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Reference documents

Rev.	Publisher	Date	Comment

Attachements

Nr	Description

Table of Contents

1 Documents purpose

This document contains a description of how SCADA systems by Dynamic Engineering are used.

2 Colours

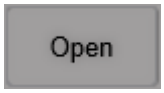
All colours used in the various interfaces are configured as a colour palette. This means you can easily add your own colour setups and switch between them.

Any number of palettes can be defined, but we aware that there is no way to reorder the colours in the list without breaking references to the UI.

No.	Identification	Palette 0
0	Background	#A09E9E
1	Menu.Background	#7F7F7F
2	Text	#000000
3	Class.Safety	#9555A0
4	Class.Fault	#6ACEF5
5	Class.Warning	#FDFD6D
6	Class.Event	#FFFFFF
7	Class.Action	#EE2E2C
8	Class.Suppressed	#1D6CB4
9	Class.Blocked	#1D6CB4
10	Class.Conflict	#EE2E2C
11	Medium.Oil	#763E18
12	Medium.Gas	#FDFD6D
13	Medium.Water	#99CA3C
14	Medium.Air	#1D6CB4
15	Medium.Fire_fighting	#FDBE3F
16	Medium.Chemicals	#9555A0
17	Button.On	#7F7F7F
18	Button.Off	#A09E9E
19	Binary.On	#FFFFFF
20	Binary.Off	#A09E9E
21	SBV.Open	#FFFFFF
22	SBV.Closed	#A09E9E
23	Background.Level1	#A09E9E
24	Background.Level2	#7F7F7F
25	Background.Level3	#6B6B6B
26	Symbol.Outline	#000000

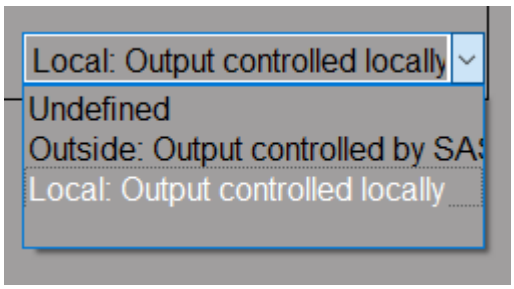
3 Styles

3.1 Button



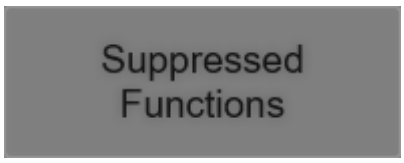
- Text style
  - Font: Standard font3 (Arial 12)
  - Text color: Text
  - Alignment horizontal/vertical: Centered
- Fill style
  - Fill pattern: Solid
  - Fill color: Background
- Element border
  - No border
  - Border color: Text

3.2 Combobox



- Text style
  - Font: Standard font3 (Arial 12)
  - Text color: Text
  - Alignment horizontal/vertical: Centered
- Fill style
  - Fill pattern: Solid
  - Fill color: Background

3.3 MenuButton



- Fill style
  - Fill pattern: Solid
  - Fill color: Background
- Text style
  - Standard font4 (Arial 14)
  - Text color: Text
- Glow effect
  - Activated
  - 75% transparency
  - Spread: 5px
- Rounding style
  - Proportional
  - All x: 5%
  - All y: 0%
  - -1 on the rest
- Element border
  - Element border: Classical deepened
  - Base color: #9A9A9C

4 Screens

4.1 General

All screens are built after the same template, being divided into 2 parts; An alert bar and a main picture.

4.1.1 Top bar

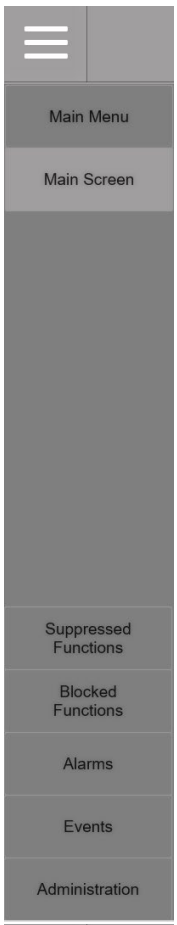
The top bar is always visible and shows important information to the operator. It contains 3 elements – A menu button for navigation, an alarms panel and an events panel.

The alarms panel displays the latest 3 unacknowledged alarms. You will find the alarms take colour based on the type of alarm they are – deviation errors and external faults may be blue, while action alarms are red. The alarm colours can be defined in the colour pallet.

4.1.2 Main picture

This section takes up most of the screen and shows the current page. By default, it will show a quick overview of the process in question, with clickable illustrations of tanks, valves and pumps.

4.1.3 Menu



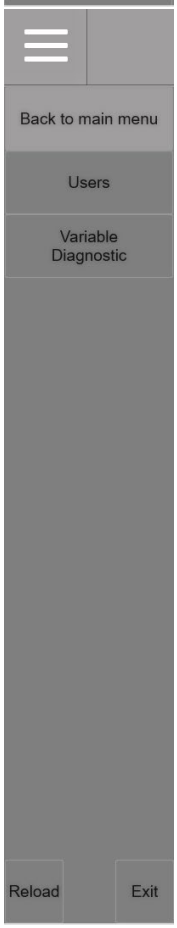
The menu is divided into two main parts. The top button always shows what page of the menu you are on or a button to get back to the main menu. Below that, you will find navigation buttons depending on which page of the menu you are on.

4.1.3.1 Main menu

You will primarily be using the main menu for navigation. On the top, it contains a list of process related screens, in this case only the Main Screen. In bigger systems you will find multiple screens listed here.

On the bottom you will find shortcuts to various utility pages. These are

- Suppressed functions – list over all functions currently suppressed
- Blocked functions – list over all functions currently blocked
- Alarms – List over all alarms, options to acknowledge, comment on or filter
- Events – List over all events (valves opening/closing, inputs from the control panel)



4.1.3.2 Administration menu

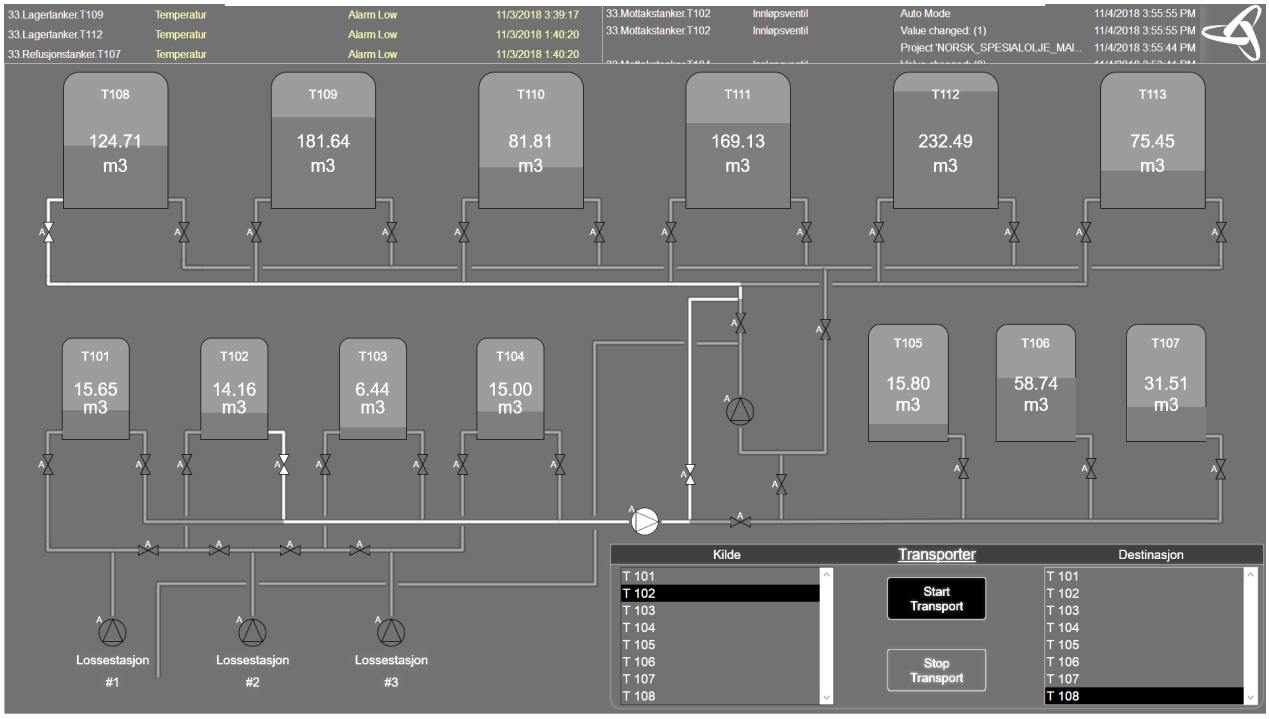
The administration menu shows various functions useful for administrating a SCADA system, including user administration (changing passwords and access levels) and a page for variable diagnostics which is useful for debugging faults.

At the bottom you will also find buttons to reload and exit the SCADA runtime. These are used to apply new runtime updates and shouldn't be touched during normal use.

4.2 Main screen

The main screen is used for process supervision and control. Here you will see a graphical representation of the process with valves, indicators and measurements. The objects are clickable and will either link to subscreens or control faceplates where you can control the object or read more detailed information about it.

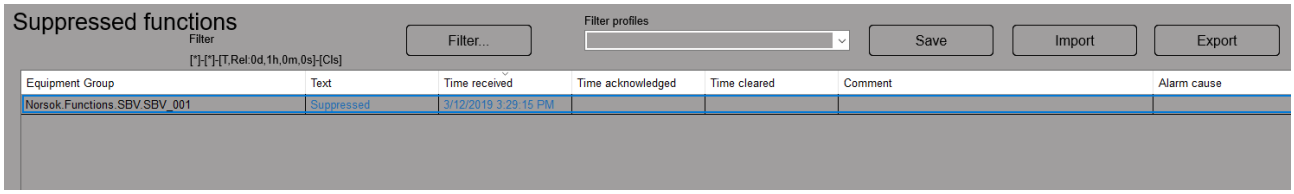
Notice how all valves and pumps have small indicators around them, indicating statuses like auto/manual mode and alarms.



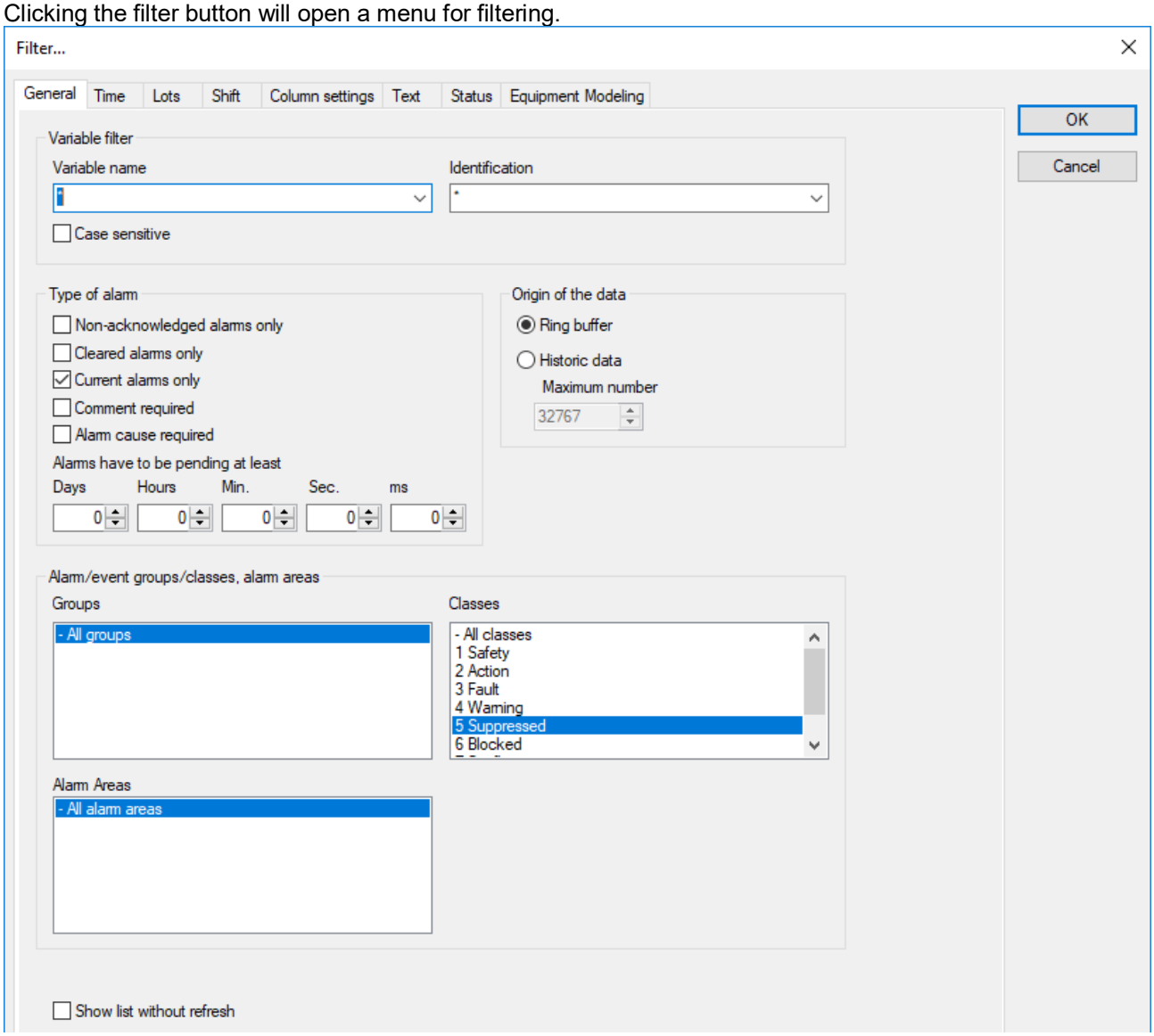
4.3 Function lists

Function list displays are a type of display that shows a filterable list of tags. For the purpose of this manual they are grouped together as they are very similar in use, but in the SCADA software they will be linked from different places and their function will vary.

Filtering is done in two different ways, a general one will be described here and the special case in Variable Diagnostic will be described in its own section (4.3.5.2)



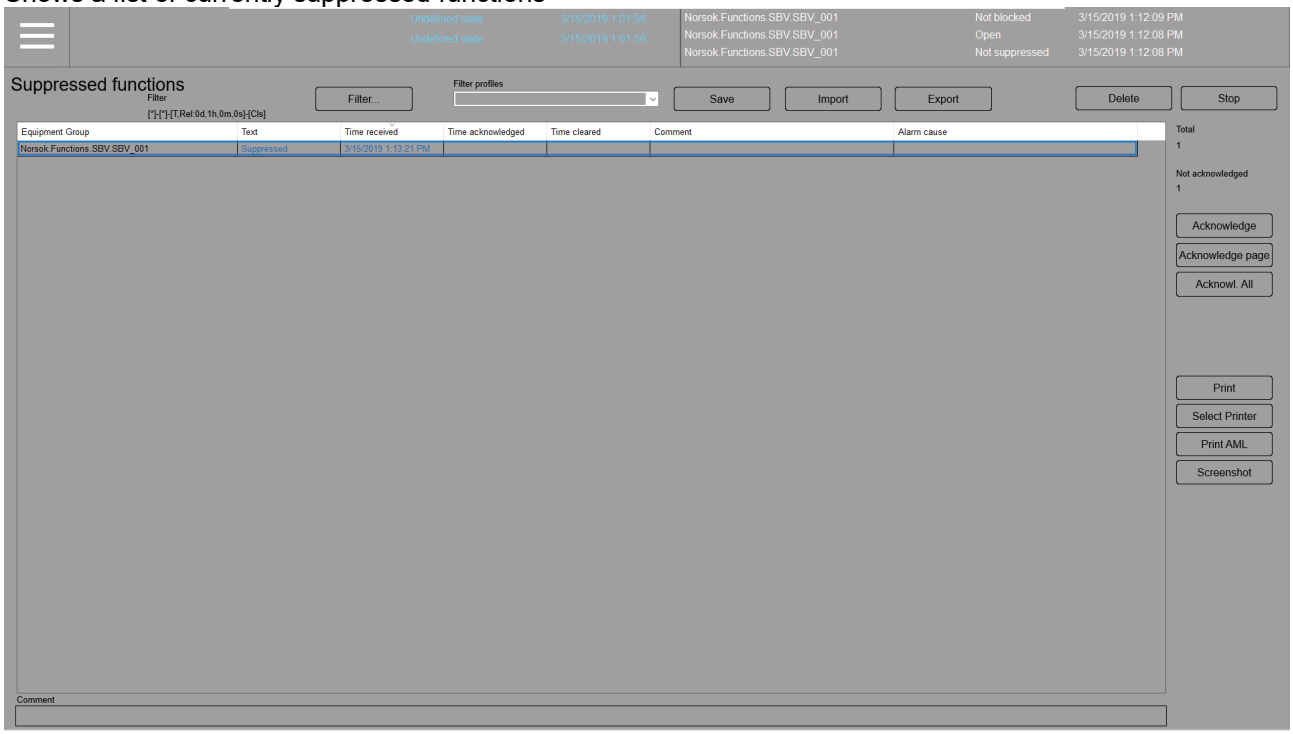
Clicking the filter button will open a menu for filtering.



Place your search term in the Variable name box. By default, it is set to * to show all variables, but replacing it with for example “*SBV*” will return all supressed tags containing SBV. The search term will reset upon refreshing the page.

4.3.1 Suppressed Functions

Shows a list of currently suppressed functions



To add a comment to a suppressed function, select the function in the list and click the comment field all the way at the bottom of the page. Once you are done writing, click anywhere on the screen for the list to update.

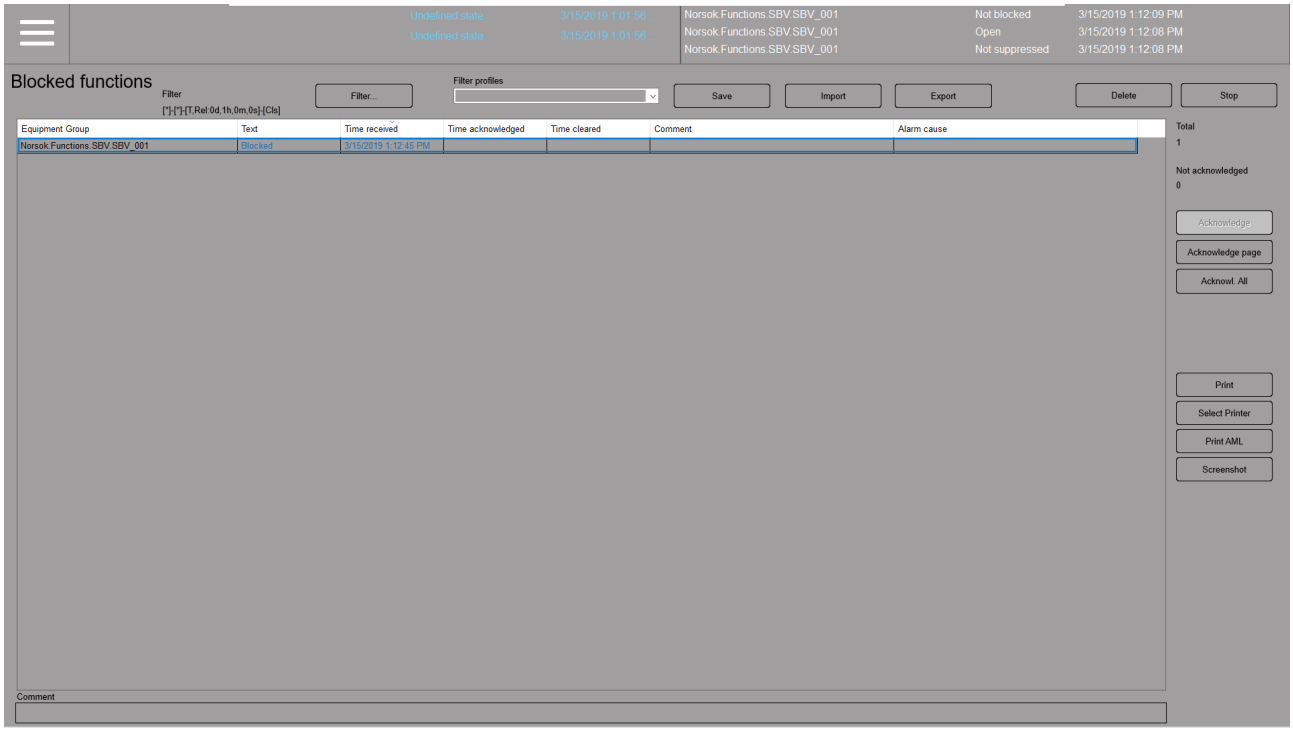
Functions will go away from this page once they get un-suppressed, causing their acknowledged time and comment to clear.

On the right you have a series of buttons

Name	Description
Acknowledge	Mark the selected object as acknowledged
Acknowledge page	Acknowledge all elements on page
Acknowledge All	Acknowledge all suppressed functions

4.3.2 Blocked Functions

Shows a list of functions currently blocked



To add a comment to a blocked function, select the function in the list and click the comment field all the way at the bottom of the page. Once you are done writing, click anywhere on the screen for the list to update.

Functions will go away from this page once they get un-blocked, causing their acknowledged time and comment to clear.

On the right you have a series of buttons

Name	Description
Acknowledge	Mark the selected object as acknowledged
Acknowledge page	Acknowledge all elements on page
Acknowledge All	Acknowledge all blocked functions

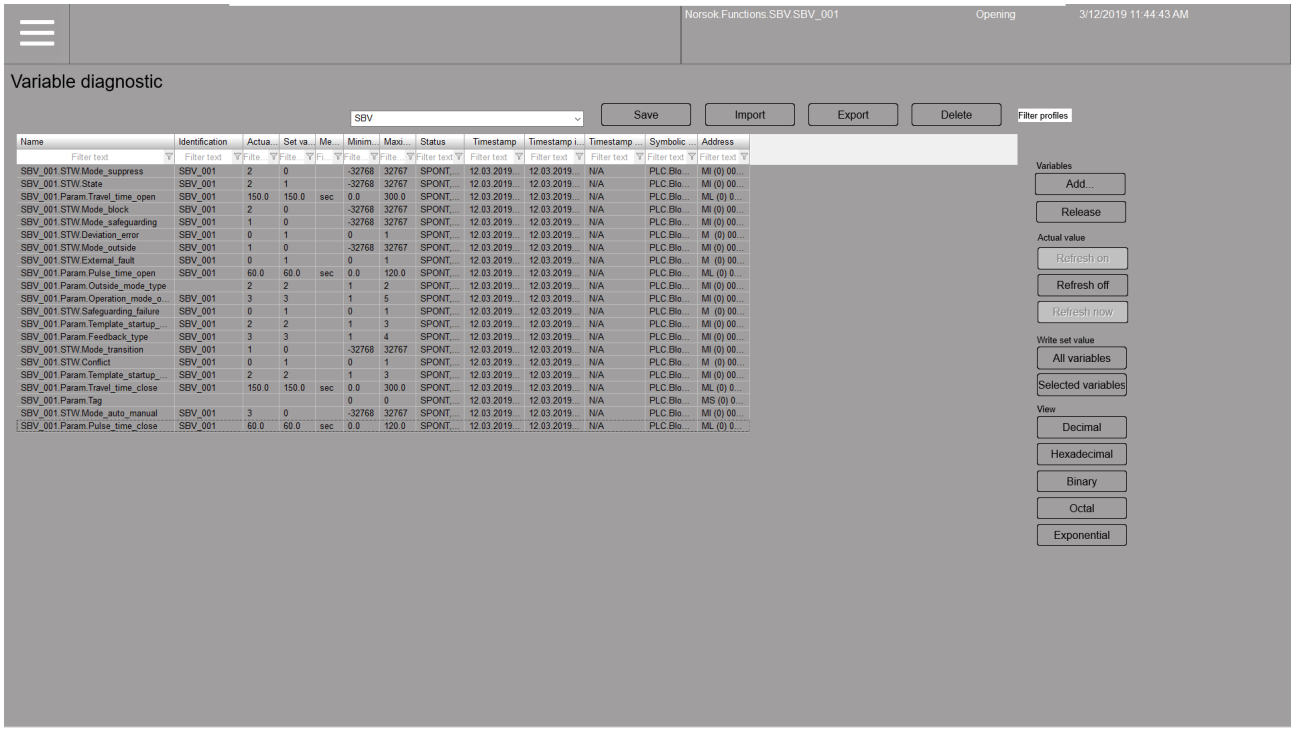
4.3.3 Alarms

Shows all alarms that have been or are currently in the system. You can acknowledge and comment on alarms.

4.3.4 Events

List over all events that have happened in the system. Events are things like valves opening/closing, functions changing modes, user input and which user clicked things. Very useful for debugging.

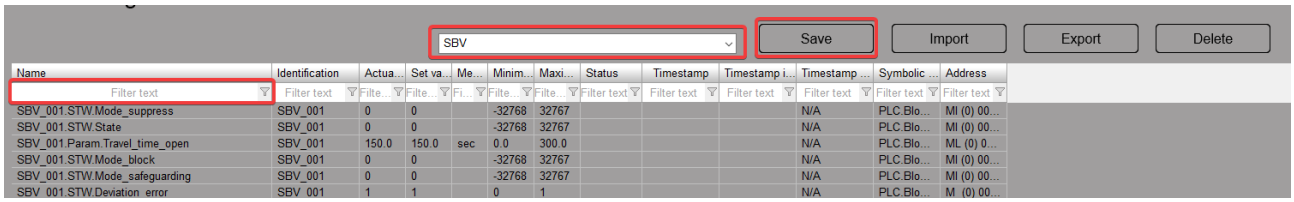
4.3.5 Variable Diagnostic



The variable diagnostic page allows you to add variables from the system to read, write and monitor their values.

4.3.5.1 Saving variable groups

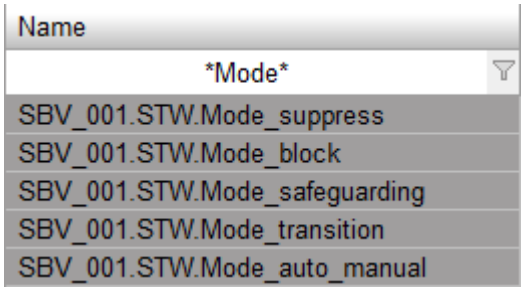
A very useful feature of the variable diagnostics screen is saving groups of frequently monitored tags. To do this, simply add your tags to the list, write a name for your group in the white dropdown menu and press “Save”.



To restore this grouping later, simply click on your named group in the dropdown.

4.3.5.2 Filters

The list supports filtering in all columns. When filtering, keep in mind that it is a strict search unless you use wildcards, so if you have a tag called “SBV_001.Mode_suppress” it would be matched by “*Mode*” but not “Mode”.



4.3.5.3 Buttons on the right sidebar

Name	Function
Add…	Add tags to monitor.
Release	Stop monitoring selected tags
Refresh On	Automatically update the Actual Value column with data from the PLC. Recommended to turn on.
Refresh Off	Disable refreshing
Refresh now	Fetch current values from PLC
All variables	Write the prepared value of all variables to the PLC
Selected variables	Write the prepared value of selected variables to the PLC
Decimal	Change number representation to decimal
Hexadecimal	Change number representation to hexadecimal
Binary	Change number representation to binary
Octal	Change number representation to octal
Exponential	Change number representation to exponential

4.4 User administration

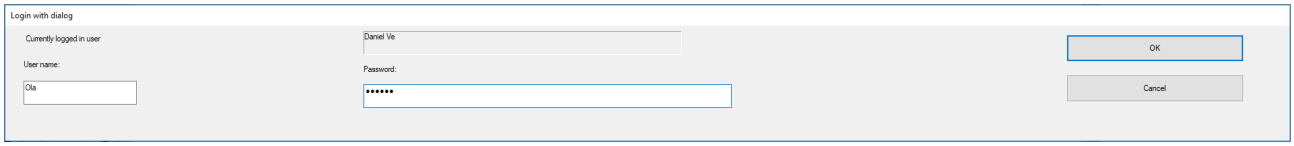
The SCADA solution supports an extensive user permission system

4.4.1 Login

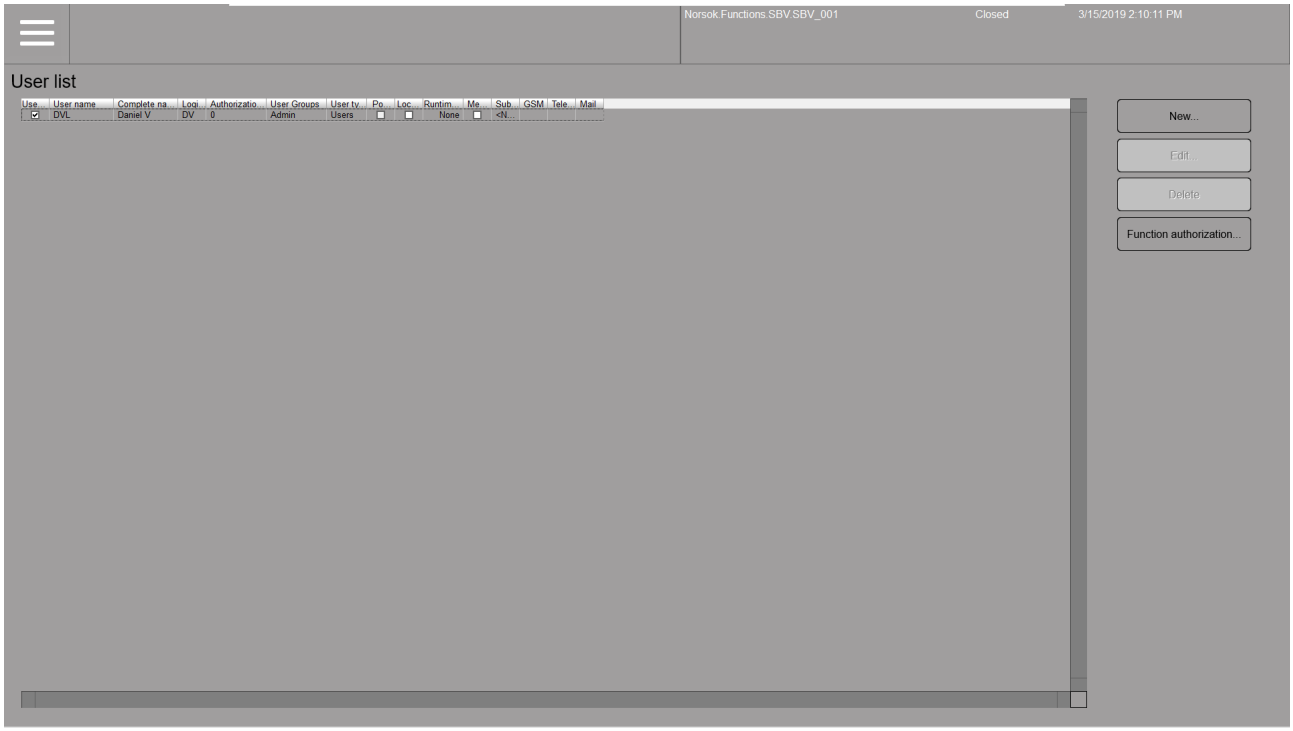
To login to an account in the scada system, open the menu, press “Administration” and then “Login”. The following dialog will open:

Here you can see the full name of the currently logged in user as well as log into another user.

To log in, type in your username and password and click OK.

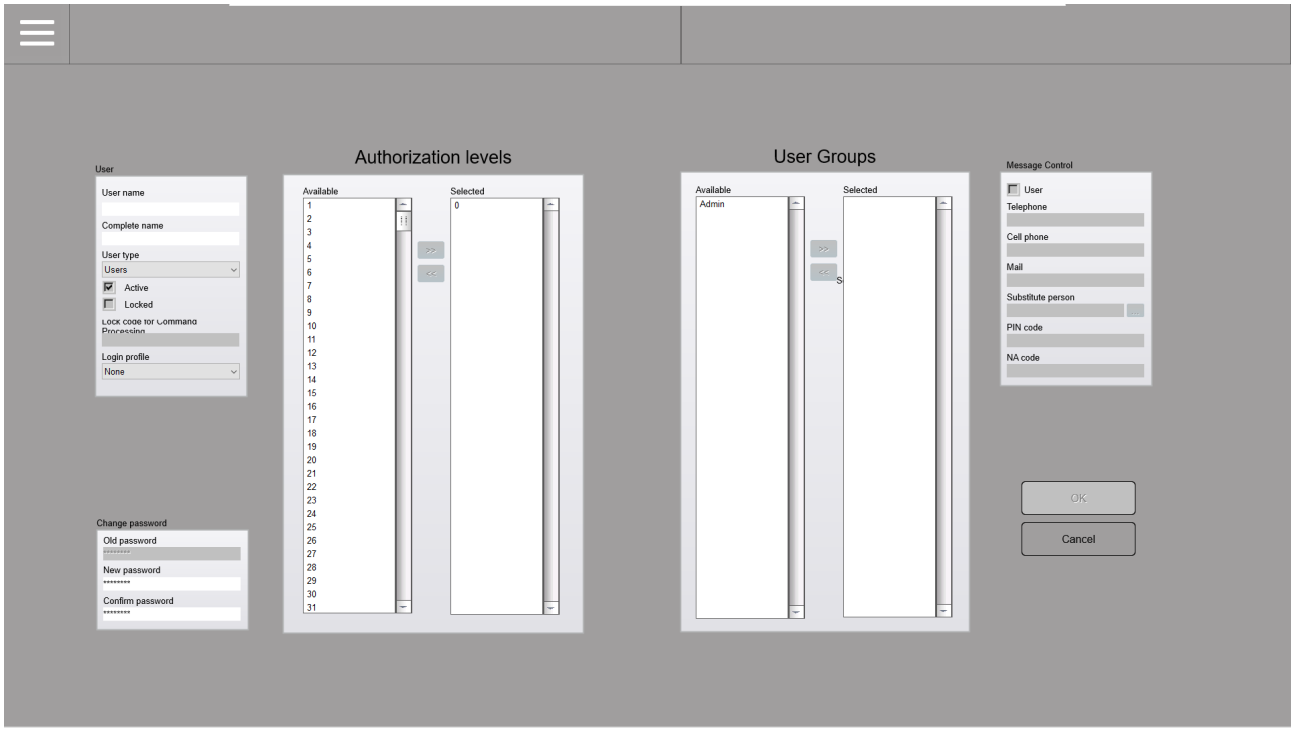


4.4.2 Users



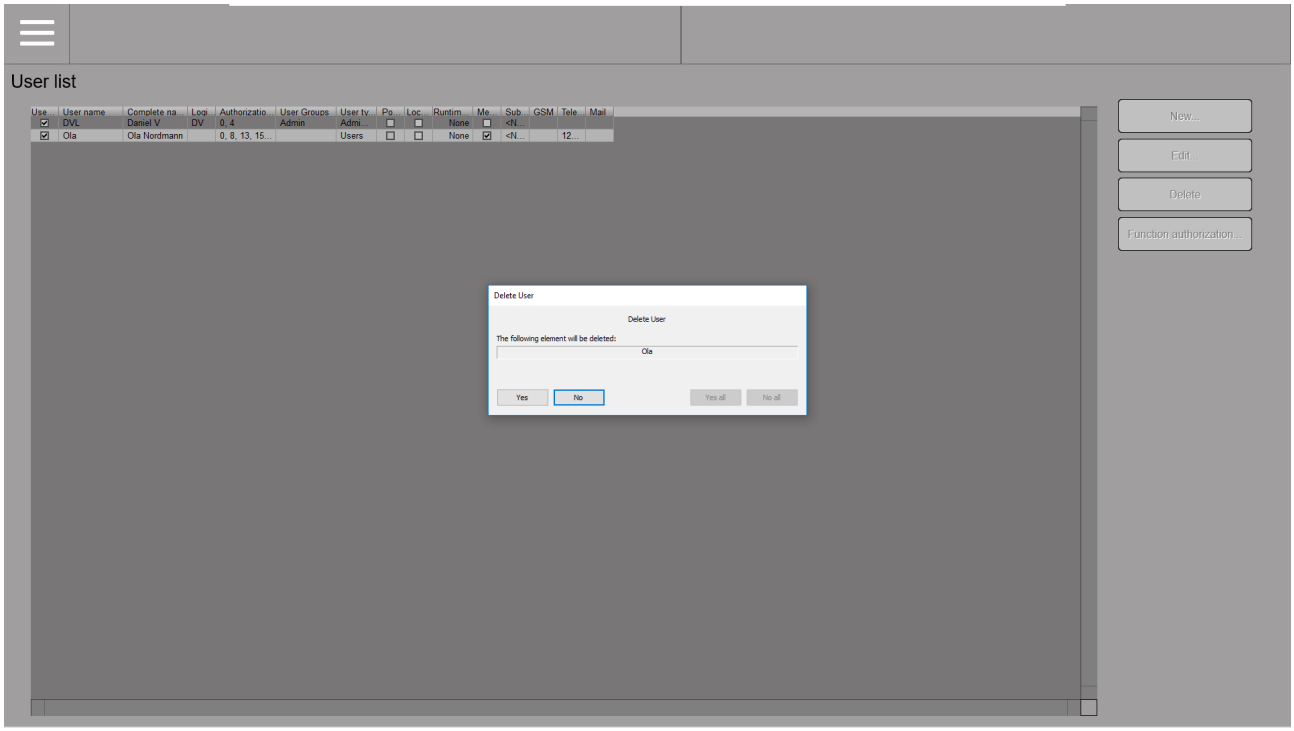
The users page shows a list of all users in the system and their access levels. If you are logged in as an administrator you will also have the option to enable/disable users, reset passwords, change permissions of existing users and add new users.

4.4.3 New user



4.4.4 Edit user

4.4.5 Delete user



4.4.6 Function authorization