

# Configuring Electronic Signatures in SIMATIC WinCC

WinCC V7

<https://support.industry.siemens.com/cs/ww/en/view/67688514>

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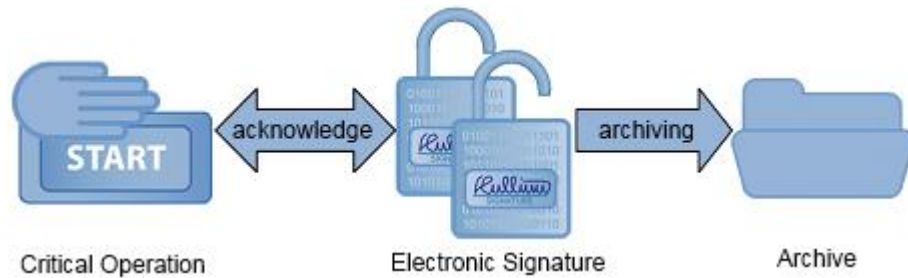
# 1 Task

In many branches, especially in the pharmaceutical and food industry it is often the case that different critical operator actions have to be authorized via electronic signature. Such kinds of operator actions may include, for example:

- changing a setpoint value
- executing a switching operation
- starting a sequence of operations
- starting a batch

Depending on the requirement, an action complying with the two-man rule may be necessary. This means that the operation has to be authorized by at least two different people. The approval will be acquired with the help of an electronic signature and saved in a long-term archive for later traceability. Based on the entries in the archive it has to be clear, who carried out an operator action at what time and when this was confirmed.

Figure 1-1



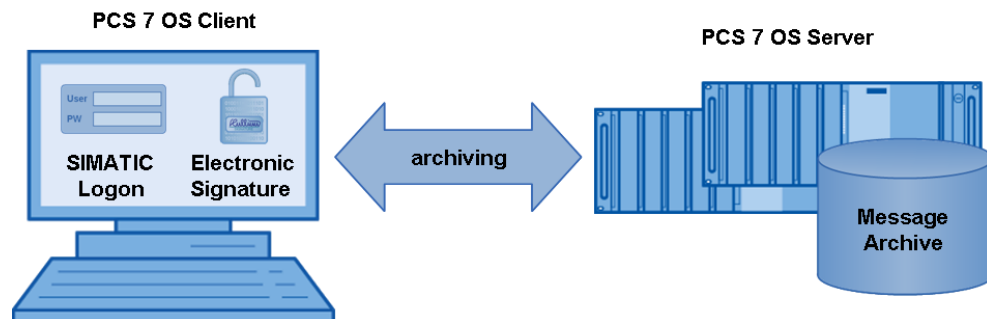
## 2 Solution

### 2.1 Solution overview

The solution presented in this entry has the following functionality:

In order to be able to carry out a critical operator action on the WinCC operator system, one or several users have to provide an electronic signature. The authentication of individual users is polled via an input dialog and is carried out with the help of SIMATIC Logon. The persons with electronic signature authorization are defined in the different user groups. Only once all required signatures are present, is the critical operator action carried out. The data of the signatures performed (time, user, operator action, operator station) is written in the WinCC message archive as audit trail.

Abbildung 2-1



#### Advantages

Using this application offers the following advantages:

- dialog-supported configuration of multiple, role-based electronic signatures
- simple integration of the “electronic signature” function in a WinCC project
- reduced costs and minimized configuration time by using preconfigured modules
- the plant is operated only by authorized personnel, thus increasing the protection against faults and errors
- excellent traceability of important operator actions
- simple documentation through automatically created audit trails in WinCC
- long-term archiving of electronic signatures through WinCC’s archiving concept

### Alternatives

The solution described in this document is quite comprehensive and fulfills the requirements of multiple electronic signatures with a role concept.

Solutions for simple electronic signatures can also be realized on the basis of the following functions of SIMATIC Logon.

- Verify Logon
- Authenticate User
- Authenticate User no GUI

Further information on these functions and a detailed description of their use can be found in the SIMATIC Logon Programming Guide Edition 03/2009 (A5E00734600-03).

For further information on SIMATIC, please refer to the following entry:

<http://support.automation.siemens.com/WW/view/en/62563251>

The WinCC default operator input message, a user-defined operator message and a simple electronic signature which also fulfill the GMP requirements are presented in chapter 8 of this description. The simple electronic signature uses the function "AuthenticateUserNoGui" which has been mentioned above. Both, the operator messages and the simple electronic signature, are demonstrated in a separate screen in the sample project.

### Installation

The "67688514\_WinCC\_ElectronicSignature\_setup\_e.exe" file includes all scripts and modules required to use the electronic signature. A sample project will furthermore be installed.

### Validity

The electronic signature can be used with WinCC V7.4 SP1 UPD1 and SIMATIC Logon V1.6. The function is also optionally available for the WinCC Web navigator.

### Assumed knowledge

Basic knowledge of SIMATIC WinCC, SIMATIC Logon and the Microsoft operating systems is assumed.

## 2.2 Description of the core functionality

### Principle of the core functionality

Abbildung 2-2

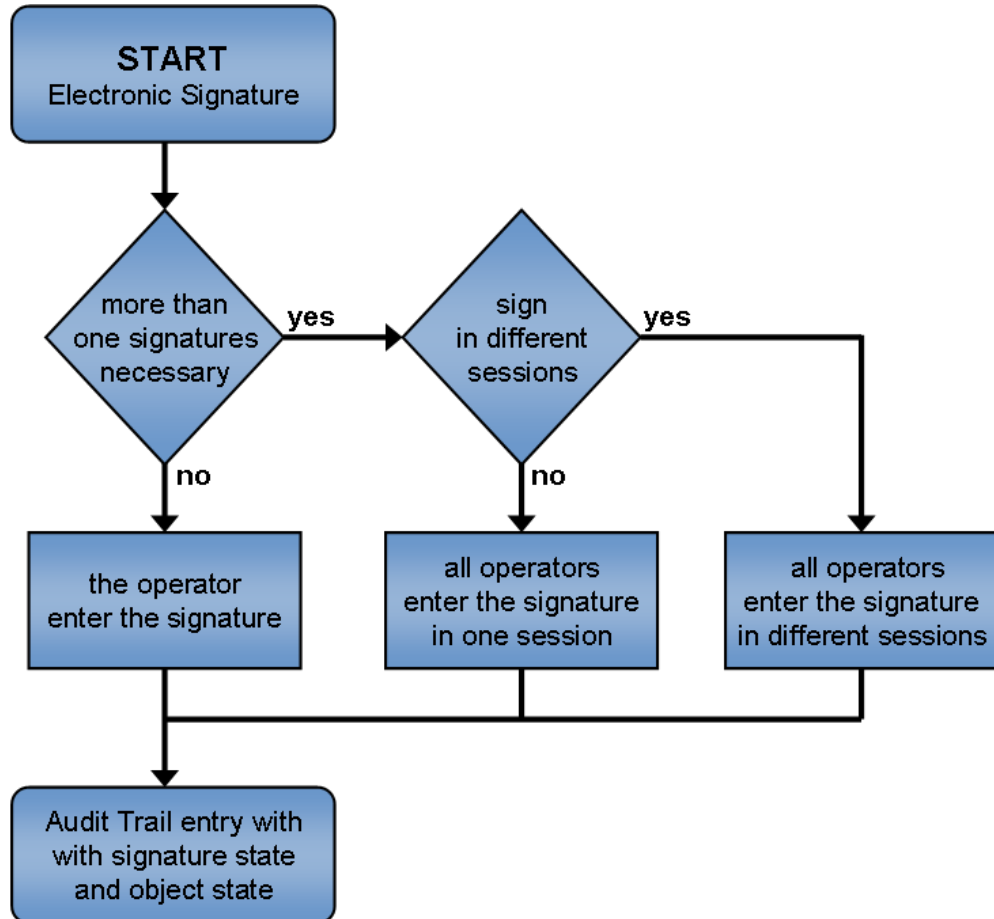


Table 2-1

| No. | Action                                                                             | Description                                                                                                                                                               |
|-----|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | The operator would like to change the status of an object or the value of a tag.   | A dialog opens, requesting the entry of an electronic signature.                                                                                                          |
| 2.  | The authorized personnel confirm the change with an electronic signature.          | If more than one signature is required, it can be specified whether these signatures are entered in one session, or in several sessions.                                  |
| 3.  | After successful entry of the signature, an audit trail message will be generated. | If the signature was entered successfully, a respective entry in the WinCC messages system is generated. If the signing process is aborted, a warning prompt will appear. |
| 4.  | Once all required signatures are available, the operation will be executed.        | In addition, an audit trail entry will be generated in the WinCC message system. It includes the information for the actual object change.                                |

## 3 Functional Mechanisms

In order to be able to use the functionality of the electronic signature, some programs and scripts are required. They are installed on the system by the included setup file and are registered in the WinCC Graphics Designer. Furthermore, the file “EsigWinCCInterface.dll” will be copied to the installation directory of WinCC. These functions are briefly described in the following chapters.

### Note

The application example was also tested in a redundant system environment. If the solution is to be used in the context of such a system, it is absolutely necessary that only on one system the project is configured. After that the project must be transferred to the redundant system with the WinCC Project duplicator.

### 3.1 “EsigWinCCInterface.dll” dynamic link library

The “EsigWinCCInterface.dll” DLL file includes auxiliary functions for generating tag structures. The prototypes of these structures are required for the instances of the different electronic signatures which are also created with the help of DLL functions.

The DLL functions are used for generating an electronic signature in the “eSigConfDlgWithDb” VBA script.

### 3.2 Functions and modules for configuration

The table below lists the functions and modules that are required for the configuration of electronic signatures in the WinCC Graphics Designer. For the configuration, these functions can be called under the “eSignature” menu item.

Table 3-1

| Module              | Description                                                                                                                                                                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MenuBar.bas         | Shows the user-specific “eSignature” menu in the Graphics Designer. The following menu items are created:<br>eSignature > ...<br>> Assign eSignature<br>> Reset eSignature parameters<br>> Configure the eSignature parameters in the DB<br>> Create eSignature table in DB |
| WinCCTagDlg.bas     | Displays the WinCC tag dialog.<br>The dialog is called from the “Reset eSignature parameters” function in order to display and select tags.                                                                                                                                 |
| WinCCUserGroups.bas | Includes various functions that are required to list the existing WinCC groups for the “Electronic signature configuration” function.                                                                                                                                       |
| TextLibrary.bas     | Includes various functions for switching over between different languages (German/English) in the different configuration dialogs.                                                                                                                                          |
| Common.bas          | Includes constants that are required throughout the project and which are referenced by the individual modules.                                                                                                                                                             |

### 3 Functional Mechanisms

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| Module                | Description                                                                                                                                                                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CreateTableInDB.bas   | Includes various functions to generate the configuration table in the WinCC data base. The table includes the data for the electronic signature and it will be created by the "Create eSignature table in DB" function, if not yet available. |
| eSigConfDlgWithDB.frm | Dialog for electronic signature configuration.                                                                                                                                                                                                |
| eSigResetParamDlg.frm | Dialog to reset the electronic signature.                                                                                                                                                                                                     |
| eSigConfigDB.frm      | Dialog for the configuration of the electronic signature in the database.                                                                                                                                                                     |

### 3.3 Functions and modules for Runtime

In order to be able to use the function of the electronic signature during WinCC Runtime, some global scripts are required. The following functions were created in the Global Script Editor:

Table 3-2

| DeleteSignaturesFromCurrentSession.bmo | Global project function, in order to delete an already performed signature within a session, if there is a cancellation.                                                                                                                                                                                                  |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CreateSigMsgs.bmo                      | Global project function in order to create an audit trail message once a signature has been made or in the event of a cancellation.                                                                                                                                                                                       |
| ResetESignatureParam.bmo               | Global project function in order to reset the parameters once the signature was successfully performed. This script is called from the project image of the automation object.                                                                                                                                            |
| GetSignatureRecordFromDatabase.bmo     | Global project function in order to read out configuration files from the WinCC database and to write them into the respective tag structures. This function has to be called via the start screen using the "Open image" event. In the sample project, this function can also be executed from the administrator screen. |
| Init_Esig_Dlg.bmo                      | Global project function in order to initialize and open the dialog for the electronic signature.                                                                                                                                                                                                                          |
| CreateESignature_AuditTrail.fct        | Global project function in order to create audit trail messages for the individual signatures in the WinCC message system.                                                                                                                                                                                                |
| OperatorMessage_Value.bmo              | Global project function in order to create a self designed audit trail message by changing a value.                                                                                                                                                                                                                       |
| Operator_Sign.bmo                      | Global project function in order to create a self designed audit trail message for a simple electronic signature.                                                                                                                                                                                                         |

## 4 Installation

Install all required components for the electronic signature with the help of the setup file. You then have the option to insert the functionality of the electronic signature in a customer-specific WinCC project. Furthermore, the WinCC sample project will be installed with the setup.

The installation of the components for the electronic signature requires Windows administrator rights.

### Note

The sample project was created with WinCC V7.2. If the project is used with a later WinCC version it has to be converted beforehand with the "project migratory".

### Functions and modules

All WinCC modules and functions required are copied to the WinCC installation directory in the "eSignature" subdirectory.

The following files are copied:

Table 4-1

| Type                      | File                                                                                                                                                                                                                                                                                                        |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VBA Module                | <ul style="list-style-type: none"> <li>• TextLibrary.bas</li> <li>• WinCCTagDlg.bas</li> <li>• WinCCUserGroups.bas</li> <li>• MenuBar.bas</li> <li>• Common.bas</li> <li>• CreateTableInDB.bas</li> </ul>                                                                                                   |
| Forms (dialogs)           | <ul style="list-style-type: none"> <li>• eSigConfDlgWithDb.frm</li> <li>• eSigResetParamDlg.frm</li> <li>• eSigConfigDB.frm</li> <li>• eSigConfigDB.frx</li> <li>• eSigConfDlgWithDb.frx</li> <li>• eSigResetParamDlg.frx</li> </ul>                                                                        |
| Global C default function | <ul style="list-style-type: none"> <li>• CreateESignature_AuditTrail.fct</li> </ul>                                                                                                                                                                                                                         |
| Global VBS functions      | <ul style="list-style-type: none"> <li>• DeleteSignaturesFromCurrentSession.bmo</li> <li>• CreateESigMsgs.bmo</li> <li>• ResetESignatureParam.bmo</li> <li>• GetSignatureRecordFromDatabase.bmo</li> <li>• Init_SLEsig_Dlg.bmo</li> <li>• OperatorMessage_Value.bmo</li> <li>• Operator_Sign.bmo</li> </ul> |

### DLL (Dynamic Link Library)

The "EsigWinCCInterface.dll" DLL is used in VBA modules and is installed in the WinCC installation directory, in the "Bin" subdirectory.

### **WinCC example project**

The WinCC sample project is copied into the  
“C:\Users\Public\Documents\Siemens\Sig\_DemoProject\Signature\_Demo\_WinC  
C\_V5” directory.

## 5 Description of the User Interface

### 5.1 User interface for configuration

#### 5.1.1 Menu

A separate menu was created for the configuration of the electronic signature. This menu list is added to the menu bar in Graphics Designer.

Figure 5-1

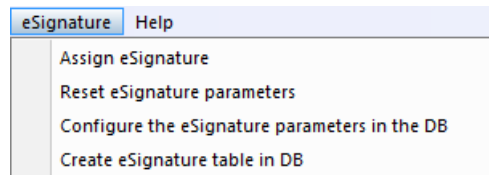


Table 5-1

| Function                                      | Description                                                                                                               |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Assign eSignature                             | Opens the dialog for the configuration of a new electronic signature for the selected object.                             |
| Reset eSignature parameters                   | Opens the dialog for the configuration of the "Reset eSignature parameters" function for the selected object.             |
| Configure the eSignature parameters in the DB | Opens the dialog to change the already configured electronic signatures in the database.                                  |
| Create eSignature table in DB                 | Creates the configuration table for the data of the electronic signature in the WinCC database, if it does not yet exist. |

### 5.1.2 “Electronic signature – configuration” dialog

From the “Electronic Signature> Assign eSignature” menu command you get to the configuration dialog for the electronic signature.

Figure 5-2

Table 5-2

| Field                                        | Description                                                                                                                                                                                                                   |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unique Tag Name                              | The name of the electronic signature has to be unique throughout the entire project. The field has already been assigned as:<br><b>eSig_&lt;picture name&gt;_&lt;object name&gt;</b><br>The “eSig_” prefix cannot be changed. |
| Object Name                                  | Name of the automation object for which the electronic signature is being configured. This name will later appear in the audit trail for the electronic signature in the WinCC message system.                                |
| Operation                                    | Describes the type of operation to be executed once the electronic signature was successfully performed.                                                                                                                      |
| Operation text with source and target values | If this property has been selected, the operation text displayed will be supplemented by the source and target values for the electronic signature in the Runtime dialog.                                                     |
| Area                                         | This is where information regarding the plant area can be stored.                                                                                                                                                             |
| Unit                                         | This is where information regarding the unit of the value to be changed can be stored.                                                                                                                                        |
| Quantity of Signatures                       | Specifies the number of signatures to be entered that are required to be able to execute the operation. 1 to 3 signatures can be selected.<br>The default value is “1”.                                                       |

| Field                                                                               | Description                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Trail Message No.                                                             | Message number for the audit trail which is generated once a signature was successfully performed. If several signatures are polled, a separate audit trail entry will be generated for each signature.<br>The default message number is "1000".                                                                                                 |
| Timeout                                                                             | Period in seconds during which the electronic signature(s) have to be performed.<br>The default value is "0" (without time limit).                                                                                                                                                                                                               |
| Signature order                                                                     | If several signatures are expected, it can be specified whether they have to be entered in a specific order.<br>The default setting is "any order".                                                                                                                                                                                              |
| Input Session                                                                       | If several signatures are expected, it can be specified whether they are entered in one session or in several sessions.<br>The default setting is "in different sessions".                                                                                                                                                                       |
| Reset after execution of all signatures                                             | If this option is selected, all signature parameters will be reset after successful completion of the signature process.<br>This option is selected by default.                                                                                                                                                                                  |
| Details of the user information                                                     | The following options can be selected: <ul style="list-style-type: none"> <li>• UserID</li> <li>• Full Name</li> <li>• UserID and Full Name</li> </ul> The default selection is "UserID".                                                                                                                                                        |
| Available WinCC user groups                                                         | List of the user groups configured in the operator system (User Administrator).                                                                                                                                                                                                                                                                  |
| Selected groups                                                                     | List of user groups that have to perform an electronic signature for this object.                                                                                                                                                                                                                                                                |
|  | Moves the selected group into the "Selected groups" list.                                                                                                                                                                                                                                                                                        |
|  | Removes the selected group from the "Selected groups" list.                                                                                                                                                                                                                                                                                      |
|  | Moves the selected user group in the "Selected group" list one position up.                                                                                                                                                                                                                                                                      |
|  | Moves the selected user group in the "Selected group" list one position down.                                                                                                                                                                                                                                                                    |
| Assign eSignature                                                                   | Configures the function of the electronic signature on the selected object. For this purpose, a VB script is generated on the "Mouse Action" event which calls the input dialog and transfers the required parameters. Furthermore, an auxiliary object (rectangle) is generated which is required for the creation of the audit trail messages. |
| Cancel                                                                              | Closes the dialog without any further actions.                                                                                                                                                                                                                                                                                                   |

### 5.1.3 “Reset Electronic Signature Parameters” dialog

You get to the configuration dialog for the “Reset Electronic Signature Parameters” function under the “Electronic Signature > “Reset parameter” command.

Figure 5-3

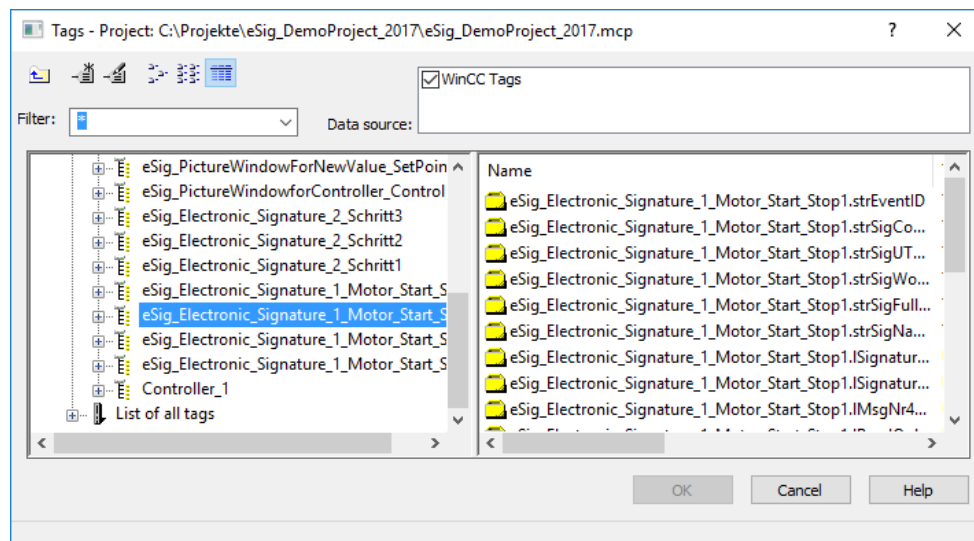


Table 5-3

| Field                                                                               | Description                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unique Tag Name                                                                     | The name corresponds to the unique name specified in the configuration dialog for the electronic signature.<br>This is the structure tag name of the electronic signature to be reset after the electronic signature has been successfully applied.  |
|  | Opens the tag dialog.<br><b>Note</b><br>It is not possible to select the instance name of the structure tag. You may, however, select any tag from the structure, since the program will identify the structure automatically.                       |
|  | Copies the current structure into the “selected Objects” list. Several structure tags can be added.                                                                                                                                                  |
| Selected Objects                                                                    | List of the selected instances (automation objects), for which the parameters of the electronic signatures are to be reset.                                                                                                                          |
| Reset parameter                                                                     | Configures the “Reset Electronic Signature Parameters” function of the electronic signature at the selected action object. For this purpose, a VB script is created on the “mouse action” event which resets the signature parameters from the list. |
| Cancel                                                                              | Closes the dialog without any further actions.                                                                                                                                                                                                       |

### 5.1.4 “Configure Electronic Signatures in database” dialog

You get to the dialog for configuring the existing signatures in the database under the “Electronic Signatures > Configure Electronic Signatures in database” menu command.

Figure 5-4

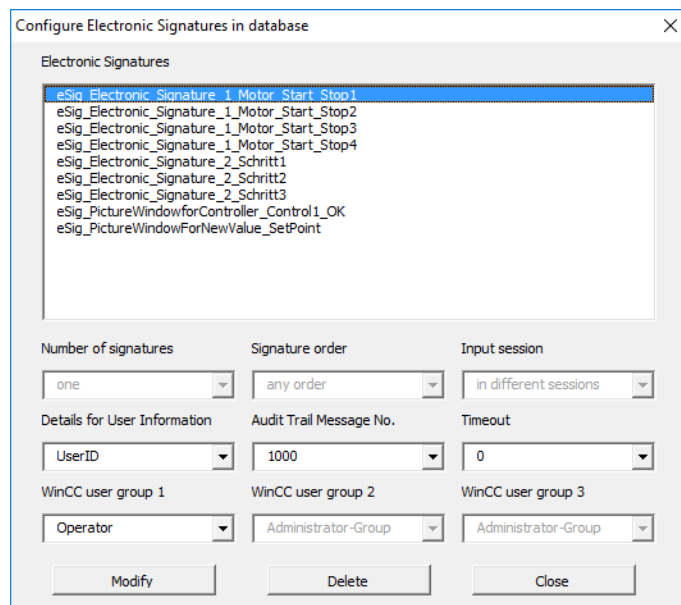


Table 5-4

| Field                           | Description                                                                                                                                                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electronic Signatures           | The list includes all electronic signatures of the current WinCC project. When clicking an electronic signature from this list, the relevant parameters will be shown in the corresponding fields.          |
| Quantity of Signatures          | Shows the number of required signatures. This parameter cannot be changed.                                                                                                                                  |
| Signature order                 | Shows whether a certain sequence is required or not. This parameter can be changed if more than one signature is required.                                                                                  |
| Input Session                   | Shows whether the signatures are to be entered in one session or not. This parameter can be changed if more than one signature is required.                                                                 |
| Details of the user information | Shows the original configuration. The following options can be selected: <ul style="list-style-type: none"> <li>• UserID</li> <li>• Full Name</li> <li>• UserID and Full Name</li> </ul>                    |
| Audit Trail Message No.         | Displays the originally configured message number. A different message number can be entered.<br><b>Note</b><br>The program does not check whether the entered message number has actually been configured. |
| Timeout                         | Displays the originally configured time in seconds. If a “0” is entered in the input field, there is no time limit for entering the electronic signature.                                                   |

## 5 Description of the User Interface

| Field                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 <sup>st</sup> /2 <sup>nd</sup> /3 <sup>rd</sup> WinCC user groups | <p>Displays the configured user groups which have to make an electronic signature. The selection fields of the 2<sup>nd</sup> and 3<sup>rd</sup> user group are only enabled if two or three was selected under "Quantity of Signatures". You can select from all configured OS user groups.</p> <p><b>Note</b><br/>If the configured user group should no longer be available, for example, because it was deleted in the User Administrator, it will be marked as missing (red) in the selection field.</p> |
| Modify                                                              | <p>Copies the changed configuration of the selected electronic signature into the database.</p>                                                                                                                                                                                                                                                                                                                                                                                                               |
| Delete                                                              | <p>Deletes the selected signature from the database.</p> <p><b>Note</b><br/>In this case, the respective object and the tag structure has to be deleted manually in the process image.</p>                                                                                                                                                                                                                                                                                                                    |
| Close                                                               | <p>Closes the dialog without any further actions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

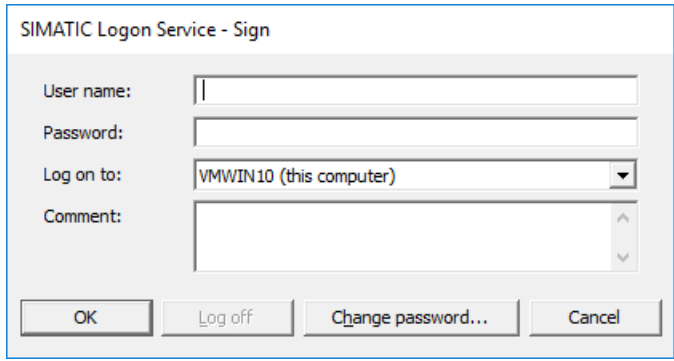
## 5.2 User interface in Runtime

When clicking with the mouse on an automation object that was configured with an electronic signature, a dialog field for entering the electronic signatures will open up.

Figure 5-5

Table 5-5

| Field        | Description                                                                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Element      | Describes the object for which an electronic signature will be acquired.                                                                                                     |
| Operation    | Describes the action that will be executed once the signature was successfully performed.                                                                                    |
| Entry        | Displays whether all required signatures can be entered in one session or in separate sessions (the dialog can be closed in the meantime).                                   |
| Sequence     | Displays whether a certain sequence is required when entering the signatures.                                                                                                |
| Requested at | Displays the time when the acquisition of the electronic signatures started.                                                                                                 |
| Valid until  | Displays the time by which all required signatures have to be entered. If no time is displayed in this output field, there will be no time limit for entering the signature. |
| Signatures   | Shows the list of user groups from which an electronic signature is required.                                                                                                |

| Field      | Description                                                                                                                                                                                                                                              |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signing... | <p>Opens the SIMATIC logon dialog for authenticating the electronic signature.</p>                                                                                     |
| OK         | <p>Closes the dialog window and executes the initially started operation, provided all required signatures are available.</p> <p>If the "All together" condition is required, the dialog cannot be closed with "OK" between entering the signatures.</p> |
| Cancel     | <p>Closes the dialog without any further actions. After a note to the user, any previously performed electronic signatures are deleted. No separate audit trail message will be created.</p>                                                             |
| Help       | <p>Opens the help of "Electronic Signature". This function is disabled so that the operator cannot leave the visualization interface.</p>                                                                                                                |

## 6 Example Project

The sample application includes different operator actions for which electronic signatures are requested.

- executing a switching action (e.g. motor on/off or open/close valve)
- changing a setpoint (e.g. temperature value of a controller)
- starting a sequence

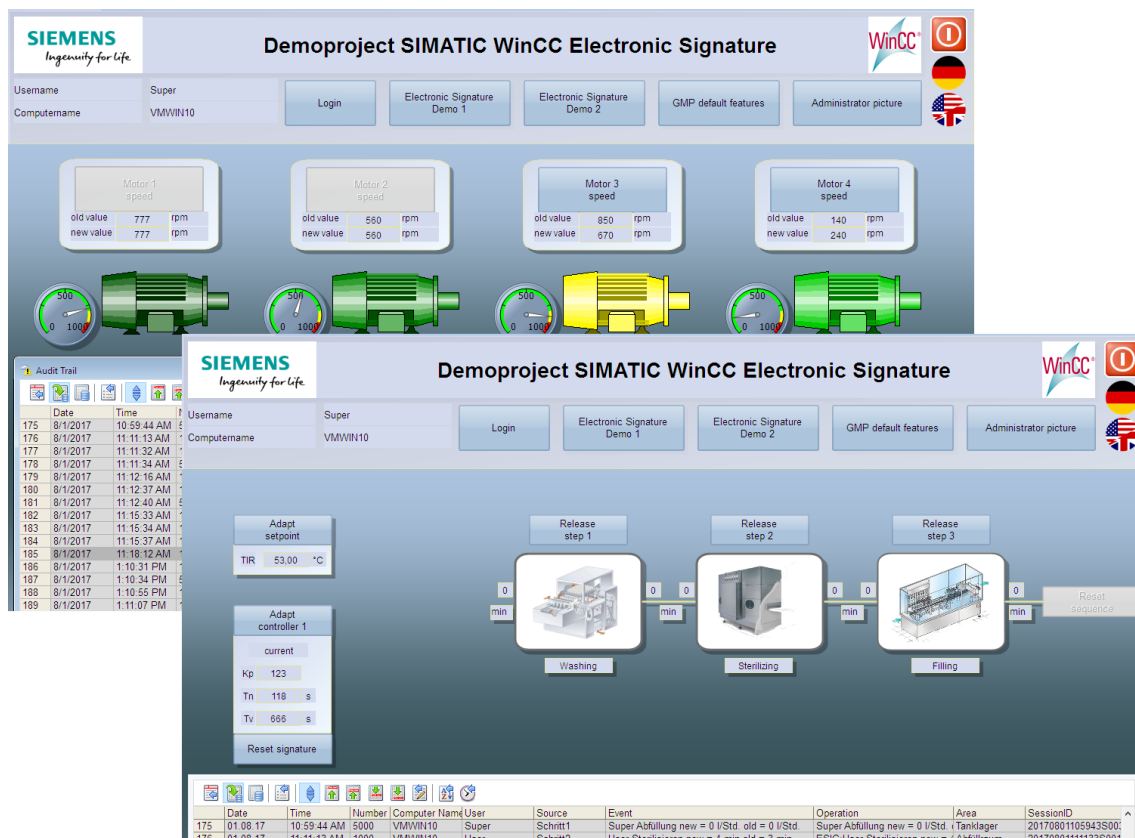
The different examples furthermore describe various requirements for electronic signatures.

- several signatures (two-man rule)
- maintaining a specific sequence when entering the signatures
- joint input of all required signatures with or without time limit

Each successful signature is saved in WinCC Alarm Logging as operator message. An audit trail message will furthermore be created which includes additional information on the executed object change, once a signature was successfully performed.

The sample project includes all required functions and modules in order to assign the functionality of the electronic signature to an automation object in WinCC and to be able to configure it according to the requirement.

Figure 6-1



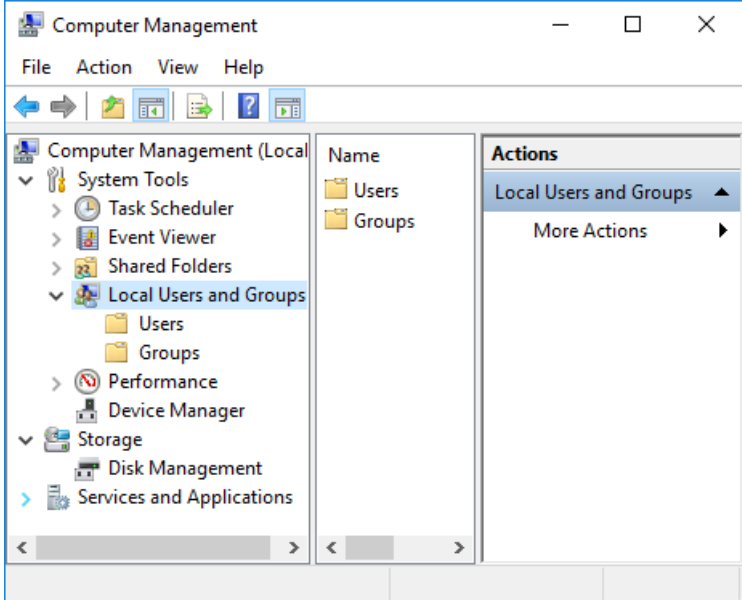
## 6.1 Preparation for using the sample project

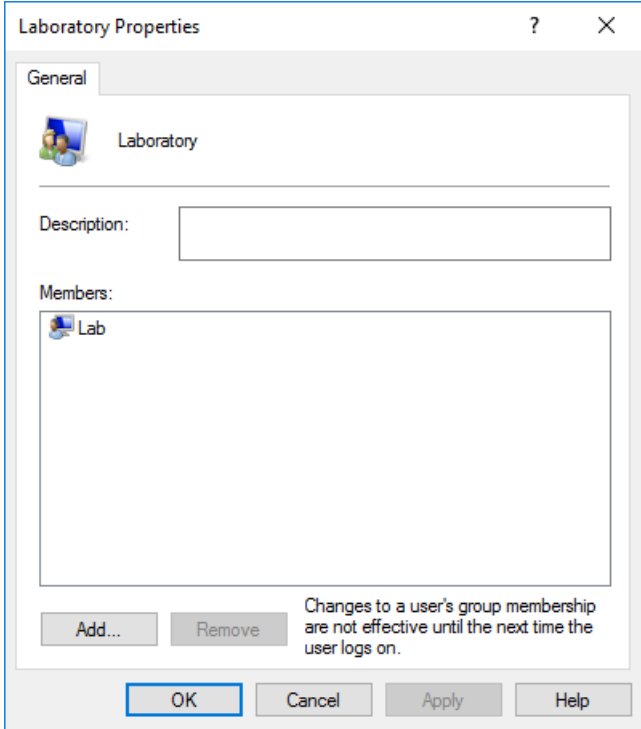
In order for the sample project to function in the desired way, the following preparatory steps have to be performed.

### 6.1.1 Creating user groups and users in Windows

The sample project uses various user groups with different authorization levels and for this reason they have to be configured in the user administrator. Execute the following steps for the configuration of the user groups and users.

Table 6-1

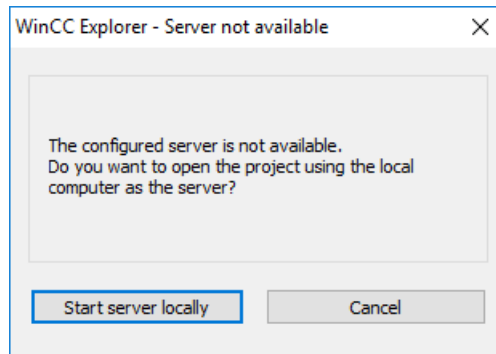
| No. | Action                                                                                                                                                                                                                                                  |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Start the Windows Computer Management and go the “Local Users and Groups” entry.</p>                                                                              |
| 2.  | <p>Create the following user groups (for the function of the application, it is important to spell precisely):</p> <ul style="list-style-type: none"> <li>• Operator</li> <li>• Spezial_Operator</li> <li>• Laboratory</li> <li>• SuperUsers</li> </ul> |

| No. | Action                                                                                                                                                                                                                                                          |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.  | <p>Create at least one user for each group and assign the user to the different groups. The screenshot below shows the "Laboratory" user group which contains one user.</p>  |

### 6.1.2 Changing the configured computer name

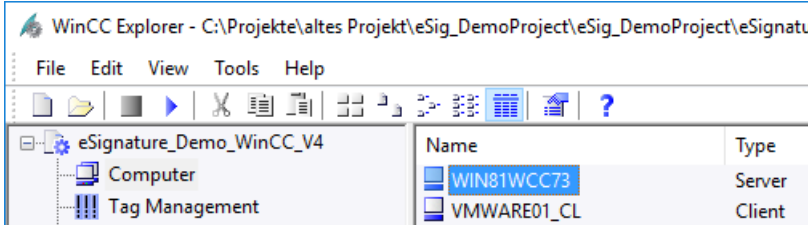
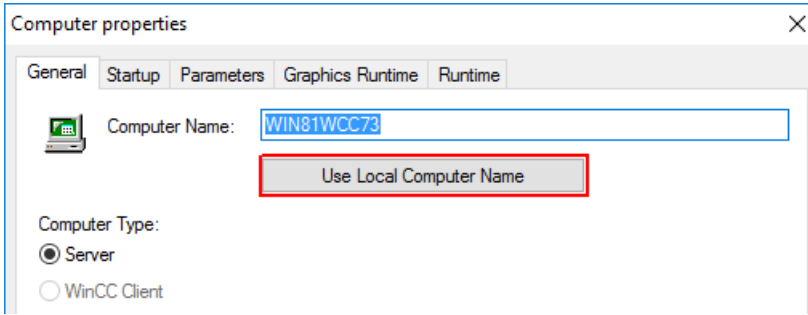
When opening the sample project for the first time, you will receive a note informing you that the configured server is not available.

Figure 6-2



Execute the following steps in order to change the configured computer name of the sample project.

Table 6-2

| No.         | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |      |            |        |             |        |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------------|--------|-------------|--------|
| 1.          | <p>Open the WinCC project with the WinCC explorer and open the properties of the configured computer.</p>  <p>The screenshot shows the WinCC Explorer interface. The left pane displays the project tree with "eSignature_Demo_WinCC_V4" expanded, showing "Computer" and "Tag Management". The right pane shows a table of configured computers:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>WIN81WCC73</td> <td>Server</td> </tr> <tr> <td>VMWARE01_CL</td> <td>Client</td> </tr> </tbody> </table> | Name | Type | WIN81WCC73 | Server | VMWARE01_CL | Client |
| Name        | Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |      |            |        |             |        |
| WIN81WCC73  | Server                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |      |            |        |             |        |
| VMWARE01_CL | Client                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |      |            |        |             |        |
| 2.          | <p>Rename the "WinCC computer name" to your own computer name with the "Use Local Computer Name" button. Then restart the WinCC Explorer.</p>  <p>The screenshot shows the "Computer properties" dialog box. The "General" tab is selected. The "Computer Name" field contains "WIN81WCC73". Below it, the "Use Local Computer Name" button is highlighted with a red rectangle. The "Computer Type" section shows "Server" selected with a radio button, and "WinCC Client" is unselected.</p>                                                           |      |      |            |        |             |        |

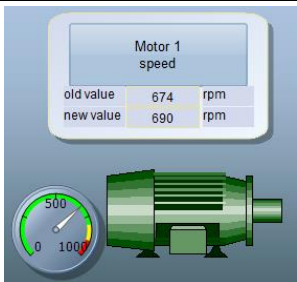
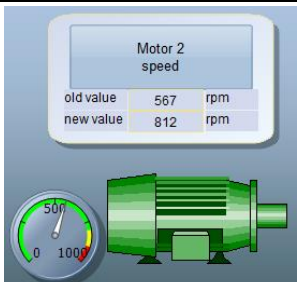
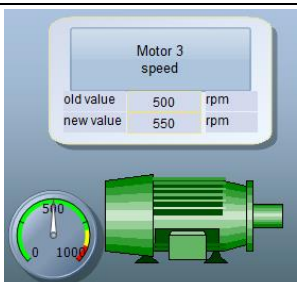
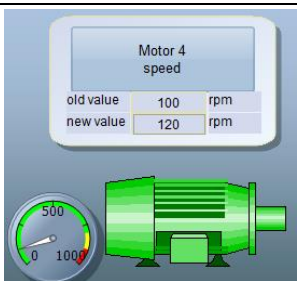
## 6.2 Description of the sample project

The sample project includes two process pictures with different scenarios for the use of electronic signatures. An administrator image was furthermore created, with which the status of the electronic signature is displayed.

### 6.2.1 “Example 1” area button

The “Elektronic\_Signature\_1.pdl” process image is called via the “Example 1” button. Four buttons and four motor icons have been configured in this image with which you can carry out the following simple switching actions.

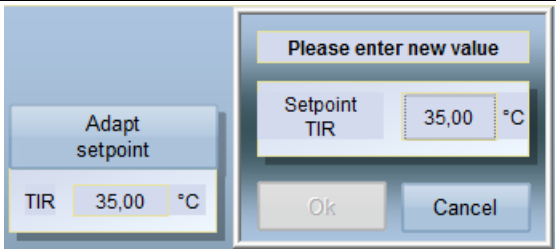
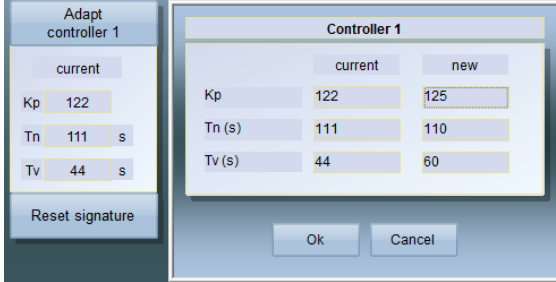
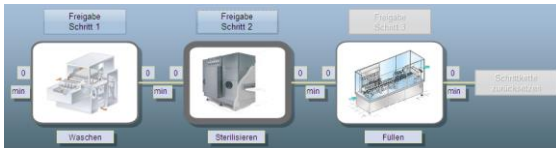
Table 6-3

| Icon                                                                                | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p>In this example the following entry is required:</p> <ul style="list-style-type: none"> <li>1 signature (Operator)</li> <li>Sequence: no</li> <li>In one session: yes</li> <li>Timeout: no</li> </ul> <p>After successful entry of the signature, the value of the “Motor 1” internal tag is inverted and the color of the motor icon is changed.</p>                                      |
|   | <p>In this example, the following entry is required:</p> <ul style="list-style-type: none"> <li>3 signatures (SuperUsers, Operator, Laboratory)</li> <li>Sequence: no</li> <li>In one session: yes</li> <li>Timeout: no</li> </ul> <p>After successful entry of the signature, the value of the “Motor 2” internal tag is inverted and the color of the motor icon is changed.</p>            |
|  | <p>In this example, the following entry is required:</p> <ul style="list-style-type: none"> <li>2 signatures (Laboratory, SuperUsers)</li> <li>Sequence: no</li> <li>In one session: no</li> <li>Timeout: no</li> </ul> <p>After successful entry of the signature, the value of the “Motor 3” internal tag is inverted and the color of the motor icon is changed.</p>                       |
|  | <p>In this example, the following entry is required:</p> <ul style="list-style-type: none"> <li>2 signatures (Spezial_Operator, SuperUsers)</li> <li>Sequence: yes</li> <li>In one session: yes</li> <li>Timeout: yes (60 seconds)</li> </ul> <p>After successful entry of the signature, the value of the “Motor 4” internal tag is inverted and the color of the motor icon is changed.</p> |

### 6.2.2 “Example 2” area button

The “Elektronic\_Signature\_2.pdf” process image is called via the “Example 2” button. In this image, the analog values and a sequence are configured. Changing the setpoint and starting the sequence requires the input of an electronic signature.

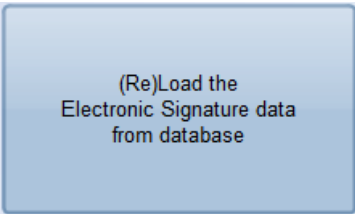
Table 6-4

| Icon                                                                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p>In this example, the following entry is required:</p> <ul style="list-style-type: none"> <li>• 2 signatures (SuperUsers, Operator)</li> <li>• Sequence: yes</li> <li>• In one session: yes</li> <li>• Timeout: no</li> </ul> <p>Entering the new setpoint has been realized the help of an image window. After successful electronic signature, the new value is written into the “SetPoint” tag.</p>                                                                                                                                                                                    |
|   | <p>In this example, three control parameters are set at once. The entry of the following signatures is required:</p> <ul style="list-style-type: none"> <li>• 1 signature (Laboratory)</li> <li>• Sequence: yes</li> <li>• In one session: yes</li> <li>• Timeout: yes (60 seconds)</li> </ul> <p>A new setpoint is entered with the help of a dialog window. After successful electronic signature, the new values are written into the “Kp, Tn, Tv” tags.</p> <p><b>Note:</b><br/>After successful electronic signature application, the signature parameters must be reset manually.</p> |
|  | <p>In this example, a sequence has been configured. Each step has to be confirmed by electronic signature. The subsequent step can only be executed after the successful entry of the required signatures.</p> <p>Each step has different requirements regarding the acquisition of the electronic signatures.</p> <p><b>Note:</b><br/>At the end of the sequence, the signature parameters have to be reset manually.</p>                                                                                                                                                                  |

### 6.2.3 “Configuration” area button

The “Configuration” area button opens the “AdvancedProjectSettings.pdl” process image. Here, you will get an overview of the status of the electronic signature and you can reload the configuration data again.

Table 6-5

| Icon                                                                                                                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>(Re)Load the Electronic Signature data from database</p> | <p>With the help of the “(Re)Load the Electronic Signature data from database” button, you write the data from the database into the respective tag structures. Reloading of the configuration is required, if you have made any changes to the configuration of the electronic signatures at runtime. When starting runtime, this function is called in the startup screen when opening the image.</p>                                                                                                                                                         |
|                                                             | <p>The status overview shows the operator station on which the dialog for the electronic signature is opened.</p> <p>The “Object” column lists the different automation objects with electronic signature.</p> <p>The “Computer” column shows the name of the computer on which the dialog is/was open.</p> <p>The “Status” column shows whether the dialog is currently open (1) or closed (0).</p> <p>The “Reset” buttons are used to reset the status of the signatures manually. This may be required, if Runtime was ended whilst the dialog was open.</p> |

### 6.2.4 WinCC message system – operation list

The messages that have been triggered by entering an electronic signature can be viewed in the integrated Alarm Control. All electronic signature messages include the “ESIG.” prefix.

Figure 6-3

|    | Date      | Time        | Number | Computer Name | User    | Source            | Event                                        | Operation                      | Area          | SessionID       |
|----|-----------|-------------|--------|---------------|---------|-------------------|----------------------------------------------|--------------------------------|---------------|-----------------|
| 23 | 7/10/2017 | 10:06:23 AM | 1000   | VMWIN10       | User    | Motor_Start_Stop1 | User changing the machine speed new = 543 r  | ESIG: User changing the machi  | Mill          | 201707101006255 |
| 24 | 7/10/2017 | 10:06:26 AM | 5000   | VMWIN10       | Super   | Motor_Start_Stop1 | Super changing the machine speed new = 543   | Super changing the machine s   | Mill          | 201707101006255 |
| 25 | 7/10/2017 | 10:06:40 AM | 1000   | VMWIN10       | Super   | Motor_Start_Stop2 | Super changing the machine speed new = 567   | ESIG: Super changing the mach  | Tankfarm      | 201707101007015 |
| 26 | 7/10/2017 | 10:06:51 AM | 1000   | VMWIN10       | User    | Motor_Start_Stop2 | User changing the machine speed new = 567 r  | ESIG: User changing the machi  | Tankfarm      | 201707101007015 |
| 27 | 7/10/2017 | 10:06:59 AM | 1000   | VMWIN10       | Lab     | Motor_Start_Stop2 | Lab changing the machine speed new = 567 rp  | ESIG: Lab changing the machin  | Tankfarm      | 201707101007015 |
| 28 | 7/10/2017 | 10:07:02 AM | 5000   | VMWIN10       | Super   | Motor_Start_Stop2 | Super changing the machine speed new = 567   | Super changing the machine s   | Tankfarm      | 201707101007015 |
| 29 | 7/10/2017 | 10:07:16 AM | 1000   | VMWIN10       | Lab     | Motor_Start_Stop3 | Lab changing the machine speed new = 500 rp  | ESIG: Lab changing the machin  | Tankfarm      | 201707101007185 |
| 30 | 7/10/2017 | 10:07:29 AM | 1000   | VMWIN10       | Super   | Motor_Start_Stop3 | Super changing the machine speed new = 500   | ESIG: Super changing the mach  | Tankfarm      | 201707101007185 |
| 31 | 7/10/2017 | 10:07:32 AM | 5000   | VMWIN10       | Super   | Motor_Start_Stop3 | Super changing the machine speed new = 500   | Super changing the machine s   | Tankfarm      | 201707101007185 |
| 32 | 7/10/2017 | 10:07:46 AM | 1000   | VMWIN10       | Spezial | Motor_Start_Stop4 | Spezial changing the machine speed new = 10  | ESIG: Spezial changing the max | belt conveyor | 201707101007565 |
| 33 | 7/10/2017 | 10:07:54 AM | 1000   | VMWIN10       | Super   | Motor_Start_Stop4 | Super changing the machine speed new = 100   | ESIG: Super changing the mach  | belt conveyor | 201707101007565 |
| 34 | 7/10/2017 | 10:07:57 AM | 5000   | VMWIN10       | Super   | Motor_Start_Stop4 | Super changing the machine speed new = 100   | Super changing the machine s   | belt conveyor | 201707101007565 |
| 35 | 7/10/2017 | 10:08:14 AM | 1000   | VMWIN10       | User    | Motor_Start_Stop1 | User changing the machine speed new = 674 r  | ESIG: User changing the machi  | Mill          | 201707101008165 |
| 36 | 7/10/2017 | 10:08:17 AM | 5000   | VMWIN10       | Super   | Motor_Start_Stop1 | Super changing the machine speed new = 674   | Super changing the machine s   | Mill          | 201707101008165 |
| 37 | 7/10/2017 | 10:11:37 AM | 1000   | VMWIN10       | Super   | SetPoint          | Super Adapt setpoint new = 30 °C old = 25 °C | ESIG: Super Adapt setpoint new | Tankfarm      | 201707101011475 |
| 38 | 7/10/2017 | 10:11:45 AM | 1000   | VMWIN10       | User    | SetPoint          | User Adapt setpoint new = 30 °C old = 25 °C  | ESIG: User Adapt setpoint new  | Tankfarm      | 201707101011475 |
| 39 | 7/10/2017 | 10:11:48 AM | 5000   | VMWIN10       | Super   | SetPoint          | Super Adapt setpoint new = 30 °C old = 25 °C | Super Adapt setpoint new = 30  | Tankfarm      | 201707101011475 |

## 7 Applying Electronic Signatures to Specific Projects

### 7.1 Preparations of configuration

If you would like to use the function of the electronic signature in new or already existing projects, some preparatory steps are required that are described in this chapter.

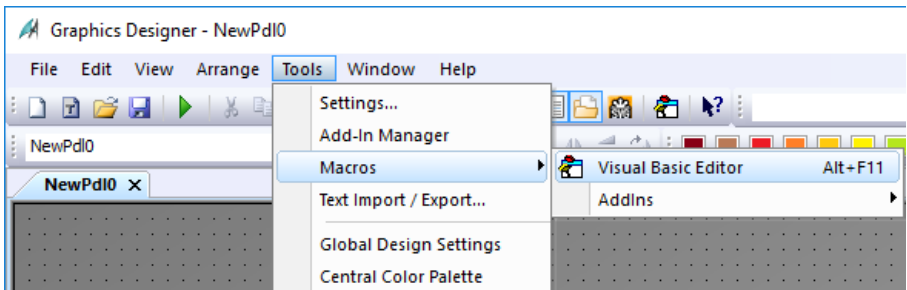
#### Note

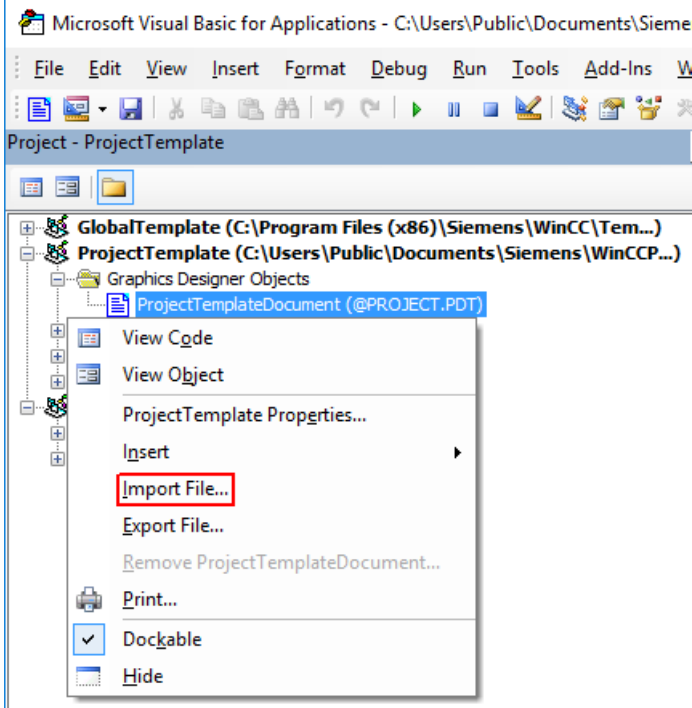
To ensure faultless operation of all functionalities, the logged in Windows user must have administrator rights while configuring the electronic signatures. Furthermore, the OS project editor must have been started in your project.

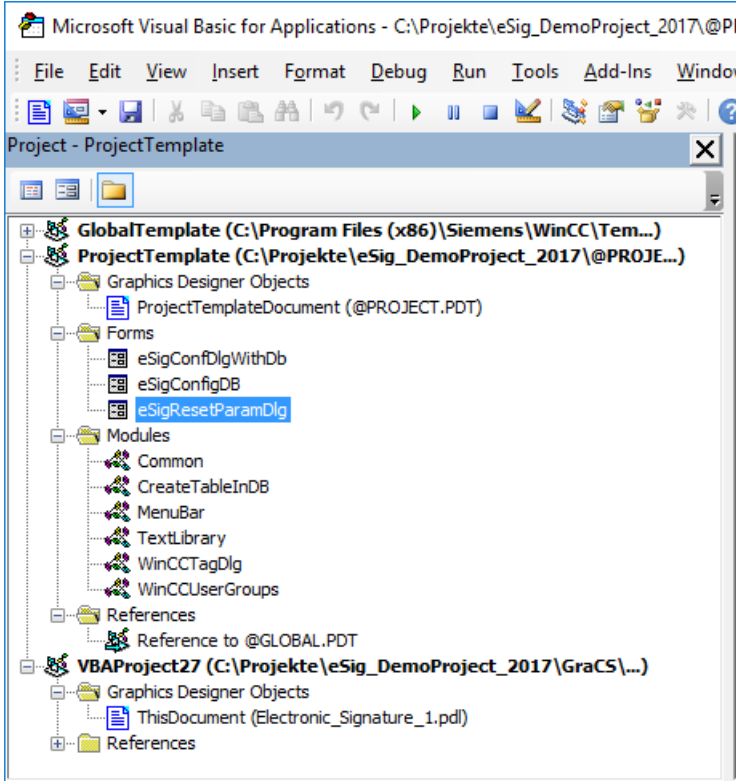
#### 7.1.1 Importing macros

For easier electronic signature configuration, the Graphics Designer program includes some VBA macros. To be able to use them, these macros must be imported beforehand.

Table 7-1

| No. | Description                                                                                                                                                                                                   |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Select "Tools &gt; Macros &gt; Visual Basic Editor" to start the Graphics Designer and the integrated VBA Editor.</p>  |

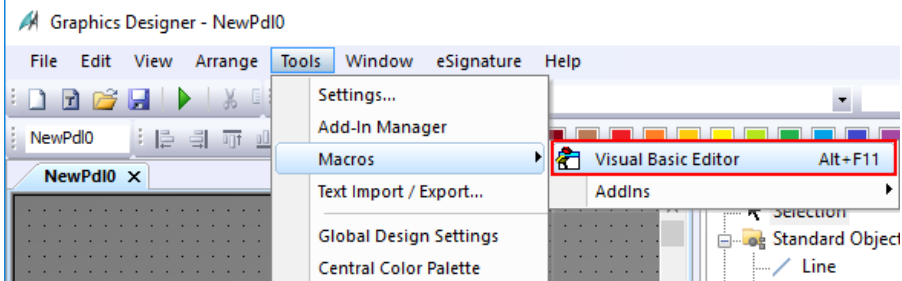
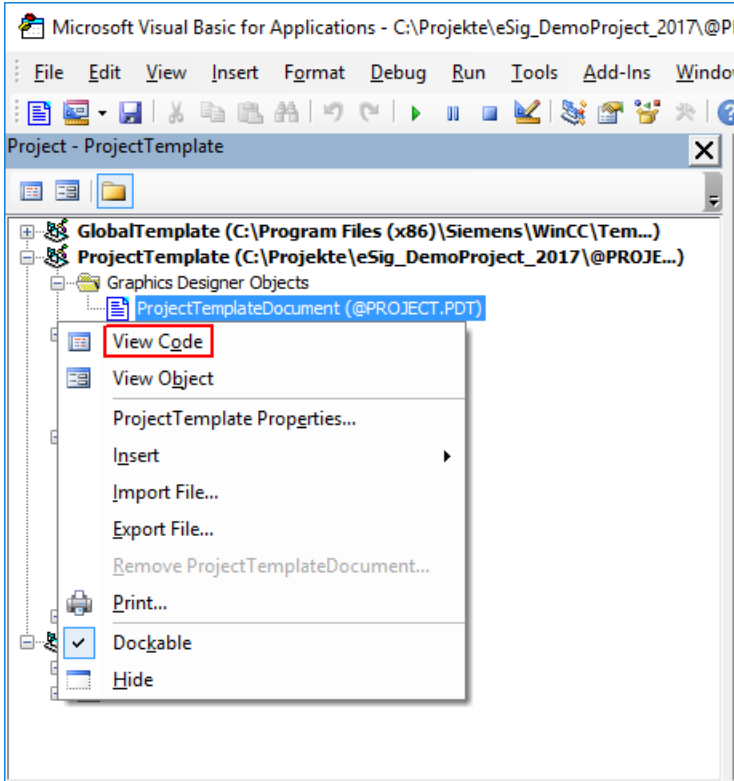
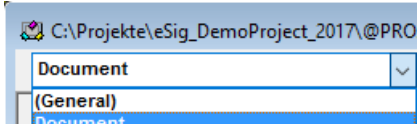
| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.  | <p>Now you can import the macros for electronic signatures either for specific projects (@Project.PDT) or for all projects (@Global.PDT). In the following sections you will learn how to import the macros for a specific project.</p> <p>Open the context menu of the "ProjectTemplateDocument" entry and select the "Import File ..." command.</p>  <p>You will find the required files in the "eSignature" folder under the WinCC installation directory. Successively import the following files:</p> <ul style="list-style-type: none"> <li>• Common.bas</li> <li>• CreateTableInDB.bas</li> <li>• eSigConfDlgWithDb.frm</li> <li>• eSigConfigDB.frm</li> <li>• eSigResetParamDlg.frm</li> <li>• MenuBar.bas</li> <li>• TextLibrary.bas</li> <li>• WinCCTagDlg.bas</li> <li>• WinCCUserGroups.bas</li> </ul> |

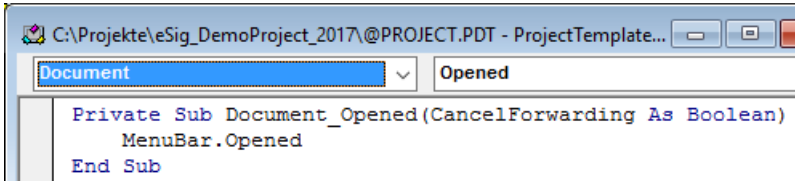
| No. | Description                                                                                                                                                                            |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.  | <p>After you have imported all files, the dialogs and modules will be shown in the VBA Editor.</p>  |

### 7.1.2 Adapting the template file

For the display of the menu in the Graphics Designer program and to enable opening of the configuration dialogs, the template file must be adapted accordingly. You can adapt either the project-specific “@PROJECT.PDT” file for individual projects or the global “@GLOBAL.PDT” file for all projects. The following sections refer to the variant for individual projects.

Table 7-2

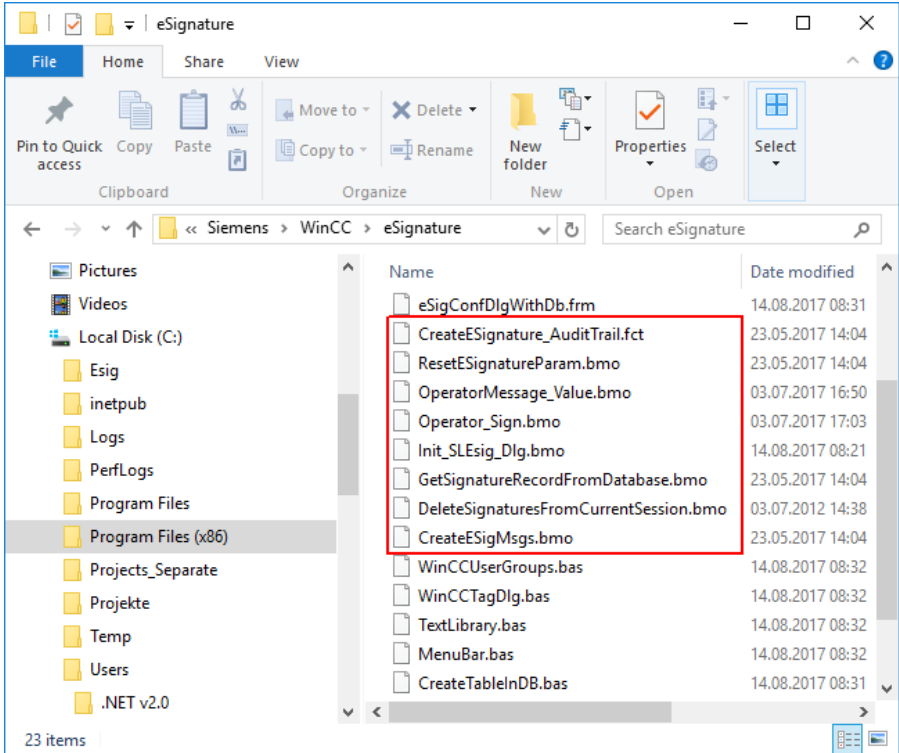
| No. | Description                                                                                                                                                                                                            |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Select "Tools &gt; Macros &gt; Visual Basic Editor" to start the Graphics Designer and the integrated VBA Editor.</p>             |
| 2.  | <p>Open the context menu for the project template file and select the "View Code" command.</p>                                      |
| 3.  | <p>Change the document type from "(General)" to "Document". The "Document_Opened" method will then be generated automatically.</p>  |

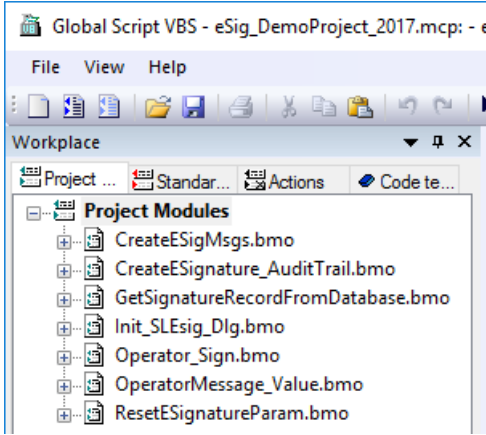
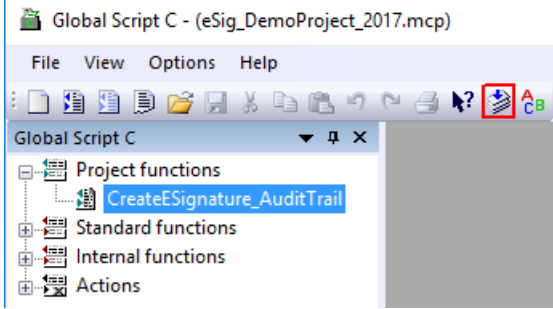
| No. | Description                                                                                                                                                             |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.  | <p>Add the "MenuBar.Opened" code line to the method.</p>                              |
| 5.  | <p>Save your changes and close the VBA Editor and the Graphics Designer. After restart of the Graphics Designer, the new "eSignature" menu entry will be available.</p> |

### 7.1.3 Integrating global scripts

The functions required to open the SIMATIC Logon dialog, to reset the signature parameters and to create audit trail messages are realized with the help of global VB and C scripts. You have to copy these scripts to the WinCC project.

Table 7-3

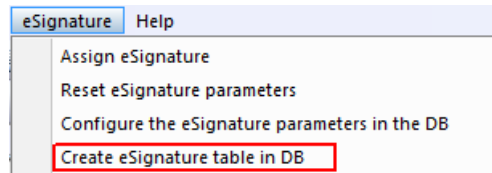
| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Use the Windows Explorer to open to the “eSignature” folder from the WinCC installation directory.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2.  | <p>Copy the following files to the “ScriptLib” folder of the WinCC project:</p> <ul style="list-style-type: none"> <li>• CreateESigMsgs.bmo</li> <li>• GetSignatureRecordFromDatabase.bmo</li> <li>• Init_SLEsig_Dlg.bmo</li> <li>• ResetESignatureParam.bmo</li> <li>• OperatorMessage_Value.bmo</li> <li>• Operator_Sign.bmo</li> </ul> <p><b>Note</b><br/>If the “ScriptLib” folder does not yet exist, open the VBS Global Script Editor once. This generates the folder in the user's project directory.<br/>Copy the following file in the folder “Library”:</p> <ul style="list-style-type: none"> <li>• CreateESignature_AuditTrail.fct</li> </ul> |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.  | <p>When calling the global script VBS editor again, the copied modules will be available in the “Project Modules” tab.</p>  <p>The screenshot shows the 'Global Script VBS - eSig_DemoProject_2017.mcp: - e' window. The 'Workplace' pane on the left has the 'Project Modules' tab selected, displaying a tree view of modules: CreateESigMsgs.bmo, CreateESignature_AuditTrail.bmo, GetSignatureRecordFromDatabase.bmo, Init_SLEsig_Dlg.bmo, Operator_Sign.bmo, OperatorMessage_Value.bmo, and ResetESignatureParam.bmo.</p> |
| 4.  | <p>The function “CreateESignature_AuditTrail” is displayed in the Global C-Editor after generation of the header data via the button.</p>  <p>The screenshot shows the 'Global Script C - (eSig_DemoProject_2017.mcp)' window. The 'Global Script C' pane on the left has the 'Project functions' tab selected, displaying a tree view of functions: CreateESignature_AuditTrail, Standard functions, Internal functions, and Actions. The 'CreateESignature_AuditTrail' function is highlighted in blue.</p>                |

### 7.1.4 Configuring the database

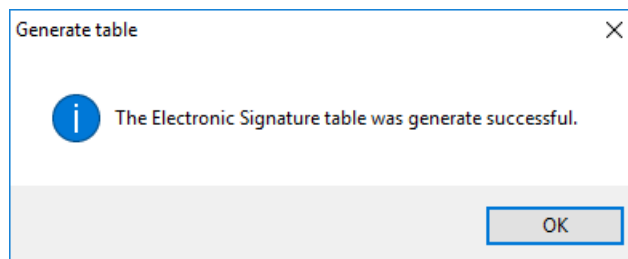
Before an electronic signature can be configured in Graphics Designer, the database must be prepared accordingly. This is performed via the “Create eSignature table in DB” menu command in the Graphics Designer.

Figure 7-1



After successful configuration, the following dialog appears:

Figure 7-2



### 7.1.5 Configuring the messages in Alarm Logging

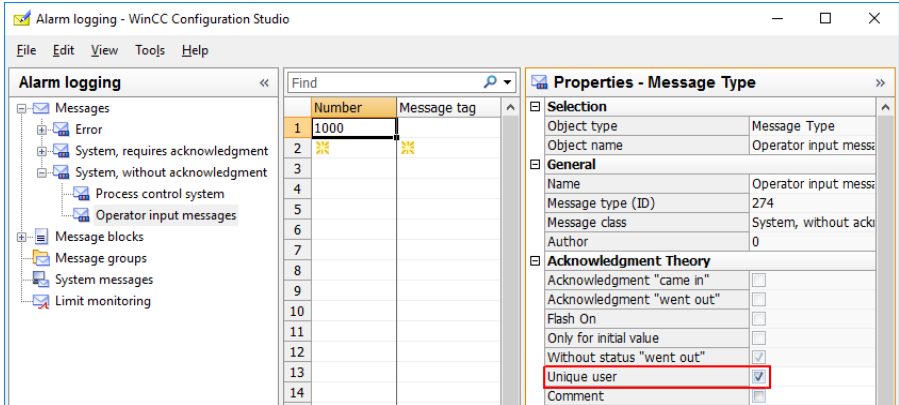
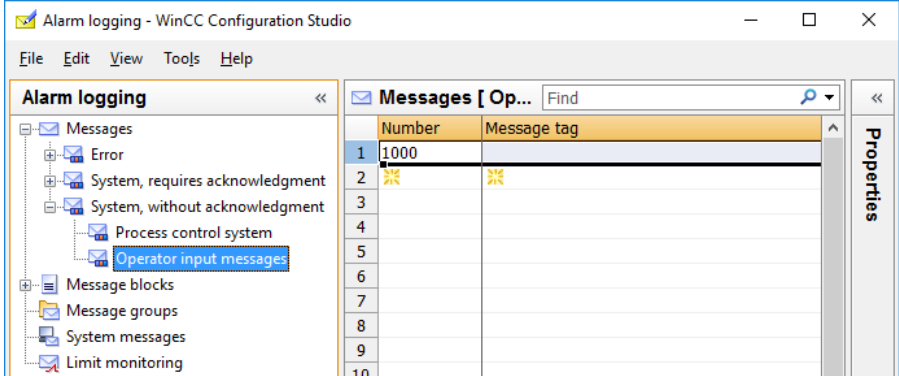
The audit trail message generated in the WinCC message system after the successful application of an electronic signature must first be configured in WinCC Alarm Logging. In this example, a message of the “System need not be acknowledged” class (class 18) and the “Operator input message” type (type 274) is created.

**Note** If no message exists, a corresponding error message will appear in the course of configuration, informing you that the message must first be created.

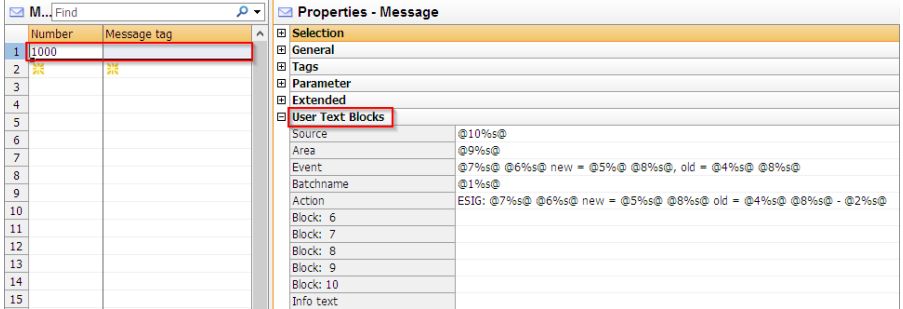
The audit trail message initiated by the electronic signature includes the following information:

- Context (object, action, type of action, status/value change, unique EventID)
- Computer name
- User
- Date and time
- Comment
- Batch name
- Area
- Signature status

Table 7-4

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Open “WinCC Alarm Logging” in the WinCC Explorer, the WinCC Configuration Studio is started. Select the message type “Operator input messages” below the message class “System, without acknowledgement” in the tree structure.</p>  <p>First of all, select the “Unique user” property of the “Operator input messages” type on the right hand side. This is necessary in order to make sure that a comment entered by the user while making an electronic signature, cannot be changed at a later point by another user.</p> |
| 2.  | <p>Create a new message line within the area “Messages”. Insert in the last line (with stars) a new message number, e.g. 1000.</p>                                                                                                                                                                                                                                                                                                                                                                                              |

| No.                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------|--------------------------|-------|---------------|--------------------------------|--------------|-------|--------------------------|---------------------------------|----------|--------------------------------|-----------|--------------------------|--------------------------|---|--------|------|--------------------------|--------------------------------|--------------|-------------------------|---------------|--------------------------|--------------------------|-------------------------|-----------|------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------|--------------------------|--------------------------|--------------------------|--------------------------------|--------------------------|------|--------------------------|--------------------------|---|----|------|--------------------------|--------------------------|----|----|------|--------------------------|--------------------------|----|--|--|--|--|
| 3.                             | <p>If you have inserted the new message number while the first node “Messages” has been selected in the tree structure on the left hand side, change the properties of the selected message number in the following way:</p> <ul style="list-style-type: none"><li>Class: “System without acknowledgment”<table><thead><tr><th colspan="2">General</th></tr></thead><tbody><tr><td>Number</td><td>1000</td></tr><tr><td>Message class</td><td>System, without acknowledgment</td></tr><tr><td>Message Type</td><td>Error</td></tr><tr><td>Message Group</td><td>System, requires acknowledgment</td></tr><tr><td>Priority</td><td>System, without acknowledgment</td></tr><tr><td>Hide mask</td><td></td></tr></tbody></table></li><li>Type: “Operator input messages”<table><thead><tr><th colspan="2">General</th></tr></thead><tbody><tr><td>Number</td><td>1000</td></tr><tr><td>Message class</td><td>System, without acknowledgment</td></tr><tr><td>Message Type</td><td>Operator input messages</td></tr><tr><td>Message Group</td><td>Process control system</td></tr><tr><td>Priority</td><td>Operator input messages</td></tr><tr><td>Hide mask</td><td></td></tr></tbody></table></li><li>Option: Archived<table><thead><tr><th colspan="2">Parameter</th></tr></thead><tbody><tr><td>Single acknowledgment</td><td><input type="checkbox"/></td></tr><tr><td>Central signaling device</td><td><input type="checkbox"/></td></tr><tr><td>Archived</td><td><input checked="" type="checkbox"/></td></tr><tr><td>Falling edge</td><td><input type="checkbox"/></td></tr><tr><td>Triggers action</td><td><input type="checkbox"/></td></tr><tr><td>Extended associated value data</td><td><input type="checkbox"/></td></tr><tr><td>Help</td><td><input type="checkbox"/></td></tr></tbody></table></li></ul> | General   |                          | Number                   | 1000  | Message class | System, without acknowledgment | Message Type | Error | Message Group            | System, requires acknowledgment | Priority | System, without acknowledgment | Hide mask |                          | General                  |   | Number | 1000 | Message class            | System, without acknowledgment | Message Type | Operator input messages | Message Group | Process control system   | Priority                 | Operator input messages | Hide mask |      | Parameter                |                          | Single acknowledgment | <input type="checkbox"/> | Central signaling device | <input type="checkbox"/> | Archived                 | <input checked="" type="checkbox"/> | Falling edge | <input type="checkbox"/> | Triggers action          | <input type="checkbox"/> | Extended associated value data | <input type="checkbox"/> | Help | <input type="checkbox"/> |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| General                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Number                         | 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Message class                  | System, without acknowledgment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Message Type                   | Error                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Message Group                  | System, requires acknowledgment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Priority                       | System, without acknowledgment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Hide mask                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| General                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Number                         | 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Message class                  | System, without acknowledgment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Message Type                   | Operator input messages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Message Group                  | Process control system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Priority                       | Operator input messages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Hide mask                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Parameter                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Single acknowledgment          | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Central signaling device       | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Archived                       | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Falling edge                   | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Triggers action                | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Extended associated value data | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| Help                           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 4.                             | <p>The user text blocks can be renamed. Please be careful with the selection of the input language. The following figure displays the configuration for this example.</p> <table><thead><tr><th>block</th><th>Number of char</th><th>Alignment</th><th>Flash</th><th>Leading zeros</th></tr></thead><tbody><tr><td>1</td><td>50</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>2</td><td>50</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>3</td><td>255</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>4</td><td>50</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>5</td><td>255</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>6</td><td>10</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>7</td><td>10</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>8</td><td>10</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>9</td><td>10</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>10</td><td>10</td><td>Left</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>11</td><td></td><td></td><td></td><td></td></tr></tbody></table>                                                                                                                                                                                                                                                                                               | block     | Number of char           | Alignment                | Flash | Leading zeros | 1                              | 50           | Left  | <input type="checkbox"/> | <input type="checkbox"/>        | 2        | 50                             | Left      | <input type="checkbox"/> | <input type="checkbox"/> | 3 | 255    | Left | <input type="checkbox"/> | <input type="checkbox"/>       | 4            | 50                      | Left          | <input type="checkbox"/> | <input type="checkbox"/> | 5                       | 255       | Left | <input type="checkbox"/> | <input type="checkbox"/> | 6                     | 10                       | Left                     | <input type="checkbox"/> | <input type="checkbox"/> | 7                                   | 10           | Left                     | <input type="checkbox"/> | <input type="checkbox"/> | 8                              | 10                       | Left | <input type="checkbox"/> | <input type="checkbox"/> | 9 | 10 | Left | <input type="checkbox"/> | <input type="checkbox"/> | 10 | 10 | Left | <input type="checkbox"/> | <input type="checkbox"/> | 11 |  |  |  |  |
| block                          | Number of char                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Alignment | Flash                    | Leading zeros            |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 1                              | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 2                              | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 3                              | 255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 4                              | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 5                              | 255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 6                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 7                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 8                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 9                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 10                             | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Left      | <input type="checkbox"/> | <input type="checkbox"/> |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |
| 11                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                          |                          |       |               |                                |              |       |                          |                                 |          |                                |           |                          |                          |   |        |      |                          |                                |              |                         |               |                          |                          |                         |           |      |                          |                          |                       |                          |                          |                          |                          |                                     |              |                          |                          |                          |                                |                          |      |                          |                          |   |    |      |                          |                          |    |    |      |                          |                          |    |  |  |  |  |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.  | <p>Select the new created message number and insert the following texts in the properties below User Text Blocks:</p> <ul style="list-style-type: none"> <li>Source: @10%s@</li> <li>Area: @9%s@</li> <li>Event: @7%s@ @6%s@ new = @5%s@ @8%s@ old = @4%s@ @8%s@</li> <li>Batch name: @1%s@</li> <li>Operation: ESIG:@7%s@ @6%s@ new = @5%s@ @8%s@ old = @4%s@ @8%s@ - @2%s@</li> </ul>  |
| 6.  | Save and close the Alarm Logging dialog.                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## 7.2 Configuring

Based on a simple example, the configuration of electronic signatures shall be demonstrated. An “on/off” button shall be used to switch an LED on and off via a binary signal. Switching the lamp is to be secured and logged with the help of an electronic signature.

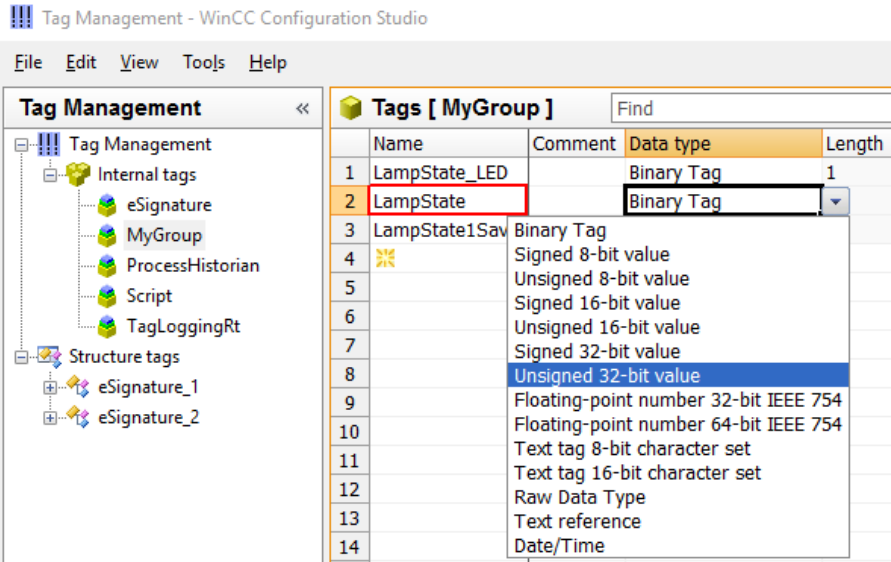
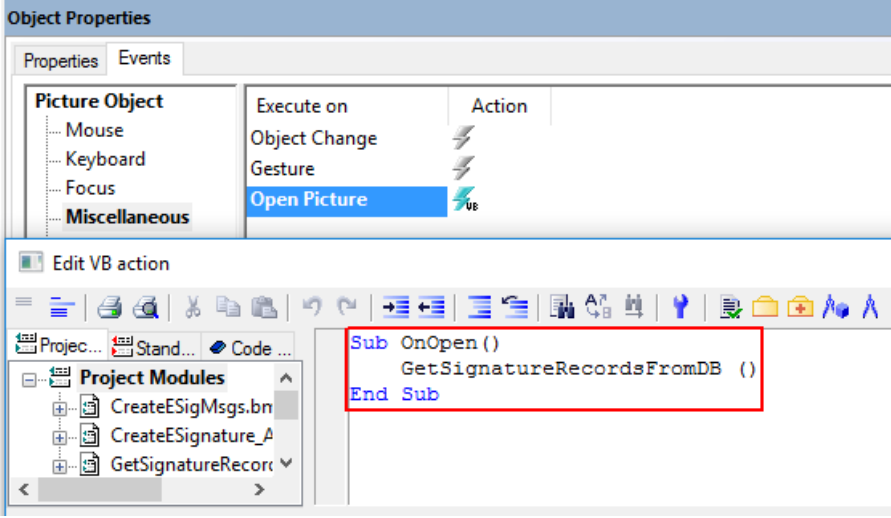
The basis for this operation is that all steps described in chapter 7.1 “Preparations of configuration” have been completed.

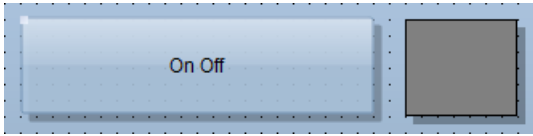
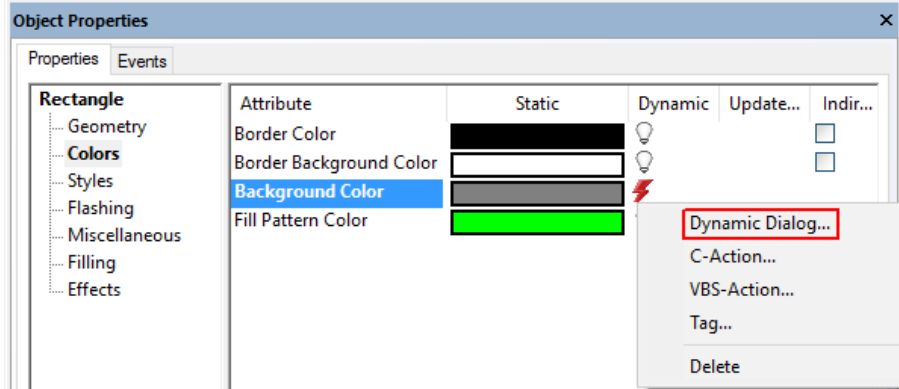
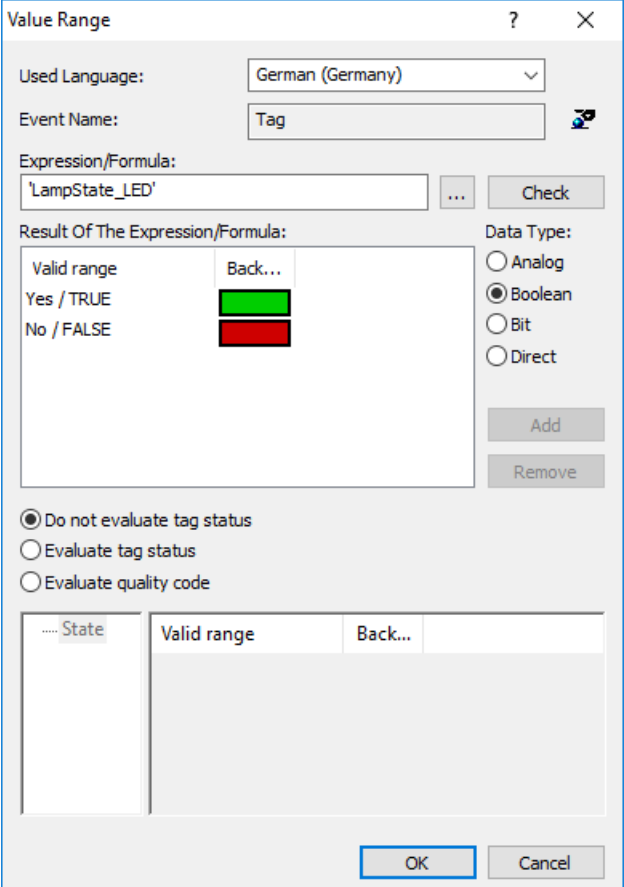
The following objects are required:

- an “On / Off” button
- a rectangle representing an LED
- an internal binary “LampState” tag
- a Windows user
- Windows user groups and the user administrator groups “Laboratory” and “Operator”

Table 7-5

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Create the Windows user groups “Operator” and “Laboratory”, as well as two Windows users. Assign one user to each group.<br>See chapter 6.1.1 “Creating user groups and users in Windows”                                                                                                                                                                                                                                                                                                                            |
| 2.  | Open the User Administrator.<br><ul style="list-style-type: none"> <li>• Create the groups “Operator” and “Laboratory”.</li> <li>• Enable the “SIMATIC Logon” option.</li> </ul> <div data-bbox="459 533 1366 864"> </div> <p><b>Note</b><br/>           It is not necessary to create users in the User Administrator. If the created user groups are exclusively used for the authentication of electronic signatures, it is not necessary to configure special user authorizations in the User Administrator.</p> |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.  | <p>Create the internal "LampState" tag.</p> <ul style="list-style-type: none"> <li>Double click the "Tag Management" in the WinCC Explorer in the tree view, the WinCC Configuration Studio is opened</li> <li>Configure below "Internal tags" a new tag group e.g. MyGroup</li> <li>Select "New tag" from the context menu.</li> <li>Insert a tag name and select the "binary" data type.</li> </ul>                                                                                                                                                                                                                                                                        |
| 4.  | <p>To enable the use of electronic signatures in Runtime, the configured data must once be read from the database and written to the internal tags. This is performed by using the "GetSignatureRecordsFromDB" function which can be called, for example, in the start screen of the project under the "Open Picture" event. In the example described here, it is called via the picture that also contains the electronic signature.</p> <ul style="list-style-type: none"> <li>Open a previously defined or a new picture in Graphics Designer.</li> <li>Configure the VB script at the "Open Picture" event with the following code line: "<code>()</code>".</li> </ul>  |

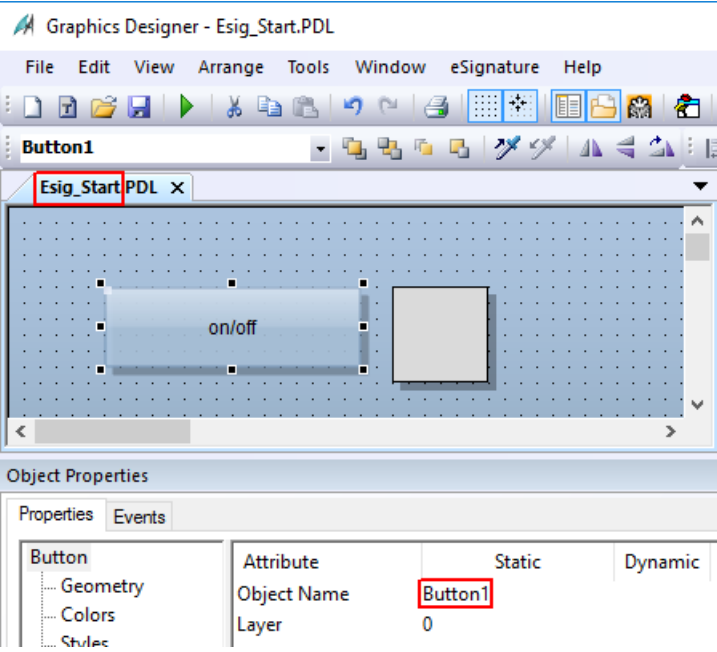
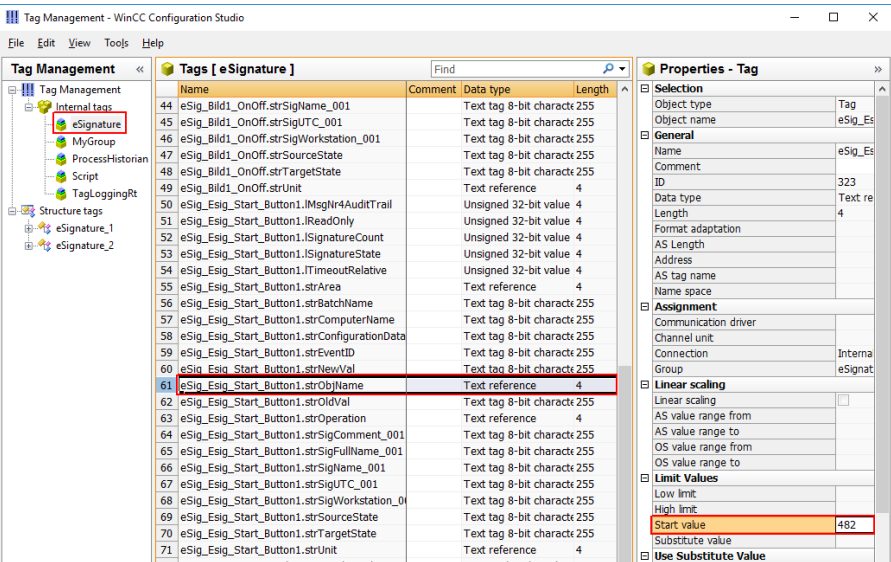
| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.  | <p>Add a button and a rectangle to the picture.</p>                                                                                                                                                                                                                                                                                                      |
| 6.  | <p>Configure the "Background Color" properties of the rectangle with the following dynamic:</p> <ul style="list-style-type: none"> <li>• "LampState" tag = 0 &gt; Background Color "red"</li> <li>• "LampState" tag = 1 &gt; Background Color "green"</li> </ul>   |

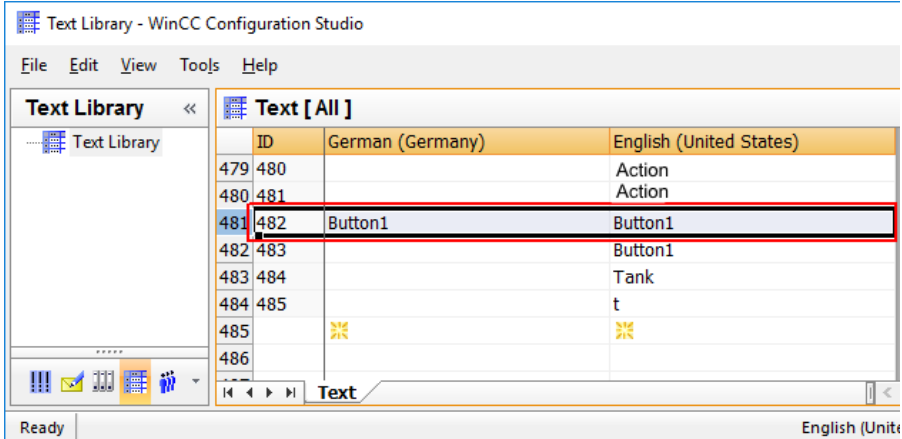
| No. | Description                                                                                   |
|-----|-----------------------------------------------------------------------------------------------|
| 7.  | Assign a meaningful name to the button. This name is displayed in the operator input message. |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8.  | <p>Select the button and use the “eSignature &gt; Assign eSignature” menu command.</p> <p>Note:</p> <p>Before of the assignment you shall check the button name and the screen name. Based on these both names the required structure tags will be generated in the WinCC tag management.</p> <p>Define the following settings:</p> <ul style="list-style-type: none"> <li>• Fill in the text fields “Operation”, “Area” and “Unit”.</li> <li>• Set the “Quantity of signatures” to 2.</li> <li>• Enter the new created message number into the “Audit Trail Message No.” field.</li> <li>• Add the user groups “Operator” and “Laboratory” to the selected groups.</li> <li>• Click the “Assign eSignature” button to confirm your settings.</li> </ul> <p>All other settings such as timeout, signature order and input session can be selected as desired.</p> <div data-bbox="464 813 1369 1662"> </div> <p><b>Note</b></p> <p>When having assigned the electronic signature, the following actions will be executed:</p> <ul style="list-style-type: none"> <li>• The configuration will be written to the database.</li> <li>• The “eSignature” tag structure will be generated.</li> <li>• The auxiliary object will be created and positioned at the upper left corner of the button.</li> <li>• The button will be configured by means of a VB script at the “Mouse Action” event.</li> </ul> |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9.  | <p>Finally, you have to adjust the VB script, in order to provide the button with the actual function and with the call of the audit trail message.</p> <ul style="list-style-type: none"> <li>• Open the Properties dialog for the button and select the "Events" tab.</li> <li>• Open the attached VB script.</li> <li>• Enter the following code line after the "declare and initialize tags" comment:</li> </ul> <pre>Dim LampStateTagSet Set LampStateTag = HMIRuntime.Tags ("LampState")  Dim CurrentUser Set CurrentUser = HMIRuntime.Tags ("@CurrentUser")  Dim strArea Set strArea= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strArea")  Dim strObjName Set strObjName= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strObjName")  Dim strOperation Set strOperation= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strOperation")</pre> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <pre>'declare and initialize tags Dim LampStateTag Set LampStateTag = HMIRuntime.Tags ("LampState")  Dim CurrentUser Set CurrentUser = HMIRuntime.Tags ("@CurrentUser")  Dim strArea Set strArea= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strArea")  Dim strObjName Set strObjName= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strObjName")  Dim strOperation Set strOperation= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strOperation")</pre> </div> <p>Hint:<br/>The tags within the script has to be exchanged with the corresponding structure tags which has been generated based on the screen name and the object name.</p> |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10. | <ul style="list-style-type: none"> <li>Enter the following code line after the “add your own code here” comment:<br/> <pre> If LampStateTag.Read = 0 Then     LampStateTag.Value = 1 Else     LampStateTag.Value = 0 End If LampStateTag.Write  'Create the Audit Trail entry CreateObjAuditTrail 1000,_     CurrentUser.Read,_     strArea.Read,_     strObjName.Read,_     strOperation.Read,_     "", "", "", "", ""  '##### ' add your own code here '#####  If LampStateTag.Read = 0 Then     LampStateTag.Value = 1 Else     LampStateTag.Value = 0 End If LampStateTag.Write  'Create the Audit Trail entry CreateObjAuditTrail 1000,_     CurrentUser.Read,_     strArea.Read,_     strObjName.Read,_     strOperation.Read,_     "", "", "", "", "" </pre> </li> <li>Close the VB script editor.</li> <li>Save the picture.</li> </ul> |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11. | <p>For opening the electronic signature dialog in all available runtime languages, the object name has to be known in every language.</p> <p>Select the object to which you have assigned the electronic signature and notice the object name. The name of the new structure tag contains the screen name and the object name. In this example it is "eSig_Esig_Start_Button1"</p>  <p>The screenshot shows the 'Graphics Designer - Esig_Start.PDL' window. The 'Object Properties' panel is open, showing the 'Button' object. The 'Object Name' attribute is highlighted and set to 'Button1'.</p>                                                                                                                                                                                                                  |
| 12. | <p>Now open the Tag Management and select the structure element "strObjName" in the corresponding structure tag, which have been created automatically by assigning the signature.</p>  <p>The screenshot shows the 'Tag Management - WinCC Configuration Studio' window. The 'Tags [ eSignature ]' list is open, and the 'eSig_Esig_Start_Button1.strObjName' tag is selected. The 'Properties - Tag' panel on the right shows the 'General' tab with the 'Object name' attribute set to 'eSig_Esig_Start_Button1.strObjName'.</p> <p>This tag refers to a text reference. The start value of the text reference requires the object name which is generated during the assignment of the signature for the current configuration language. The start value in this example refers to the Text reference ID 482.</p> |

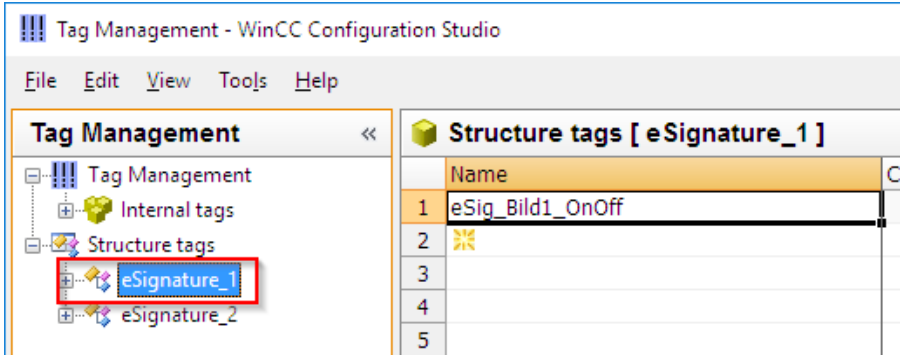
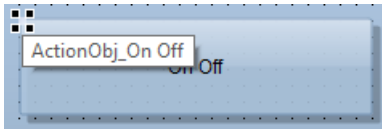
| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13. | <p>Open the Text Library. You can find the object name based on the reference-ID for one language. Copy this name and paste it in each available language column. In this example the object name is available in the English column and has been copied to the German column,</p>  <p>Changes in the Text Library are saved automatically.</p> |

Now you can start the Runtime of the project. A signal change of the configured LED will now be possible only after it has been confirmed by two different people.

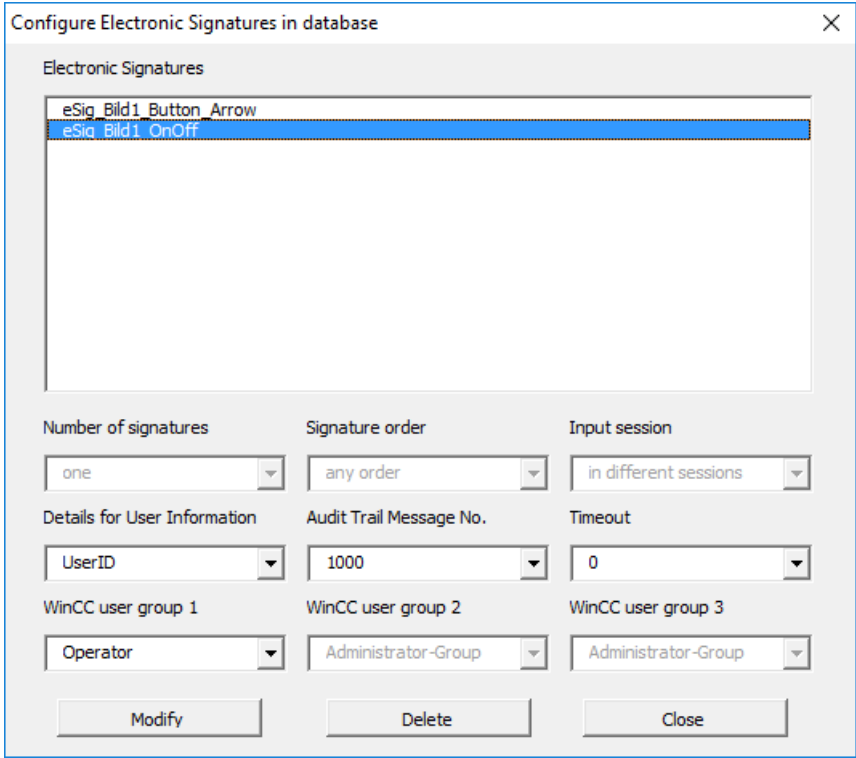
### 7.3 Removing an electronic signature from an object

To undo the configuration of an electronic signature, some manual actions are required. Proceed as follows:

Table 7-6

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Delete the tag structure of the associated electronic signature.</p> <ul style="list-style-type: none"> <li>Go to the "Structure tag" entry in the WinCC Explorer.</li> <li>Delete the relevant structure tag from the "eSignature_&lt;n&gt;" folder.</li> </ul>                                                                                            |
| 2.  | <p>Delete the auxiliary object of the electronic signature.</p> <ul style="list-style-type: none"> <li>Open the process picture which includes the signature.</li> <li>Select the auxiliary object and delete it. The auxiliary object of the "OnOff" object is named "ActionObj_OnOff" and it is located in the upper left corner of the button.</li> </ul>  |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.  | <p>Delete the script of the electronic signature from the object.</p> <ul style="list-style-type: none"> <li>Open the Object Properties dialog and select the “Events” tab.</li> <li>Open the VB script attached to the “Mouse Action” event.</li> <li>Delete the code lines of the electronic signature. Make sure that the original program remains unchanged.</li> </ul> <pre> 'declare and initialize tags Dim SignatureStateTag : Set SignatureStateTag = HMIRuntime.Tags("eSig_Esig_Start_test.1SignatureState") Dim SignatureStateBefore : SignatureStateBefore = SignatureStateTag.Read  Dim LampStateTag Set LampStateTag = HMIRuntime.Tags("LampState")  Dim CurrentUser Set CurrentUser = HMIRuntime.Tags ("@CurrentUser")  Dim strArea Set strArea= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strArea")  Dim strObjName Set strObjName= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strObjName")  Dim strOperation Set strOperation= HMIRuntime.Tags ("eSig_ESig_Start_Button1.strOperation")  'open SIMATIC Logon Electronic Signature dialoge Init_SLEsig_Dlg "eSig_Esig_Start_test"  'Check the signature state - 0=no signature added/1=part of signatures are added/2=signature is complete If ( (SignatureStateTag.Read = 2) And (SignatureStateBefore &lt;&gt; 2) ) Then  '##### ' add your own code here '#####  If LampStateTag.Read = 0 Then     LampStateTag.Value = 1 Else     LampStateTag.Value = 0 End If LampStateTag.Write   'Create the Audit Trail entry CreateObjAuditTrail 1000,_                         CurrentUser.Read,_                         strArea.Read,_                         strObjName.Read,_                         strOperation.Read,_                         "", "", "", ""  'Reset the rest of the eSignature parameters ResetESignatureParam "eSig_Esig_Start_test" End If  End Sub </pre> |

| No. | Description                                                                                                                                                                                                                                                                                                                                         |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.  | <p>Remove the electronic signature entry from the database.</p> <ul style="list-style-type: none"> <li>Select the “eSignature &gt; Configure the eSignature parameters in the DB” menu item.</li> <li>Select the relevant data record and delete it.</li> </ul>  |

After this procedure, the electronic signature function will no longer be available for this object and all redundant data will be cleared.

### 7.4 Qualification and test of the application in the project

Although the solution for electronic signatures described in this document has been carefully developed and tested, it is only intended as an example for application. This is why the electronic signatures have to be realized, tested and described in the concrete application of a project. This is particularly the case when using it in a regulated environment.

The individual scenarios for electronic signatures within a project have to be defined in your specification. Testing should not only include a documentation of the configuration's compliance with the specification, but also how the applied electronic signature is displayed in the message system and, if required, in reports.

The input dialog for electronic signature authentication is a SIMATIC Logon standard module. SIMATIC Logon has been tested in the course of the WinCC system tests, so that it does not need to be verified again for the specific project.

The dialog for the configuration of electronic signatures (5.1.2 "Electronic signature – configuration" dialog) presented with this solution includes the automatic generation of scripts which are then adapted manually. These scripts are customer-specific applications in compliance with the GAMP software category 5. This type of applications must be inspected under functional aspects and by means of a code review. This affects the scripts mentioned in section 3.3 "Functions and modules for Runtime".

## 8 Operator input message and simple electronic signature

SIMATIC WinCC offers a basic functionality to log operator input messages like an Audit Trail while the plant is in operation. The default operator input message optional with an operator comment only records old value and new value from numeric value changes.

More options provide a self-defined operator input message which is suitable to record the changes of text values.

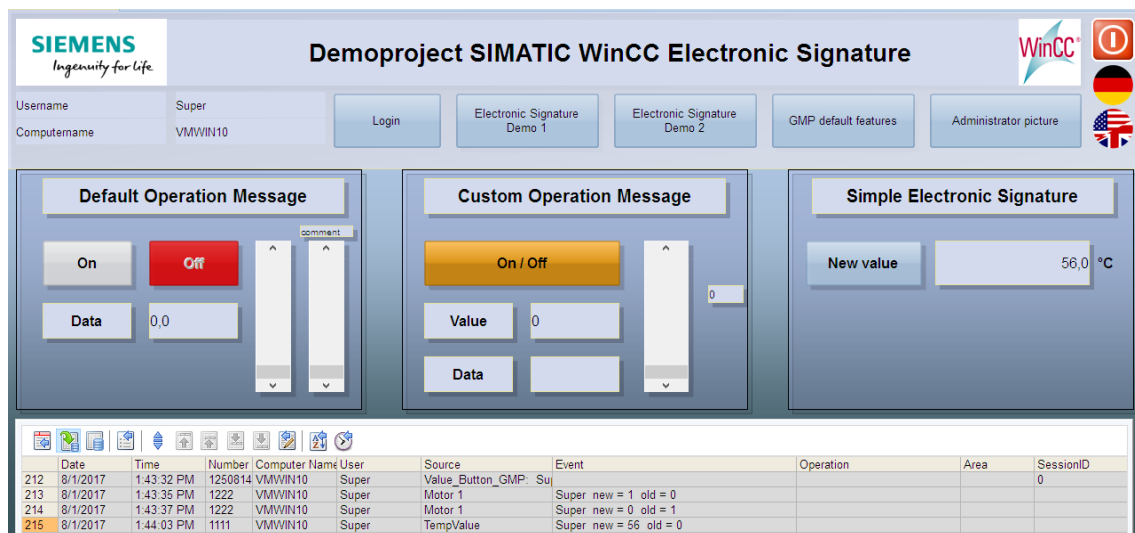
The described simple electronic signature uses a function of SIMATIC Logon and can be adapted flexibly by the user.

The messages generated in each case are archived in the WinCC Alarm Logging and can be displayed as an Audit Trail by setting corresponding filters.

### Hint

It is recommended to configure the property "Authorization" at the objects for tracking the operator input message. So a logged-in user is required to operate the respective object.

Figure 8-1

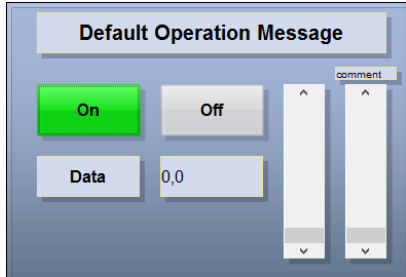


## 8.1 Description of the examples

### 8.1.1 WinCC Default Operator input message

The default operator input message provided by WinCC is demonstrated in the screen “GMP default features” based on the objects IO-field, button and slider-object. It is the system message with the message number 12508141 which is only configurable restrictedly.

Table 8-1

| Objects                                                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |               |         |        |                                              |                                                                                       |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|---------|--------|----------------------------------------------|---------------------------------------------------------------------------------------|
|  | <p>This example shows the buttons “On” and “Off”, a numeric IO-field and two slider-objects. With each operation of these objects the default operator input message with the message number 12508141 is generated.</p> <p>By changing the value or moving the right slider-object an operator input comment is required in addition. This comment can be called up in the Alarm Logging control via the button .</p> |            |               |         |        |                                              |                                                                                       |
| Date                                                                              | Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Number     | Computer Name | User    | Source | Comm                                         |                                                                                       |
| 699                                                                               | 6/27/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9:28:40 AM | 1250814       | VMWIN10 | Super  | Value_Button_GMP: Super new=0 old=0          |    |
| 700                                                                               | 6/27/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9:28:42 AM | 1250814       | VMWIN10 | Super  | Value_Button_GMP: Super new=1 old=0          |    |
| 701                                                                               | 6/27/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9:28:46 AM | 1250814       | VMWIN10 | Super  | Value_Button_GMP: Super new=0 old=1          |    |
| 702                                                                               | 6/27/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9:28:58 AM | 1250814       | VMWIN10 | Super  | Value_Number_GMP: Super new=42 old=34        |   |
| 703                                                                               | 6/27/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9:29:01 AM | 1250814       | VMWIN10 | Super  | Value_Slider_GMP: Super new=42 old=0         |  |
| 704                                                                               | 6/27/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 9:29:13 AM | 1250814       | VMWIN10 | Super  | Value_Slider_GMP_Comment: Super new=73 old=0 |  |

The default operator input message includes the following information:

- Timestamp of the operation time
- Message number
- Computer name
- Current WinCC user
- Tag name, current WinCC user, old value (process value 2) and new value (process value 3) in the “source” message block

The configuration is explained in the chapters:

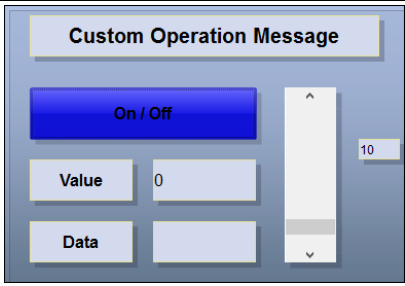
8.2.1 WinCC default operator input message for an IO-field / Slider-object

8.2.2 WinCC default operator input message when pushing a button

### 8.1.2 Self-designed operator input message

The operation of these objects generates a self-designed operator input message to track the operation in an Audit Trail. It is the message number 1222 in this demo project.

Table 8-2

| Objects                                                                           |                      | Description                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                      | <p>This example shows a button, two IO-fields to enter a numeric value and a value of type String and a slider object.</p> <p>With the operation of the button or the value change or the movement of the slider-object the self-designed operator input message with the message number 1222 is generated as Audit Trail entry in the Alarm Logging control.</p> |
| 710                                                                               | 6/27/2017 9:46:41 AM | 1222 VMWIN10 Super Motor 1 Super new = 1 old = 0                                                                                                                                                                                                                                                                                                                  |
| 711                                                                               | 6/27/2017 9:46:52 AM | 1222 VMWIN10 Super I/O Value Super new = 137 old = 123                                                                                                                                                                                                                                                                                                            |
| 712                                                                               | 6/27/2017 9:47:00 AM | 1222 VMWIN10 Super I/O Data Super new = Label B old = Label A                                                                                                                                                                                                                                                                                                     |
| 713                                                                               | 6/27/2017 9:47:05 AM | 1222 VMWIN10 Super Slider Value Super new = 32 old = 42                                                                                                                                                                                                                                                                                                           |

The self-designed operator input message includes the following information:

- Timestamp of the operation time
- Message number
- Computer name
- Current WinCC user
- Name of the object which has been changed
- Current WinCC user, old value and new value as entry in the “event” message block

The configuration of the self-designed operator input message is explained in the chapters:

### 8.2.3 Self-designed operator input message

### 8.2.4 Self-designed operator input message for the value change of an IO-field

### 8.2.5 Self-designed operator input message for the operation of a button

### 8.2.6 Self-designed operator input message for moving a slider object

### 8.1.3 Comparison of the default operator input message and the self-designed operator input message

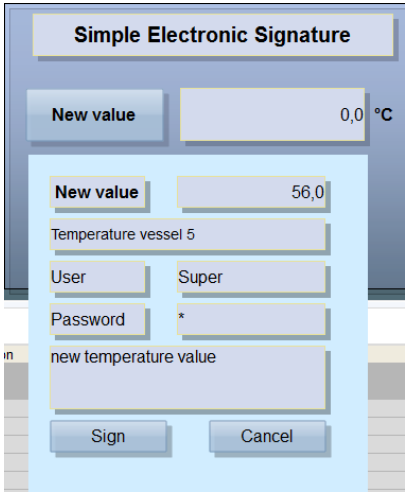
Table 8-3

| Included data            | Default operator input message | Self-designed operator input message |
|--------------------------|--------------------------------|--------------------------------------|
| Timestamp                | X                              | X                                    |
| Message number           | X                              | X                                    |
| Computer name            | X                              | X                                    |
| Current WinCC user       | X                              | X                                    |
| Tag name                 | X                              | X                                    |
| Object name              |                                | X                                    |
| Old value of type Number | X                              | X                                    |
| Old value of type String |                                | X                                    |
| New Value of type Number | X                              | X                                    |
| New value of type String |                                | X                                    |

### 8.1.4 Simple electronic signature

A value is only changed after the successful input of an electronic signature.

Table 8-4

| Objects                                                                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <p>The button "New value" opens a self-designed dialog. The new value is entered in this dialog. The text field below displays a description to the respective value. The signature is given by entering the password hidden to the displayed user. The text field below can be used to input an operator comment.</p> <p>With pushing the button "Sign" the authorization check of the signature (user and password) is started. If the authorization is successful, the dialog will be closed, the new value will be displayed in the input field and an Audit Trail entry with the message number 1111 will be generated in the Alarm Logging.</p> <p>Otherwise the message "The login data is not valid" is shown.</p> |
| <div>818 6/29/2017 11:01:00 AM 1111 VMWIN10 Spezial TempValue Spezial new = 765 old = 650</div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

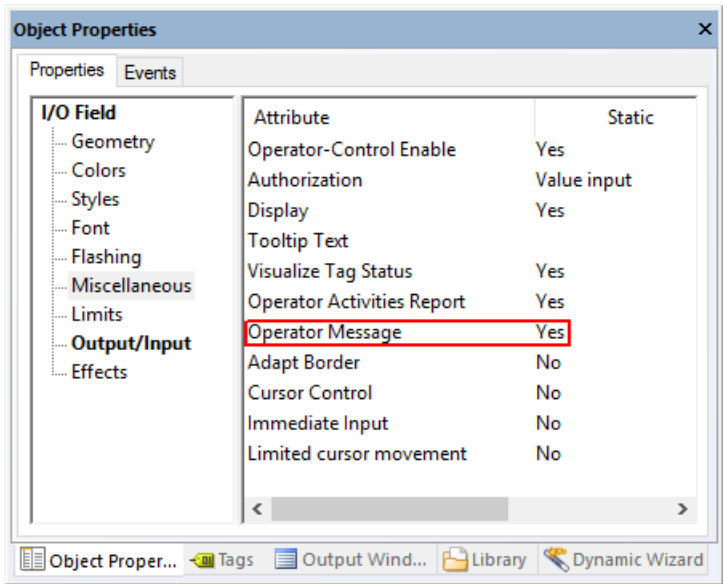
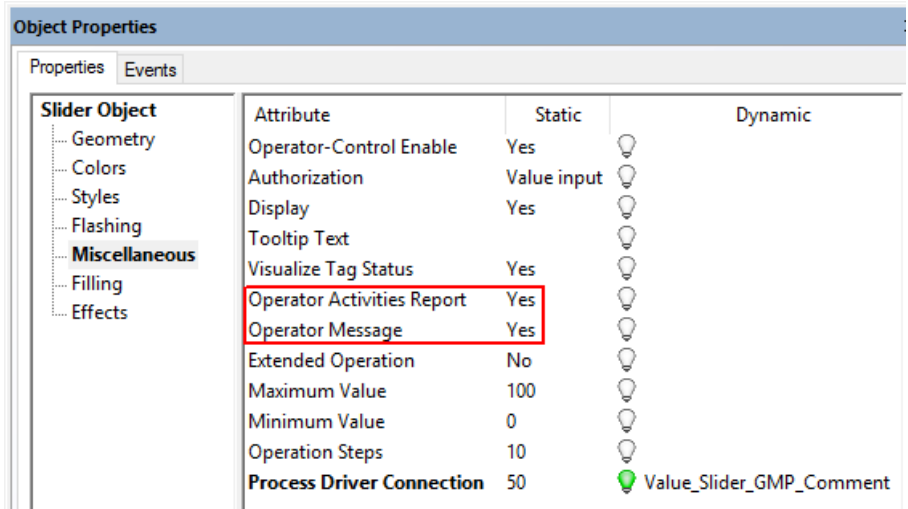
The configuration is described in the chapter 8.2.3 Self-designed operator input message

## 8.2 Configuration of the examples

### 8.2.1 WinCC default operator input message for an IO-field / Slider-object

The generation of the default operator input message is activated in the properties to the objects.

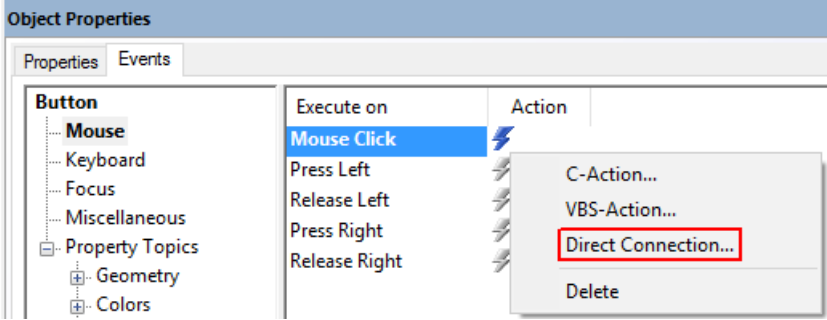
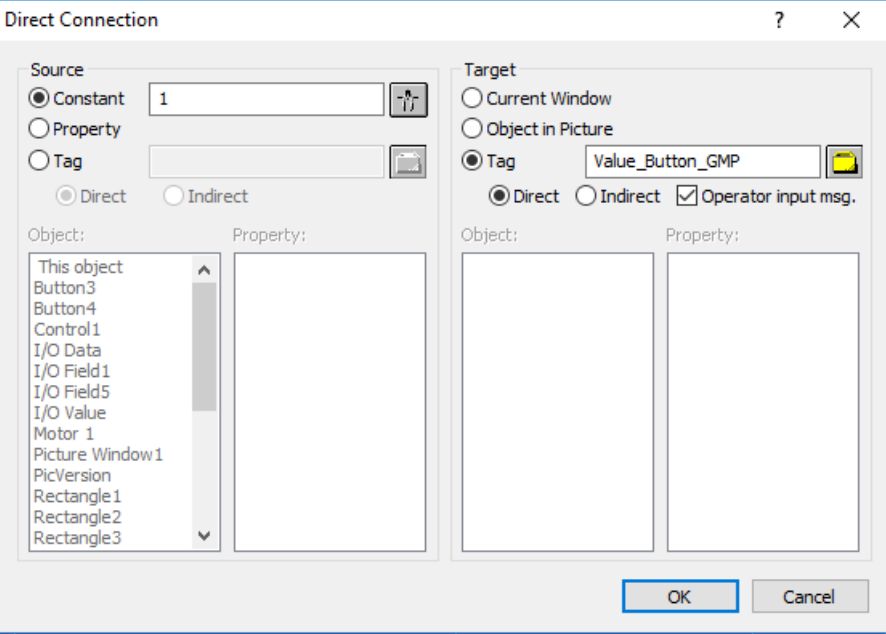
Table 8-5

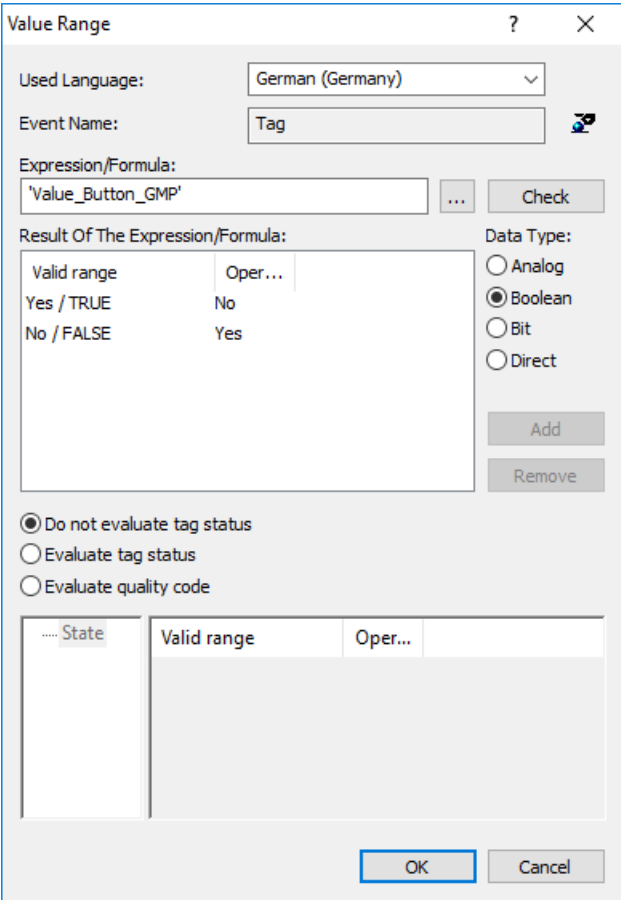
| No. | Description                                                                                                                                                                                                                                                                                                                                             |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Open the properties to the selected IO-field.                                                                                                                                                                                                                                                                                                           |
| 2.  | The setting "Operator Message = Yes" ensures the generation of the operator input message with the number 12508141, if a value has been entered in the IO-field.                                                                                                                                                                                        |
| 3.  | The property "Operator Activities Report" is set to "Yes", if the input of an additional operator comment is required. After the value input a dialog to edit an operator comment is opened. The comment can be displayed in the Alarm Logging control via the button  |
| 4.  | Properties of the IO-field <div data-bbox="464 824 1189 1406">  </div>                                                                                                                                                                                               |
| 5.  | Properties of the slider-object with operator comment <div data-bbox="464 1451 1375 1957">  </div>                                                                                                                                                                  |

### 8.2.2 WinCC default operator input message when pushing a button

The generation of the default operator input message can be activated in the direct connection of the button. The example demonstrates this function at the buttons “On” and “Off”.

Table 8-6

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Open the register tab “Event” in the properties to the selected button.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2.  | <p>Select the entry “Direct Connection” in the context menu to the event “Mouse Click”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3.  | <p>The configuration dialog “Direct Connection” is opened. The example shows that the constant value 1 (Source) is assigned to the tag “Value_Button_GMP” (Target). When the button is pushed in runtime, the tag is set to value 1.</p> <p>The activation of the property “Operator input msg.” ensures that an operator input message will be generated with pushing the button.</p> <p>The button “Off” is configured in the same way, but the value “0” is assigned to the same tag “Value_Button_GMP”. The property “Operator input msg.” is also activated.</p>  |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                             |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.  | <p>The buttons “On” / “Off” lock each other, so that only one of them can be pushed. For that the property “Operator Control Enable” below “Miscellaneous” is configured in the following way for the Button “On”.</p>  <p>For the other button the operator control enable has to be set in opposite direction.</p> |

### 8.2.3 Self-designed operator input message

The self-designed operator input message can include more information and is suitable to track changes of values from type String.

You can setup more operator input messages with different message numbers.

The example project shows the following self-designed operator input messages:

- 1222, when a value has been changed
- 1111, when a value has been changed after the input of a simple electronic signature

The self-designed operator input message should contain the following information:

- Timestamp
- Computer name
- Current WinCC user
- Object name
- Event (user, object name, old value and new value)
- Comment

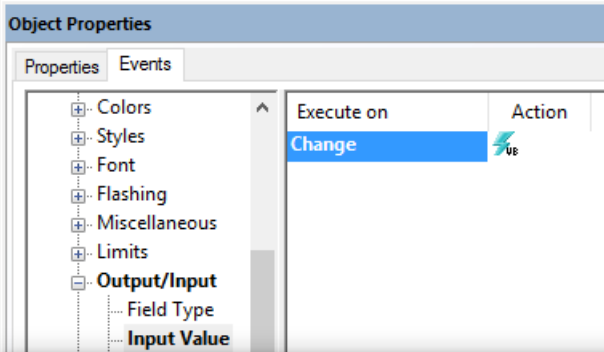
Table 8-7

| No.              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--|--------|--------|------|-------|-------|---------------------------------------------------|------------|-------|-----------|--|
| 1.               | Setup a new message number for the self-designed operator input message, The configuration is described in detail in the chapter 7.1.5 Configuring the messages in Alarm Logging.                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
| 2.               | <p>In comparison with the description in the chapter 7.1.5 the configuration of the user text blocks is done in the following way.</p> <p>Source: @10%s@</p> <p>Area: @9%s@</p> <p>Event: @102%s@ @6%s@ new = @5%s@ @8%s@ old = @4%s@ @8%s@</p> <table border="1"> <thead> <tr> <th colspan="2">User Text Blocks</th></tr> </thead> <tbody> <tr> <td>Source</td><td>@10%s@</td></tr> <tr> <td>Area</td><td>@9%s@</td></tr> <tr> <td>Event</td><td>@102%s@ @6%s@ new = @5%s@ @8%s@ old = @4%s@ @8%s@</td></tr> <tr> <td>Batch name</td><td>@1%s@</td></tr> <tr> <td>Operation</td><td></td></tr> </tbody> </table> | User Text Blocks |  | Source | @10%s@ | Area | @9%s@ | Event | @102%s@ @6%s@ new = @5%s@ @8%s@ old = @4%s@ @8%s@ | Batch name | @1%s@ | Operation |  |
| User Text Blocks |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
| Source           | @10%s@                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
| Area             | @9%s@                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
| Event            | @102%s@ @6%s@ new = @5%s@ @8%s@ old = @4%s@ @8%s@                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
| Batch name       | @1%s@                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
| Operation        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |  |        |        |      |       |       |                                                   |            |       |           |  |
| 3.               | Call the function "OperatorMessage_Value.bmo" at the object which is changed in runtime to generate the self-designed operator input message. This is described in detail in the following chapters.                                                                                                                                                                                                                                                                                                                                                                                                              |                  |  |        |        |      |       |       |                                                   |            |       |           |  |

### 8.2.4 Self-designed operator input message for the value change of an IO-field

The function "OperatorMessage\_Value.bmo" requires the parameters old value, new value and object name. So it is necessary to save the old value and the new value with the input in an IO-field.

Table 8-8

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Open the register tab "Events" in the properties to the IO-field. Insert the following VB-Script at the property "Input Value" below Output/Input</p> <pre>Sub InputValue_OnPropertyChanged(Byval Item, Byval value)  Dim OldValue: OldValue = item.OutputValue Dim NewValue: NewValue = item.InputValue Dim Obj: Obj = item.ObjectName  OperatorMessage_Value OldValue, NewValue, Obj  End Sub</pre>  <pre>Sub InputValue_OnPropertyChanged(Byval Item, Byval value)   Dim OldValue: OldValue = item.OutputValue Dim NewValue: NewValue = item.InputValue Dim Obj: Obj = item.ObjectName   '===== 'Call of the custom specified operation message '===== OperatorMessage_Value OldValue, NewValue, Obj   End Sub</pre> |

### 8.2.5 Self-designed operator input message for the operation of a button

The operator input message should be generated with mouse action at the button. A possible existing script has to be supplemented.

Table 8-9

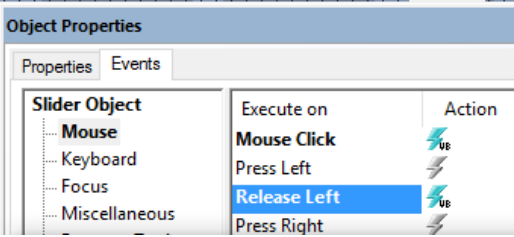
| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Open the register tab "Event" in the properties to the button. Insert the following VB-script or add it to an existing VB-script e.g. to the event mouse click below the property "Mouse".</p> <pre> Sub OnClick(Byval Item) Dim OnOff: Set OnOff = HMIRuntime.Tags("Value_Button_Custom") OnOff.Read 'Saves the old value Dim OldValue: OldValue = OnOff.Value  'Switches the current value If OnOff.Value = 1 Then     OnOff.Write 0 Else     OnOff.Write 1 End If  'Reads the new value Dim NewValue: NewValue = OnOff.Value  'Call of the custom specified operation message OperatorMessage_Value OldValue, NewValue, item.ObjectName  End Sub </pre> <hr/> <pre> Sub OnClick(Byval Item) Dim OnOff: Set OnOff = HMIRuntime.Tags("Value_Button_Custom") OnOff.Read 'Saves the old value Dim OldValue: OldValue = OnOff.Value  'Switches the current value If OnOff.Value = 1 Then     OnOff.Write 0 Else     OnOff.Write 1 End If  'Reads the new value Dim NewValue: NewValue = OnOff.Value  '===== 'Call of the custom specified operation message '===== OperatorMessage_Value OldValue, NewValue, item.ObjectName  End Sub </pre> |

### 8.2.6 Self-designed operator input message for moving a slider object

The operator input message should be generated after moving the slider. It is necessary to save the old value and the new value for the operator input message.

Table 8-10

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | <p>Save the old value in an internal DataSet tag. For that insert the following VB-script at the event "Mouse Click".</p> <pre> Sub OnClick(Byval Item) 'Saves the old value in an internal picture tag HMIRuntime.DataSet.Add "OldValue", item.Process  End Sub </pre> <pre> Sub OnClick(Byval Item) 'Saves the old value in an internal picture tag HMIRuntime.DataSet.Add "OldValue", item.Process  End Sub </pre> |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.  | <p>The saving of the new value and the generation of the operator input message is configured in a VB-script e.g. at the event "Release Left".</p> <pre> Sub OnLButtonUp(Byval Item, Byval Flags, Byval x, Byval y) 'Reads the value from the internal picture tag Dim OldValue: OldValue = HMIRuntime.DataSet.Item("OldValue").Value  Dim NewValue: NewValue = item.process Dim Obj: Obj = item.ObjectName ' 'Call of the custom specified operation message OperatorMessage_Value Oldvalue, Newvalue, Obj  'Removes the internal picture tag HMIRuntime.DataSet.Remove "OldValue"  End Sub </pre>  <pre> Sub OnLButtonUp(Byval Item, Byval Flags, Byval x, Byval y) 'Reads the value from the internal picture tag Dim OldValue: OldValue = HMIRuntime.DataSet.Item("OldValue").Value Dim NewValue: NewValue = item.process Dim Obj: Obj = item.ObjectName  '===== 'Call of the custom specified operation message '===== OperatorMessage_Value Oldvalue, Newvalue, Obj  'Removes the internal picture tag HMIRuntime.DataSet.Remove "OldValue"  End Sub </pre> |

### 8.2.7 Simple electronic signature

In this example the simple electronic signature bases on the input of the password to the displayed current user. For this function a self-designed dialog which can be designed as needed has been configured.

The dialog contains the objects:

- IO-field to enter the new value
- IO-field, either to display the current WinCC user (@CurrentUser) or to enter a user name (in this case the content of the WinCC tag @CurrentUser has to be buffered within the VB Script.)
- IO-field to input the password
- Button to sign the data
- Button to cancel the action

Optional:

- Text field to describe the value which should be changed
- IO-field to enter an operator comment

Figure 8-2

The dialog box is titled 'New value' and contains the following elements:

- A text field labeled 'New value' with the value '56,0'.
- A text field labeled 'Temperature vessel 5'.
- A text field labeled 'User' with the value 'Super'.
- A text field labeled 'Password' with a masked input (asterisk).
- A text field labeled 'New temperature value'.
- Two buttons at the bottom: 'Sign' and 'Cancel'.

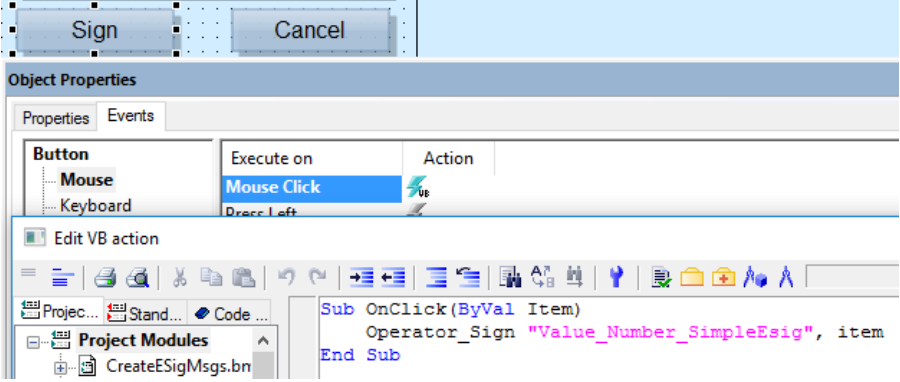
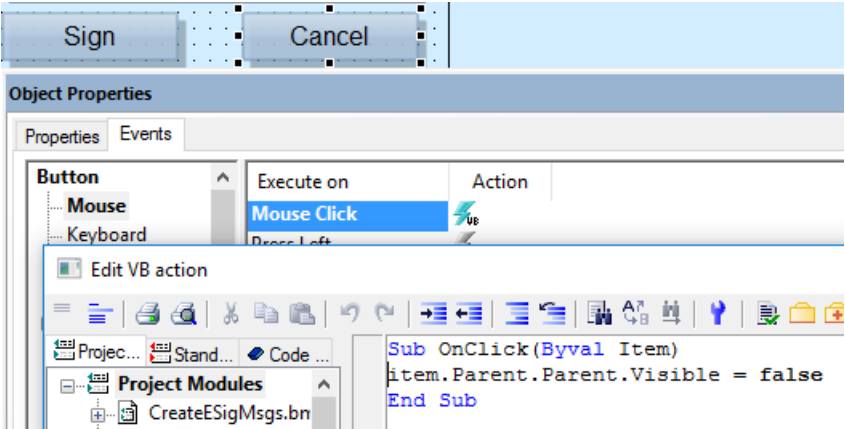
The dialog is displayed within a picture window when the button “New value” has been pushed.

- After the input of all necessary data you push the button “Sign”. The new value is overtaken in the IO-field in the screen and an operator input message is generated as an Audit Trail entry. In this example project it is the message number 1111.
- If the authorization check (user / password) was not successful, the hint “The login data is not valid” is displayed.

You configure the properties of the different objects in this dialog in the following way:

Table 8-11

| No.           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|--------------|--|-----|----------|------------|--------|--|--|--------|-------------|---|--|--|--------|--------------|---|--|--------------|------|-------------|--------|--|--|----------|---------------|---|--|--|---------------|---------------|----|--|--|--------|---------------|----|--|--|--------------|--------------------|-----|--|--|---------|------------------------|-----|--|--|--|--------------|-----|--|--|
| 1.            | Link the IO-field with an additional internal tag to save the entered new value. The function “Operator_Sign.bmo” saves at first the entered new value in this tag and transfers the value after the successful authorization check (user / password) into the real tag which should be changed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| 2.            | Declare the IO-field to display the user (@CurrentUser) as output field. So the user is only output. <div><div>Object Properties</div><div><div>PropertiesEvents</div><table><tr><th>I/O Field</th><th>Attribute</th><th>Static</th><th></th><th>Dyn</th></tr><tr><td>Geometry</td><td>Field Type</td><td>Output</td><td></td><td></td></tr><tr><td>Colors</td><td>Input Value</td><td>*</td><td></td><td></td></tr><tr><td>Styles</td><td>Output Value</td><td>*</td><td></td><td>@CurrentUser</td></tr><tr><td>Font</td><td>Data Format</td><td>String</td><td></td><td></td></tr><tr><td>Flashing</td><td>Output Format</td><td>*</td><td></td><td></td></tr><tr><td>Miscellaneous</td><td>Apply on Full</td><td>No</td><td></td><td></td></tr><tr><td>Limits</td><td>Apply on Exit</td><td>No</td><td></td><td></td></tr><tr><td>Output/Input</td><td>Clear on New Input</td><td>Yes</td><td></td><td></td></tr><tr><td>Effects</td><td>Clear on Invalid Input</td><td>No</td><td></td><td></td></tr><tr><td></td><td>Hidden Input</td><td>No</td><td></td><td></td></tr></table></div></div>                                                     | I/O Field | Attribute | Static       |  | Dyn | Geometry | Field Type | Output |  |  | Colors | Input Value | * |  |  | Styles | Output Value | * |  | @CurrentUser | Font | Data Format | String |  |  | Flashing | Output Format | * |  |  | Miscellaneous | Apply on Full | No |  |  | Limits | Apply on Exit | No |  |  | Output/Input | Clear on New Input | Yes |  |  | Effects | Clear on Invalid Input | No  |  |  |  | Hidden Input | No  |  |  |
| I/O Field     | Attribute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Static    |           | Dyn          |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Geometry      | Field Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Output    |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Colors        | Input Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | *         |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Styles        | Output Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | *         |           | @CurrentUser |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Font          | Data Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | String    |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Flashing      | Output Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | *         |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Miscellaneous | Apply on Full                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No        |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Limits        | Apply on Exit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No        |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Output/Input  | Clear on New Input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes       |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Effects       | Clear on Invalid Input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | No        |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
|               | Hidden Input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No        |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| 3.            | Link the IO-field with an internal tag to enter the password. Furthermore set the property “Hidden Input” to “Yes”, so that the password entry is not visible. <div><div>Object Properties</div><div><div>PropertiesEvents</div><table><tr><th>I/O Field</th><th>Attribute</th><th>Static</th><th></th><th></th></tr><tr><td>Geometry</td><td>Field Type</td><td>Input</td><td></td><td></td></tr><tr><td>Colors</td><td>Input Value</td><td>*</td><td></td><td></td></tr><tr><td>Styles</td><td>Output Value</td><td>*</td><td></td><td>Password</td></tr><tr><td>Font</td><td>Data Format</td><td>String</td><td></td><td></td></tr><tr><td>Flashing</td><td>Output Format</td><td>*</td><td></td><td></td></tr><tr><td>Miscellaneous</td><td>Apply on Full</td><td>No</td><td></td><td></td></tr><tr><td>Limits</td><td>Apply on Exit</td><td>No</td><td></td><td></td></tr><tr><td>Output/Input</td><td>Clear on New Input</td><td>Yes</td><td></td><td></td></tr><tr><td>Effects</td><td>Clear on Invalid Input</td><td>Yes</td><td></td><td></td></tr><tr><td></td><td>Hidden Input</td><td>Yes</td><td></td><td></td></tr></table></div></div> | I/O Field | Attribute | Static       |  |     | Geometry | Field Type | Input  |  |  | Colors | Input Value | * |  |  | Styles | Output Value | * |  | Password     | Font | Data Format | String |  |  | Flashing | Output Format | * |  |  | Miscellaneous | Apply on Full | No |  |  | Limits | Apply on Exit | No |  |  | Output/Input | Clear on New Input | Yes |  |  | Effects | Clear on Invalid Input | Yes |  |  |  | Hidden Input | Yes |  |  |
| I/O Field     | Attribute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Static    |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Geometry      | Field Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Input     |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Colors        | Input Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | *         |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Styles        | Output Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | *         |           | Password     |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Font          | Data Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | String    |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Flashing      | Output Format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | *         |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Miscellaneous | Apply on Full                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No        |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Limits        | Apply on Exit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No        |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Output/Input  | Clear on New Input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes       |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
| Effects       | Clear on Invalid Input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes       |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |
|               | Hidden Input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes       |           |              |  |     |          |            |        |  |  |        |             |   |  |  |        |              |   |  |              |      |             |        |  |  |          |               |   |  |  |               |               |    |  |  |        |               |    |  |  |              |                    |     |  |  |         |                        |     |  |  |  |              |     |  |  |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.  | <p>Call the function "Operator-Sign.bmo" in a VB-script at the event "Mouse Click" in the properties of the button "Sign". The function requires the tag name of the tag which should be changed.</p> <p>This function executes the authorization check (user / password) against SIMATIC Logon. If the check is successful, the content of the internal tag to save the new value is transferred to the real tag and the operator input message with the message number 1111 is generated as Audit Trail entry. The message includes the old value, the new value and the object name.</p>  |
| 5.  | <p>Insert the VB-script at the property "Mouse Click" to the button "Cancel".</p> <pre>Sub OnClick(Byval Item) item.Parent.Parent.Visible = false End Sub</pre>                                                                                                                                                                                                                                                                                                                                                                                                                            |

| No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.  | <p>If the authorization check was not successful, the self-designed dialog with the hint "The login data is not valid" is displayed in the same picture window.</p> <p>The opening of this dialog is executed by the function "Operator_Sign.bmo" which is called at the button "Sign".</p>  <p>Configure the same VB-script as described in point 5 to close this dialog at the property "mouse Click" to the button "Close".</p> |

## 9 Appendix

### 9.1 Service and Support

#### Industry Online Support

Do you have any questions or need assistance?

Siemens Industry Online Support offers round the clock access to our entire service and support know-how and portfolio.

The Industry Online Support is the central address for information about our products, solutions and services.

Product information, manuals, downloads, FAQs, application examples and videos – all information is accessible with just a few mouse clicks at:

<https://support.industry.siemens.com>

#### Technical Support

The Technical Support of Siemens Industry provides you fast and competent support regarding all technical queries with numerous tailor-made offers – ranging from basic support to individual support contracts. You send queries to Technical Support via Web form:

[www.siemens.com/industry/supportrequest](http://www.siemens.com/industry/supportrequest)

#### Service offer

Our range of services includes, inter alia, the following:

- Product trainings
- Plant data services
- Spare parts services
- Repair services
- On-site and maintenance services
- Retrofitting and modernization services
- Service programs and contracts

You can find detailed information on our range of services in the service catalog:

<https://support.industry.siemens.com/cs/sc>

#### Industry Online Support app

You will receive optimum support wherever you are with the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone:

<https://support.industry.siemens.com/cs/ww/en/sc/2067>

## 9.2 Links & Literature

### Internet links

The following list is by no means complete and only provides a selection of appropriate information.

Table 9-1

| No  | Topic                           | Link                                                                                                                                  |
|-----|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| \1\ | Reference to this entry         | <a href="https://support.industry.siemens.com/cs/ww/en/view/67688514">https://support.industry.siemens.com/cs/ww/en/view/67688514</a> |
| \2\ | Siemens Industry Online Support | <a href="http://support.automation.siemens.com">http://support.automation.siemens.com</a>                                             |
| \3\ | SIMATIC Logon                   | <a href="http://support.automation.siemens.com/WW/view/en/62563251">http://support.automation.siemens.com/WW/view/en/62563251</a>     |

## 9.3 History

Table 9-2

| Version | Date    | Modifications                                                               |
|---------|---------|-----------------------------------------------------------------------------|
| V1.0    | 02/2013 | First version                                                               |
| V1.1    | 05/2014 | Adaption WinCC V7.2 / Redundancy support                                    |
| V1.2    | 08/2017 | Adaption WinCC 7.4 / Operator input message and simple electronic signature |