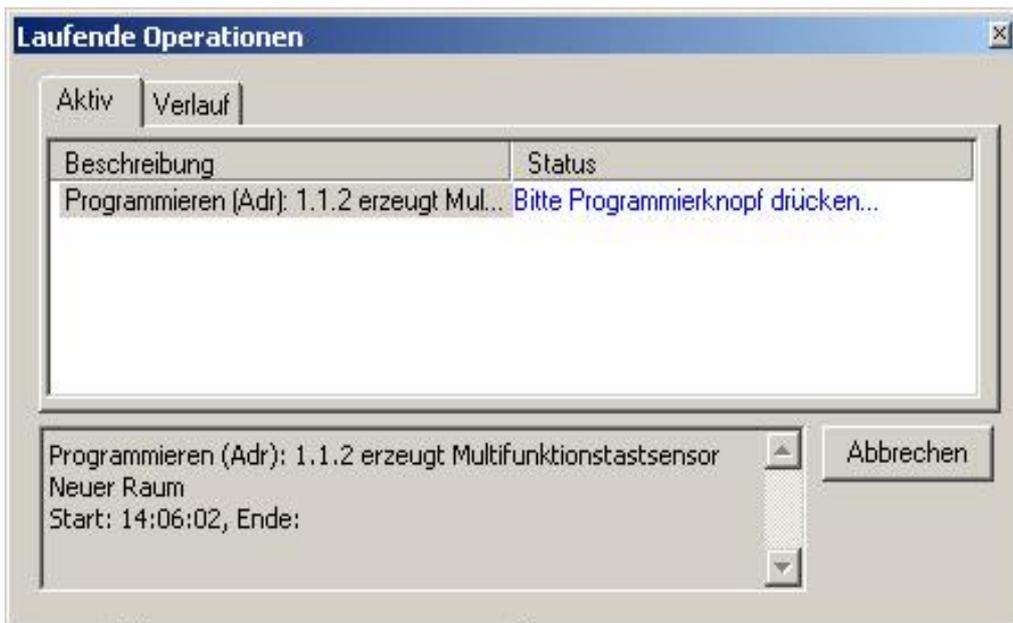


Locally or general must differentiate them with respect to this dialog whether they even
 ge
over bus nau the device, by which the PC is connected with the bus system (locally), or
 – and this is the normal case – other devices in the bus system to
 program wants.

4.3 physical addresses into the devices charge

In the first step the physical addresses must be charged into the devices. They start the programming process over the switching area
physical addr program.

Current current operations open the window. In this window **operations** can observe it the programming progress. Further they receive there also the information, at which EIB device them the Programmieretas



The termination of this process is acknowledged with a signal in the window **running operations**.



4.4 application programs charge

In the second step the applications become, parameter adjustments and

Applications download Group address assignments charged into the devices. This takes place over the well-known programming dialog. They can do that loading of the Applikationsprogramms directly following programming physikalischen addresses start, by them the switching area

application

Program actuate.

partially per grammieren

If it late modifications at parameters or in the allocation of Group addresses made, need them usually only the Ap to transfer plikation again into the devices. The physical address remains under normal conditions unchanged. Around the loading

procedure a little abzu

shortens, can it practically be, the transfer on those actually geän derten values to limit. For this the switching area serves **partial programmieren**.

After downloading the physical address and the Applikati Ons program is final the programming process, and it can the function of their system check.