Mustang Sampling®

# SoftView® PLUS

## Operation Manual

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# SoftView® PLUS SOFTWARE OVERVIEW

The Mustang Sampling SoftView PLUS Software is available for users who need to acquire measurement data from field instrumentation. The software is Windows-based and operates on a Windows XP, Windows 7, Windows 8, or Windows 10 PC platform.

This software provides the user with an easy-to-use interface to the "smart" Mustang Sampling products. The software operates as a Modbus host master on a communications network. The SoftView PLUS software supports both a demand polling and an auto-polling interface to the instruments.

Two versions of SoftView PLUS software are available from Mustang Sampling. The PLUS version allows the user to pre-install and collect data on a 24/7 basis from up to ten (10) instruments. The PLUS+ version allows the user to pre-install and collect data on a 24/7 basis from up to twenty (20) instruments.

Users unfamiliar with computer to instrument digital communications concepts and procedures are encouraged to review the Communications Primer section at the end of this manual to better understand the concepts and instructions discussed here.

The SoftView PLUS software saves the acquired measurement data in history log files allowing the user to monitor measurement history and to review the performance of the instruments. The software also supports features which can allow the user to configure the instruments.

The SoftView PLUS Software consists of two major components or modules.

1. SoftView PLUS Client (the User GUI interface)
2. SoftView PLUS SCADA Gateway Executive (SGX) Server

# SoftView® PLUS FEATURES

The SoftView PLUS software provides the user with a number of features including the following major features:

1. Simple Intuitive User Interface - An important SoftView PLUS design priority was to provide the user with an interface which is simple, intuitive and easy to use. As you will see in the visualization discussion below, this has been achieved for the day-to-day software user.

2. Applications (APPs) - The information required by SoftView PLUS to interface to an instrument is contained in an APP file for the instrument. So configuring SoftView PLUS to interface to a particular instrument is a simple two-step process. First, the user installs the appropriate APP for the desired instrument and second, he then defines the communications parameters required for the instrument interface.

3. Station Network User Interface – This feature allows the user to define a custom Station Network. The user defines custom stations containing the measurements acquired from the instruments. The Station Network measurements (station points) are visualized to the user in pop-up station windows as shown in the visualization windows below. The stations and their assigned points are presented color coded to show the normal or alarm status of the measurements. The user can pre-configure each station window by adding a desired BMP image for the station window background. He can also position the station measurements or points to desired locations over the BMP image.

4. Training Mode Configuration – SoftView PLUS supports a training mode configuration. The software training mode when configured allows the user to easily become familiar with the user GUI software interface. The user can execise the functionality in the software without having a physical connection to the instrument. The instrument communications is virtual or simulated. The user can become familiarity with the software by installing and polling the virtual instrument. Then, when ready, the user can switch the configuration to use the physical interface to the real instrument.

5. Instrument Configuration – The SoftView PLUS instrument APP for interface to the instrument will usually contain "read only" measurement report data and "read/write" configuration parameter report data. So the SoftView PLUS user can also read (poll) and re-configure key parameters in the instrument by editing and downloading configuration parameters to the instrument.

6. History Logging and Trending – The user can review a graphic trend of selected measurement values in the history data log.

7. Methane Number Calculation – The user can optionally select a methane number protocol method for calculation of methane number when gas composition is polled from a gas chromatograph. The methane number is automatically computed and added to the acquired gas composition.

The SoftView PLUS user can:

1. Install the APPs for the desired instruments.

2. Define the communications settings for the link to the instruments. Communications options include serial or Ethernet network connections.

3. Select a desired instrument APP, i.e. the "focus APP".

4. Select a desired instrument report containing the specific data desired from the instrument, i.e. the "focus report".

5. Request a "demand" poll of the focus report data from the instrument.

6. Enable auto-polling of all active instruments.

7. Tune or re-configure the focus instrument by editing and downloading configuration parameters to the instrument.

8. Review the latest acquired instrument data and alarm status.

9. Review graphically a trend of acquired instrument measurements saved in the history data log.

10. Export saved history log data to a CSV file for import into Excel.

11. Print history data log reports.

SoftView instrument applications (APPs) are provided in the SoftView PLUS software to support communications with the following Mustang Sampling instruments (focus instruments):

1. Mustang® Sample Conditioning System

2. Mustang® P53

3. Mustang Pony® Heated Probe enclosure with Mustang® Heated Regulator

4. Mustang® Pressure Regulating Vaporizer Sampling System

5. Mustang® Heated Regulator

6. Mustang Intelligent Vaporizer Sampling System® Model 1

7. Mustang Intelligent Vaporizer Sampling System® Model 2

8. SS2000 Moisture Analyzer

9. MTC1

SoftView PLUS supports the following communications media or links to the instrument:

1. Serial over a COMx RS232 port or RS485 with a converter.

2. Ethernet (TCP/IP)

# SoftView® PLUS INSTALLATION & STARTUP

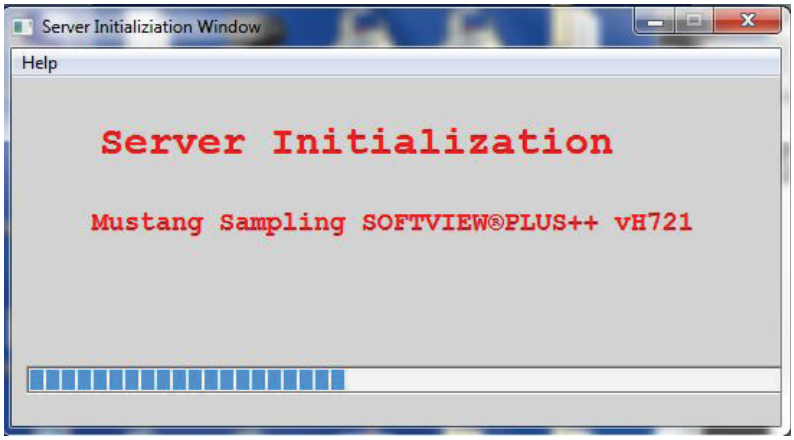
## INSTALLATION

To install the software, click on the SoftView PLUS setup....exe and follow the install wizard instructions.

## STARTUP

After the software is installed, click on the SoftView PLUS icon to open the software. The above progress window indicates software startup and initialization of the CST Mustang Sampling SCADA Gateway Server.

The Station Network window is presented to the user when the Server initialization is complete.

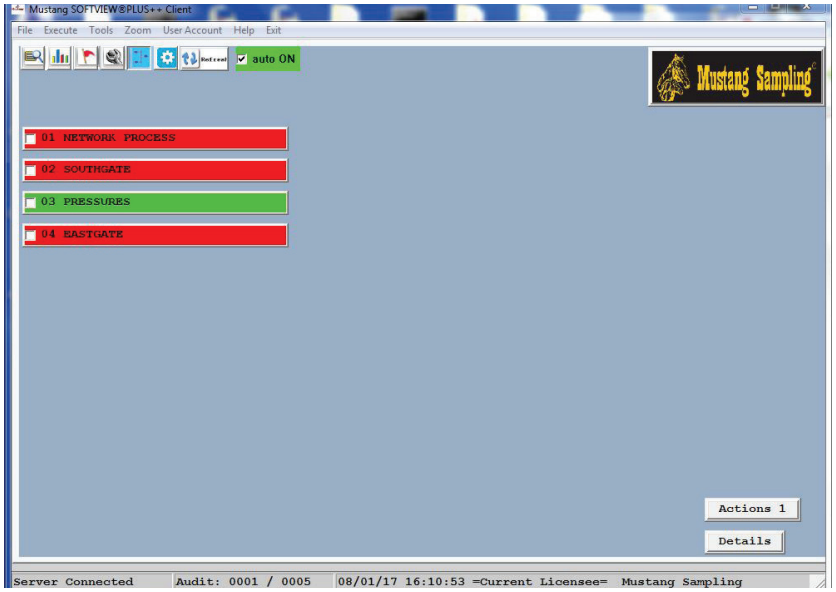


## STATION NETWORK WINDOW

The Station Network Window is presented to the user after the software has completed initialization. This window serves as the "home" screen for the SoftView PLUS user.

Each button on this window references a "Network Station". So the buttons allow the user to access data associated with or assigned to the Network Station. The Network Station configuration in SoftView PLUS is configurable by the user so the user can easily modify or add new measurement data to desired stations.

SoftView PLUS supports up to 30 Stations with up to 30 measurements assigned to each Network Station.




## MENU FUNCTIONS

The following Menu Functions related to user interface are available on all windows and are important to note:

- Exit Menu Function – Close Software
- The Exit menu function is used to close the SoftView PLUS software. This function should be used in order to insure that the SoftView PLUS Client and Server can properly close all files before shutdown.
- Zoom Menu Options – Change Window Size
- The Zoom menu function can be used to adjust window size.
- Help Menu Function – Help Documentation Access

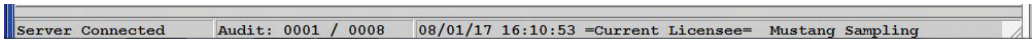
PDF documentation related to SoftView PLUS and the Mustang Sampling instruments can be accessed and reviewed online via the Help / Content Menu option if the Adobe reader AcroRd32.exe is installed on the user's computer. The user can access this information by clicking on the Help Content option. The first time this is done, SoftView PLUS attempts to locate the reader file and informs the user of success or failure. After the path to the file has been identified, the user is presented with a list of documentation which can be directly accessed.

## WINDOWS TOOL BUTTONS FOR NAVIGATION

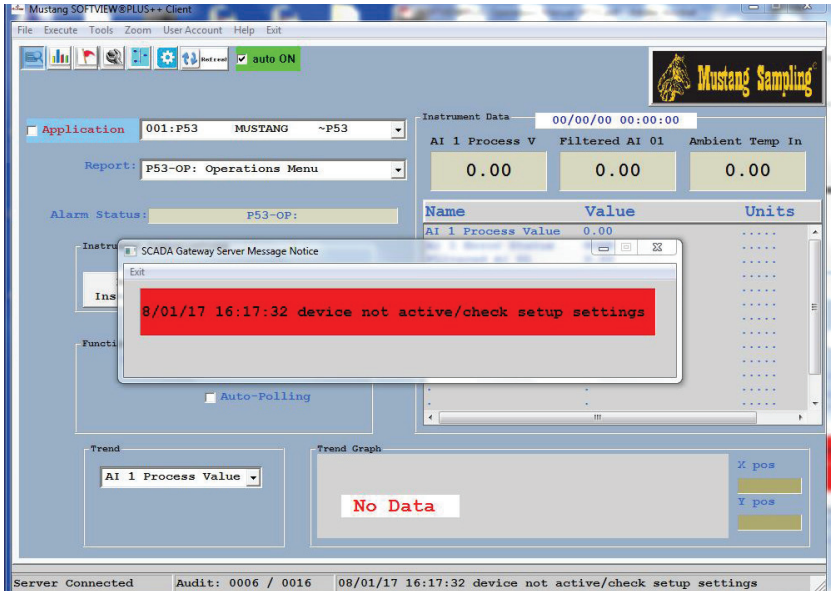

The above "Navigation" buttons at the top of all windows are used to access the Operations, Trend, Event, Setup, Station Network and Configuration Windows, respectively in SoftView PLUS and to request a window refresh or to freeze auto refresh mode.

## MESSAGE BAR STATUS

The Status Bar at the bottom of the SoftView PLUS window is used to inform the user of important software processing status messages and information.



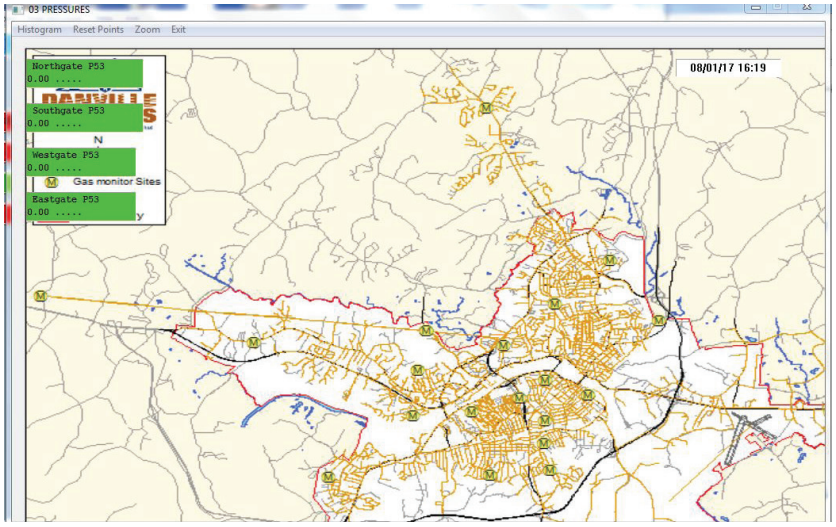

Important messages requiring user response are visualized using a popup window as shown in the following example:

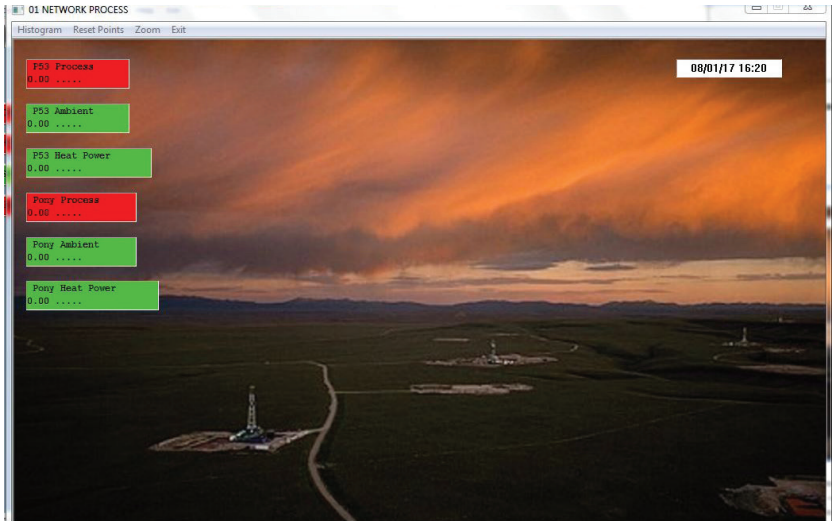


## STATION NETWORK WINDOW FEATURES & EXAMPLES

The Station Network window is used to review the latest measurement information collected from the instruments. The user can define and configure each station and the station points associated with the stations.

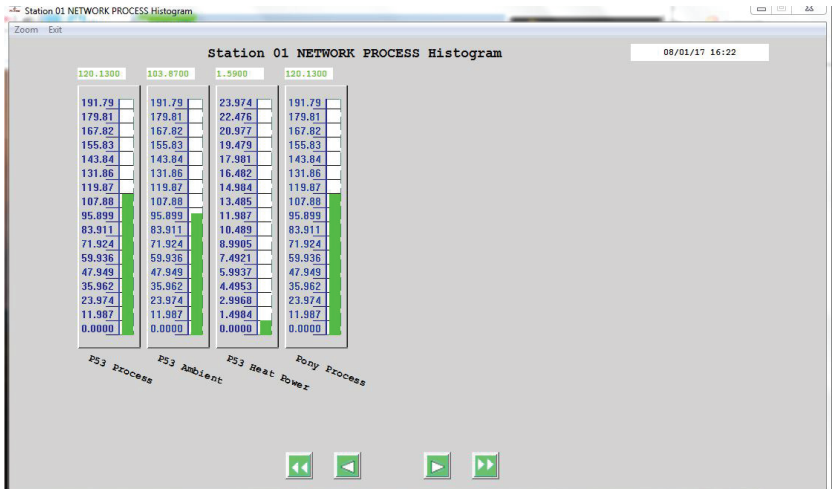
The user accesses the desired Station window and data (Station Points) by clicking on a Station button




The pop-up Station Window allows the user to quickly review the status of all station points or measurements assigned to the station. The user can define low and high range values and alarm limit values for each station point. Station point measurements in alarm are shown in red.

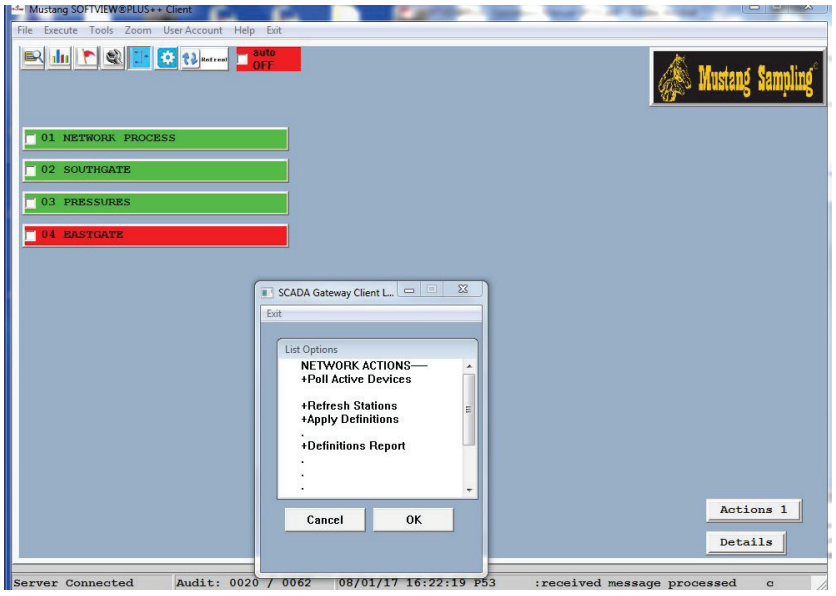
## STATION HISTOGRAM WINDOW



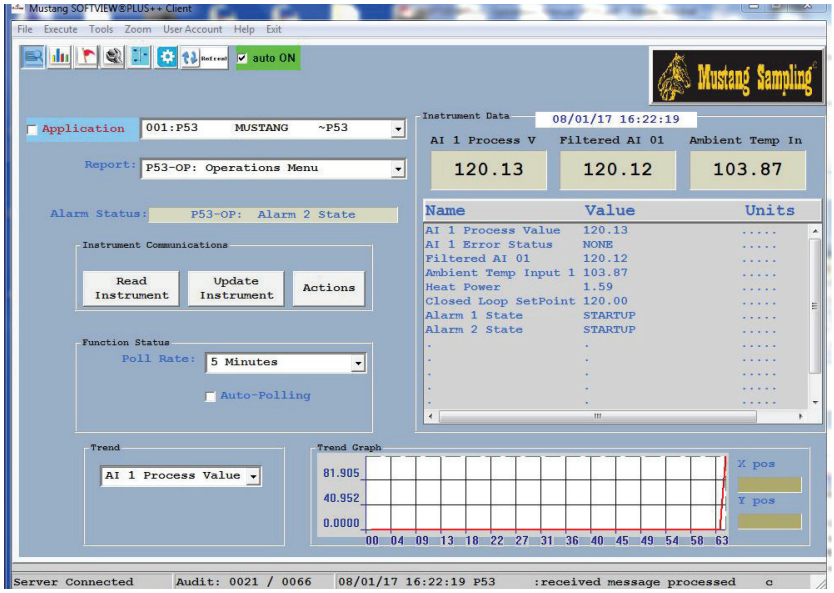

The Station Histogram Window is accessed via the Histogram tab on the Station window. This window allows the user to review station point measurement values relative to user pre-defined low and high limit range settings for the station points or measurements.

## STATION NETWORK ACTIONS

The Actions button on the Network window provides the user with the ability to request SoftView PLUS processing. Click on the desired +Action and SoftView PLUS will respond by performing the necessary processing associated with that action.



## OPERATIONS WINDOW




Click on the Operations navigation button to access the Operations Window. The Operations window is used to review the report data for both installed instrument APPs and installed non-instrument APPs. Non-instrument APPs are pre-installed in the software as part of the SoftView PLUS configuration to support various SoftView PLUS features.

## OPERATIONS FEATURES

The Operations window is used to communicate with the instrument, to review data acquired from the instrument and to access and edit instrument configuration parameters and SoftView PLUS configuration settings.

### *Instrument Application Field*

The Application field at the top identifies the currently selected APP, i.e. the "Focus APP".


Click on the highlighted blue "Application" area to access a graphic picture of the focus instrument for review.

### *Report Field*

Click on the down arrow in the Reports field application to view a list of defined reports for the current Focus APP.

The selected report is called the "Focus Report". The report contains pre-defined "Cells" representing instrument measurements or configuration settings. These cells are displayed in the Instrument Data field. The user clicks on the down arrow in the Reports field application to review a list of defined reports and to change the Focus Report.

### Instrument Data Field

Use the scroll bar in the Instrument Data field to scroll through the report cell measurements or settings.

Instrument APPs will usually contain both "read only" measurement reports and "read/write" configuration reports containing configuration parameters. For the read/write reports, the user can click on the cell in the Instrument Data window to edit the current value for the cell item.

There are generally four types of reports which may be available to the user for an instrument.

1. Operations or Primary Measurement Report
   The instrument primary measurement data is contained in this report. This report will contain the key measurement information for the instrument. This is a Read Only report polled from the instrument on demand via the Read Instrument button or automatically via the Auto-Poll feature. The data in this report when polled is captured in a history log.

2. Expanded Measurement Report
   This report, if it exists, is also a Read Only report containing additional measurement data in addition to the primary measurement data. This report is polled from the instrument via the Read Instrument button. The data in this report when polled is captured in a history log.

3. Diagnostic Report
   This report is a Read Only report containing "diagnostic" parameters which are useful in monitoring instrument performance and determining if instrument maintenance is required.

4. Configuration Reports
   These reports are Read/Write reports containing instrument configuration parameters. The user can poll these parameters, tweak or edit them as desired, then download the new settings to the instrument using the Update Instrument button.

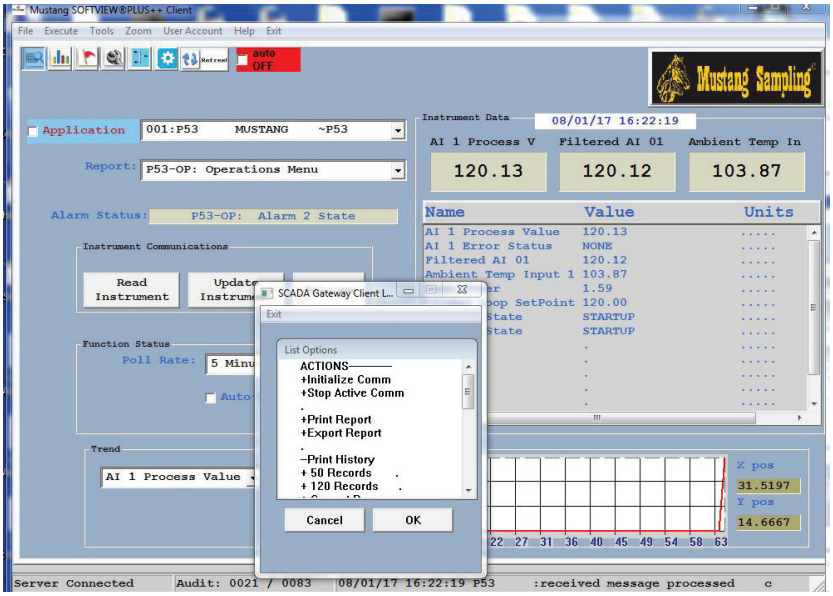
### Reviewing Collected Instrument Data

The Read Instrument and Update Instrument buttons are used to demand poll the Focus Report data for the Focus instrument APP. Live measurement report data when polled from the instrument is saved in a history log. Acquired data for the Focus Report is displayed in the Instrument Data field.

The "real time" graphic trend visualization at the bottom of the window allows the user to review graphically a trend of the latest 60 measurement values for the user selected measurement. Click on the field down arrow to the left of the trend to select the desired measurement.

To configure SoftView PLUS to communicate for the first time with an instrument, the user must access the Setup Window discussed below to install the instrument APP and to define or adjust, as necessary, the communications parameters needed for the instrument communications link.

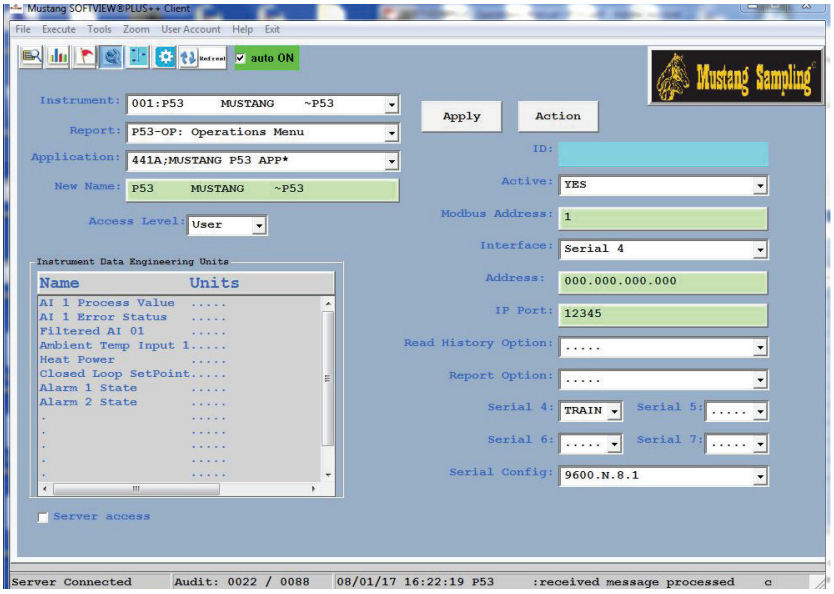
## OPERATIONS WINDOW ACTIONS




The Actions button on the Operations Window allows the user to request specific processing by SoftView PLUS. Some Key actions which may be available are:

1. Initialize Comm – to initialize the assigned COMx ports.
2. Stop Active Comm – to terminate currently active communications.
3. Print Report – to print a report containing the current Focus Report data.
4. Export Report – to save as a digital file a report containing the current Focus Report data.
5. Print History Actions – to print a report containing the captured history data for the Focus Report.
6. Export History – to save as a file a report containing the captured history data for the Focus Report.
7. Clear History – to flush all saved history for the current Focus Report.
8. Synchronize History – For instruments with embedded hourly history logging capability, to synchronize the software with the latest history acquired from the instrument.

## SETUP WINDOW




Click on the Wrench navigation button to access the Setup window. This window is used to install the desired instrument APPs and to define the communications profile for the SoftView PLUS interface to the instruments.

SoftView PLUS when initially installed is configured with a single P53 instrument and the serial communications link is set for training mode (note the Serial 4 assignment). This mode allows the user to do demand polling and auto-polling of installed APPs as virtual devices without a physical connection to the instruments. The user can therefore use the Training Mode to gain familiarity with the software.

The Serial 4, Serial 5, Serial 6 and Serial 7 fields (lower right) are used to designate the computer's COMx serial ports to be used for serial communications. If the "Train" option is selected, then the polling function for the instrument assigned to that Serial option will operate in Training Mode using virtual communications.

The Report field identifies the currently selected "Focus Report". The focus APP will usually contain one or more read only measurement reports and one or more read/write reports containing instrument configuration parameters. Click on the Report down arrow to select the desired report for the Focus APP or instrument.

Note the communications settings fields for the instrument:

| | |
|---|---|
| Active | Yes is required for active communications |
| Modbus Address | The Modbus Address for the instrument |
| Interface | Serial link option or Ethernet link, e.g. Serial 4 |
| Address | IP address if interface is via an Ethernet link |
| IP Port | IP Port if interface is via an Ethernet link |
| Serial 4 | Serial COM port to use for Serial 4 APPs |

| | |
|---|---|
| Serial 5 | Serial COM port to use for Serial 5 APPs |
| Serial 6 | Serial COM port to use for Serial 6 APPs |
| Serial 7 | Serial COM port to use for Serial 7 APPs |
| Serial Config | COMM parameters Baud Rate, Parity, etc. |

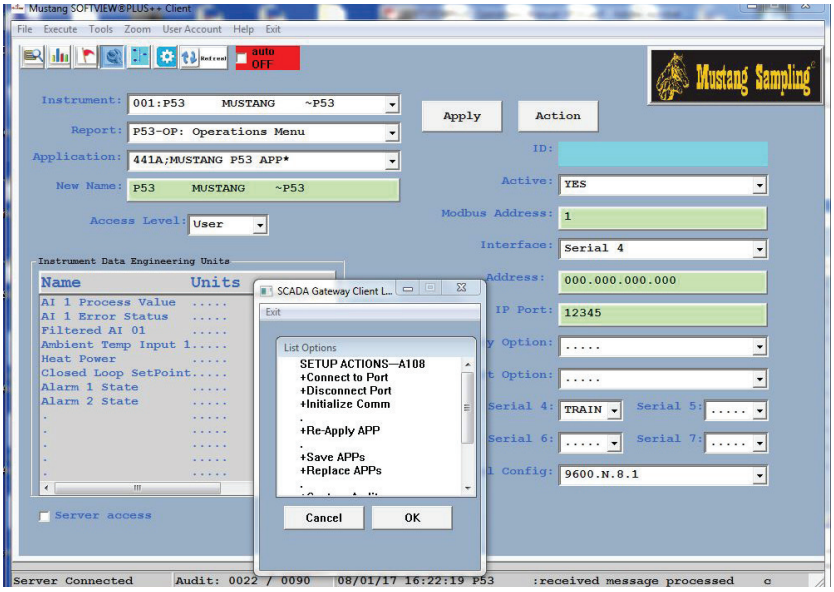
After any user change or edit, the Apply button is used to install the user changes made to the fields on the Setup window.

SoftView® PLUS can only communicate with an instrument to acquire the focus report data if:

1. The instrument APP has been installed.
2. The communications parameters for the instrument are set correctly to match those in the instrument and the link settings matches the customer's installation.
3. The Active status of the current focus report is YES.

Once the settings are defined for the installed instrument, SoftView PLUS retains these settings so they do not have to be repeated unless the instrument APP is re-installed.

## SETUP WINDOW ACTIONS



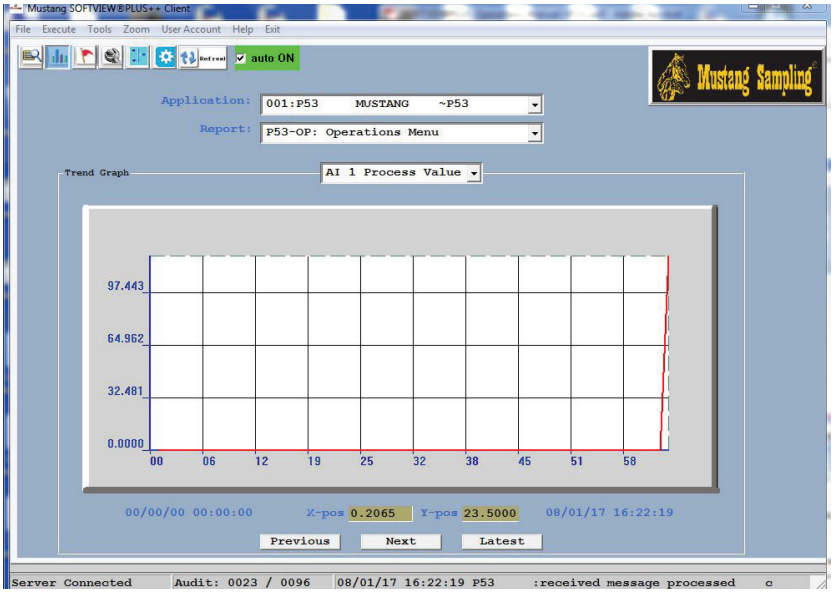

The Action button on the Setup Window allows the user to request specific processing by SoftView PLUS. Some Key Actions which may be available are:

1. Connect to Port – opens the specified computer COMx ports for communications.

2. Disconnect Port – closes the software COMx ports to release the port so other software can use it.

3. Initialize Comm – Initializes the defined COMx ports.

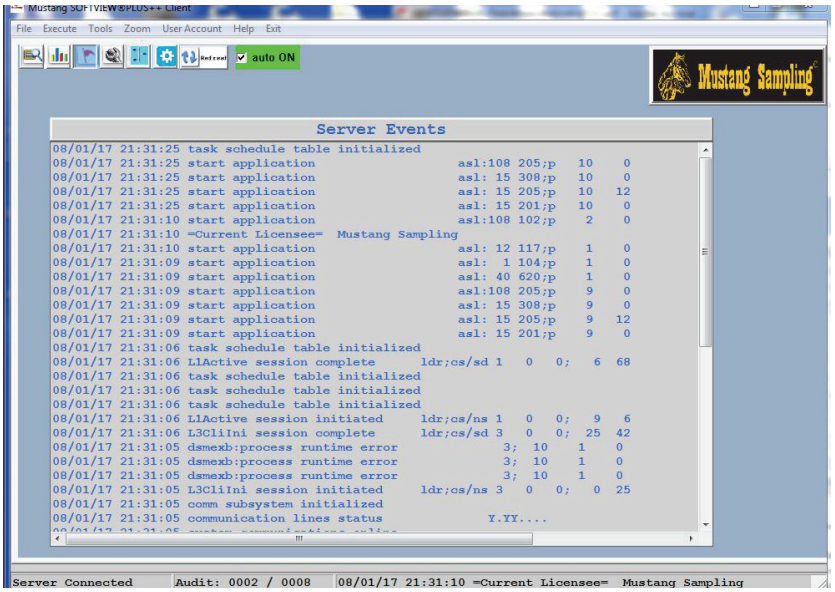
## TREND WINDOW




Click on the Graph navigation button to access the Trend Window. Data acquired for Measurement Reports is saved in history or data log files.

The Trend Window allows the user to review graphically captured history for a selected measurement in the current focus report. The user can select a measurement of interest for review and can page through the history data using the "Latest", "Next", and "Previous" buttons. Placing the cursor on the trend will display the X and Y coordinates for the trend.

## SERVER EVENTS WINDOW




The Event Window is accessed via the Flag navigation button.

The CST SCADA Gateway Executive (SGX) Server is the communications front-end for the SoftView PLUS software. The Server Events window allows the user to review the latest audit trail of server events. This can be particularly helpful in diagnosing communications problems with the instrument.

## CONFIGURATION WINDOW


The Configuration Window is accessed via the Configuration navigation button. This window is used to access, review and edit the SoftView PLUS Application and Configuration Tables. The two fields at the top of the window are used to select the desired APP, i.e. the "focus" APP, and the desired report, i.e. the "focus" report, within the APP respectively.

# QUICK START GUIDE - SoftView® PLUS

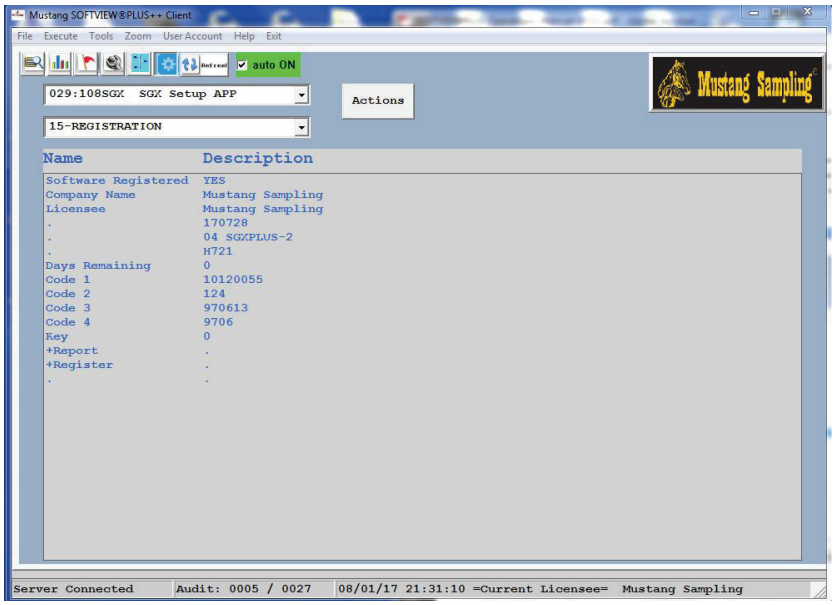
SoftView PLUS when initially installed, is pre-configured for training mode. This mode allows the user to exercise basic software functionality without a physical connection to the instruments. The communications is virtual or simulated. The user should use this configuration to gain familiarity with the software.

## STEP 1 - BECOME FAMILIAR WITH THE USER INTERFACE

1. Install the SoftView PLUS software.
2. Use the default Training Mode and the above Visualization section documentation to become familiar with the user interface.
3. Proceed with the next step to configure SoftView PLUS for field operation and interface to the field instruments.

## STEP 2 - REGISTER THE SoftView PLUS SOFTWARE

SoftView PLUS requires that the user register the software when installed for the first time on a PC and before the evaluation time expires. The user is reminded of this need when the software is opened. The evaluation period for a new install of the software is 60 days.



The following steps are used to register the SoftView PLUS software.

1. Access the Configuration Window via the Configuration navigation button.
2. Select the 029:SGX Setup APP as the Focus APP.
3. Select the 15-Registration report as the Focus Report.
4. Edit Cell 02, i.e. row 02, to enter the user company name.
5. Click on the +Report Action to create the Registration report.
6. Click on Save and email the Registration Report to Mustang Sampling.
7. Mustang Sampling will return the registration key code.
8. Edit the "Key" Cell to enter the registration key code.
9. Click on the +Register action to register the software.
10. Note the Registration Procedure Complete message in the Message Status Bar indicates successful registration.

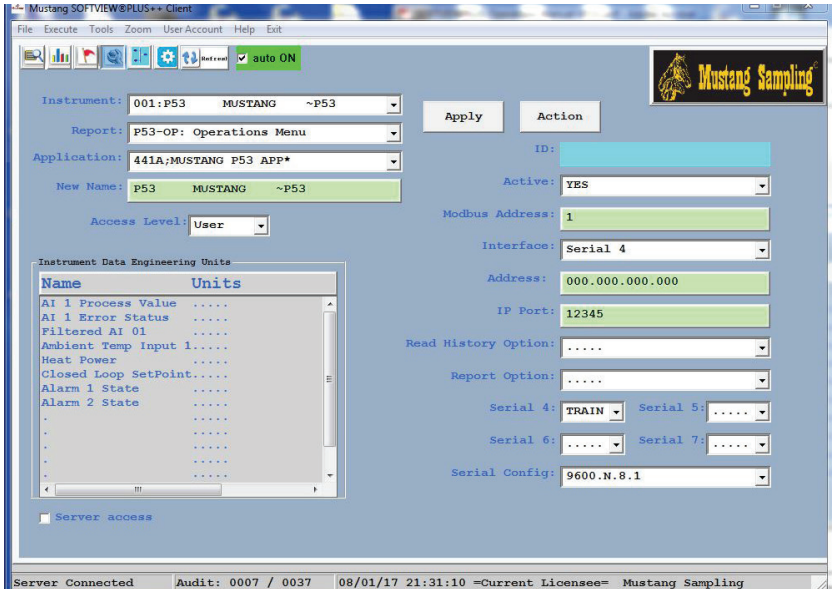
## STEP 3 - IDENTIFY/DEFINE THE SERIAL PORT CONNECTION

Serial communications between SoftView PLUS and the instrument requires the existence of a serial port on the computer. It is important to understand that if a USB to serial converter is to be used, the port does not exist until the converter is plugged into the USB port. So this should ideally be done prior to opening the SoftView PLUS software as SoftView PLUS when opened assumes that the pre-defined COMx port exists.

The following steps are used to define or modify the serial connection to be used by the SoftView PLUS software.

1. Plug in the USB to Serial Converter if needed.
2. Use the device manager to identify the computer COMx port to be used.
3. Open SoftView PLUS software
4. Access the Setup Window.
5. Click on the Serial 4 field down arrow and select the COMx port to be used.
6. Click on the Apply button.
7. Click on the Actions button
8. Click on the +Connect to Port action to test and verify the COMx connection.

## STEP 4 - INSTALLING THE INSTRUMENT APPS




1. Access the Setup window.
2. Click on the Instrument down arrow and select the desired instrument slot.
3. Click on the Application down arrow and select the desired instrument APP.
4. Click on the Apply button to install the desired instrument APP.
5. Repeat the above steps to install additional APPs.

## STEP 5 - DEFINING THE INSTRUMENT COMMUNICATIONS PARAMETERS

1. Access the Setup Window
2. Use the Modbus Address field to define the Modbus address of the instrument.
3. Use the Interface field to set the desired serial or Ethernet link option.
4. If a Serial N Interface option is chosen, use the Serial N Port field to define the COMx serial port on the computer to be used for the communication link.
5. If the Ethernet option is chosen, enter the IP address in the Address field and the Ethernet port number in the IP Port field.
6. Use the Serial Config field to select the appropriate baud rate, parity, #data bits, #stop bits for the communications link.
7. Click on the Apply button to install the new settings.

SoftView PLUS supports a serial or an Ethernet (TCP/IP) connection to the instrument. Once the link definition is defined,

it will remain in effect, i.e. the user does not have to re-define it, unless the link parameters change or unless the user has installed a different "APP" in the instrument slot.

## STEP 6 - COMMUNICATING WITH THE INSTRUMENT

1. Complete Steps 3, 4, and 5 above.
2. Plug the instrument cable into the USB converter or the Ethernet connection to establish the physical connection between the computer and the instrument.
3. Access the Operations window.
4. Select the desired instrument report as the focus report.
5. Click on the Actions button and select the +Connect to Port Action to establish the communications connection.
6. Click on the Read Instrument button to poll the instrument.
7. If errors are reported, return to the Setup Window and check the instrument connection and communication settings.

## STEP 7 - ENABLING/DISABLING DEMAND-POLL OR AUTO-POLL MODE

The user can easily enable/disable Auto-Polling of all installed "active" instruments using the following steps:

1. Access the Setup window.
2. Select each installed Instrument APP to review and edit, if necessary, its "active" status.
3. Access the Operations window.
4. Click on the Poll Rate field and select a desired polling frequency. Do not choose a frequency which is faster than the time required to poll all "active" devices.
5. Click on the Auto-Polling Checkbox to enable or disable auto-polling of all active instruments..
6. The " On-Demand" Poll Rate option allows the user to choose demand polling of active devices when he selects the Poll Active Devices action on the Station Network window.

## STEP 8 - COLLECTING/REVIEWING HISTORY WITH GRAPHIC TRENDING

SoftView PLUS saves acquired measurement data in a history file for Report #1. The user can review this history in the graphic trend on the Operations window or on the Trend window.

a. Use the Auto-Poll feature to collect history data for the focus report.

b. You will see a real time trend of the selected measurement as data is collected.

c. Click on the Trend Measurement field down arrow to select the desired measurement.

d. You will see a real time trend of the selected measurement as data is collected

e. You can also export the history data to a CSV file to import into Excel if desired.

f. Access the Trend window to review all collected history for a report.

## STEP 9 - ACCESSING & CHANGING CONFIGURATION PARAMETERS FOR AN INSTRUMENT

1. Verify valid communications with the instrument via the above steps.
2. Access the Operations window.
3. Click on the Report down arrow and select the desired Configuration Report as the focus report.
4. Click on the Read Instrument button to poll the current configuration settings from the instrument. Warning!! This is a required step to insure that SoftView PLUS contains the current instrument settings.
5. Review the current settings.
6. Click on each setting to be changed and edit the value as desired.
7. When editing is complete, click on the Update Instrument button to write the Configuration Report with the new settings to the instrument.

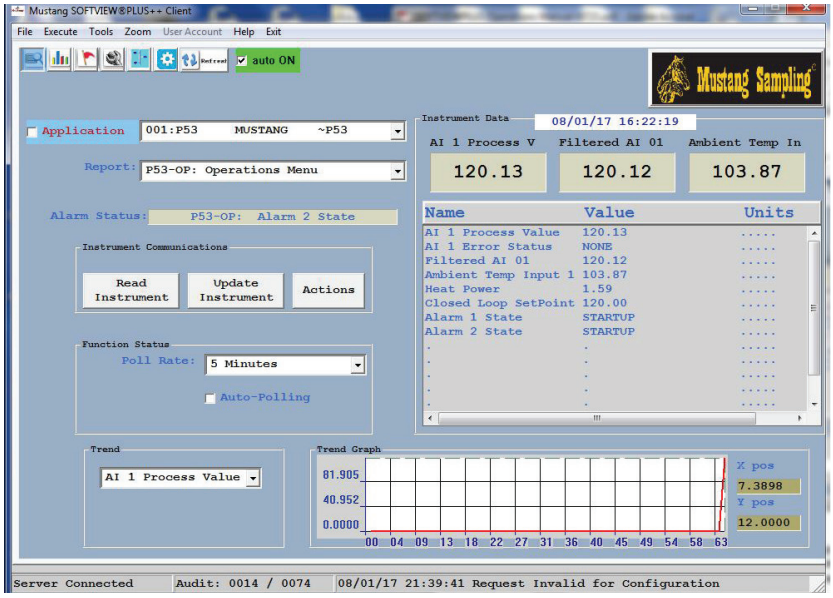
## STEP 10 - DEFINING/CONFIGURING THE STATION NETWORK


The Stations and Station Points are defined using the 01-Station Network report in the 023:015 USER CONFIGURATION APP.

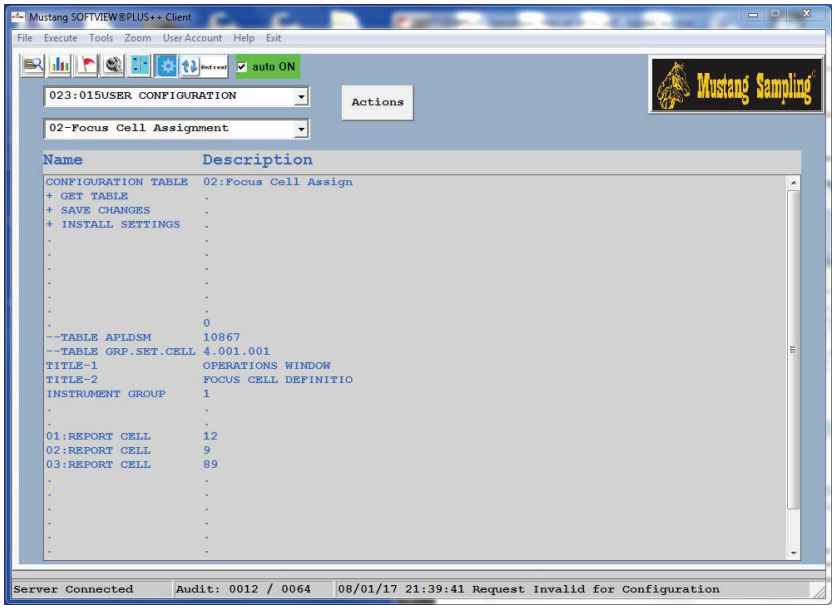
Note that the above report contains definition data for a station point and also the Actions needed to support the definition function. The following steps are used to define Stations and Station Points:

1. Access the Configuration Window.
2. Click on the APP down arrow at the top to access the 023:015 USER CONFIGURATION APP as the Focus APP.
3. Click on the down arrow for the Focus Report field and select the 01-STATION NETWORK report as the Focus Report.
4. Click on the + GET TABLE action to retrieve the definition data for a Station Point.
5. Note that the –TABLE GRP.SET.CELL row defines the address of the currently displayed point data. Groups 11-40 contain the point definitions for stations 1-30. Each group contains up to 30 sets defining the points for the station The +Next/Previous Group and +Next/Previous Set actions are used to access a desired station and point definition or the user can directly enter the desired group and set in the –TABLE GRP.SET.CELL row followed by the +GET TABLE action to access a desired point definition.
6. Edit the definition cells as needed to define or change the station point definition.
7. Select the +SAVE CHANGES action to install the updates.
8. After all point changes are completed, click on the +INSTALL SETTINGS action to re-build the Station Network.
9. Access the Station Network window.
10. Click on the Actions button and select the +Refresh Stations action to update the network display with the new Station changes and with the latest data.

## STEP 11 - DEFINING FOCUS CELLS FOR THE OPERATIONS WINDOW




The three measurements displayed in large font at the top of the Instrument Data field in the Operations window above are the Focus Cell Measurements for the currently selected Focus APP. The user can customize these definitions using this procedure and the steps below:



1. Access the Configuration Window. The first step is to identify the APP group and the APP report cells which are desired as focus cells for the APP report.

2. Click on the Focus APP down arrow at the top and select the desired APP.

3. Click on the Focus Report down arrow if necessary at the top to select the first report for the APP.

4. Identify the cells or rows which are desired as focus cells.

5. Click on the Focus APP down arrow at the top and select the 023:015 USER CONFIGURATION APP as the Focus APP.

6. Click on the down arrow for the Focus Report field and select the 02-Focus Cell Assignment report as the Focus Report.

7. Click on the + GET TABLE action to retrieve the Focus Cell Definition table data.

8. Click on the Instrument Group cell and enter the aboue desired APP group.

9. Click on the Report Cells and enter the desired cells to be used as focus cells.

10. Click on the +SAVE CHANGES action to save the changes.

11. Click on the +INSTALL SETTINGS action.

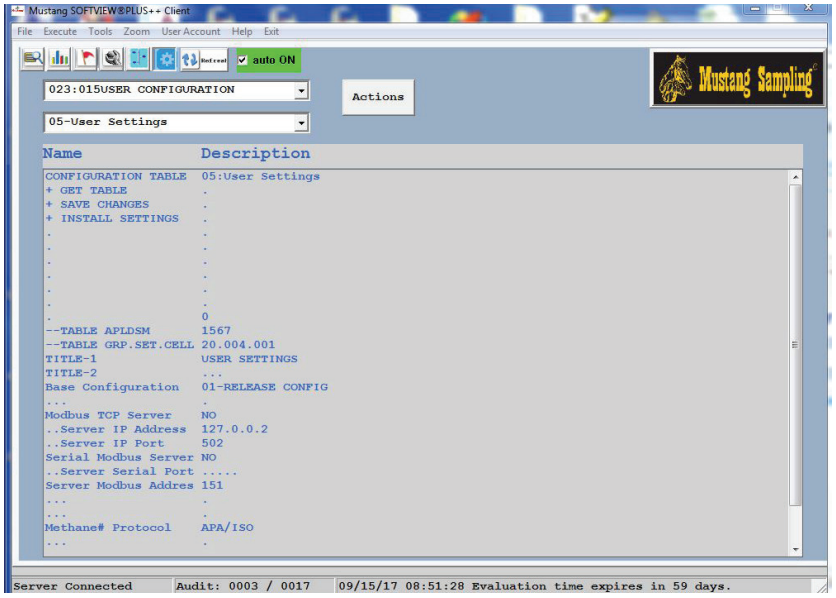
## STEP 12 - SELECTING A DESIRED METHANE NUMBER CALCULATION PROTOCOL

When SoftView PLUS acquires gas composition data from a gas chromatograph, the methane number for the composition can be automatically computed and added to the composition report. Use this procedure to pre-configure the software to automatically compute the methane number associated with the acquired gas composition when polled from the instrument.


1. Access the Configuration Window.
2. Click on the Focus APP down arrow at the top and select the 023:015 USER CONFIGURATION APP as the Focus APP.
3. Click on the down arrow for the Focus Report field and select the 05-User Settings report as the Focus Report.
4. Click on the + GET TABLE action to retrieve the User Settings table data.
5. Click on the Methane# Protocol cell and select the desired protocol.
6. Click on the +SAVE CHANGES action to save the changes.
7. Click on the +INSTALL SETTINGS action.

## STEP 13 - CONFIGURING SOFTVIEW PLUS AS A DCS OR SCADA MODBUS SERVER

SoftViewPLUS can act as a Modbus TCP or Serial Modbus Server to the user's DCS or SCADA System. Use this procedure to pre-configure the software for this communications link.




1. Access the Configuration Window.
2. Click on the Focus APP down arrow at the top and select the 023:015USER CONFIGURATION APP as the Focus APP.
3. Click on the down arrow for the Focus Report field and select the 05-User Settings report as the Focus Report.
4. Click on the + GET TABLE action to retrieve the User Settings table data.
5. Click on the desired cells and enter the required communications link information.
6. Click on the +SAVE CHANGES action to save the changes.
7. Click on the +INSTALL SETTINGS action.
8. Close and re-open SoftViewPLUS.

# ADVANCED USER FEATURES & PROCEDURES - SoftView® PLUS

A number of additional features for configuration are available in SoftView PLUS for the advanced user.

Configure a custom APP to interface via Modbus RTU/Modbus TCP communications to an instrument.

This procedure assumes that the user is familiar with the Modbus protocol.

1. Access the Setup window.
2. Click on the Instrument down arrow and select a desired slot for the APP.
3. Click on the Application down arrow and select the 202A or 203A Custom APP.
4. Click on Apply button to install the APP.
5. Access the Configuration window.
6. Click on the focus report down arrow and select the 07-Report Definition report.
7. Note the Actions at the bottom of the report cells.
8. Click on the + Get Definition Action to get the current definition of the report.cell defined at the top of the report.
9. Edit the cell definition information to define the cell name, Modbus register, etc. Note: the Modbus register value to be entered here is the actual register number for the Modbus command, e.g. the actual register number for the Gould documented 47001 register is 7000.
10. Click on the + Apply Changes action to save the new settings.
11. Click on the + Next Cell action and repeat the above steps to define cells 2 through n.
12. The APP can now be used for instrument communications.

# COMMUNICATIONS PRIMER - SoftView® PLUS

The following information will help users with little or no experience in remote data communications to instruments to understand some key communications related concepts.

To communicate remotely with an instrument requires that the User's PC or laptop with SoftView PLUS Software establish a connection, i.e. a communications link, to the local or remote instrument. A good analogy is to consider a phone call. Let's assume that Person A wishes to talk to Person B.

Person A to Person B Communications Session

1. The telephone will serve as the communications media.
2. Person A must specify the "address", i.e. phone number, for Person B so the phone media knows which remote phone or node to connect to the Person A phone.
3. Person A enters the phone number and waits for B to answer.
4. When B answers and sends a "hello" message to A, the link can be considered "established" and communications can begin.
5. Person A can now communicate with B if and only if:
    a. They speak the same language or "protocol", e.g. English
    b. They speak using an understandable voice volume and speech rate (baud rate)
6. A asks B a question, i.e. sends a "command" to solicit information from B.
7. B receives the question (command), understands it, and responds with the desired information, i.e. sends a "response" to A.
8. A is satisfied, says good-by and hangs up the phone, i.e. issues a disconnect message to terminate the connection and close the communications session.

SoftView PLUS to Instrument Communications Session

1. The serial COMx port, e.g. COM1, or the Ethernet connection serves as the communications media connection.
2. SoftView PLUS can communicate with many instruments in the field so the software must know the instrument "address" of the desired instrument. This is the instrument Modbus address and, if Ethernet, the IP address and Ethernet port number. The user must pre-define these in SoftView PLUS .
3. SoftView PLUS establishes the session with the requested instrument when the user wants to retrieve data from the instrument, e.g. he clicks on the Read Instrument or Update Instrument button or requests that an "Action" be executed.
4. When the instrument answers SoftView PLUS automatically recognizes that the link is "established"

5. SoftView PLUS will now communicate with the instrument if and only if:

    a. They speak the same language, e.g. (GMR) Gould Modbus RTU protocol

    b. They speak using the same data rate (SoftView PLUS must use the baud rate, e.g. 9600,N,8,1 which is configured in the instrument)

6. SoftView PLUS asks the instrument a question, i.e. sends a message, i.e. command, using Modbus language soliciting information from the instrument.

7. The instrument receives the command, understands it, and if the command is Modbus address is the instrument address, responds with the desired information using the Modbus protocol or language.

8. SoftView PLUS receives the information, processes it, is satisfied and disconnects the link if the user does not request additional data, thus terminating the communications session.

Before SoftView PLUS can communicate with an instrument the user must define the above media and address information for the instrument. This information is entered using the Setup window as discussed above. This information only needs to be entered once for a particular installed instrument APP as SoftView PLUS retains this information for the installed APP.

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## About Mustang Sampling

Mustang Sampling, LLC is the innovator of Analytically Accurate® solutions within sample conditioning systems. We provide custom solutions of products and services globally to the Natural Gas, Natural Gas Liquids (NGL), and Liquefied Natural Gas (LNG) industries. Mustang Sampling continues to pioneer integrated control systems, allowing our customers to maintain phase stability from sample extraction at the pipeline through sample analysis. Our products are continuously improved and subjected to the highest quality standards which provides our customers with the best sample conditioning solutions.

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