

SuperView

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INSTRUCTIONS MANUAL V3.0x A

INDEX

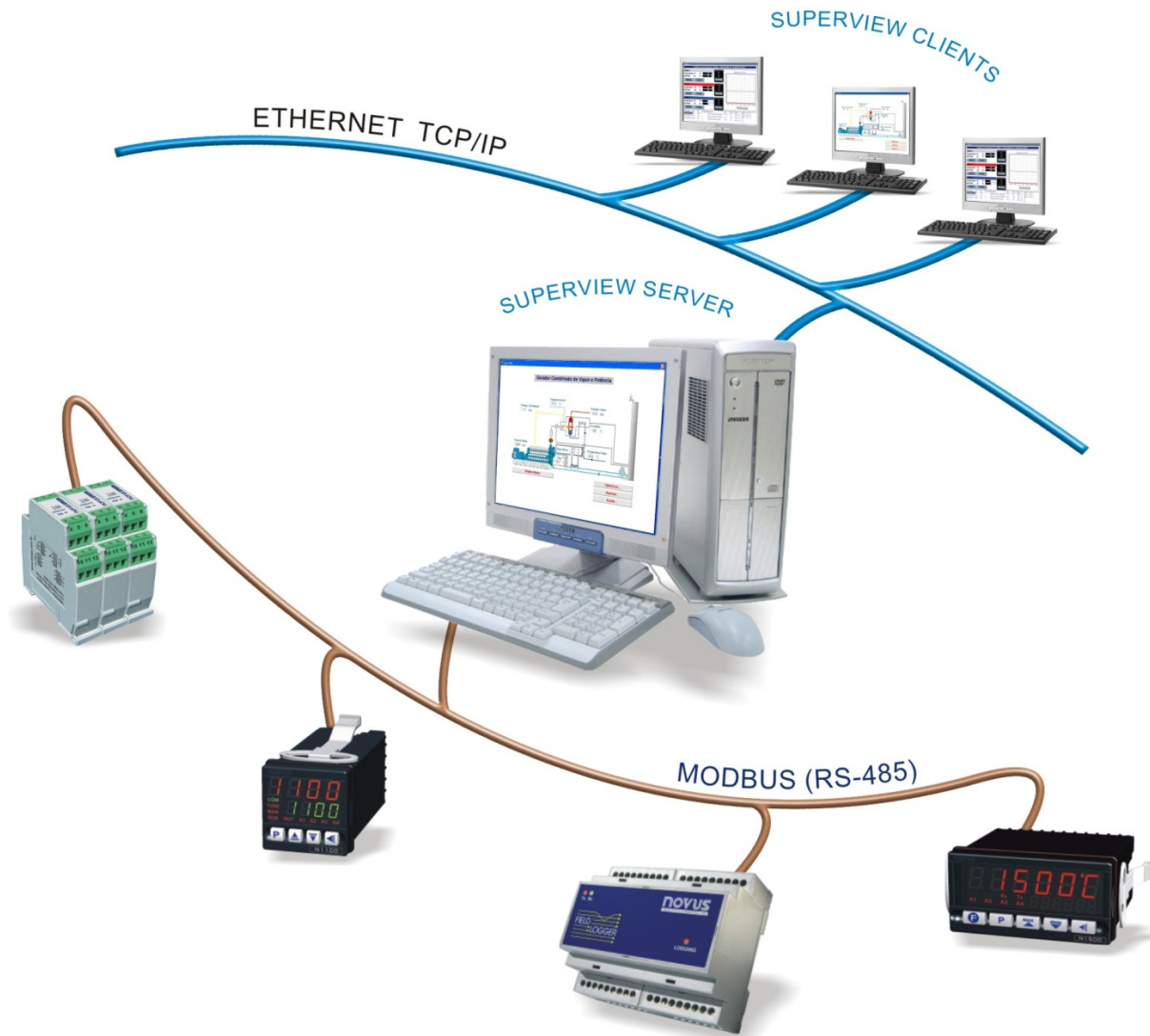
INDEX	1
INTRODUCTION	3
INSTALLATION	4
SYSTEM REQUIREMENTS	4
INSTALLATION PROCEDURES	4
SOFTWARE LANGUAGE SELECTION	4
FIRST STEPS	5
SETTING UP A BASIC APPLICATION	5
START <i>SUPERVIEW</i>	5
CREATE A NEW APPLICATION	6
REGISTERING DEVICES IN THE NETWORK	6
REGISTERING THE VARIABLES OF EACH DEVICE – TAGS	7
CREATING SUPERVISION FORMS	8
DEFINE THE NETWORK COMMUNICATION PARAMETERS	11
SAVING AND OPENING AN APPLICATION	11
START SUPERVISION	11
REGISTERING THE <i>SUPERVIEW</i> COPY	12
REGISTER USING A HARDKEY	12
OPERATION MODES WITH A HARDKEY	13
REGISTER USING A SOFTKEY – USE LICENSE AND REGISTRATION NUMBER	13
VALIDATING THE REGISTRATION NUMBER	13
PROCEDURE FOR REGISTRATION USING A SOFTKEY	13
OPERATION MODES WITH A SOFTKEY	14
ADDITIONAL FEATURES	15
USERS MANAGEMENT	15
ALARM MONITORING, PRESENTATION AND NOTIFICATION	16
CREATING ALARM GROUPS	16
DEFINING THE ALARM PARAMETERS OF A TAG	17
INCLUDING AN ALARM TABLE OBJECT	18
ACKNOWLEDGING ALARMS	18
CONFIGURING THE E-MAIL SERVER	19
HISTORIC LOG	19
CREATING A HISTORIC	20
INCLUDING A HISTORIC LIST TYPE OBJECT	20
VISUALIZING, COPYING AND EXPORTING HISTORICS	21
CREATING REPORTS	22
REPORTS MANAGER	23
USING <i>SUPERVIEW</i> WITH THE FIELD LOGGER	23
FIELD LOGGER I/O	23
FIELDLOGGER MEMORY DOWNLOAD (NEW GENERATION)	23
REGISTERING EVENTS IN <i>SUPERVIEW</i>	26
LOGS VISUALIZER	26
CONFIGURING TASKS	27
CONFIGURING FORMULAS	28
CONFIGURING THE COLOR TEMPLATES	29
INFORMATION TABLE	30
VIRTUAL KEYBOARD	31
APPLICATION GENERAL OPTIONS	31
PRINT SETTING	32

DATABASE OF MODBUS DEVICES PARAMETERS	32
CONFIGURING THE COMMUNICATION WITH DEVICES FROM OTHER VENDORS	33
REGISTERING DEVICES IN THE NETWORK.....	33
REGISTERING THE VARIABLES OF EACH DEVICE – TAGS	33
ADVANCED SCREEN EDITION	34
OBJECTS GROUPING.....	34
BRINGING OBJECTS TO FRONT / SENDING BACK	34
OBJECTS ALIGNMENT.....	34
STANDARDIZING THE SIZE OF OBJECTS	34
COPY / PASTE OBJECTS.....	35
EXPORTING AND IMPORTING A COMPLETE SUPERVISION FORM	35
START SUPERVISION WHEN WINDOWS IS STARTED	35
DISTRIBUTED SUPERVISION	36
DEFINING THE DISTRIBUTED COMMUNICATION PARAMETERS.....	36
CONFIGURE REMOTE VARIABLES -TAGS	38
CONFIGURE REMOTE VARIABLES –OBJECT TAG	38
ACTIONS DURING SUPERVISION.....	39
PRINT A SUPERVISION SCREEN VIEW	39
VISUALIZE, PRINT, IMPORT AND EXPORT AND CHECK HISTORY.....	39
MODBUS TCP AND MODBUS OVER TCP.....	39

INTRODUCTION

Flexible, functional and user-friendly, **SuperView** is a SCADA – Supervisory Control and Data Acquisition system focused on supervision of local and geographically distributed applications. Its simplicity of configuration collaborate in the process of taking decisions on how to develop mimic diagrams that represents real supervision environment.

Acting as a control for supervision, the user have a set of tools that allows describe logics to read and write to Modbus devices. There are different kinds of alarm for each Tag (channel) with customized notifications methods, adding security to deal with them.



Electronic registers can be viewed and exported to well-known file formats (XLS, PDF, RTF, XML, HTML, DBF, TXT, CSV). User's authentication, task management, mathematical formulas and audit trail of users action completes main features of the system.

SuperView achieves technical requirements of FDA 21 CFR Part 11 for computer system validation. Users can acknowledge alarms using electronic signature, electronic records are protected with encrypted, strong mechanism of authentication using unique password and log of event's application (Audit Trail) for traceability. Validation protocols and the execution of validation are optional to additional this product.

This manual describes the steps required to start using **SuperView**. A detailed description of each **SuperView** setting window is available at the help system, accessible through the menu **HELP/SUPERVIEW HELP**, or by pressing F1.

INSTALLATION

SYSTEM REQUIREMENTS

The following are necessary for using **SuperView**:

- A PC-Compatible computer running Windows XP or higher operational system. The minimum specification for this computer is:
 - Processor AMD or INTEL 2 GHz
 - Free space on disk: 300 MB
 - RAM: 2 GB
 - Mouse, Keyboard, SVGA Monitor, Serial or USB Ports
 - NETWORK Interface
 The **SuperView's** Hardkey is not compatible with Windows Server edition. Use Softkey instead to register your license.
- In order to execute **SuperView** set up in Server or Local mode, one or more devices with communication through the MODBUS RTU Slave or MODBUS TCP protocol are necessary. If this device uses a RS485 communication interface, a converter RS232/RS485 will also be necessary (if communication through the PC serial port is used) or a USB/RS485 converter (if communication through the PC USB port is used – Requires Windows 2000, XP or higher).

INSTALLATION PROCEDURES



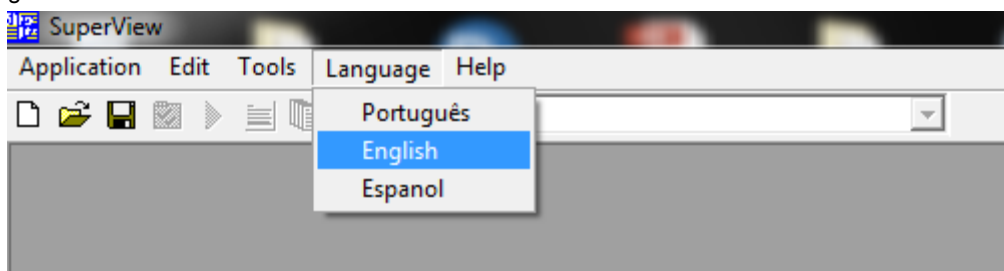
To provide the **SuperView** installation, the computer user shall have the privilege of an administrator and an unrestricted access to the Windows folders.

For the **SuperView** installation on your computer follow the steps below:

1. Insert the installation CD in the CD driver
2. The **SuperView** installation program shall start automatically in a few moments. If it does not launch automatically, run it manually from D:\Setup.exe (considering that D: is the letter that identifies your CD driver).
3. Follow the instructions prompted on the screen till the installation is complete.

SOFTWARE LANGUAGE SELECTION

During installation, users will be prompted to select the software language (Portuguese, English or Spanish). Another way of selecting the software language is through the “Language” option on the main screen menu, as shown on the following image.



FIRST STEPS

The use of **SuperView** can be divided into four stages:

- Setting up a basic application
- Registering **SuperView**
- Widening the application
- Supervision

The three first stages shall be performed by a user registered with the Administrator's privileges. The supervision can be accomplished by Administrator, Operator or Monitor user.

For the **basic application set-up**, the following basic steps shall be fulfilled.

- Start **SuperView**.
- Create a new application.
- Inform **SuperView** about the NOVUS networked devices in the supervisory system (it is possible to communicate with Modbus RTU devices from other vendors, as described in "Configuring the Communication With Devices From Other Vendors").
- Inform **SuperView** which the interest variables are (TAGS) within each device in the network.
- Create one or more supervision screens, containing images, texts, buttons and graphics associated to the variables read in the communication network.
- Define the network communication parameters.
- Save the application.
- Start supervision.

The **registration** consists of registering a license number in **SuperView** designated by NOVUS when a user license is purchased. The registration number is unique and is associated to the serial number of one of NOVUS devices connected to the communication network.

Some additional steps may be required to **widen the application**:

- Create application's users, with different privileges.
- Create alarm groups, defining actions for alarm events.
- Define alarm ranges for the critical variables monitored by the system.
- Set up the history register of the system important variables.
- Set up sending e-mail messages in alarm conditions.
- Set up the log of events and actions of the supervision system.

To setup a **distributed supervision**, the following steps shall be fulfilled.

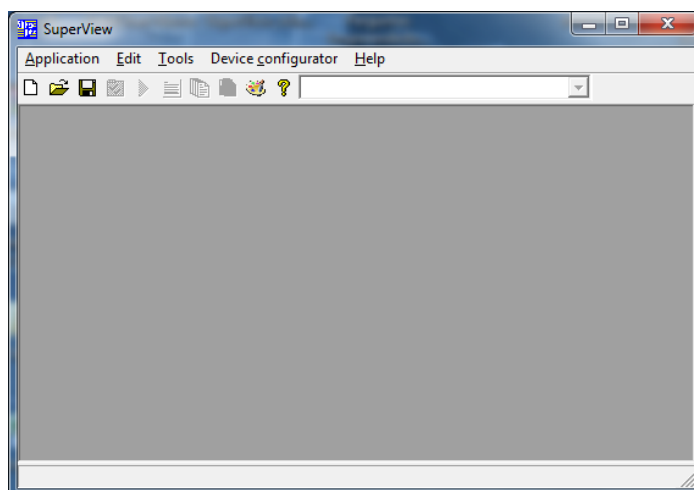
- Set up the Server Mode to allow TCP/IP communication between two or more **SuperView** stations.
- Set up the applications to operate in Client mode.

Once the application is created, **SuperView** shall be normally used only in the **Supervision** mode, showing the operator the different information about the supervised process.

SETTING UP A BASIC APPLICATION

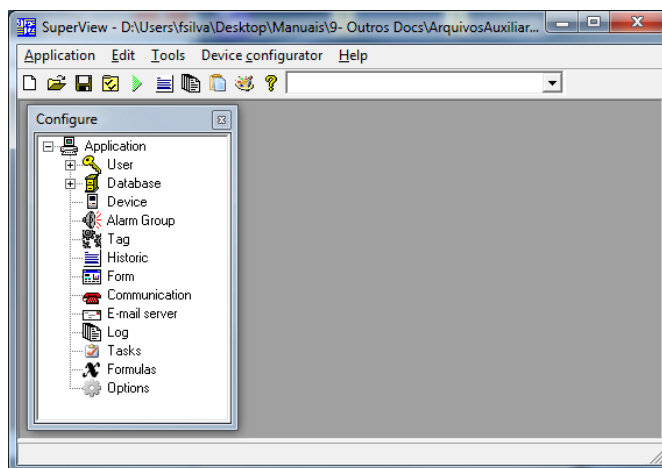
START SUPERVIEW


In order to start **SuperView**, select the icon **SuperView** from the Start menu. The initial window will pop up in a few seconds, as on the figure below.



CREATE A NEW APPLICATION

To create a new application in **SuperView**, select the option APPLICATION/NEW. The CONFIGURE window will be displayed, as on the figure below.

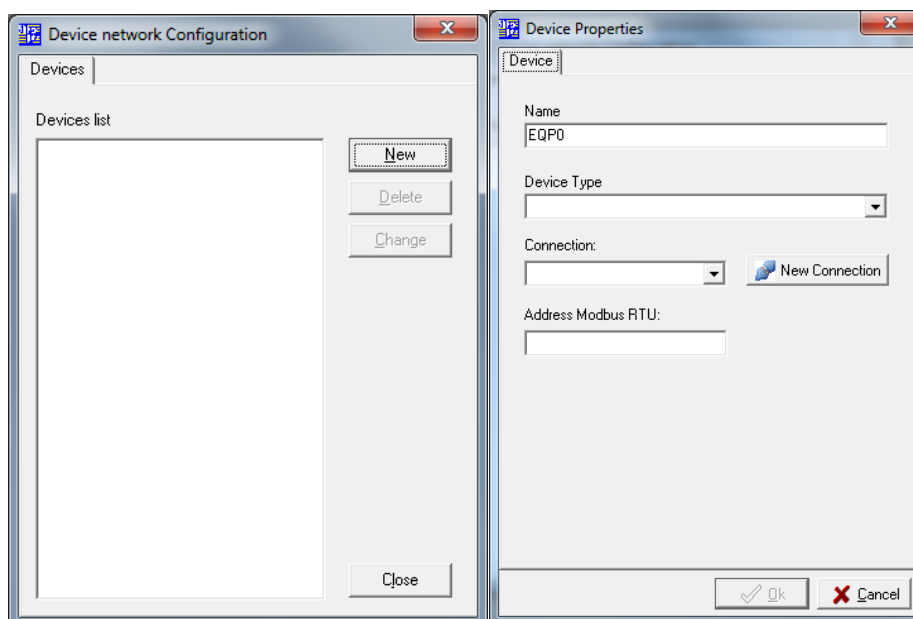


If the CONFIGURE window is closed, it can be opened again selecting the option from the menu APPLICATION/CONFIGURE, or pressing the button .

REGISTERING DEVICES IN THE NETWORK

Establishing communication is only possible with registered devices. To register the devices in the **SuperView** network, proceed as indicated below:

1. Double click the icon DEVICES in the CONFIGURE window. The window DEVICE NETWORK CONFIGURATION will be displayed.
2. Click NEW and the DEVICE PROPERTIES window will display. Examples of these two windows are presented on the figure below.



3. Define the name, in the NAME field, which will identify it in **SuperView**; in the drop-down list DEVICE TYPE, select the NOVUS device model that you want to be included in the network; in the field CONNECTION select the connection that this device will use (for further information about connections, see the topic "Define network communication parameters") and in the field ADDRESS, type the address of the Modbus network that identifies this device. The informed Modbus address must be the same as the one defined for the device, and it must be unique in the network (only one device in the network can have this address). The name selected for the device will be used to identify it when configuring the communication variables (TAGS).
4. After entering all this information, click the OK button and check if the new device was added to the registered device list in the NETWORK DEVICES CONFIGURATION window.
5. Proceed with registering all devices in the network. When finished, close the window CONFIGURE DEVICES NETWORK.
6. To change data of an existing device, select the device from the list in the CONFIGURE DEVICES NETWORK window and press the button CHANGE.

The devices available for selection in the DEVICES TYPES list are registered in the **SuperView** devices database. For further information about the database, see “Database of Modbus Devices Parameters”. To register Modbus devices from other vendors, see “Configuring the Communication With Devices From Other Vendors”.



The device registered with the address 1 must be a Novus device, and its electronic serial number must be the one listed in the **SuperView Use License** purchased from Novus. This condition is necessary when **SuperView** is used in the **Full Registered** mode. See chapter “REGISTERING THE SUPERVIEW COPY” for more information on **SuperView** registering and licensing.

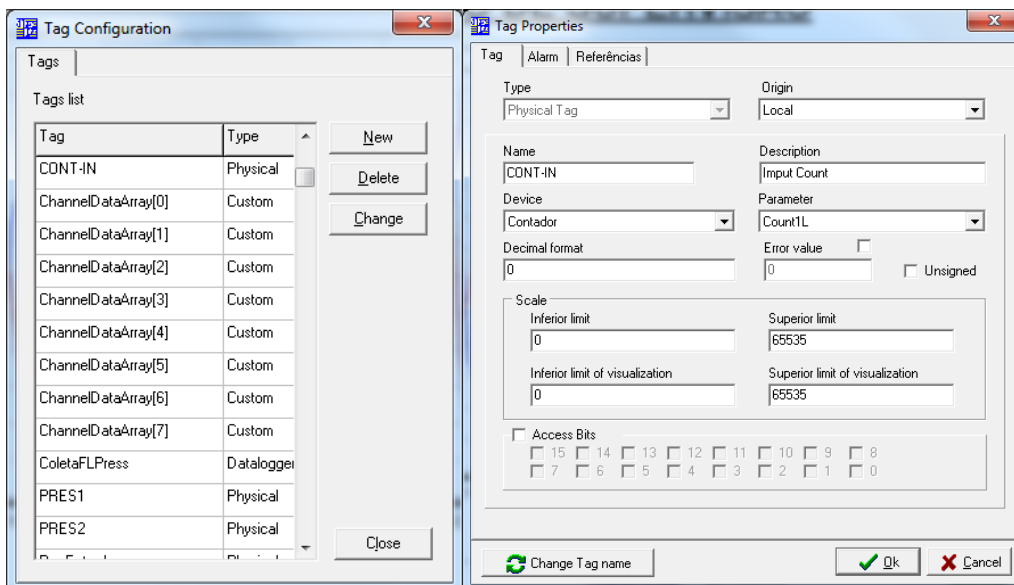
REGISTERING THE VARIABLES OF EACH DEVICE – TAGS

The basic element of information to be displayed on **SuperView** screens is the TAG. A TAG identifies numeric information and can be one of the following types:

- Physical Tag:** Identifies a variable associated to a Modbus register in a NOVUS network device. This tag value represents, for example, the current temperature reading of a controller or the required pressure (set point) in another one. Only 16-bit value can be associated to a physical tag (values ranging from -32768 to 32767 or from 0 to 65535).
- Constant Tag:** Identifies a variable in the computer memory, not associated to a device in the network. Typically used to perform more advanced functions.
- Date/Time Tag:** Identifies a variable that contains information about date or time, as indicated by the computer internal clock. Used when you want the current date and time to be displayed on the **SuperView** screen.
- Timer Tag:** Identifies a variable that counts time in hours, minutes and seconds. Used when you want to indicate how long the **SuperView** application is running for. A Timer Tag can be controlled by writing operations using buttons or alarm groups. To pause or resume the count after a pause: write -1 to the Tag. To reset the count: write 0 (zero) to the Tag.
- Datalogger Tag:** Identifies a variable associated to the data memory content of a NOVUS data logger, Field Logger model. Used when there are historic data stored in this logger that must be transferred to a **SuperView** historic file.
- Custom Tag:** Identifies a variable associated to a Modbus register in a networked device (like the Physical Tag, but the device can be from other vendors). The configuration of the Custom Tag requires parameterization of the Modbus command to be used to read from and write to the device. Only Custom devices can use a Custom Tag type. See “Configuring the Communication With Devices From Other Vendors” for additional information on communication with Custom devices.
- Object Tag:** The Object Tag is automatically created when the user creates a history, task or formula. Upon creating a history, a Tag is created for it with the identification [HST]. Upon creating a task, a Tag is created for it with the identification [TSK], and upon creating a formula a Tag is created for it with the identification [FOR]. If desired, the user can create an Object Tag for remote access. For this purpose, the Object Tag shall be created through the Tags creation window.

Reading and writing operations in a physical or custom tag are associated to reading or writing operations through the Modbus or TCP/IP communication network. When configuring a simple application, the Physical tag is of greater interest. To register the physical tags that shall be read by the network devices, proceed as indicated below:

1. Double click the icon TAGS in the CONFIGURE window. The TAG CONFIGURATION window will be displayed.
2. Click the NEW button and the TAG PROPERTIES window will be displayed. Examples of these two windows are shown below.














3. In the TYPE drop-down menu, select PHYSICAL TAG.
4. In the field ORIGIN, select LOCAL to read the tag from a RTU Modbus network.
5. In the field NAME assign the tag a unique name, which will identify it in all further set up steps of this **SuperView** application.
6. Filling the DESCRIPTION field is optional. This information will be used to identify the lines in the "physical tag and up to two constant tags" report. The DESCRIPTION field accepts a larger number of characters.
7. In the DEVICE drop-down menu, select the registered device this tag belongs to.
8. In the PARAMETER drop-down menu, select which register of the device will be associated to the tag. Note that **SuperView** displays only devices that were already registered, and once the device is selected, the parameter list corresponds to Modbus registers that are specific of this device model.
9. Select the number of decimal points that will be presented when the value of this tag is displayed on the screen.
10. Determine an ERROR VALUE that will be assigned to the TAG in case its value cannot be read from the associated Modbus device (due to a communication error or disconnection of the device).
11. Check the box NO SIGNAL in case you want the TAG to undertake positive values higher than 32767, up to the limit of 65535.
12. After entering all these information, press the OK button and check if the new tag was added to the list of registered tags in the TAG CONFIGURATION window.
13. Proceed with registering all tags. When finished, closed the TAG CONFIGURATION window.
14. To change data of an existing TAG, select the tag from the TAG CONFIGURATION window list and press the CHANGE button.
15. To change the name of a tag that has already been created, it is necessary to click on the "Change Tag Name" button, thus the name is changed in all places where the tag is referenced in, too.
16. In the tab "References", it is possible to see where the tag is being used, in order to locate the application components used by the tag.

To set up a TAG in a Modbus device from another vendor, see "Configuring the Communication With Devices From Other Vendors".

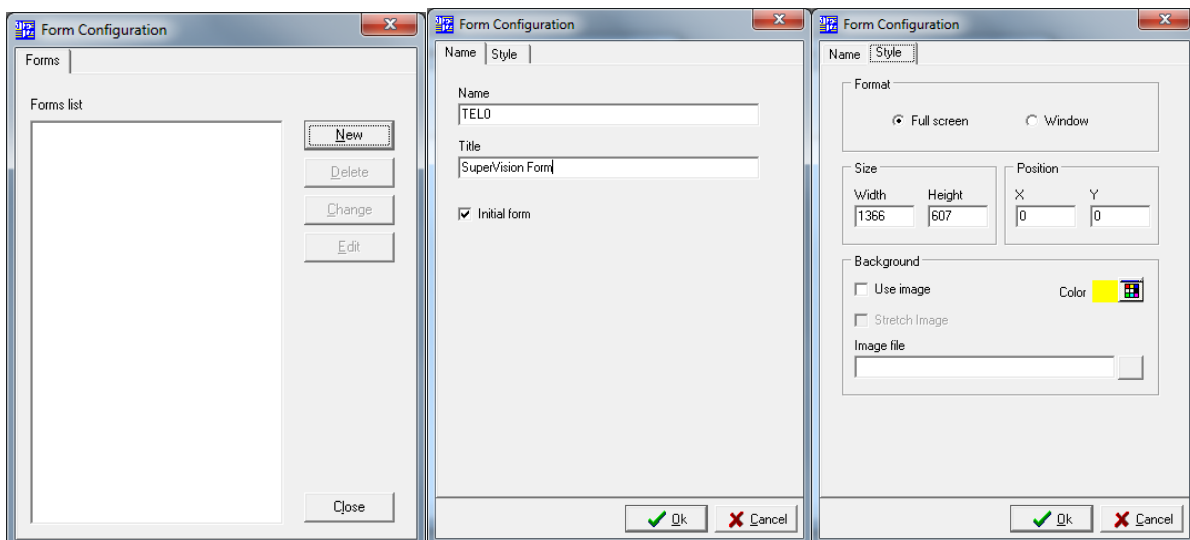
CREATING SUPERVISION FORMS

Supervision forms are the core features of a **SuperView** application. Typically, each form presents a different vision of the process under supervision, and can contain the following types of objects:

- Images 
- Fixed texts 
- Text box with tags 
- Buttons 
- Gauge 
- Line Meter 
- Graphs with TAGS values through the time 
- Bargraphs (Bargraph) 
- Alarm table 
- Historic control 
- Angular Gauge 

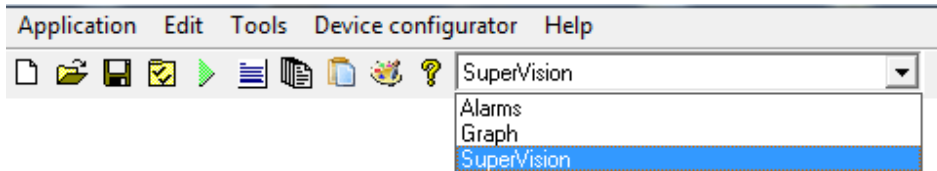
To create a new supervision form on **SuperView**, proceed as described below:

1. Double click the icon FORM in the CONFIGURE window. The FORM CONFIGURATION window will be displayed.
2. Click on the NEW button and the FORM PROPERTIES window will display. Examples of these two windows are shown below.



3. In the NAME tab, assign name and title to the form. The name will be used to identify the form in other set up steps of **SuperView**, and the title will be presented at the upper part of the form during supervision.
4. Check the option INITIAL FORM to define this form as default whenever this **SuperView** application is started.
5. In the STYLE tab, define the form appearance (format, size and position). In BACKGROUND section, a color or an image can be defined to be displayed at the screen background.
6. After entering all these information, click the OK button and check if the new form was added to the list of registered forms in the FORM CONFIGURATION window.
7. To change data of an existing form, select the form from the FORM CONFIGURATION window list and press the CHANGE button.

Once the form is created, the objects that define its appearance and features must be positioned. If multiple forms were created, you can select the one that will be edited using the FORM CONFIGURATION window list, clicking on the EDIT button. The form to be edited can also be selected from the list located on the upper tool bar of the **SuperView** screen, as illustrated on the figure below. Select the form to be edited form this list.



The selected form will be displayed at the desktop. The bottom tool bar contains tools for the inclusion of different supervision objects in the form area, as presented in the following figure.

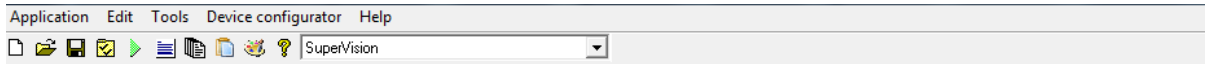


The steps required to create a form containing a graphic object (grid), a text box with a tag (abT), two buttons (OK), an image (landscape) and a fixed text (A) are listed below.

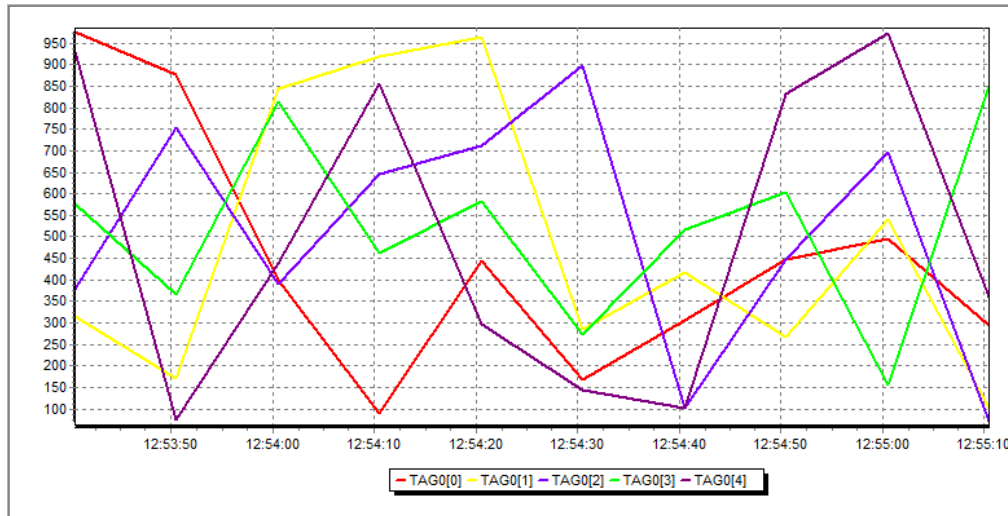
1. Select the form to be edited from the forms list located on the upper tool bar. In this example the form called "Initial" is selected.
2. Select the object that will be inserted clicking on the corresponding tool. It will be recessed while active. In the empty area of the form under creation, left-click the mouse and drag it, defining a rectangle with the dimension required for the object. When you release the mouse button, the selected object will be placed on the form. To place another type of object, select the corresponding tool and repeat the procedure to place it on the form. To disable the selected tool, click on the recessed one or on the arrow tool (mouse cursor). When no tool is selected (recessed), the mouse can be used to move and change the dimensions of the already placed objects. The following figure shows an example of a form with all objects positioned.



To select more than one object, left-click the first object and then press the Ctrl key. With the Ctrl key pressed, click on the other objects. Multiple selected objects can be dragged (moved) all together with the mouse.

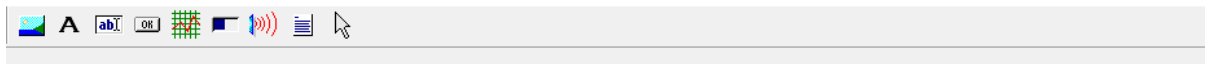


monitoring screen

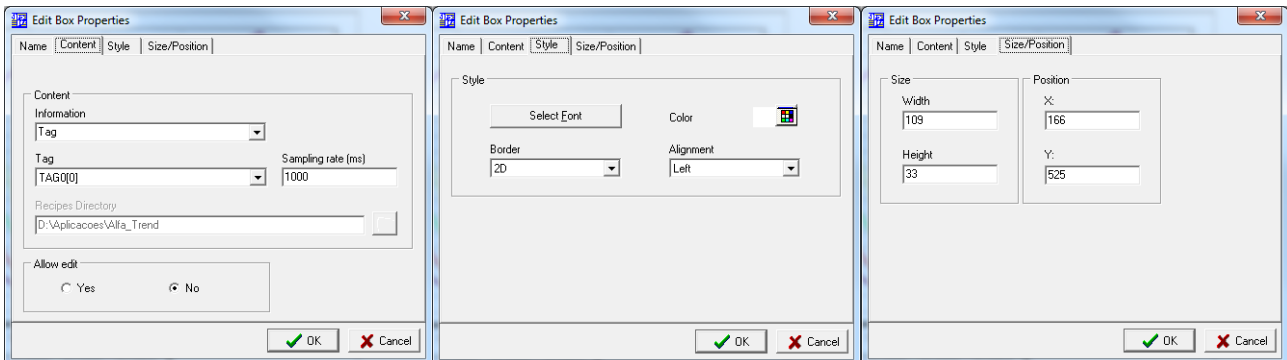


Historics Alarms Temperature

Start **Stop**




- Define the properties for each object placed on the form. These properties specify the object appearance and features. To access the properties window of each object, right-click the object and select PROPERTIES from the pop-up menu, which will be displayed. The figure below shows the properties windows of the text box with tags (ELM3 in the previous figure). For further information on the properties of the other objects, refer to the **SuperView** help.

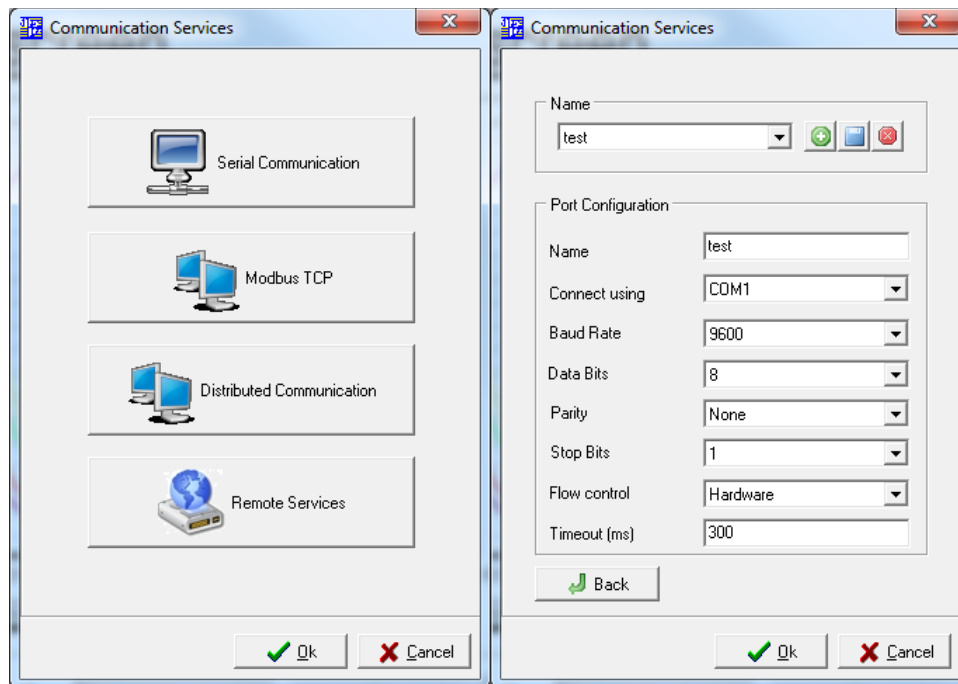




- In the CONTENT tab, select among showing a Tag value, the user name, the number of the application version, you can use the text box to perform the created routine, only typing the value code in the text box, and at the end, it can be used as a text box for inserting simple texts.
- If the user selects the option to show the value of a tag, the list of existing Tags is shown in the box under it, only tags that have already been registered can be associated to a screen object. Display the list of tags available for selection clicking on . Define the update rate of the value displayed in the text box. In case the associated tag is of the Physical type, this rate will define the interval between the tag readings from the communication network. Use the maximum acceptable value to reduce network traffic. If the associated tag allows write operations, define whether it can be changed during the supervision through this text box.
- In case the user selects the option “execute routines”, in the field “routines directory”, the directory, which serves as repository for the routines files shall be informed.
- In the STYLE tab you can define visual properties as: font type, background color, border and text alignment.
- The SIZE/POSITION tab is more informative, once both size and position of form objects can be defined using the mouse.
- After the configuration is complete, click OK.
- Define the properties for all objects on the screen. Each type of object presents a specific set of properties, which are not described in this manual. For further information about the particular properties of each object type, see the **SuperView** help by pressing F1 key upon visualization of the window which the help is necessary in.

DEFINE THE NETWORK COMMUNICATION PARAMETERS

The communication through the Modbus RTU network for the reading and writing operations from the Physical Tags is accomplished through a serial communication port of the computer (COM port). The COM port to be used for communication, as well as its parameters, shall be set up in **SuperView**. For this set-up, proceed as described below:


1. Open the CONFIGURE window by clicking  in the upper tool bar.
2. Double click the COMMUNICATION icon. The window with the existing Types of communication in **SuperView** will be displayed, select SERIAL COMMUNICATION, and the window will shown as the figure below.




3. **SuperView** operates with multiple connections, so different COM port connections can be created, further to the possibility to create connection for communication with Modbus TCP protocol.
4. In NAME, select the name for the connection, in CONNECT USING, select the communication port which the devices to be supervised will be connected to. The other fields will be self guiding.
5. After the configuration is complete, click OK.
6. The User can confirm more connection without leaving this window, it is enough to save the existing connection clicking on the button  and then clicking on the button , to start the set-up of the new connection. The connections shall use different COM ports.

To set up the parameters of the distributed communication, see DISTRIBUTED SUPERVISION.

SAVING AND OPENING AN APPLICATION


The application created for **SuperView** must be saved to avoid losing the last changes. Multiple applications can be created and saved in different files. To save the current application, select APPLICATION/SAVE or click  on the upper tool bar.

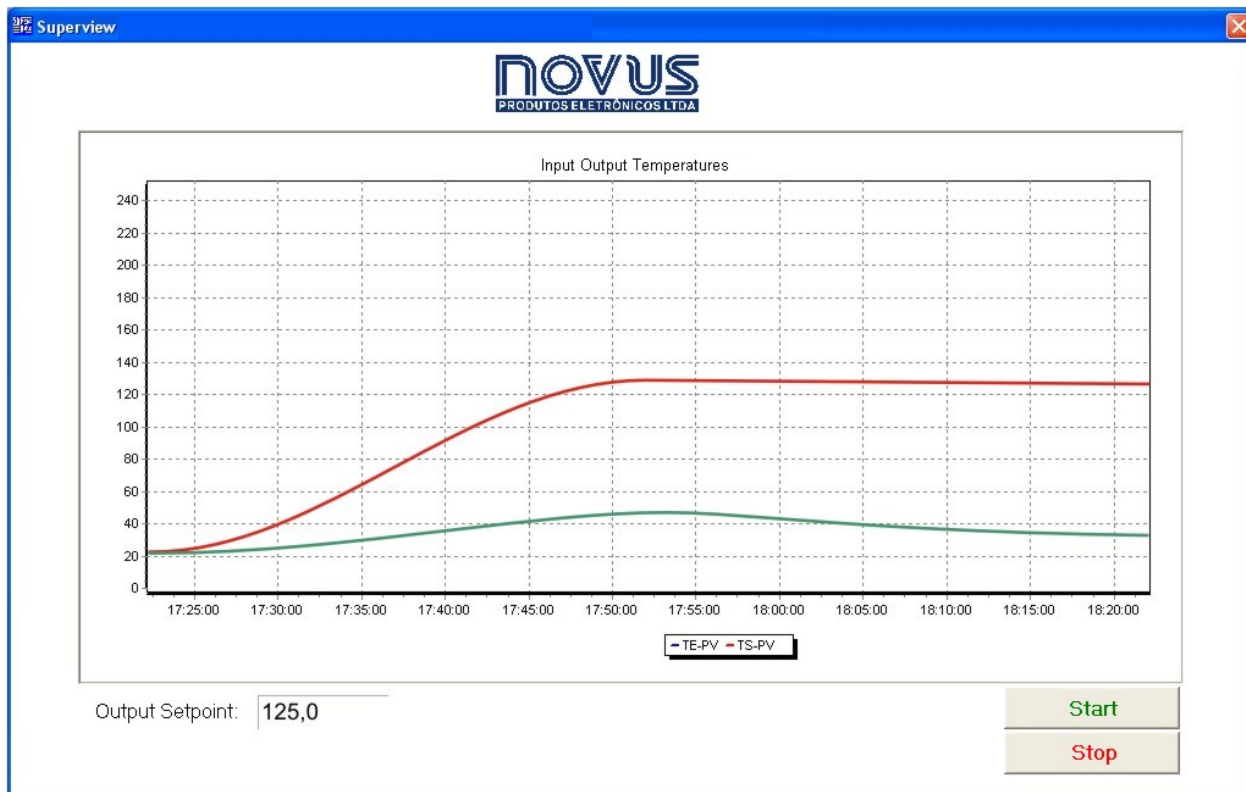
To open a previously created application, select the FILE/OPEN option from the menu or click the button  on the upper tool bar.



Upon opening an application, the user name and password will be requested. In case users have not been defined upon creating this application, or the standard users' set-up has not been changed, use the word **SuperView** as a user name and password (all lower case characters).

START SUPERVISION

A non-registered copy of **SuperView** is able to operate in the supervision mode for 20 minutes. This is enough time to check how the application created is working. To start supervision, click  from the upper tool bar, or select APPLICATION/SUPERVISE option from the menu. **SuperView** will show a message informing that anon-registered copy will operate during 20 minutes only, and the communication with the devices will be started. The form defined as initial will be shown. The sample screen presented before is shown in the supervision mode, according to the figure below (the tags values depend on the values read from the network devices).



All steps described in this chapter for “Configuring a Basic application” are necessary to create a simple supervisory application and enough to get acquainted with its use. For more complex applications, additional features must be included in the application, and are described in the “Additional Features” chapter. To operate in supervision for more than 20 minutes, **SuperView** must be registered. The registering procedure is described in the chapter “Registering the **SuperView** Copy”.

REGISTERING THE SUPERVIEW COPY

The **SuperView** register can be done in two ways, the first is using a Hardkey, which shall be plugged in a USB port of the computer when the **SuperView** is installed, or using the Softkey system, where it is necessary to have a Novus device connected to a modbus network, so that the validation of the software register number is provided, based on the device serial number.

REGISTER USING A HARDKEY

In order to register your **SuperView** license, it is enough to purchase a Hardkey with the respective license and connect it to a USB port in the computer where **SuperView** will supervise, with no need to install any kind of driver. In order to check whether the Hardkey is working in the selected USB port, it is enough to check whether the indicator light is lit green.



- It is important to point out that **SuperView** requires the machine administrator privileges, a free USB port and that the energy options cannot switch the USB off during the supervision.
- **SuperView** will periodically check the Hardkey, so in order for the software to continue monitoring in full mode, it is necessary to keep the Hardkey plugged in the computer.

The users have the possibility to purchase six types of Hardkey for **SuperView**:

- **SuperView** Software SCADA for Modbus devices with a Hardkey;
- **SuperView** + License for 1 remote connection with Hardkey;
- **SuperView** + License for 2 remote connections with Hardkey;
- **SuperView** + License for 3 remote connections with Hardkey;
- **SuperView** + License for 4 remote connections with Hardkey;
- **SuperView** + License for 9 remote connections with Hardkey;

In the **SuperView** installation pack, there is software for the performance of a set of maintenance actions for the Hardkey.

OPERATION MODES WITH A HARDKEY

When the supervision is started, **SuperView** can operate in three different modes, according to the situation of its register:

Demonstration Mode: In this operation mode all **SuperView** features are available, but once the supervision is started, a warning is shown, and after 20 minutes, the supervision mode is interrupted. To be able to re-start the supervision the hardkey shall be inserted in a USB port in the computer which the **SuperView** is installed on, thus, next time the software carries out the register verification, the supervision will be restarted. **SuperView** operates in this mode when:

- A valid Hardkey has not been found in the computer USB port.

Full Register Mode: In this operation mode, all **SuperView** features are available, there is no any warning regarding the register and the Supervision mode can be used indefinitely, provided that a valid Hardkey is plugged in a USB port of the computer which **SuperView** is installed on. Thus, **SuperView** operates in this mode only when:

- **SuperView** finds a valid hardkey plugged in a USB port of the computer which it is installed on.
- When the Hardkey being used for the register does not have a license for remote connections, the supervision in distributed mode will be performed in a Demonstration Mode.

REGISTER USING A SOFTKEY – USE LICENSE AND REGISTRATION NUMBER

For licensing of one **SuperView** copy use, it is necessary to purchase from Novus a Use License containing Registration Number of the product. The utilization of **SuperView** with a Registration Number in a computer, without the corresponding Use License is forbidden.

VALIDATING THE REGISTRATION NUMBER



The **SuperView** Registration Number is associated to the serial number of a Novus device and to a quantity of Clients that can connect to **SuperView** in the Server mode. In case no Clients number is specified, **SuperView** will allow a Client connection in the demonstration mode for 20 minutes. The **SuperView** copy will operate fully and without warnings only in case:

- A valid registration number has been inserted.
- The Novus device related to the registration number is present in the Modbus network, with address 1 (one) or 255 (two hundred and fifty five).

The registration of **SuperView** using a softkey is divided into three steps:

- Get a Registration Number and a Use License from Novus
- Enter the Registration Number in **SuperView**
- Continuously validate the Registration Number through communication with the device associated to the registration.

PROCEDURE FOR REGISTRATION USING A SOFTKEY

The steps necessary to place **SuperView** in a Full Registration mode, which is the **SuperView** normal utilization condition, are described below:

1. Start **SuperView**.
2. Select the HELP/REGISTER option from the menu.
3. Insert the registration number shown in the Use License.
4. Click the REGISTER button. If the registration is successful, the message “REGISTERING SUCCESSFUL” is displayed. With this step successful, **SuperView** can operate in the PARTIAL REGISTRATION MODE.
5. Create an application in **SuperView** and install the Novus device with serial number associated to the registration number in the Modbus network. This device shall be set up with Modbus address 1 (one) or 255 (two hundred and fifty five).
6. Start supervision from application. **SuperView** will communicate with this device and validate its serial number. If validation is successful, **SuperView** will start supervising and no warning will be displayed regarding the use restriction.
7. If **SuperView** is still operating in the PARTIAL REGISTERING MODE, test the communication between the software and the device associated to the register. Check also whether it is set up for communication in the network address 1 (one) or 255 (two hundred and fifty five), as well as the communication parameters.
8. The FULL REGISTRATION procedure will only be concluded, when it is possible to start supervision without **SuperView** sending warnings about use restrictions.

OPERATION MODES WITH A SOFTKEY

When the supervision is started, **SuperView** can operate in three different modes, according to its registration:

Demonstration Mode: All **SuperView** features are available in this operation mode, but when supervision starts a warning is displayed and after 20 minutes the supervision mode is aborted. To restart supervision, close **SuperView** and open it again. **SuperView** operates in this mode when:

- A valid registration number has not been informed.
- A valid registration number has been informed, but the Novus device with the serial number associated to the registration number was not detected in the network for the last 30 days.

Partial Registration Mode: In this operation mode all **SuperView** features are available, but once supervision is started, a warning is displayed informing until what date **SuperView** can be used without limitation of the supervision time. After this date, **SuperView** will run in the Demonstration Mode.

- A valid registration number has already been informed and the Novus device with the serial number associated to the registration number has been detected in the last 30 days, but it is not running now.

Full Registration Mode: All **SuperView** features are available in this operation mode, and there is no warning regarding registration and the Supervision mode can be indefinitely used.

- A valid registration number has already been informed and the Novus device with the serial number associated to the registration number has been detected upon starting Supervision.

ADDITIONAL FEATURES

The previous chapter described the required procedures for the creation of a simple application with **SuperView**. In this chapter, procedures for adding new features to the application are presented:

- Management of multiple users.
- Monitoring, presentation, notification and acknowledging of alarms.
- Historic register of supervised variables.
- Registering of user's actions and events.
- Setting up tasks.
- Setting up formulas.
- Setting up color template.
- Database with network definitions of Novus devices.
- Communicating with Modbus devices from other vendors.
- Advanced screen edition.
- Automatically start supervision when Windows is started.
- Additional resources available during supervision.


Each of these topics is approached in this chapter.

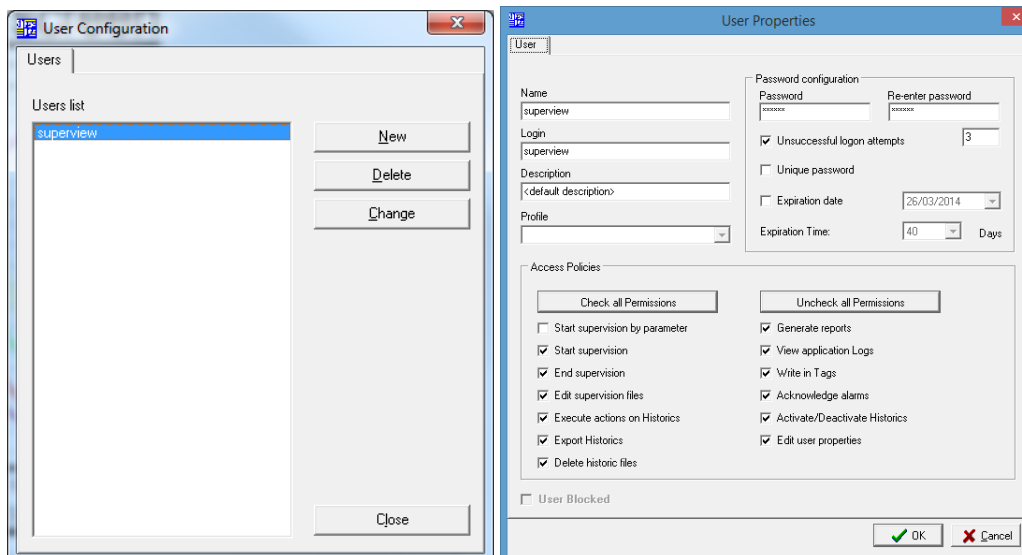
USERS MANAGEMENT

Each **SuperView** application shall be access by login and password to protect the supervision application. Upon addition of a new user, make sure about the access policies attributed to him.

Upon creation of a new application, an Administrator user is created automatically. This user has a name and password **SuperView** (all lower case characters).

In order to create a new user, proceed as described below:

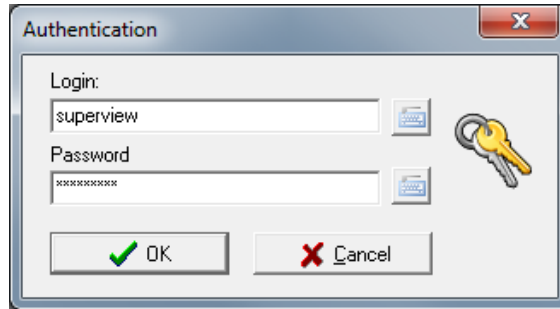
1. Open the CONFIGURE window, clicking the button  on the upper tool bar.
2. Double click on the icon USERS. The window CONFIGURE USERS will be displayed.
3. Click the button NEW and the window USER'S PROPERTIES will be displayed. Examples of these two windows are shown below.



4. Insert the information about the new user:
 - a. Unsuccessful logon attempts: by marking this option, in case the user attempts to log unsuccessfully, this action will be registered in the application log. The minimum number of attempts is 3, the maximum is 9.
 - b. Unique Password: In case this option is marked, the user will not be able to use passwords he used before.
 - c. Expiration date: On this date the use shall modify his password.
 - d. Validity period: Select in what time interval the password shall be changed.
 - e. Access policies: the user can access or execute only the set up options, either during the supervision or during the application edition. In case the user wants to access an option he is not authorized for, a login window shall be displayed so that another user with permission can authorize him.
 - f. Profile: In this item it is possible to select pre-set access policies configurations, the options are: ENGINEERING, OPERATOR, SYSTEM and SUPERVISOR.

5. After inserting the information, press OK to confirm the inclusion of the new user.
6. To change data of an existing user, select the user from the list in the CONFIGURE USERS window and press the CHANGE button.

Whenever an application is opened, the user's identification is requested. The user's actions will depend on the access policies, in case the user has a permission only to start the supervision via parameter, **SuperView** starts in the supervision mode. The user identification window is shown in the figures below. In case there is a user in the application with permission to start supervision by a parameter, this window will not be shown and the supervision will start automatically with the user login.



The user shall, in the IDENTIFICATION window, his name and password, and then click OK. To edit an application with existing user with permission to run via parameter, it is necessary to open **SuperView** and access the application via menu from the proper **SuperView**, running the application by double clicking the file, the application will always start automatically in supervision mode.

BLOCKING USERS

When performing unsuccessful login attempts (if the "Unsuccessful logon attempts" is checked), the user is blocked by SuperView and can no longer perform the login application. Only users with permission to edit the .sup file and edit user properties can unlock this user. The user "superview" cannot be blocked because it is master user of the application.

ALARM MONITORING, PRESENTATION AND NOTIFICATION

SuperView can monitor the value read from any physical tab, comparing it to the limits set. If the tag exceeds the determined limits, the following actions can be defined:

- The computer emits a configurable sound.
- A notification e-mail is sent (depends on an adequate setting of the service and on the availability of an e-mail server in the corporate network environment. See "Configuring the e-mail server").
- The value of a tag is changed. It allows an alarm event condition to result in an automatic action, as changing a parameter in a device in the network, or changing the value of a constant tag (for example, used to define the display of an image on the screen or not)

The following alarm conditions can be simultaneously monitored for each tag in the application:

- Low value
- Low low value
- High value
- High high value
- The difference as compared to another tag is too high
- The difference above the value of another tag is too high
- The difference below the value of another tag is too high

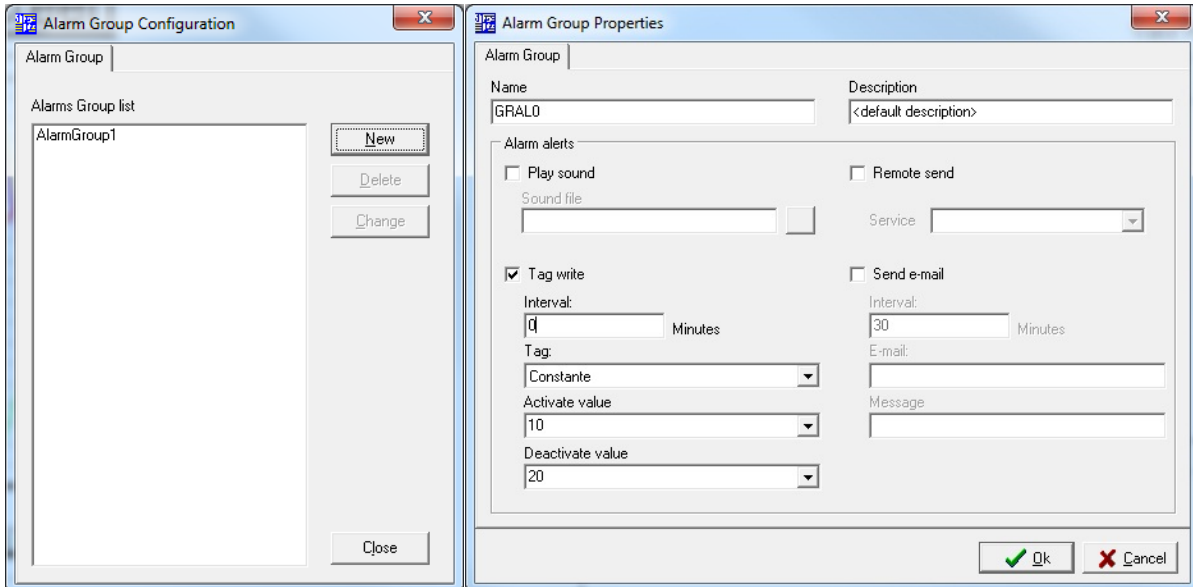
The following settings are required for the use of alarms monitoring:

- Create alarm groups
- Define the alarm parameters for each tag
- Include in one of the application forms an object of the type Alarm Table –

CREATING ALARM GROUPS

The actions to be taken when an alarm condition takes place in a tag are defined in the attributes of the group which the alarm belongs to. To create and configure an alarm group, proceed as follows:


1. Open the CONFIGURE window by clicking the button on the upper tool bar.
2. Double click the ALARM GROUPS icon. The window ALARM GROUPS CONFIGURATION will be displayed.
3. Click on the NEW button and the ALARM GROUP PROPERTIES window will display. Examples of these two windows are shown below.

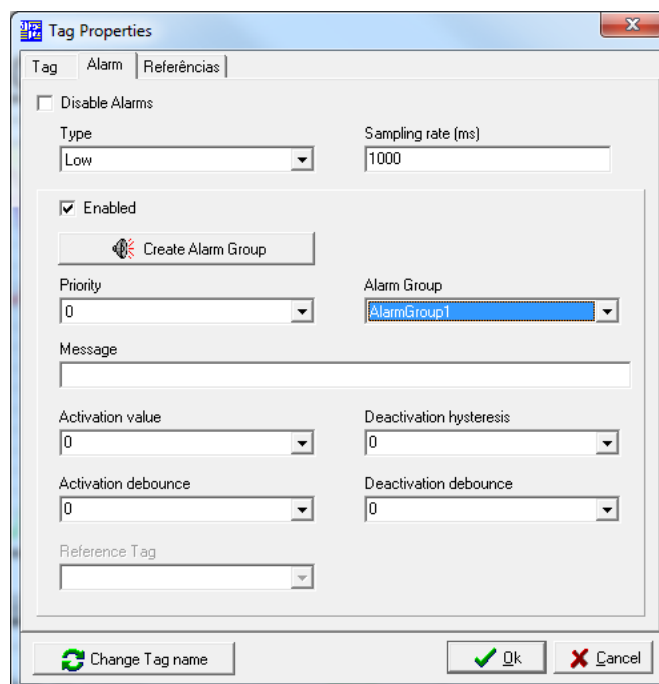


4. Assign a name for the alarm group. The name will be used to identify the group in further steps in the **SuperView** set up.
5. Define notification actions that **SuperView** will perform whenever the alarm of a tag in this group is activated/deactivated. Each action requires specific parameters:
 - a. Play Sound: Select a sound file.
 - b. Send e-mail: Enter the e-mail address and the e-mail message. The information presented on the object Alarm Table will be added to the body of the e-mail. In the Interval field, the user is allowed to choose a delay for sending the e-mail following an alarm activation. If the alarm is deactivated within this interval, no e-mail is sent.
 - c. Write in a tag: Tag name and values that it must receive when the alarm is activated and deactivated. In INTERVAL, the user determines how long after the alarm the writing in the tag will be done.
6. After entering all these information, click on the OK button and check whether the new group has been added to the list of group registered in the ALARM GROUPS CONFIGURATION window.
7. To change data of an existing group, select the group from the list in the ALARM GROUPS CONFIGURATION window and press CHANGE button.

DEFINING THE ALARM PARAMETERS OF A TAG

Alarm values can be associated to any physical tag. Up to seven different alarm conditions can be set for the same tag. To configure alarms for a physical tag, proceed as described below:


1. Open the CONFIGURE window by clicking the button  from the upper tool bar.
2. Double click the TAGS icon. The TAG CONFIGURATION window will be displayed.
3. In the tags list, double-click the tag you want the alarm to be set up about. The TAG PROPERTIES window will be displayed. Select the ALARM tab. The window displayed will be according to the figure below.

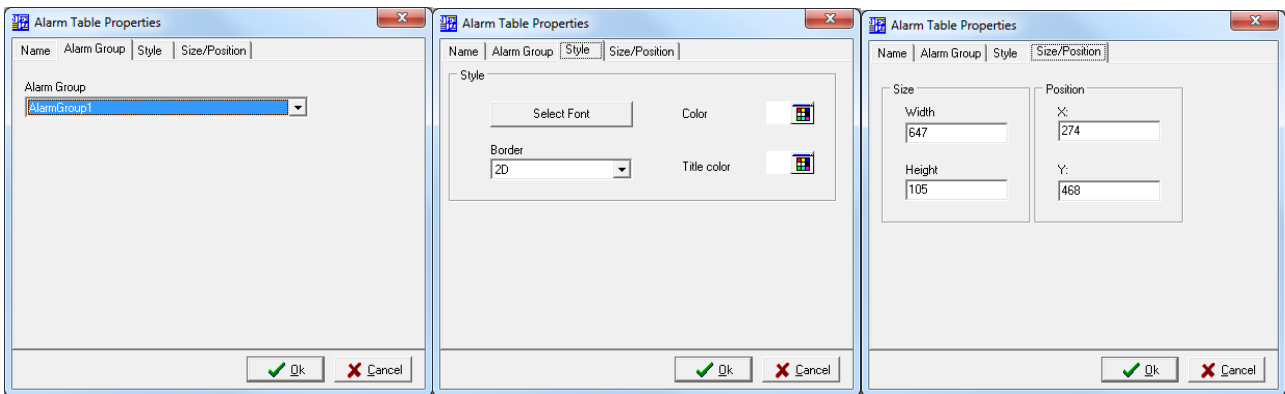


4. Select the type of alarm among the options Low, Low-Low, High, High-High, LowDifference, HighDifference or Difference.
5. Define the updating rate. The existence or not of the alarm condition for this tag will be checked according to this scheduled interval.
6. Check the ENABLED box to enable the selected alarm.
7. Indicate the alarm group which this alarm belongs to (the group should have been created in advance).
8. Define the other alarm parameters. Refer to help about the meaning of each parameter.
9. In case it is necessary to define another alarm condition for the same tag, select another type of alarm in the TYPE box and proceed with the definition of parameters.
10. Click the OK button to conclude the definition of alarm parameters for this tag.

INCLUDING AN ALARM TABLE OBJECT

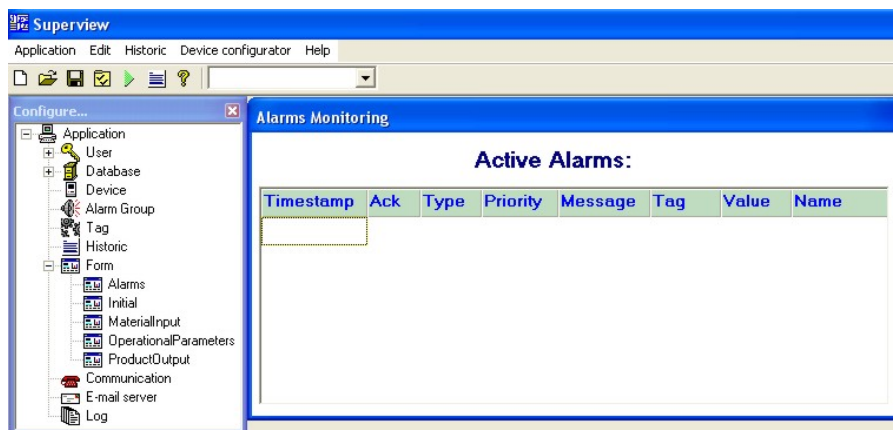
The effective monitoring of an alarm group starts only when an object of this type is positioned and its parameters are defined in one of the application forms. For this purpose, follow the procedures described below:

1. Create a new form or edit an existing one (see chapter “Creating supervision forms”).
2. Select the Alarm Table object –  on the lower tool bar.
3. Place the object on the form and right-click on it to visualize your properties window called CONFIGURE ALARM TABLES. The following figure shows 3 main tabs for this object configuration.



4. In the ALARMS GROUP tab select the name of an already registered alarm group. In this alarm table, the active alarms in this group will be displayed.
5. In the STYLE tab set up the appearance of the table on the screen (font type, background color and border).
6. In the Size/Position tab you can change the size of a component and its position on the application screen.
7. After the configuration is complete, click OK.
8. You can adjust the table columns width using the mouse. Place the mouse cursor on the column lines in the table title bar and drag this line to change the column size.

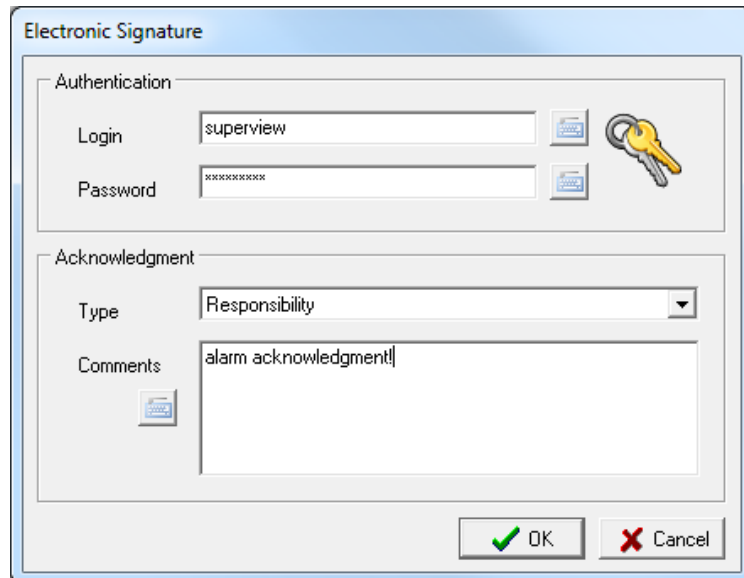
The figure below shows an example of a form with a title text and an alarm table.



ACKNOWLEDGING ALARMS

During supervision, all active alarms in the alarm group are presented in the table. When the operator makes a double click on the line indicating an alarm condition, the operator will be acknowledging (ACK) the alarm condition. The Ack column will indicate whether the operator acknowledged the alarm condition (Ack=Yes) or not (Ack=No).

Upon acknowledging an alarm, an electronic signature will be requested by the user, where the user shall have to confirm his login and password to be able to provide the alarm acknowledgement. The electronic signature serves as an additional security guarantee for the confirmation of the operation. Example of the window is shown below:

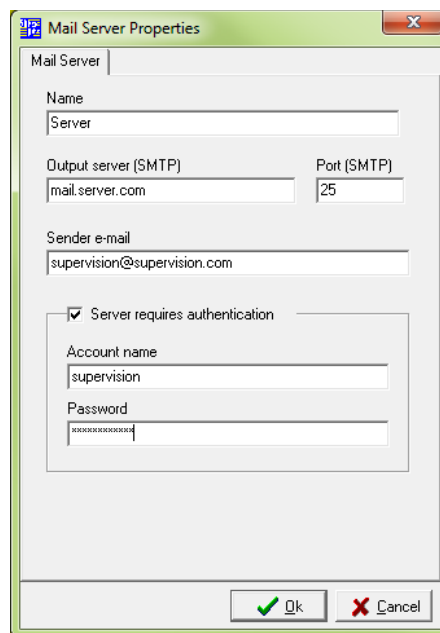


The 'Electronic Signature' dialog box is divided into two sections. The 'Authentication' section contains a 'Login' field with the text 'superview' and a 'Password' field with masked characters 'xxxxxxxx'. To the right of these fields are two small icons: a blue square with a white key and a yellow key. The 'Acknowledgment' section features a 'Type' dropdown menu set to 'Responsibility' and a 'Comments' text area containing the text 'alarm acknowledgment!'. At the bottom right, there are 'OK' and 'Cancel' buttons.

CONFIGURING THE E-MAIL SERVER

For using the function for sending an e-mail in the event of an alarm condition, it is necessary to set up an account in **SuperView** in an e-mail server accessible through the local network which the computer running the **SuperView** is connected to. These parameters configuration shall be done from the information supplied by the administrator of your computers network, following the steps described below:

1. Open the CONFIGURE window by clicking on the upper tool bar.
2. Double click on the E-MAIL SERVER icon. The E-MAIL SERVER PROPERTIES window will be displayed.



The 'Mail Server Properties' dialog box has a title bar with a green background. It contains several input fields: 'Name' (Server), 'Output server (SMTP)' (mail.server.com), 'Port (SMTP)' (25), and 'Sender e-mail' (supervision@supervision.com). There is a checked checkbox for 'Server requires authentication'. Below this, there are fields for 'Account name' (supervision) and 'Password' (masked with 'x'). At the bottom, there are 'Ok' and 'Cancel' buttons.

3. Fill the information about sender NAME, name and PORT of the OUTPUT SERVER (SMTP), sender address and, if required, user name and password for the AUTHENTICATION in the SMTP server.
4. Click OK to end and save settings.

HISTORIC LOG

The value of any **SuperView** tag may be periodically logged in a computer's file for later reference (such as a chart or table) or exported to other applications (Excel spreadsheets or PDF, for example). The historic log is an important feature in any supervisory system, because it allows for maintenance of information about the process for future reference, as well as to integrate these data with other systems within the company, for higher security of the information, the data mass is encoded, impeding possible manipulations.


When creating a history, an Object Tag is created automatically with the identification [HST] + the name of the history created, in order to control the activation and the deactivation of the history during the application running.

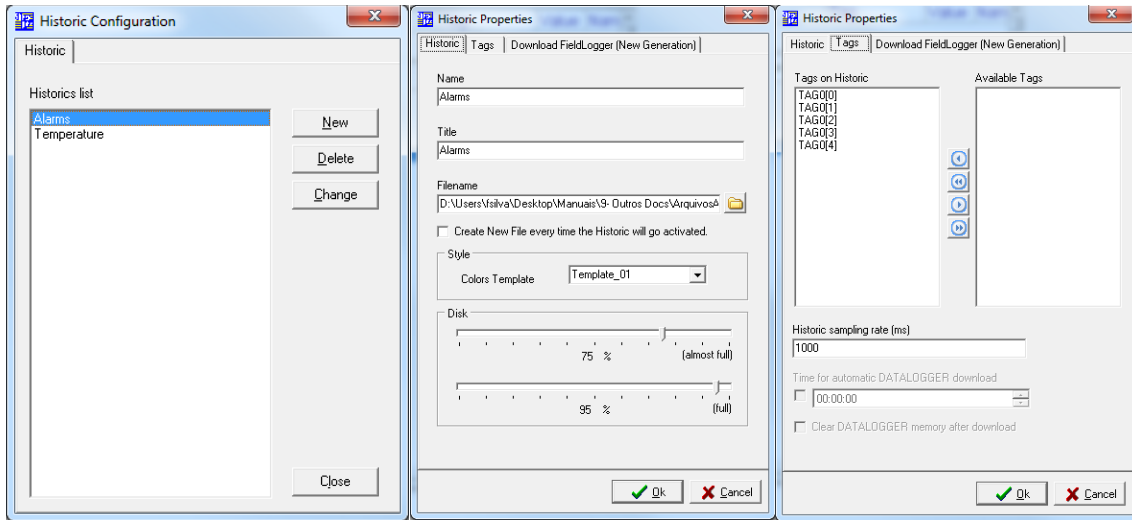
To use the historic log, the following settings are required:

- Create and define a parameter for one or more historic.
- Include a Historic Object in one of the application forms, defining its properties.

CREATING A HISTORIC

The tags that will take part in the historic and the name of the file that will store data are defined in this configuration. For this purpose, follow the procedures described below:


1. Open the CONFIGURE window by clicking the  button on the upper tool bar.
2. Double click the HISTORIC icon. The HISTORIC CONFIGURATION window will be displayed.
3. Click the NEW button and the HISTORIC PROPERTIES window will be displayed. Examples of these two windows are shown below.

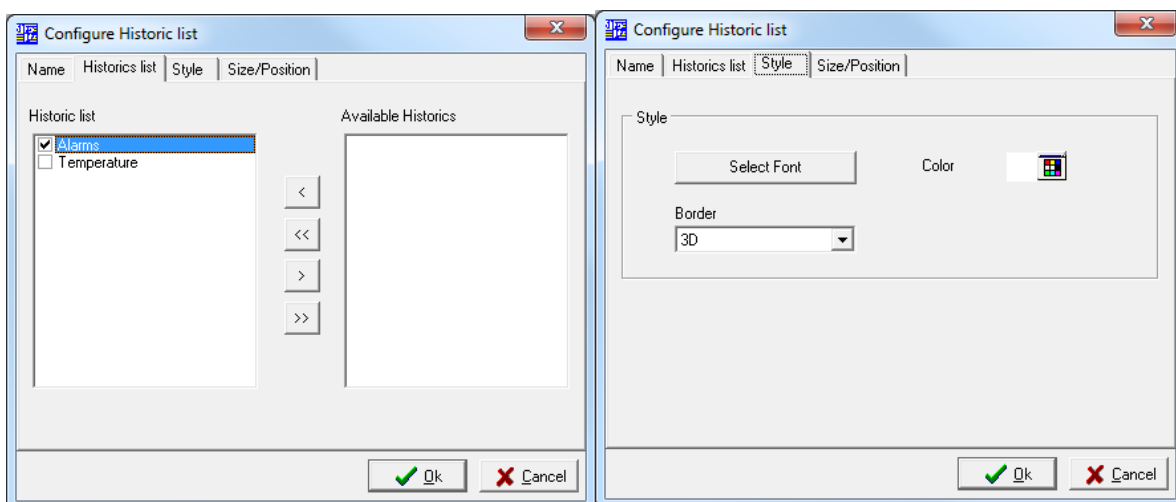


4. In the HISTORIC tab, assign a name and a title to the historic. The name will be used to identify the historic in further steps in the **SuperView** set up. To locate the file click on the icon. In the Color Template option you can choose a pre-set color template to visualize the historic chart.
5. In the TAGS tab, select from the right list the tags to be logged in this historic. Use the movement buttons placed between the lists to insert or remove tags to/from the historic. Define the sampling rate, which determines the time interval between logs in the historic file.
6. After entering all these information, press the OK button and check whether the new historic has been added to the list of the HISTORIC CONFIGURATION window.
7. To change data of an existing historic, select the historic from the list in the HISTORIC CONFIGURATION window and press the CHANGE button.

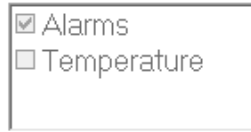
INCLUDING A HISTORIC LIST TYPE OBJECT

The effective register of a historic is only possible when an object of this type is positioned and parameterized in one of the application forms. For this purpose, follow the procedures described below:

1. Create a new form or edit an existing one (see chapter “Creating supervision form”).
2. Select the Historic List object –  from the lower tool bar.
3. Place this object on the form and right-click on it to visualize your properties window called CONFIGURE LIST OF HISTORIC. The following figure shows the two main tabs of this object configuration.



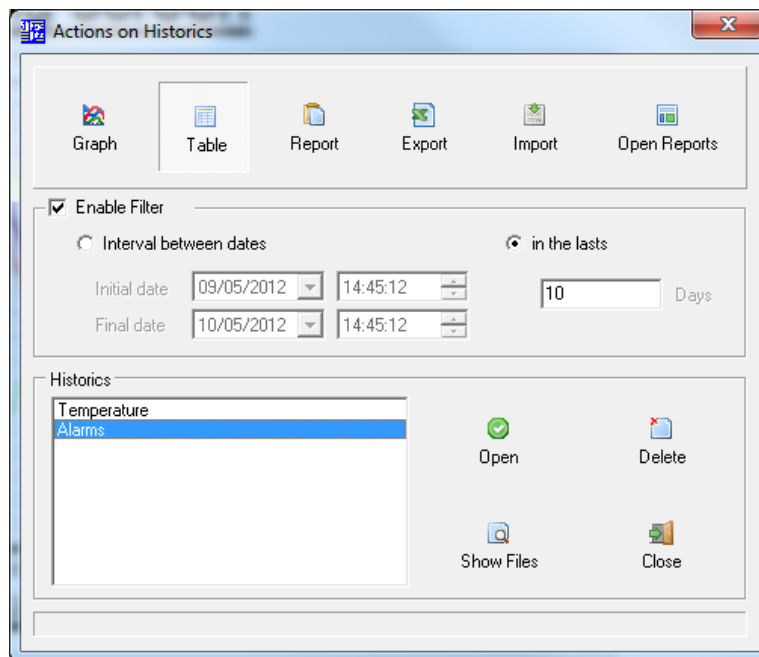
- In the HISTORIC LIST tab, select from the right list the historic that shall be included in this object. Use the movement buttons located between the lists to place or remove a historic from the list. Historics with a checked box (☑) will be enabled as soon as the **SuperView** application is started. Historics with an unchecked box (☐) will not be enabled as soon as the **SuperView** application is started. To check and uncheck a historic box, click on the mouse on the box.
- When the configurations are completed, click the OK button and check whether the object with all historic selected is correctly displayed on the screen. The figure below is an example of an object with 3 historics.



During supervision, the operator may enable (☑) or disable (☐) each historic, clicking with the mouse. Enabled historics will perform a historic log in the disk file. A disabled historic does not perform any historic register in the disk.

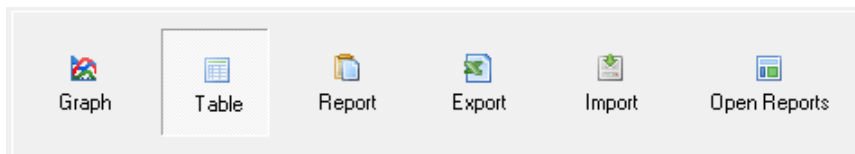
VISUALIZING, COPYING AND EXPORTING HISTORICS.

Historic disk-stored files can be visualized from the **SuperView** menu while it is in the application configuration mode. Select the menu option HISTORIC/ACTIONS ON HISTORIC to open the window with actions on historic, shown on the figure below. During supervision, the same window can be accessed by right clicking the historic object, or as set up function of a button.

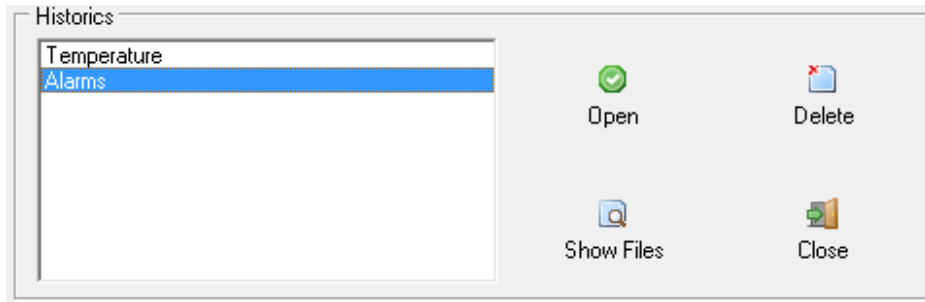


From this window it is possible to:

- Visualize historic data in the form of charts or tables, it is possible to print and create filters about the generated chart or the table.
- Create personalized Reports from the historics available, there are two report models available in **SuperView**.
- Export a historic file to another format: **XLS** (Excel), **PDF** (Acrobat), **RTF** (MS Word and other text editors), **XML**, **HTML**, **DBF** (Database), **TXT** (Text only), **CSV** (comma separated text only).
- Import a historic from other applications.



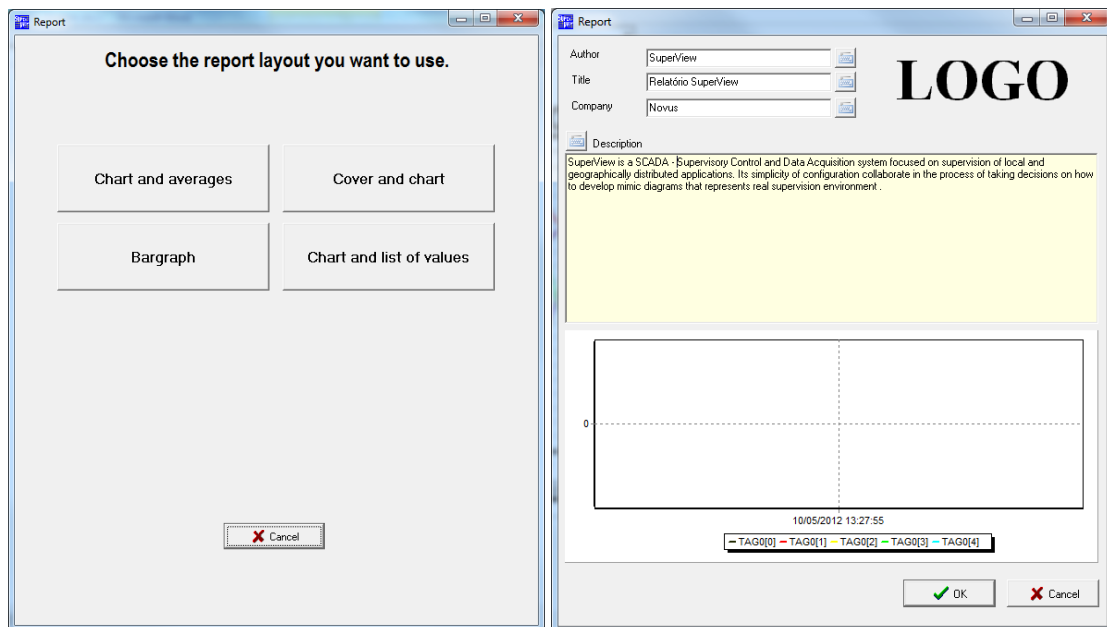
When Selecting one of the available options, you can enable the filter choosing the period of information you want to visualize. After enabling the date filter or not, you shall choose the historic. After choosing the historic, it is possible to run some actions:



- Open: when selecting a historic from the list, the button “open” is enabled, it will run the chosen action, for a selected historic, as show it in a chart or create a report.
- Delete: this option deletes all existing files for the selected historic. Once deleted there is no way to recover the files.
- See Files: this option enables the list of all files belonging to the selected historic, it is possible to open or delete only the selected files.

CREATING REPORTS

SuperView provides the possibility to create printed documents to report the historic data. There field in the report to place Author, Title, Company, responsible, a field to insert the report description, further to showing minimum, medium and maximum values of the tags that belong to the chart.



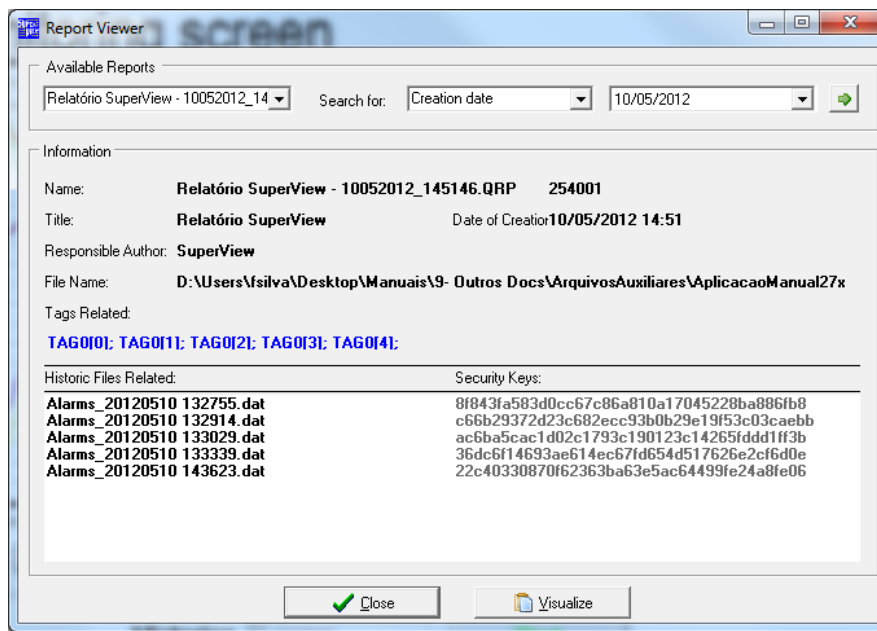
REPORTS MANAGER

The Report manager is a tool that manages all reports created in the application, keeping information as creation date, the user that created the document, what historic has been used, which tag belonged to this historic, further to the possibility to recreate the previously created document.

The access to the Report Manager window can be realized in the following manners:

1. Accessing the TOOLS/REPORTS MANAGER menu.
2. Pressing the combination of the keys CTRL+R.

An example of the Report Manager screen is given below:



It is also possible to search for reports using some filters as Author, creation date and document ID.

USING SUPERVIEW WITH THE FIELD LOGGER

FIELD LOGGER I/O

Field Logger is an eight-channel Data Logger manufactured by Novus that can be used both in online monitoring and in offline historic log. **SuperView** includes some specific features to be used together with this product:

- Access shortcut to the Field Logger set up program.
- Transference (download) of the Field Logger memory data to a **SuperView** historic log file.

To start the Field Logger set up program from the **SuperView** menu, select the option from the CONFIGURATORS menu. In the displayed window, select a Field Logger type device and press CONFIGURE. The Field Logger configuration program will start. To use this application, refer to the Field Logger documentation.

The following settings are required in **SuperView** application to allow the operator to download historic data from the Field Logger memory:

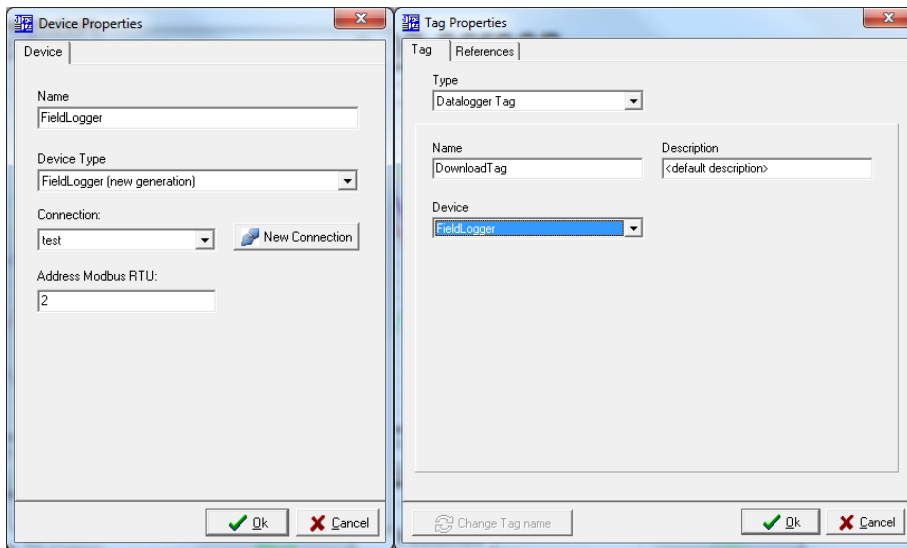
1. In case it does not exist, register a Field Logger device. For further information on how to register a device, refer to "Registering devices in the network".
2. Create a Datalogger Tag associated to a Field Logger device. For further information on how to create a tag, refer to "Registering the variables of each device – TAGS".
3. Create a new historic and include the Datalogger Tag in the list of tags displayed in the HISTORIC PROPERTIES window. Note that a historic with a Datalogger Tag cannot have any other tag. In cases where the download must start automatically in a scheduled time, define time in the field TIME FOR DOWNLOAD FROM THE Datalogger Tag shown in this window. The value in the field PHYSICAL TAG SAMPLE RATE is irrelevant in a historic, containing one Datalogger Tag. To delete data from the Field Logger memory after download check the option CLEAR DATALOGGER MEMORY AFTER DOWNLOAD. It is recommended to delete data logged to certify that there will be no repeated data saved in the disk.
4. Include a historic object in an application form (in case it does not exist). Include the historic created in the previous step in the list of historics of this object. Uncheck the box for this historic so that when supervision starts it will not be enabled. For information concerning the historic object, refer to the "INCLUDING A HISTORIC LIST TYPE OBJECT".

FIELDLOGGER MEMORY DOWNLOAD (NEW GENERATION)

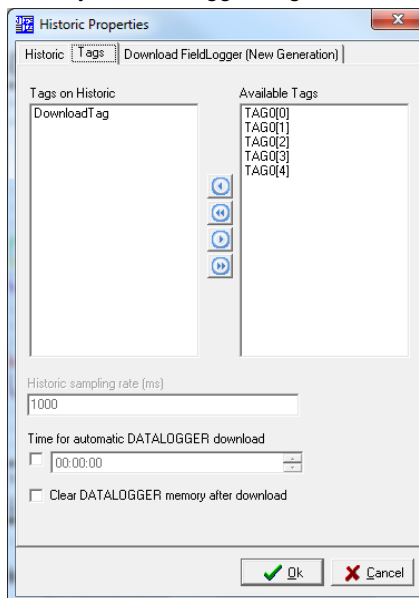
FieldLogger is a module for reading and registering analog, digital and other variables, with high resolution and speed. It is a high performance and high connectivity device, yet easy to set up and operate. **SuperView** supports FieldLogger, and thus, further to monitoring its variables, it is possible to download the device memory and transfer it to a **SuperView** historic.

The steps below shall be followed:

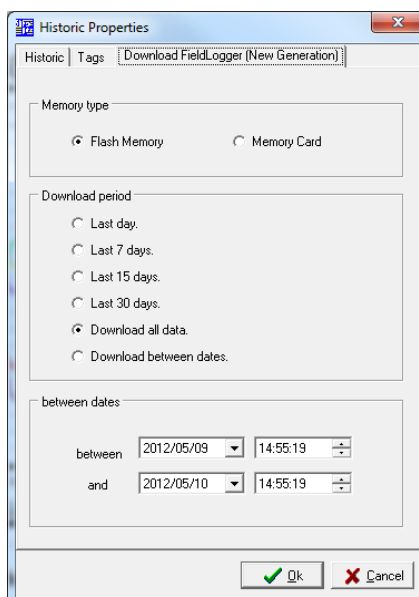
1. A FieldLogger (New Generation) device shall be created, as shown on the figure below.
2. Once the device is created, a Datalogger Tag shall be created and the created device attributed.



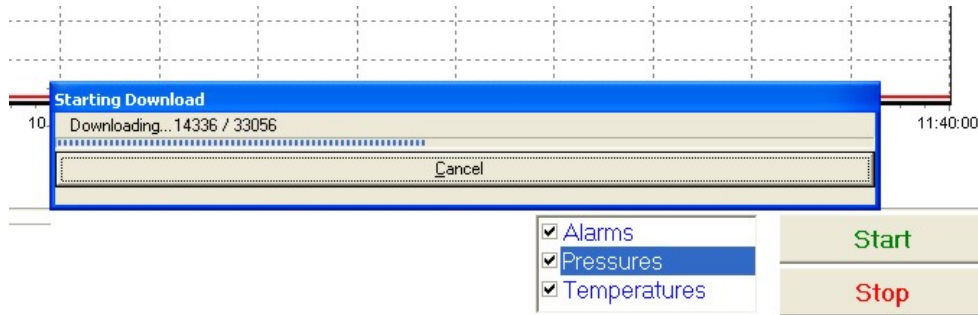
3. Create a new historic and attribute only the Datalogger Tag, thus a new configuration tab will be enabled.



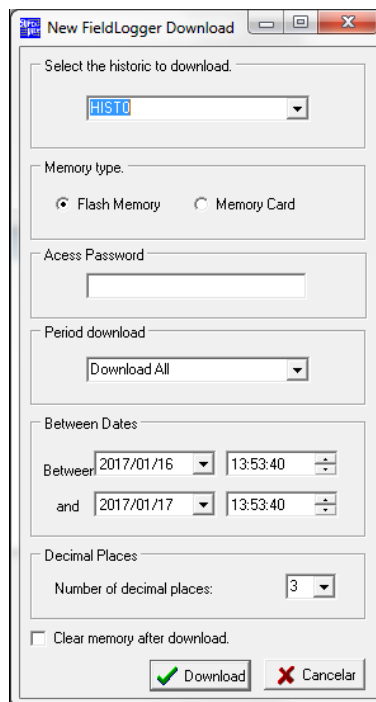
4. The Download FieldLogger (New Generation) tab provides some needed configuration for the successful download. There, users need to select the logging memory type used by FieldLogger, the data period of interest, the number of decimal places used by downloaded data and whether the memory shall be deleted or not after the download.



During supervision the operator can start the data download from FieldLogger I/O or from FieldLogger enabling the corresponding historic o in the historic object (it is enough to check the box in front of the historic name-). A window for following the download will be displayed, showing a progress bar, as on the figure below.



With the FieldLogger it is also possible to download data by means of a button action, as shown on the image below:



At the end of the download, **SuperView** will automatically uncheck the historic. A new download can be started at any time by checking the historic again. Data read from the Field Logger will be saved in the historic file, and can be visualized and exported with the resources described in “Visualizing, Copying and Exporting Histories”.


If when setting up the historic the **not** CREATE A NEW FILE EACH TIME THE HISTORIC IS ENABLED option is not checked, each download will be saved in a different file. If it is **not** checked, each download will be appended at the end of the historic file, which will contain data from all downloads performed.

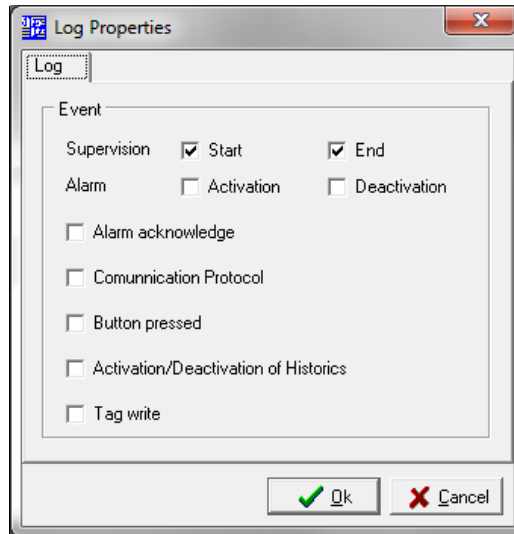


During download of the FieldLogger I/O and FieldLogger data, **SuperView** stops reading all tags. **SuperView** historic logs will also be stopped during the download process.

REGISTERING EVENTS IN SUPERVIEW

Some actions the operator performs and some events detected by **SuperView** can be registered in a text file for further reference. To configure this function, proceed as described below:

1. Open the CONFIGURE window by clicking the button  on upper tool bar.
2. Double click the LOGS icon. The LOG PROPERTIES window will be displayed, as on the figure below.



3. In the EVENTS section, check the events that you want to be logged in the file
4. After completing the configuration, click the OK button

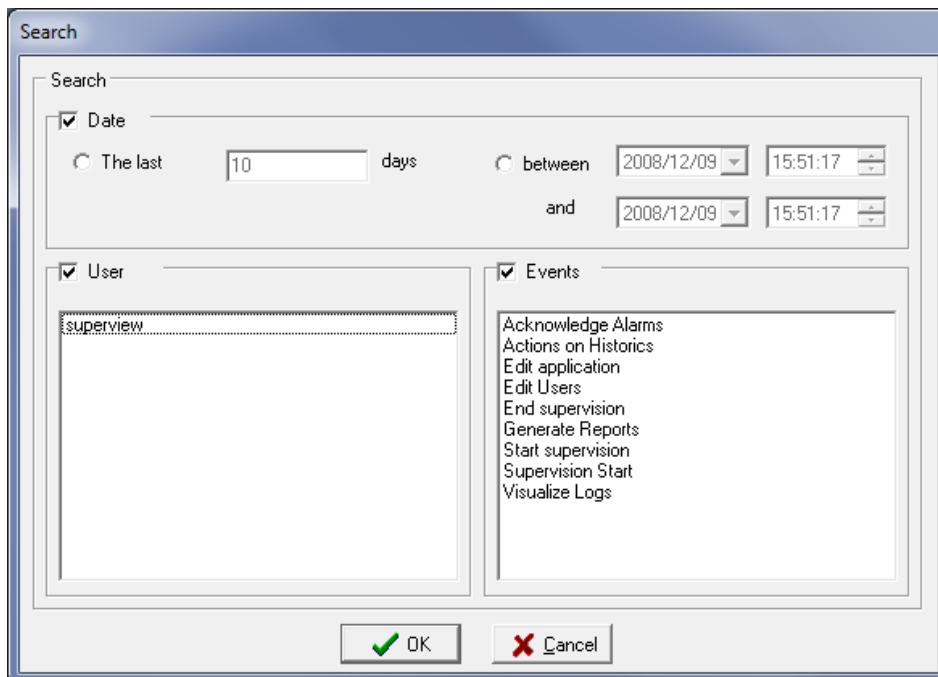
The Log file is located in the same folder as the application file, furthermore, the file is encoded; to visualize the logs it is necessary to use the **SuperView** LOGS VISUALIZER.

LOGS VISUALIZER

The access to the Logs Visualizer window can be realized in the following manners:

3. Accessing the TOOLS/ LOGS VISUALIZER menu.
4. Pressing the combination of keys CTRL+L.

An example of the search screen and the Logs Visualizer is given below:



Timestamp	User	Event	Message
2012/05/10 14:51:54	superview	Generate Reports	Action Performed by superview
2012/05/10 14:57:36	superview	Start supervision	Action Performed by superview
2012/05/10 14:58:11	superview	Supervision Start	File: D:\Users\fsilva\Desktop\Manuais\9- Outros Docs\ArquivosAuxiliares\AplicacaoManual27x\test\test.log
2012/05/10 14:58:20	superview	End supervision	Action Performed by superview
2012/05/10 14:58:32	superview	Start supervision	Action Performed by superview
2012/05/10 14:59:06	superview	Supervision Start	File: D:\Users\fsilva\Desktop\Manuais\9- Outros Docs\ArquivosAuxiliares\AplicacaoManual27x\test\test.log
2012/05/10 14:59:12	superview	End supervision	Action Performed by superview
2012/05/10 14:59:16	superview	Edit application	Action Performed by superview
2012/05/10 14:59:22	superview	Edit application	Action Performed by superview
2012/05/10 14:59:27	superview	Start supervision	Action Performed by superview
2012/05/10 15:00:01	superview	Supervision Start	File: D:\Users\fsilva\Desktop\Manuais\9- Outros Docs\ArquivosAuxiliares\AplicacaoManual27x\test\test.log
2012/05/10 15:00:46	superview	End supervision	Action Performed by superview
2012/05/10 15:00:52	superview	Edit application	Action Performed by superview


Logs Visualizer properties:

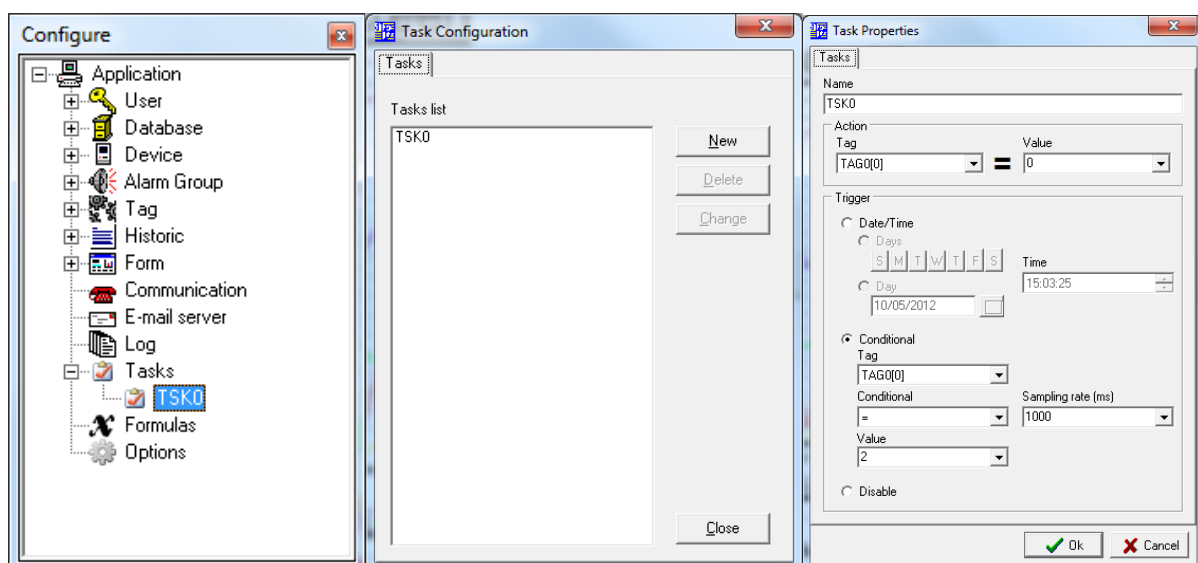
- TimeStamp: Date and time when the action occurred;
- User: The name of the user who is running the application;
- Event: action occurred during the application running.
- Message: Additional information about the event occurred.

CONFIGURING TASKS

The automated Task Management allows a better control on your application. It allows controlling and running supervision actions without human interaction, in pre-determined time and conditions.

To create and configure a task, proceed as described below:

1. Open the CONFIGURE window, pressing the button  on the upper tool bar.
2. Double click on the icon TASKS. The window CONFIGURE TASKS will be displayed.
3. Press the button NEW and the window TASK PROPERTIES will be displayed. Examples of these windows are shown below.



4. In TASK PROPERTIES, attribute a name to the Task. The name will be used to identify the Task in the application.
5. Define an action to be executed when the chosen trigger is activated.
6. Define how the trigger shall be activated, the following types can be chosen:

- Date/Time: You can define a day of the week in a certain time for the task to occur. When selecting this option, the task will occur always on the same day of the week and in the specified time. You can also define only one day and time for the task to occur. When selecting this option, the task will occur only once, on the specified day and in the specified time.


- Conditional: When the set up tag is equal to, higher or lower than (according to the condition chosen), the task will be executed. The condition check is defined by the Rate of updating.

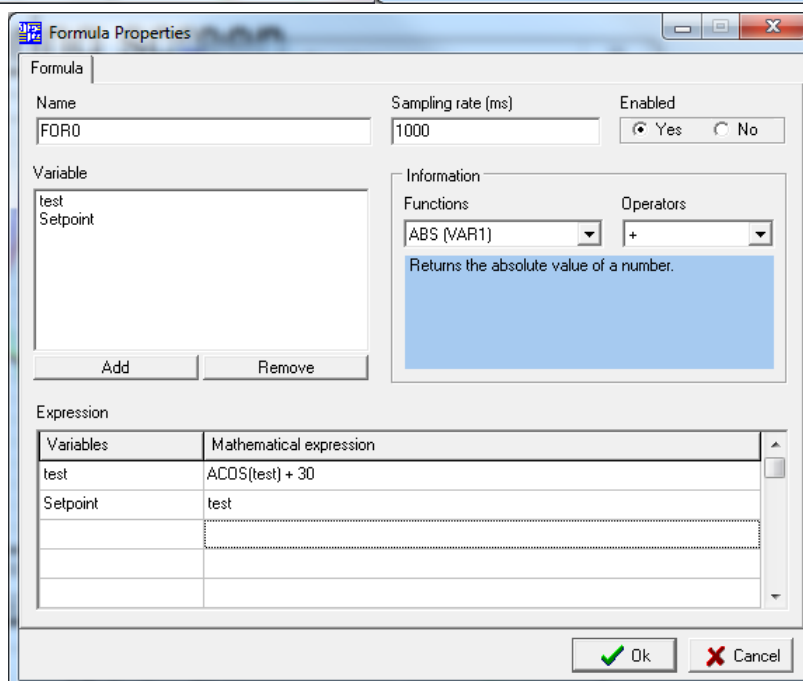
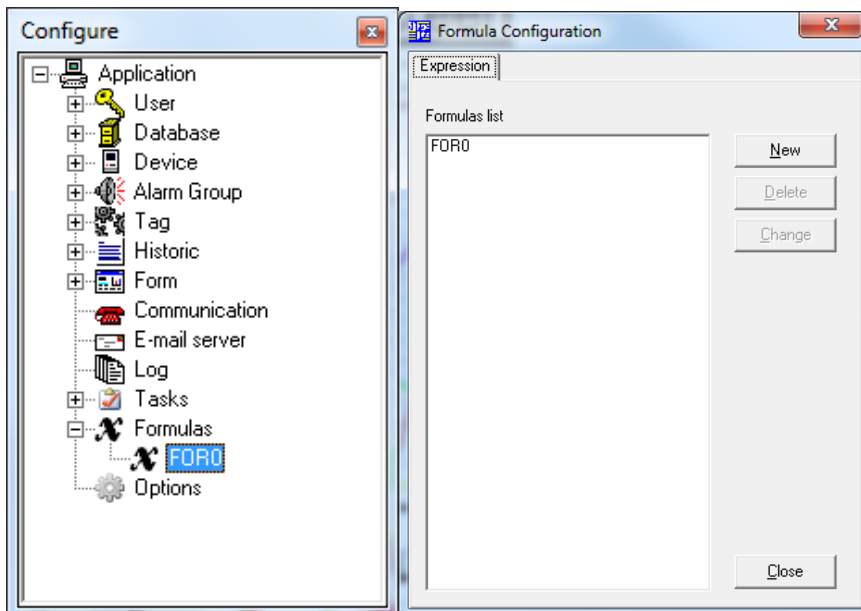
7. Rate of updating: Indicates the interval in milliseconds, the conditions defined in the other fields are examined in. It can be defined by a number or a tag.
8. Disable task: it disables the task, you can enable it through the task Object Tag. For further information, see CHANGING TAGS PROPERTIES. This option is useful when you want to run a task only once.
9. After setting up all parameters, click on the OK button, and check whether the new task has been included in the list of the CONFIGURE TASKS window.
10. To change the information of an already existing task, select the task from the list of the CONFIGURE TASKS window and click the button CHANGE.

CONFIGURING FORMULAS

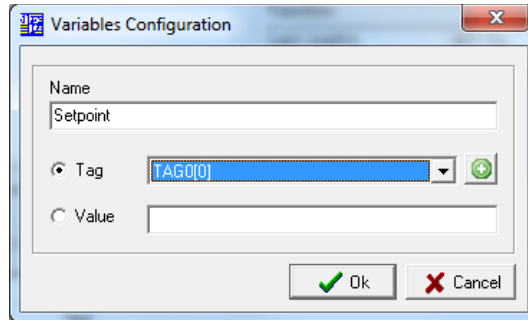
The creation of formulas allows the user to create sequences of expressions, involving application tags, thus allowing the transformation of data extracted from the tags in useful information for a certain process.

To create and set up a task, proceed as described below:

1. Open the CONFIGURE window, pressing the button  on the upper tool bar.
2. Double click on the icon FORMULAS. The window CONFIGURE FORMULAS will be displayed.
3. Press the button NEW and the window FORMULA PROPERTIES will be displayed. Examples of these windows are shown below.



4. In FORMULA PROPERTIES, attribute a name to the Formula. The name will be used to identify the Formula in the application.
5. The rate of updating indicates the intervals the defined expressions will be executed in.
6. The field "enabled" defines whether the formula will be started as soon as the supervision starts or not.
7. Define the variables that will be used in the formula; they can be numbers or tags. An example of the window for variables addition is presented below.



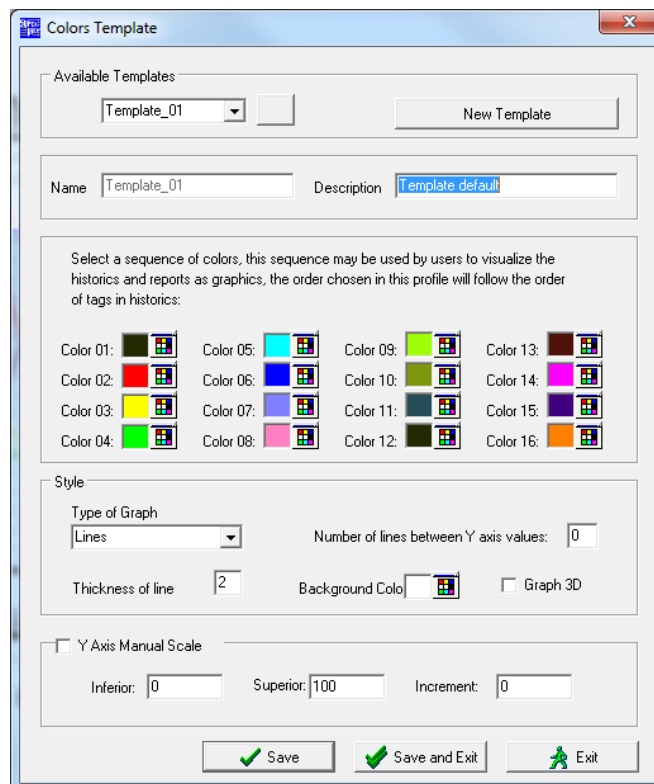
8. In "Expressions statement" you define the variable, which will receive the result from the mathematical expression.
9. The mathematical expression is defined by a set of syntaxes, which may be used; in the field "Information", the operators and the functions that can be used in the expressions are shown.
10. The formula can contain a sequence of expression, which will be run from top to bottom in the stated expressions list.
11. After inserting all information, click on the OK button, and check whether the new formula has been inserted in the list in the CONFIGURE FORMULAS window.
12. To Change information of an existing formula, select the formula in the list in the CONFIGURE FORMULAS window and press the CHANGE button.

CONFIGURING THE COLOR TEMPLATES

The color template is a way to pre-set the colors and the styles the charts of the application are displayed in. The color template can be used in the forms Graphic object, as well as in the Historic and Reports charts. The access to the Color Template window can be provided in the following manners:

1. Accessing the TOOLS/COLOR TEMPLATE menu.
2. Pressing the combination of keys CTRL+ALT+L.

An example of the Color Template window is shown below:



3. Color Template properties:

- Templates Available>you can choose a template that has been previously set up, exclude or create a new one. The template with the name Template_01 is the **SuperView** standard template and cannot be excluded.
- Name: The name, which identifies the template.
- Description: a short description about the template.
- You can choose the color of each of the 16 lines that appear on the chart.
- Style: Defines the chart style; you can choose the Chart Type, the number of lines between the Y axle values, the line thickness, the chart background color and whether the chart will be shown with a 3D effect or not.
- Manual Y axle scale: Defines the Y axle scale, and also the increment, which is an interval a delimitation line is placed on the Y axle in.

INFORMATION TABLE

The Information table is an information matrix for the application tags; with these tables it is possible RO identify which device a certain tag belongs to, what connection this device uses, what are the limits, error values and alarms enabled for the application tags. It is possible to print these tables for fast reference about the properties that the tables provide.


An example of the information table is shown on the images below.

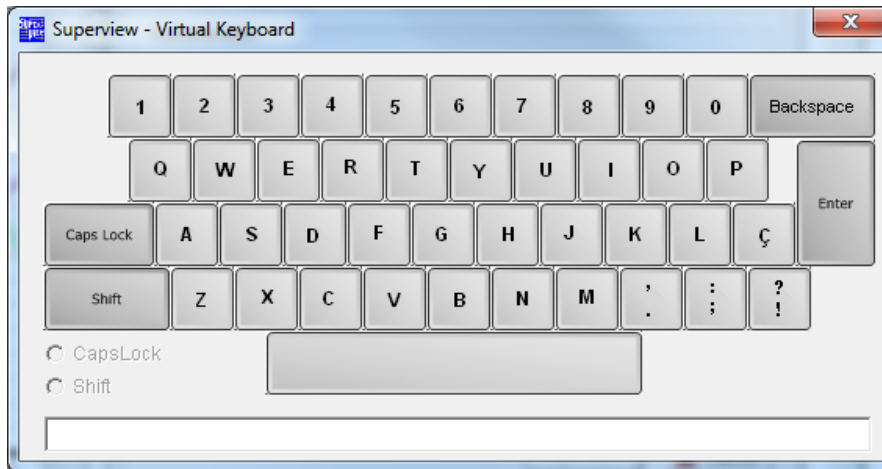
#	Tag	Parameter	Equipment	Equipment type	Adress	Protocol	Conection
1	DownloadTag		FieldLogger	FieldLogger (new generation)	2	ModBus RTU	test
2	FiellLogger1	AlarmArrayHigh	FieldLogger	FieldLogger (new generation)	2	ModBus RTU	test
3	FiellLogger2	AlarmArrayLow	FieldLogger	FieldLogger (new generation)	2	ModBus RTU	test
4	FiellLogger3	Analog_1_Int	FieldLogger	FieldLogger (new generation)	2	ModBus RTU	test
5	FiellLogger4	Analog_3_Int	FieldLogger	FieldLogger (new generation)	2	ModBus RTU	test
6	FiellLogger5	Analog_6_Int	FieldLogger	FieldLogger (new generation)	2	ModBus RTU	test
7	TAG0[1]		EQP0	Custom	1	ModBus RTU	test
8	TAG0[2]		EQP0	Custom	1	ModBus RTU	test
9	TAG0[3]		EQP0	Custom	1	ModBus RTU	test
10	TAG0[4]		EQP0	Custom	1	ModBus RTU	test

#	Tag	Decimal places	Inferior limit	Superior limit	Inferior visual limit	Superior visual limit	Error Value
1	DownloadTag	N/D	N/D	N/D	N/D	N/D	N/D
2	FiellLogger1	0	0	0	65535	65535	N/D
3	FiellLogger2	0	0	0	65535	65535	N/D
4	FiellLogger3	0	-32768	-32768	32767	32767	N/D
5	FiellLogger4	0	-32768	-32768	32767	32767	N/D
6	FiellLogger5	0	-32768	-32768	32767	32767	N/D
7	TAG0[1]	0	-1999	-1999	9999	9999	N/D
8	TAG0[2]	0	-1999	-1999	9999	9999	N/D
9	TAG0[3]	0	-1999	-1999	9999	9999	N/D
10	TAG0[4]	0	-1999	-1999	9999	9999	N/D

#	Tag	Low	Low low	High	High high
1	DownloadTag	N/D	N/D	N/D	N/D
2	FiellLogger1	N/D	N/D	N/D	N/D
3	FiellLogger2	N/D	N/D	N/D	N/D
4	FiellLogger3	N/D	N/D	N/D	N/D
5	FiellLogger4	N/D	N/D	N/D	N/D
6	FiellLogger5	N/D	N/D	N/D	N/D
7	TAG0[1]	N/D	N/D	N/D	N/D
8	TAG0[2]	N/D	N/D	N/D	N/D
9	TAG0[3]	N/D	N/D	N/D	N/D
10	TAG0[4]	N/D	N/D	N/D	N/D


VIRTUAL KEYBOARD

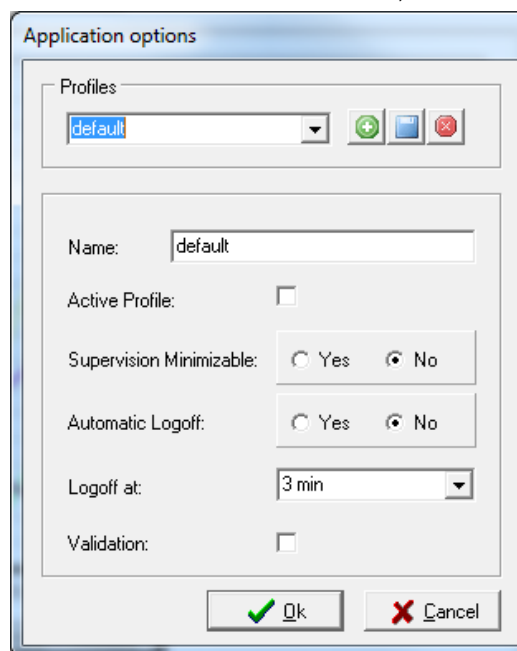
SuperView has a virtual keyboard, which can be used in the supervision mode for the applications that use touch screen monitors. Whenever the user needs to interact with **SuperView** in supervision mode, either writing a new value for a tag, or acknowledging an alarm, there will be a button that calls the software virtual keyboard; it is enough only to click the button  for the keyboard to appear, as on the image below:



APPLICATION GENERAL OPTIONS

To access the Application General Options, the steps below must be followed:

1. Open the CONFIGURE window, pressing the button  on the upper tool bar.
2. Double click on the item OPTIONS of the CONFIGURE window; the window below will be displayed.



3. It is possible to create different profiles for using each application, however only one can be active at a time.
4. Each profile has some options, which are explained below:
 - **Name**: this is how the set up profile will be called.
 - **Active Profile**: when it is checked, the profile is in use at the moment.
 - **Minimizing Supervision**: defines whether the user can minimize the supervision form.
 - **Automatic Logoff**: with this option checked as “yes”, when starting the supervision it will start blocked and for the user to be able to access its forms, it is necessary insert login and password.
 - **Logoff in**: this is the time that **SuperView** will wait without interaction from the user, before blocking the supervision forms again.

- **Validable:** activating this option makes certain aspects of the software to change, below is the list of modifications:
 - When saving the application, saves the old versions.
 - A report showing values with minimum, maximum and average.
 - Obligatory automatic Logoff.
 - Minimizing Form not enabled.
 - Electronic signature screen, the login field is already filled in.
 - Requires an electronic signature when saving an application, generating a report or exporting a historic.

PRINT SETTING


During supervision, the operator may request a print screen of the supervision or historic data screens. The printer to be used, as well as its settings, must be configured in the application during the application configuration. Define print parameters in the menu APPLICATION/PRINTER SETUP.

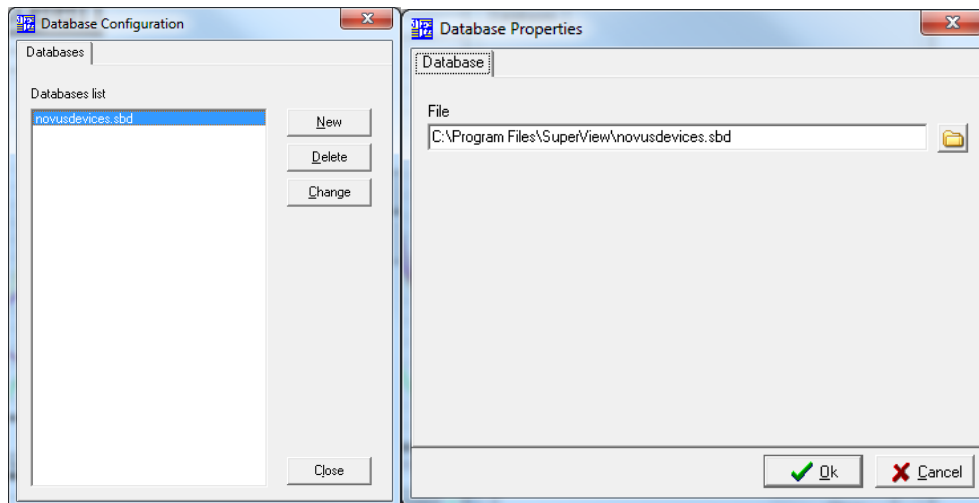
DATABASE OF MODBUS DEVICES PARAMETERS

To facilitate the use of **SuperView** together with NOVUS Modbus devices, a database named NOVUSDEVICES.SBD is included in the **SuperView** installation. This database associates friendly names to Modbus registers of the different models of NOVUS devices. When configuring the Devices for an application (see “Registering devices in the network”), the devices from the “DEVICE TYPE” list will be included in the databases registered in the application.

If the NOVUS device model that will communicate with **SuperView** is not available in the installed database, an updated version can be obtained at NOVUS website (www.novusautomation.com), in the section **SuperView** files for download, and included as an additional data base or as a replacement of the database originally installed with **SuperView**. Before installing a new database, it is recommended to make a security backup of the previous version, to allow recovery of the previous operation condition in case the application stops running with the database exchange.

Communication with devices that are not included in the database is possible and described in “Configuring the Communication with Devices from Other Vendors”. The procedures for the inclusion and exclusion of a database in a **SuperView** application are shown below:

1. Open the CONFIGURE window by clicking the button  on the upper tool bar.
2. Double click the DATABASE icon. The DATABASE CONFIGURATION window will be displayed.
3. To include a new database, click on the button NEW. To delete or change the properties of an already registered database, select the database from the list and click the buttons DELETE or CHANGE, respectively. In the tags list, double click the database to be set up. The DATABASE PROPERTIES window will be displayed, as on the figure below.



4. In the file field, find the file with the **SuperView** database that you want to include.
5. Select OK to confirm and save your selection.

CONFIGURING THE COMMUNICATION WITH DEVICES FROM OTHER VENDORS

SuperView can communicate with any Modbus RTU slave device. Knowledge about the Modbus RTU protocol and device communication documentation present are necessary to set up **SuperView**.

SuperView can be set up to use the following Modbus commands for communication. The read command is defined during the **SuperView** configuration and the corresponding write command is determined by the proper **SuperView** based on the selected read command:

REGISTER READ COMMAND	REGISTER WRITE COMMAND
<ul style="list-style-type: none"> • <i>ReadCoils</i>(Command 01) 	<ul style="list-style-type: none"> • <i>Write Single Coil</i> (Command 05)
<ul style="list-style-type: none"> • <i>ReadDiscrete Inputs</i> (Command 02) 	<ul style="list-style-type: none"> • Write not allowed in this register type
<ul style="list-style-type: none"> • <i>Read Holding Registers</i> (Command 03) 	<ul style="list-style-type: none"> • <i>Write Single Register</i> (Command 06)
<ul style="list-style-type: none"> • <i>Read Input Registers</i> (Command 04) 	<ul style="list-style-type: none"> • Write not allowed in this register type

Block read operations can be configured, which will result in the creation of one TAG for each block member. Block write operations are not allowed, and they shall be done individually in each TAG that builds the block.

Modbus addresses informed in **SuperView** shall be the physical register addresses that are transmitted into the address field of Modbus frames, and not the logical addresses described in the documentation of some devices. For example, the lowest address for a register of the type "Holding Register" is 0(zero) in **SuperView**, but in some devices it is identified as 40001. For a register of the type "Input Register", the lowest address in **SuperView** is also 0 (zero), but in some devices it is identified as 30001.

Modbus commands configuration is only available for TAGS of type CUSTOM that must be associated also to CUSTOM DEVICES.

REGISTERING DEVICES IN THE NETWORK

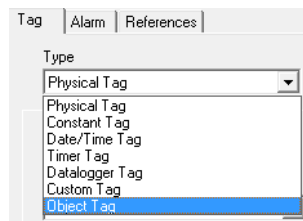
Devices from other vendors shall be obligatory registered as Custom. To include such a device, follow the steps described in "Registering devices in the network", making sure to register the DEVICE TYPE as Custom. Multiple Custom devices can be registered, but always remember not to repeat Modbus addresses in the network.

Since the device associated to **SuperView** shall be NOVUS and obligatory in the Modbus1 (one) address, no Custom device shall be set up and registered with this address.

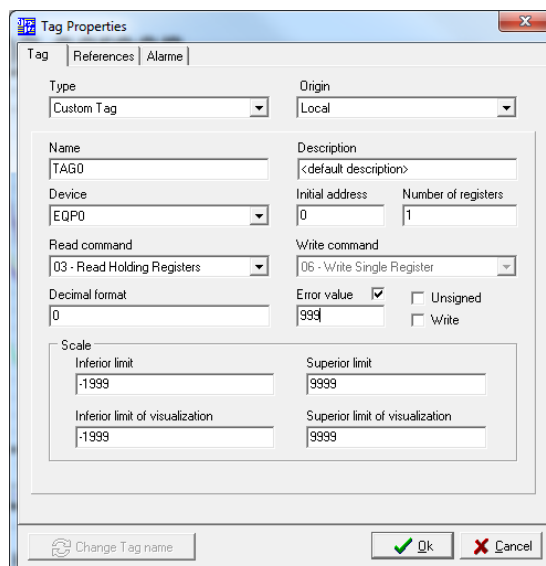
REGISTERING THE VARIABLES OF EACH DEVICE – TAGS

Once a device of the type Custom is created, Tags associated to each address of interest in this device shall be created. Since the device of the type Custom is not registered in the **SuperView** devices database, there is no a friendly way of creating the Tags. Knowledge about Modbus protocol and about the device registers memory map is necessary.

To register a Tag in a custom device, proceed as described in "Registering the variables for each device – TAGS", but select the Tag TYPE as CUSTOM TAG:



Several of the properties already described for a PHYSICAL TAG are also present in a CUSTOM TAG. The figure below shows the properties window for a Custom Tag, and the exclusive properties of this type of Tag are described below.



Initial Address: Specify the address of the Modbus register to be read and associated to the Tag. If the Tag to be created is of the BLOCK type (composed of multiple contiguous Modbus registers), specify here the Modbus address of the first block register. The specified address must be the physical address of the register that transmits in the address field of the Modbus frame.

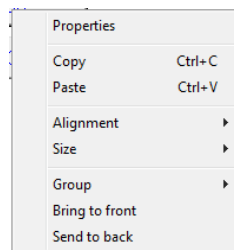
Number of Registers: Specify the size of the block of registers to be read and associated to the Tag. To define a Tag with a single register, enter the value 1 (one). If a value higher than 1 (one) is selected, an array of Tags will be created with the same name, but with different indexes. For example, if a Custom Tag of 4 registers is created and named as *DataValues*, 4 Tags will be created with the following names: *DataValues[0]*, *DataValues[1]*, *DataValues[2]* and *DataValues[3]*.

Read Command: Specify the Modbus command that shall be used to read this Tag. The commands accepted by **SuperView** are: *READ COILS* (command 01), *READ DISCRETE INPUTS* (command 02), *READ HOLDING REGISTERS* (command 03) and *READ INPUT REGISTERS* (command 04).

Write Command: The write command to be used when a writing operation is carried out in the Tag is determined automatically by **SuperView**, based on the previously selected Read Command. Some read commands do not have a corresponding write command, and writing in Tags that use these commands is automatically disabled. A tag composed of more than one register (block) and that uses a Modbus read command that allows writing, does not accept block writing operations. Each one of the multiple tags that form a block type register shall be written individually by **SuperView**.

ADVANCED SCREEN EDITION

During the graphic design of a supervision form, the following edition resources are available to make the task easier. To use them, select the objects that you want to change and right click on them. A drop-down menu will be displayed with the available options:



OBJECTS GROUPING

Applicable when more than one object has been simultaneously selected (to select multiple objects, select on them with the left button of the mouse while holding the *Ctrl* key). A group of objects will always be moved together. The individual features of each object within a group can be also accessed with a right-click on the object. The GROUP menu unfolds the options GROUP AND UNGROUP. Select the action you need.

BRINGING OBJECTS TO FRONT / SENDING BACK

A selected object or group can be brought to the first plane of the screen, in front of objects in lower planes. It is useful to control how objects in the screen will overlap. Objects like TEXT BOX WITH TAGS and ALARM TABLE are always displayed in the first plane.

OBJECTS ALIGNMENT

Allows alignment of selected multiple objects. Select the objects to be aligned and choose the required alignment option:

- Horizontal/Left: All objects will have the same horizontal position as the object positioned on the left.
- Horizontal/Right: All objects will have the same horizontal position as the object positioned on the right.
- Vertical/Top: All the objects will be on the same vertical position of the object on the screen top.
- Vertical/Bottom: All the objects will be on the same vertical position of the object on the screen bottom.
- Vertical/Central: All the objects will be on the same vertical center of the object on the screen bottom.

STANDARDIZING THE SIZE OF OBJECTS

Allows standardization of dimension of selected multiple objects. Select the objects to be dimensioned and choose the required option:

- Height/Higher: All the objects will be as high as the highest selected object.
- Height/Lower: All the objects will be as low as the lowest selected object.
- Width/Higher: All the objects will be as wide as the widest selected object.
- Height/Lower: All the objects will be as wide as the highest selected object.

COPY / PASTE OBJECTS

Allows copying objects within the same application. One or multiple objects, grouped or not, can be selected, copied and pasted into another position on the screen. Select the objects you want to copy, select the copy option (or press *Ctrl C*) and then select the paste option (or press *Ctrl V*). A copy of the selected objects will be placed on the screen, and they can be moved to other positions. Most of the properties of the copied objects is maintained, but they must be reviewed, specially the tags association.

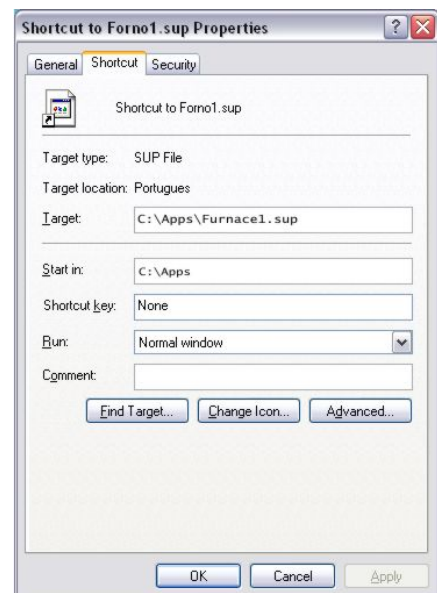
EXPORTING AND IMPORTING A COMPLETE SUPERVISION FORM

A supervision form can be saved to a file for later reuse in a different application. When a form is saved, application information as users, devices and tags are not saved. Only visual and position properties of the objects are preserved. When a form is imported into an application, the properties of all objects that compose this form shall be revised and completed with the information that had not been saved on its export. The functions Import or Export of Forms are available in the Application menu. The files that contain supervision forms have a name with the extension **.xcr**.

START SUPERVISION WHEN WINDOWS IS STARTED

A **SuperView** application can be started whenever the Windows is started. For this purpose, follow the steps described below:

1. In the register of the application users, create a MONITOR user, which will allow for the start of supervision without a password. Refer to "Users Management". Save the application.
2. In Windows, create a shortcut for the supervision file to be started.
3. Place this shortcut in the STARTUP Windows folder in the START/ALL PROGRAMS menu. See the figure below for an example of a short cut for the initialization of a sample application named FORNO1.SUP.



DISTRIBUTED SUPERVISION


In the DISTRIBUTED SUPERVISION mode, multiple computers running **SuperView** carry out the supervision of one and the same system. Typically, the computer that is directly connected to the Modbus network will act as a data SERVER for the other computers, named CLIENTS. Client-Server communication uses the existent TCP/IP computer corporate network.

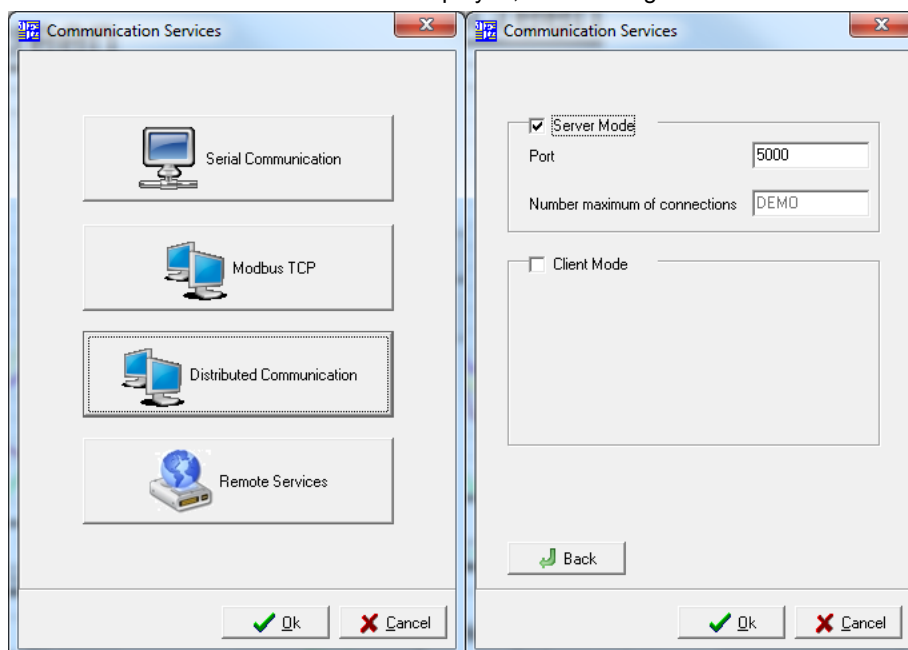
- Each client **SuperView** can connect to a single SERVER.
- The number of CLIENTS stations that can be connected simultaneously to a SERVER is determined by the use license of the **SuperView** SERVER, purchased from NOVUS.
- A **SuperView** station can act as a CLIENT and a SERVER at the same time.
- CLIENT stations can also communicate with their own local Modbus network and act as a SERVER for other CLIENTS stations
- All TAGS defined in the **SuperView** SERVER application are also accessible in the CLIENTS stations. A CLIENT station requests the TAGS values from the SERVER by name.
- A CLIENT station can perform reading and writing operations in the SERVER station TAGS.
- The multiple CLIENT stations can display different views of the process under supervision. Use, at each CLIENT station, a copy of the SERVER supervision file (file .SUP), set up the CLIENT feature and redefine the TAGS as REMOTE. The supervision forms layout can be freely changed for each CLIENT station.

DEFINING THE DISTRIBUTED COMMUNICATION PARAMETERS

The TCP/IP communication is performed through communication among two or more **SuperView** running in the Client and/or Server modes. In case **SuperView** will operate only locally, these configurations shall not be carried out. To configure the distributed communication, proceed as described below:

Server:

1. Open the CONFIGURE window by clicking the button  on the upper tool bar.
2. Double click the COMMUNICATION icon and press the DISTRIBUTED COMMUNICATION button. COMMUNICATION PROPERTIES window will be displayed, as on the figures below.




3. Click on "Server Mode" to activate the Server mode and type the number of the TCP/IP port where the Server will hear Clients connections (it shall be a value between 1025 and 65535). In the field "Maximum number of Connections" the maximum number of clients that may be connected in the Server will be indicated. This number will depend on the license acquired for the **SuperView** registration. If the license acquired does not allow clients, the word DEMO will appear and any clients connection will be terminated after 20 minutes.
4. After the configuration is finished, press OK.

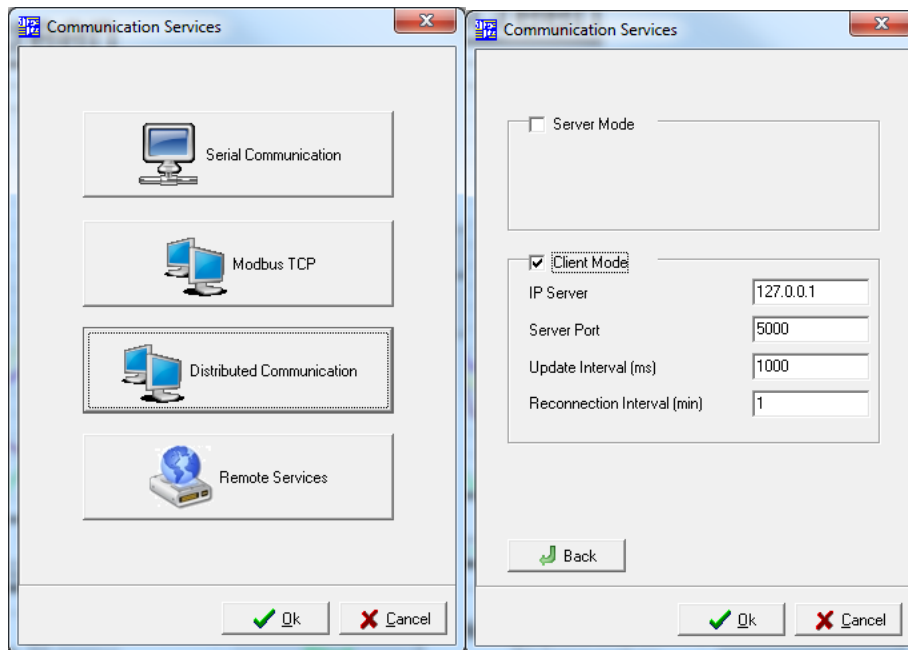
Client:

The **SuperView** client remotely accesses the information from the devices connected to another computer, provided that they are set up correctly. It is recommended to use a copy of the same file, providing only the necessary modifications.

In the computer, which *SuperView* will be set up for the Client mode in, open a copy of the supervision file and perform the following steps:

Configuring a Client:

1. Open the CONFIGURE window by clicking the button  on the upper tool bar.
2. Double click the COMMUNICATION icon and click on the button Distributed Communication. The COMMUNICATION PROPERTIES window will be displayed, as on the figure below.



3. In the Communication Properties window, click on "Client Mode" to enable the Client mode.
4. In SERVER IP, enter the IP of the computer where **SuperView** is running in the Server mode.
5. In the SERVER PORT, enter the same value set up in the "Port" field of **SuperView** that is configured as Server mode.
6. In the UPDATE INTERVAL field, enter the interval, in milliseconds, which the client will receive the Tags values from the server in, and enter the RECONNECTION INTERVAL, which is the interval the client will be reconnected in, in case there is a failure of the TCP/IP communication.
7. After the configuration is finished, press OK.



SuperView allows that supervision runs in the Server and the Client modes simultaneously.

CONFIGURE REMOTE VARIABLES -TAGS

Further to configuring the Client Mode, it is necessary to change the configurations of the Tags created for it to be read remotely. It is necessary that the remote Tags are associated to an object from the supervision form, such as a text box, chart or a bargraph, in the application set up in the Server mode.

1. To modify the Tags configurations, double click on the Tag to be modified in the CONFIGURE TAG window. The TAG PROPERTIES window, as on the figure below.

2. Select the “Remote” option in the field “Origin”, and click OK. Repeat this procedure for all Tags that shall be read from **SuperView** in the Server mode.

CONFIGURE REMOTE VARIABLES –OBJECT TAG

Tags used to remotely control the activation or deactivation of history, tasks or formulas during an application. To control the actions locally, it is enough to create one of the mentioned types (history, task or formula) and the object tag related to it is created automatically.

When you want to control a history, task or formula remotely, it is necessary to create an Object Tag, with the same name as name of the tag created in the original local application. When creating this tag, it is already naturally a remote tag, and there is no way to change this, because an object tag can only have a local origin when the proper history, formula or task that it controls exists locally. Example in the images below.



In order to read the devices and the variables of the application remotely from a configuration in the Client mode, the Tags created in the server and in the client shall have the same NAME (checking upper case, lower case and spaces) and TYPE. In the Client mode application, the Tags associated to the devices connected in the Server shall be set up as REMOTE ORIGIN.

ACTIONS DURING SUPERVISION

During the normal use of **SuperView** in the supervision mode, possibly by a user with no administrator right, the operator has an access to some features offered by **SuperView**:

PRINT A SUPERVISION SCREEN VIEW

Click with the right button of the mouse on an area of the form where there are no objects, and select, in the drop-down menu, the option PRINT SCREEN. The printer to be used for this printing should have been previously set up in the application configuration (see "Printing Configuration").

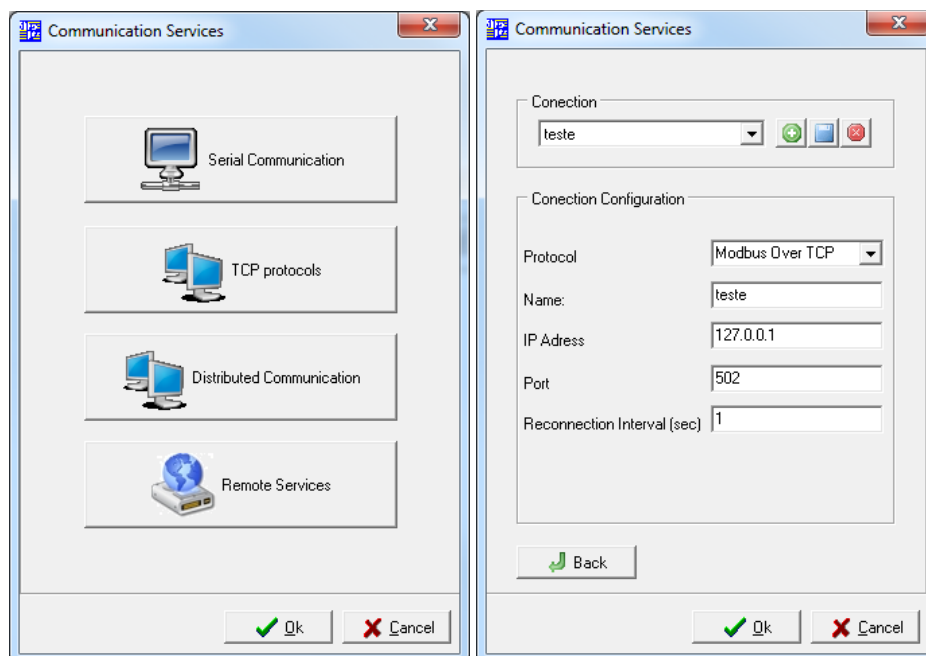
VISUALIZE, PRINT, IMPORT AND EXPORT AND CHECK HISTORY

Click with the right button of the mouse on a history object. The history actions windows will be displayed. The features available in this window are described in "History Visualization, Import and Export".



MODBUS TCP AND MODBUS OVER TCP

SuperView has support to the Modbus TCP protocol, thus providing ability to communicate with devices that use this protocol, as WS10 and FieldLogger from NOVUS, besides giving also support Modbus Over TCP. The connection is done informing the device IP and the input port, **SuperView** supports the commands 3-Read Holding Registers and 6-Write single register. For this configuration follow the steps below:

1. Open the Configure window, pressing the button on the upper tool bar.
2. Double click on the COMMUNICATION icon, and click on the TCP Protocols button, a window will be displayed as in the figure below.



3. In PROTOCOL, select the type of protocol that the connection will use.
4. In NAME, type the name for the connection being set up;
5. In IP ADDRESS, insert the IP set up in the device with support to the Modbus TCP or Modbus Over TCP protocol.
6. Configure the PORT which the device will receive the data packs in, the standard port is 502.
7. And in RECONNECTION INTERVAL, insert the time interval in which **SuperView** will try to contact again with the device, in case there is a loss of connection, the interval is in minutes.
8. After completing the set-up, click OK.

Several different connections configurations can be saved, to save a configuration, click on the icon , and to add a new connection, click on the icon .



In order to write on or read WS10 parameters, the address set up on the "deviceWS10" created on **SuperView** shall be 255, to communicate with the devices connected to WS10, address set up on the "deviceWs10" shall be the same set up on the device.



To create tags to receive the WS10 parameters, it is necessary to create a unique Custom Tag, which recognizes the device.



In order to write on or read FieldLogger parameters, the address set up on the "FieldLogger (New Generation)" device created on **SuperView** shall be 255, to communicate with the devices connected to FieldLogger, when it is running as a Gateway, a device shall be set up of the same type as the one connected to FieldLogger, and it should have set up the same address it is set up on the device.