



# Starting an IPm Project Configuration



## *Requirements*

- SIXNET Tool Kit Installed
- Licensing – SCS and Datalogging options
- SX-1131-32 or larger

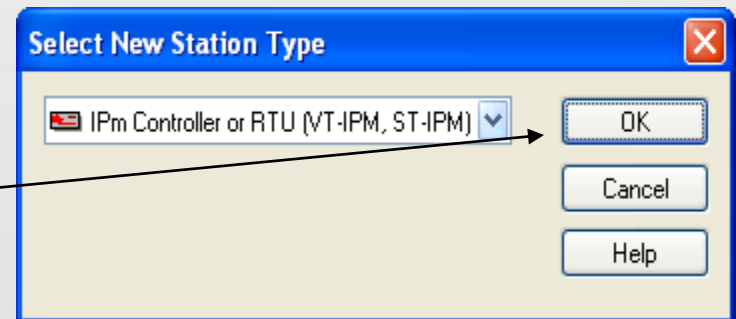
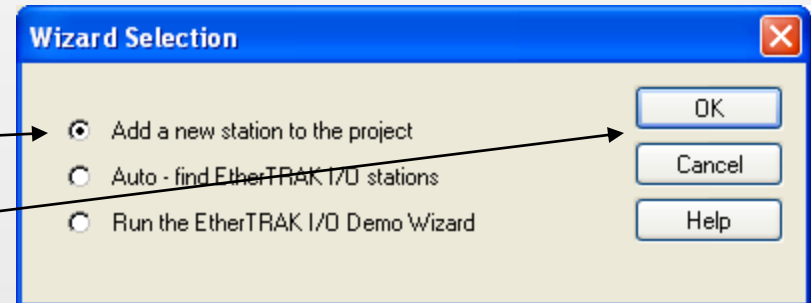
- Run the SIXNET Tool Kit
- Select File Menu - > New Project

Wizard Selection window

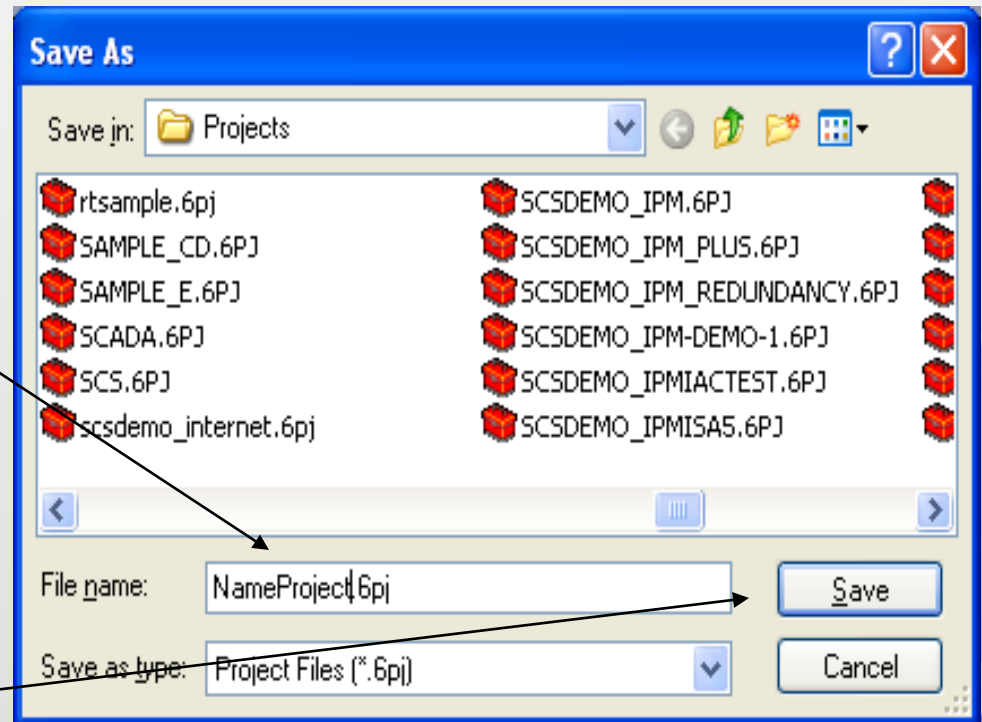
- Ok

Select New Station Type

- Ok

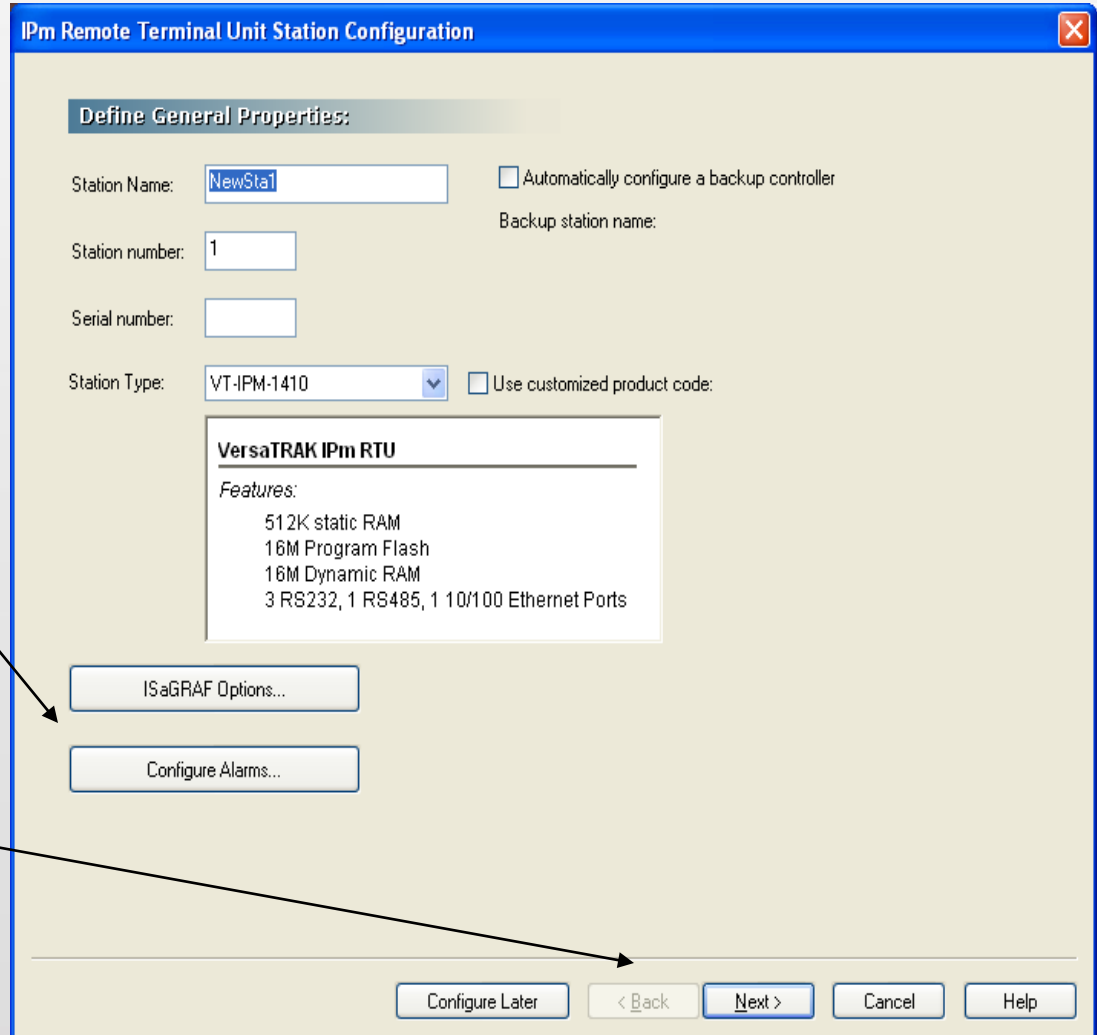


- Name the project



- Save

- Add
- Add or change
- Add serial number
- Select station type
  
- Can be configured later
  
- Select next to use configuration Wizard



IPm Remote Terminal Unit Station Configuration

**Define General Properties:**

Station Name:   Automatically configure a backup controller

Station number:  Backup station name:

Serial number:

Station Type:   Use customized product code:

**VersaTRAK IPm RTU**

*Features:*

- 512K static RAM
- 16M Program Flash
- 16M Dynamic RAM
- 3 RS232, 1 RS485, 1 10/100 Ethernet Ports

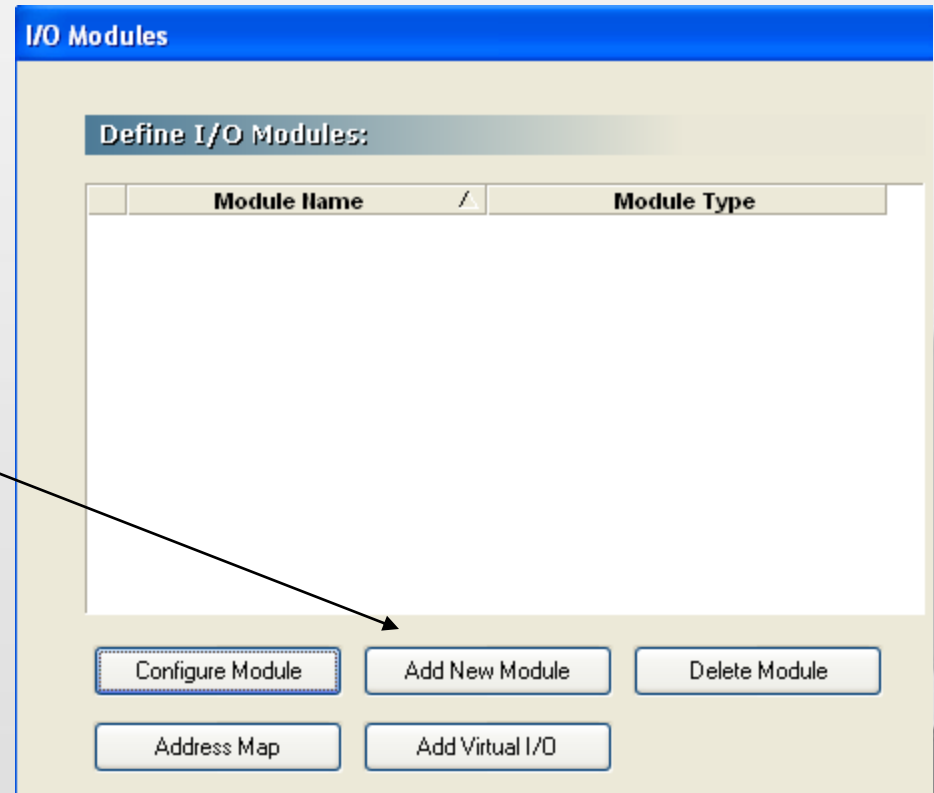
- Set IP address
- Set Serial ports
- Changes will take effect after an IPm load is complete

Port	Settings
Ethernet1	Ethernet: 10.1.0.1
RS232 Port A	SIXNET Universal,9600,N,8,1,RS232
RS232 Port B	SIXNET Universal,9600,N,8,1,RS232
RS485 Port C	SIXNET Universal,9600,N,8,1,RS485
RS232 Port D	SIXNET Universal,9600,N,8,1,RS232

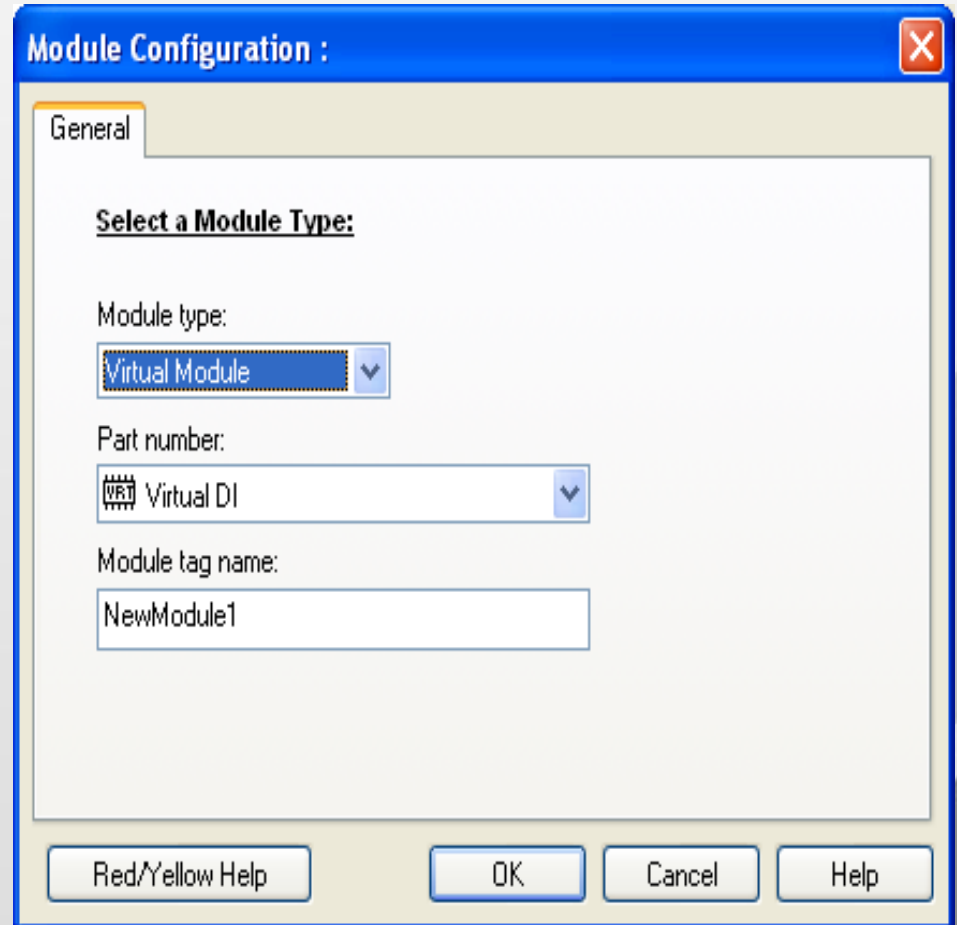
Configure Selected Port...

Security...

- I/O module include Virtual, Physical (ST), & Status modules
- Select Add New Module



- Add Virtual Module
- Virtual DI
- Name Module



The screenshot shows a 'Module Configuration' dialog box with a blue title bar and a close button (X) in the top right corner. The 'General' tab is selected. The dialog contains the following fields:

- Select a Module Type:** A section header.
- Module type:** A dropdown menu with 'Virtual Module' selected.
- Part number:** A dropdown menu with a circuit board icon and 'Virtual DI' selected.
- Module tag name:** A text input field containing 'NewModule1'.

At the bottom of the dialog, there are four buttons: 'Red/Yellow Help', 'OK', 'Cancel', and 'Help'.





# Virtual Module configuraiton

- General CFG →
- Next
- Discrete Options  
Leave to default
- Next

The screenshot shows a configuration window titled "General" with a blue header. Below the header, the text "Select a Module Type:" is displayed. There are three main input fields: "Module type:" with a dropdown menu showing "Virtual Module"; "Part number:" with a dropdown menu showing "Virtual DI" and a small icon of a circuit board; and "Module tag name:" with a text input field containing "NewModule1".

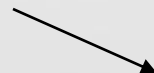
- Enter Tag names or use Auto Name for uniform tag entry

**Discrete Tags**

Auto Name Copy Prior

I/O Type	I/O Address	I/O Tag Name	OFF Message	ON Message	
D IN	X0				N/A
D IN	X1				N/A
D IN	X2				N/A
D IN	X3				N/A
D IN	X4				N/A
D IN	X5				N/A
D IN	X6				N/A
D IN	X7				N/A

- Example of Auto Name



**Discrete Tags**

Auto Name Copy Prior

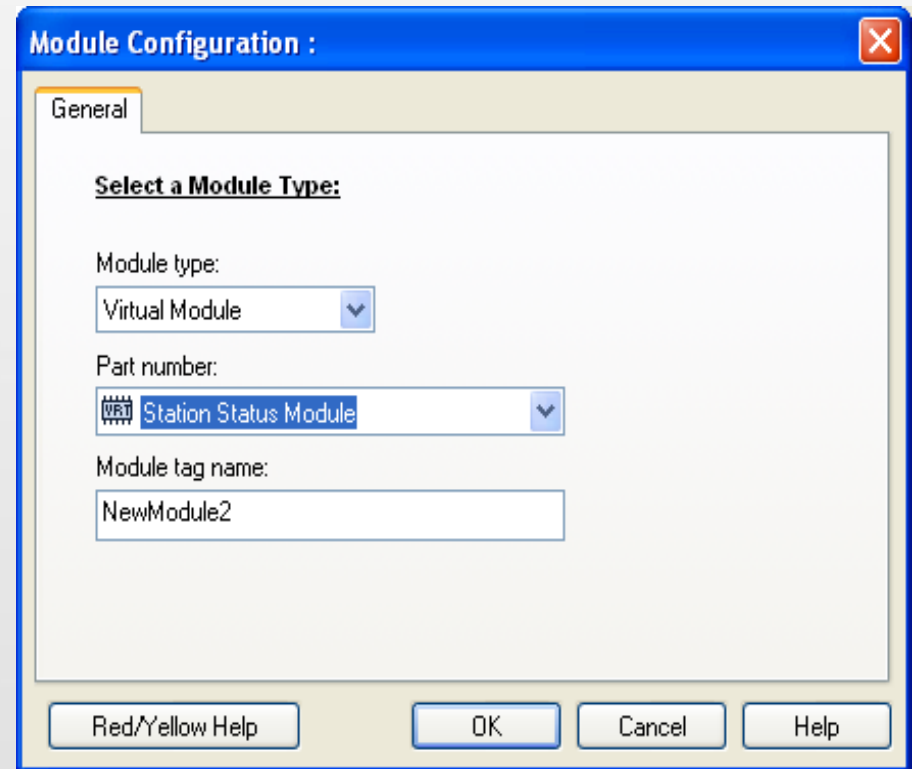
I/O Type	I/O Address	I/O Tag Name	OFF Message	ON Message	
D IN	X0	Pump10			N/A
D IN	X1	Pump11			N/A
D IN	X2	Pump12			N/A
D IN	X3	Pump13			N/A
D IN	X4	Pump14			N/A
D IN	X5	Pump15			N/A
D IN	X6	Pump16			N/A
D IN	X7	Pump17			N/A

## Repeat Add new module

- Add 3 additional modules
- Virtual DO – Tag IO
- Virtual AI - Tag IO
- Virtual Station Status Module

See next slide for details on the station status module. IO transfers will be required to be able to assign a status bit or tag.

- Next to Advanced Tab



The screenshot shows a 'Module Configuration' dialog box with a blue title bar and a close button in the top right corner. The 'General' tab is selected. Under the heading 'Select a Module Type:', there are three fields: 'Module type:' with a dropdown menu set to 'Virtual Module', 'Part number:' with a dropdown menu set to 'Station Status Module' (which has a small icon to its left), and 'Module tag name:' with a text input field containing 'NewModule2'. At the bottom of the dialog, there are four buttons: 'Red/Yellow Help', 'OK', 'Cancel', and 'Help'.



## Station Status Module

- Use these to monitor communications to SIXNET or 3<sup>rd</sup> party devices
- Virtual modules that contain discrete inputs that reflect the communication health
- I/O Transfers should be configured before assigning the status tag
- Once a transfer is configured the transfer name will appear as an option in the tag tab -> feature column. Select one transfer per status bit
- With valid communications the Station Status discrete register will be set TRUE (1)
- Can be used to monitor SIXNET and Modbus communications via Serial and Ethernet
- Take appropriate action if a distributed station or module goes offline by monitoring these registers in your ISaGRAF program or Windows applications
- Distributed stations or modules will be reported in their last known state if communication is halted with a Scan Enable flag

- No changes required for this sample IPm setup
- I/O register assignments can be modified –Assign Resources
- Disable External I/O bus communications only applies to - ST bus
- Disable physical input reads
- Watchdog Options – special features
- Services – Requires licensing options



## *I/O Transfers*

- Select add new transfer wizard
- Identify station to communicate (Station Number)
- Next
- Name the Transfer
- Next
- Select Transfer Type –
- Next
- Select Communications
- Next
- Scan Options – default ok
- Next
- I/O Options – Map IO from Local (IPM) to/from Remote (any device)
- Next -> Finish

- Goto back to IPm configuration - I/O Module tab
- Select Station Status Module – Configure
- Goto Discrete Tab
- SIXNET Universal\_001 is the transfer created in this project
- If a Modbus transfer was configured the Modbus would appear in drop down.
- If two transfers were configured then two options would be available in drop down list

Module Configuration : NewModule4

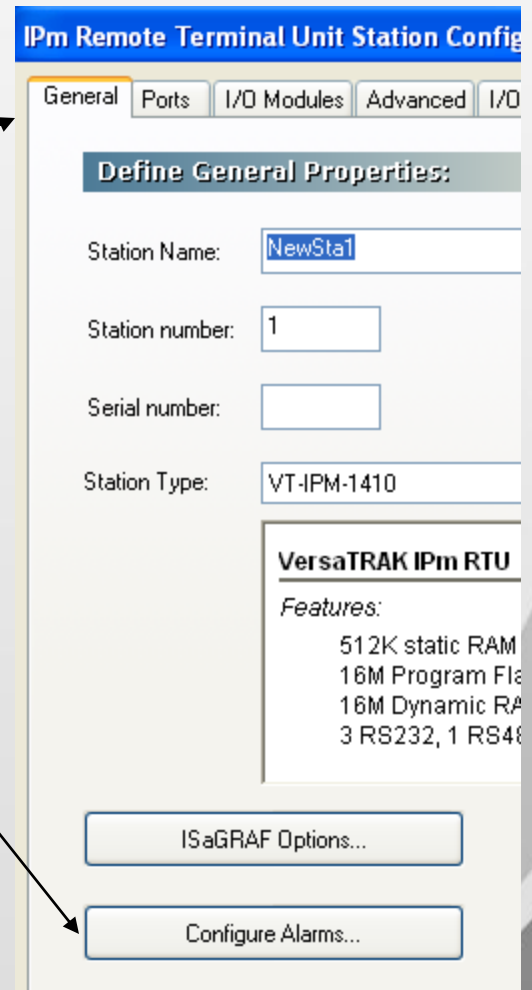
General Discrete Options Discrete Tags

Auto Name Copy Prior

I/O Type	I/O Address	I/O Tag Name	OFF Message	OII Message	Feature
D IN	X8	STA_001_OK	Off_line	On_line	SIXNET Universal_001
D IN	X9		Off_line	On_line	No Station
D IN	X10		Off_line	On_line	SIXNET Universal_001
D IN	X11		Off_line	On_line	No Station
D IN	X12		Off_line	On_line	No Station
D IN	X13		Off_line	On_line	No Station
D IN	X14		Off_line	On_line	No Station
D IN	X15		Off_line	On_line	No Station

# Add an alarm to trigger a datalog record

- Configure IPm – Select IPm -> configure
- Alarm configuration – General tab of IPm configuration



IPm Remote Terminal Unit Station Config

General Ports I/O Modules Advanced I/O

**Define General Properties:**

Station Name:

Station number:

Serial number:

Station Type:

**VersaTRAK IPm RTU**

*Features:*

- 512K static RAM
- 16M Program Flash
- 16M Dynamic RAM
- 3 RS232, 1 RS485



- Add Alarm

Alarms

Add Alarm... Add Recipient...

Remove Alarm Remove Recipient

General Options Recipients

Name	Type	Tag/Reg
There are no items to		

- Add Name
- Type – Discrete Set
- Tag – Pump1

General

Name: Trigger Datalogging

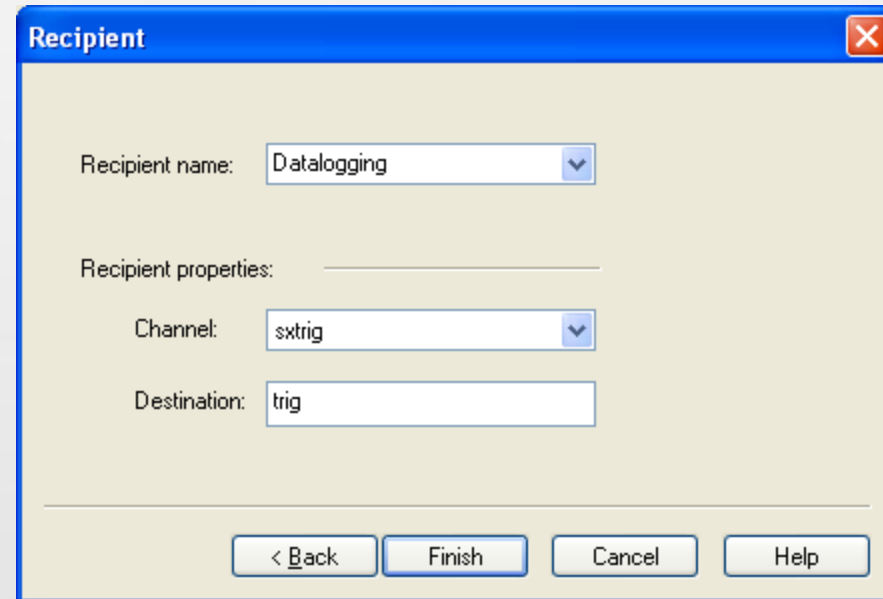
Type: discrete set

Tag / Register Address: X0: Pump0

Delay: 5 seconds

< Back Next > Cancel Help

- Add recipient name
- Channel- sxtrig
- Destination trig

A screenshot of a software dialog box titled "Recipient". The dialog has a blue title bar with a close button (X) in the top right corner. The main area is light beige and contains the following fields:

- "Recipient name:" followed by a dropdown menu showing "Datalogging".
- "Recipient properties:" followed by a horizontal line.
- "Channel:" followed by a dropdown menu showing "sxtrig".
- "Destination:" followed by a text input field containing "trig".

At the bottom of the dialog, there are four buttons: "< Back", "Finish", "Cancel", and "Help".



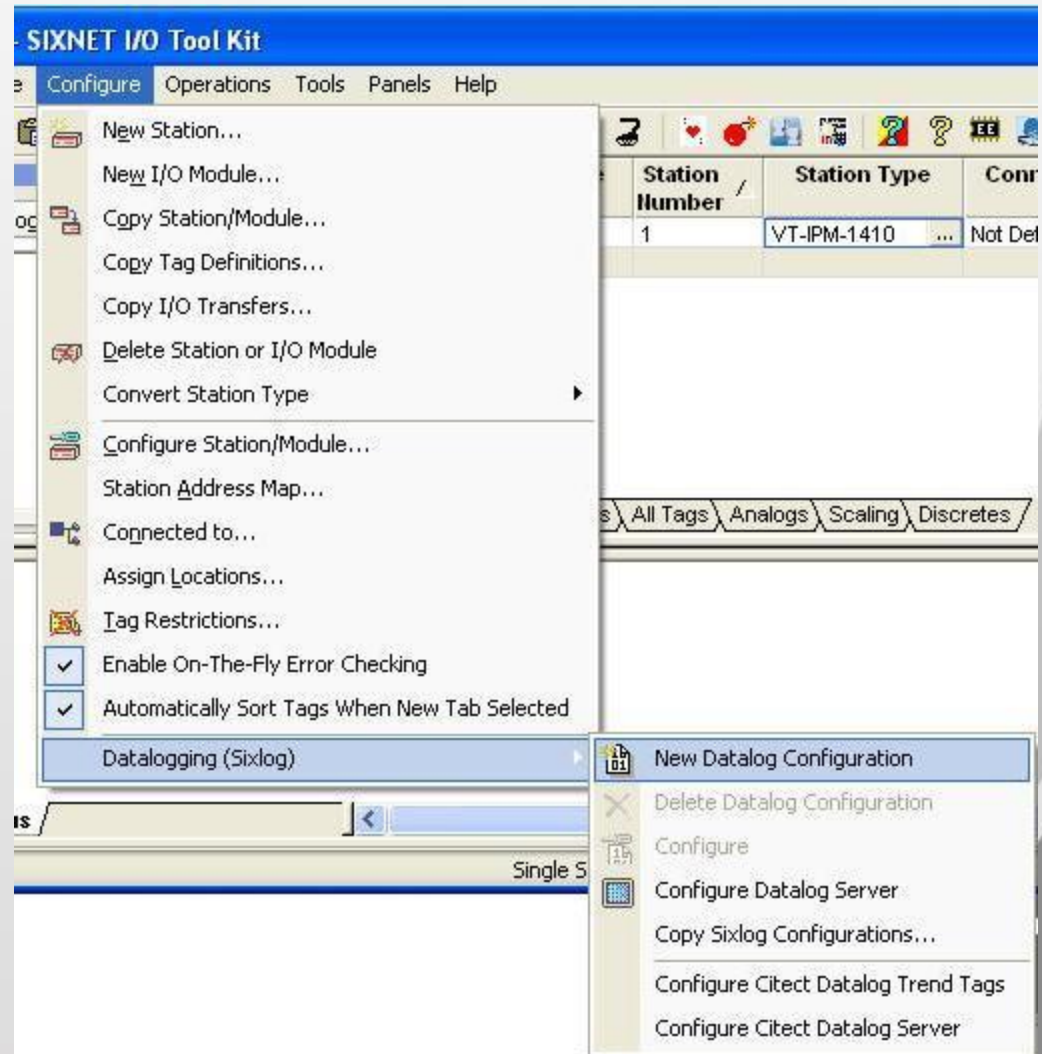
## *Basic Setup is complete*

- It's most important to assign tags first
- With tags assigned you can proceed to setup datalogging (tags will be ready to assign), add I/O transfer Scan Enable bits (tags will be ready to assign), and Export Tags to ISAGRAF project.



# Starting a datalogging project

- Create New Tool Kit project (done)
- Add IPM to project (done)
- Assign tags to Onboard IO, or add tag to virtual IO modules (done)
- Add a new Datalog configuration to station





# New Datalog Configuration

- Add Name
- Select Time stamp format
- Next

Data Log Configuration: Station: NewSta1

Station name: NewSta1

Datalog configuration name:

Timestamp format:

Backup datalog configuration

- 'MM/DD/YY HH:MM:SS'
- 'DD/MM/YY HH:MM:SS'
- 'YY/MM/DD HH:MM:SS'
- 'MM/DD/YY',HH:MM:SS'
- 'DD/MM/YY',HH:MM:SS'
- 'YY/MM/DD',HH:MM:SS'
- ANSI C
- Spreadsheet

Red/Yellow Help

< Back Next > Cancel Help

- Add Number of records  
Choose log rate (fast rate to verify records)
- Log on event – “trig”  
Controlled by ISaGRAF
- Log stop Control  
Enable or disable logging via Discrete register
- Action when full
- Memory locations  
Battery backed or Flash

Data Log Configuration: newlog\_1 Station: NewSta1

General Capture Parameters Record Content Host Transfers Client Transfer

Number of records: 100

Record capture control

Define fixed log rate

Timed log rate: [ ] Seconds

Synchronize to: 12:00:00 AM

Log on event name: trig

Log/Stop control: [ ]

Action when full

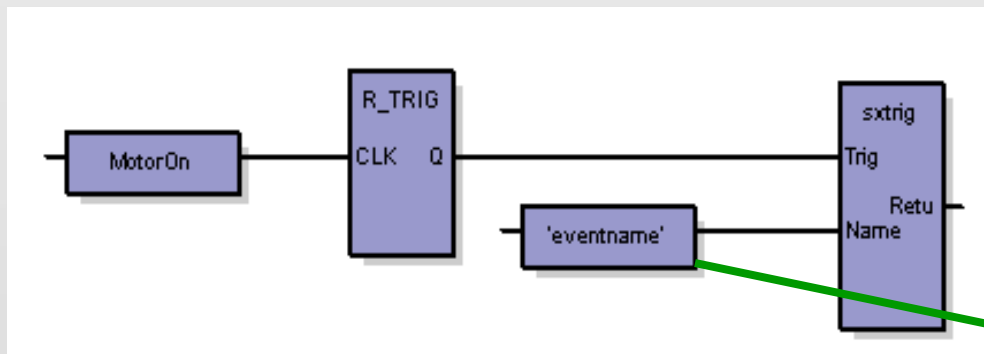
Cyclic buffer

Save until cleared

Memory location: nvram (default) [v]

Red/Yellow Help OK Cancel Help

- One log file per event
- Program the event using the sxtrig function in ISaGRAF, or use the new Alarms feature
- Assign the sxtrig “Name”
- Use the sxtrig “Name” as the Event Name in the Dlog configuration
- Sample ISaGRAF code below



Data Log Configuration: add name Station: NewSta1

General Capture Parameters Record Content Host Transfers Client Transfer

Log on event name: eventname

Log/Stop control: [dropdown]

- Pre-assigned tags readily available
- Highlight tags & Add
- Add Time stamp
- Content setup is complete
- Total Bytes in record  
(use this value to calculate storage abilities)

**Data Log Configuration: add name Station: NewSta1**

General Capture Parameters **Record Content** Host Transfers Client Transfer

Select I/O points to be logged:

I/O Address	I/O Tag Name	Tag Description
AX0	Datalog0	
AX1	Datalog1	
AX2	Datalog2	
AX3	Datalog3	
AX4	Datalog4	
AX5	Datalog5	
AX6	Datalog6	

Additional variables: time

Record definition (each record will contain this information):

Status	Data Field Contents	Data Type	Field Count	Byte Count
OK	Datalog0	16-bit Integer	1	2
OK	Datalog1	16-bit Integer	1	2
OK	Datalog2	16-bit Integer	1	2
OK	Datalog3	16-bit Integer	1	2
OK	Datalog4	16-bit Integer	1	2
OK	time	Time	1	4

Total bytes in each record: 14



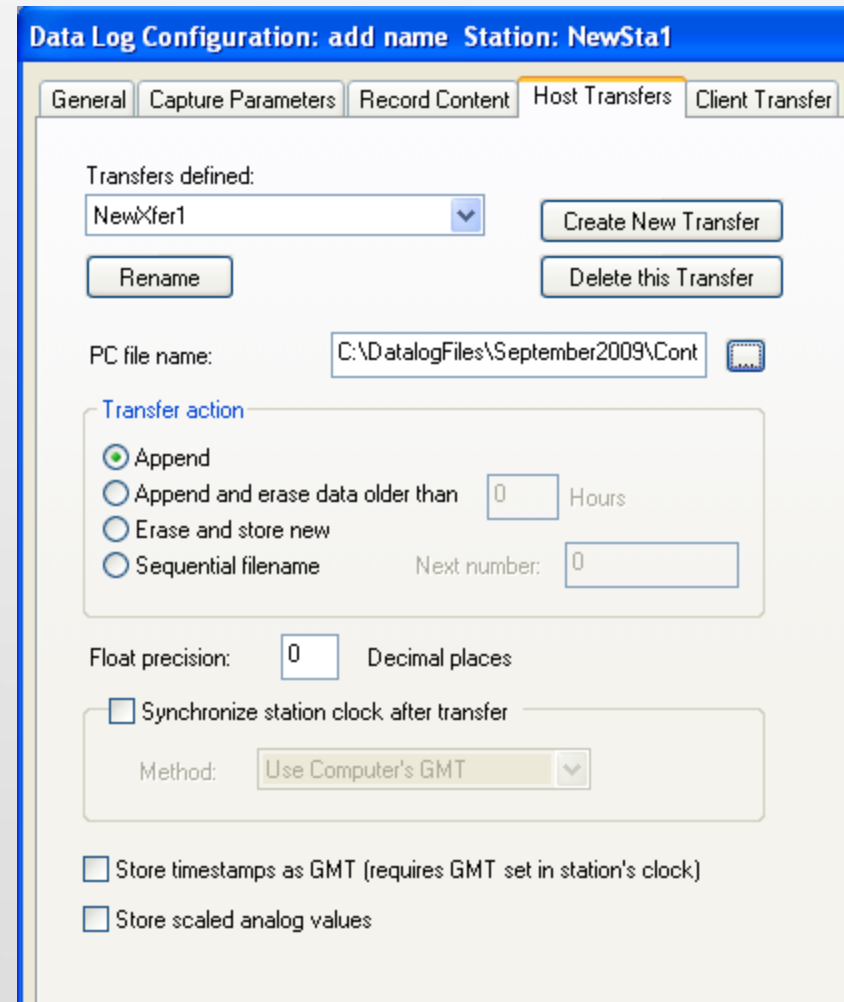
- This is not required for sample project – leave to default
- Host site will request records from station
- Use the Tool kit to read records
- Launch sxlogview.exe transfer command via:

-User programs C, Visual Basic etc..

-The "Run" command in Windows and other applications

-Batch file

-Other applications capable of running Windows commands



Data Log Configuration: add name Station: NewSta1

General Capture Parameters Record Content **Host Transfers** Client Transfer

Transfers defined:  
NewXfer1

PC file name: C:\DatalogFiles\September2009\Cont

Transfer action

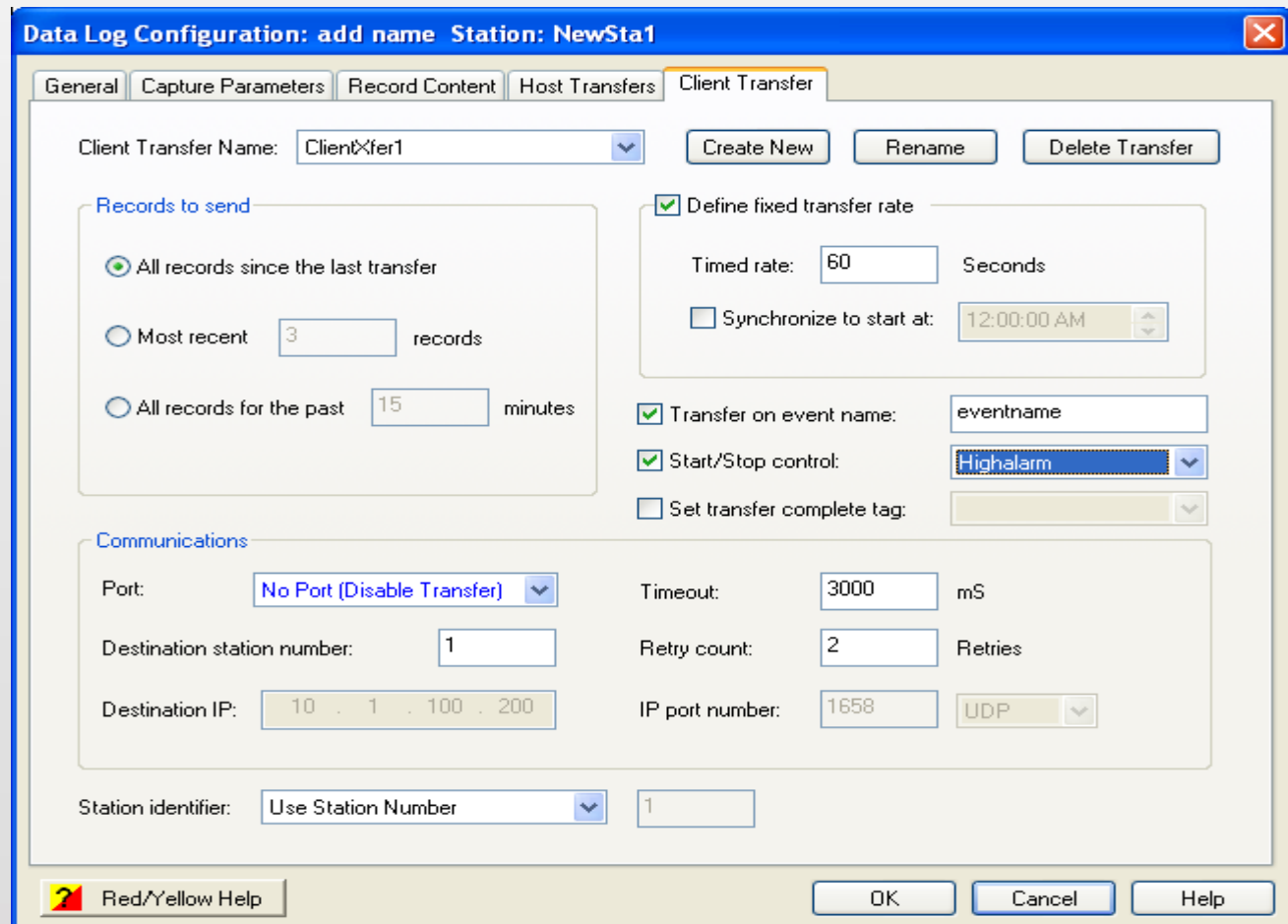
Append  
 Append and erase data older than  Hours  
 Erase and store new  
 Sequential filename Next number:

Float precision:  Decimal places

Synchronize station clock after transfer  
Method:

Store timestamps as GMT (requires GMT set in station's clock)  
 Store scaled analog values

- This is not required for sample project – leave to default
- RTU initiates record transfer to the server



The screenshot shows the 'Data Log Configuration' dialog box for a station named 'NewSta1', specifically the 'Client Transfer' tab. The dialog has several sections:

- Client Transfer Name:** A dropdown menu showing 'ClientXfer1'. To its right are buttons for 'Create New', 'Rename', and 'Delete Transfer'.
- Records to send:** Three radio button options: 'All records since the last transfer' (selected), 'Most recent 3 records', and 'All records for the past 15 minutes'.
- Define fixed transfer rate:** A checked checkbox. Below it, 'Timed rate: 60 Seconds' and an unchecked 'Synchronize to start at: 12:00:00 AM' option.
- Transfer on event name:** A checked checkbox with a dropdown menu set to 'eventname'.
- Start/Stop control:** A checked checkbox with a dropdown menu set to 'Highalarm'.
- Set transfer complete tag:** An unchecked checkbox with an empty dropdown menu.
- Communications:** A section containing:
  - Port:** A dropdown menu set to 'No Port (Disable Transfer)'.
  - Destination station number:** A text box containing '1'.
  - Destination IP:** A text box containing '10 . 1 . 100 . 200'.
  - Timeout:** A text box containing '3000' followed by 'mS'.
  - Retry count:** A text box containing '2' followed by 'Retries'.
  - IP port number:** A text box containing '1658' and a dropdown menu set to 'UDP'.
- Station identifier:** A dropdown menu set to 'Use Station Number' and a text box containing '1'.

At the bottom of the dialog, there is a 'Red/Yellow Help' icon, and 'OK', 'Cancel', and 'Help' buttons.



**Sixnet** *Basic datalog configuration complete*