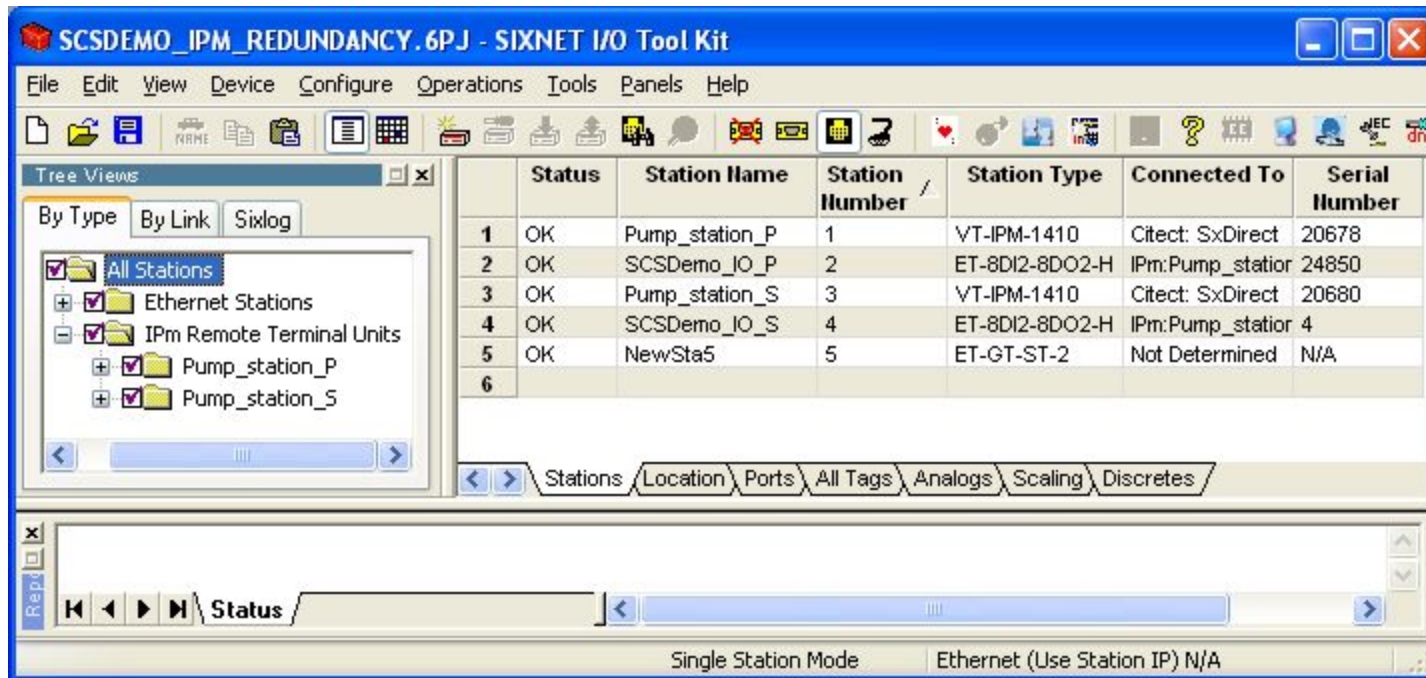


A dark red silhouette of a world map is centered on the slide, showing the continents of North America, South America, Europe, Africa, Asia, and Australia. The map is set against a dark background with subtle, curved, light-colored lines that create a sense of motion or a globe's surface.

# Quick Start Software Training

- **Software overview**
- **RTU overview**
- **Start an ISaGRAF Open project**
- **Configure an RTU using SXTTOOLS (basic setup with tags, & export)**
- **Develop simple program and “Build” (compile) ISaGRAF project**
- **Download to RTU using the Tool Kit and ISaGRAF**

- Used to configure, load, and maintain SIXNET Automation RTUs and I/O
- Project Management software
- Works with ISaGRAF Open programming software



- **ISaGRAF Open includes:**

- ISaGRAF v5 editor
- SIXNET enhancements
- v3 features for backward compatibility to installed SIXNET RTU base
- Differences.pdf > C:\Program Files\SIXNET ISaGRAF Open\Documentation 5.1\Users Guide\English

- **Based on the International Standard IEC 61131-3**

- **ISaGRAF supports all five programming languages:**

- Sequential Function Chart
- Ladder Diagram
- Structured Text
- Instruction List
- Function Block Diagram
- (also supports Flow Chart)

The screenshot displays the SIXNET - [PumpOne (\* \*) - Link architecture] software interface. The window title bar indicates the project name and architecture. The menu bar includes File, Edit, Insert, Project, Tools, Debug, Options, Window, and Help. The toolbar contains various icons for file operations, navigation, and project management.

The **Project Tree View** on the left shows the project structure:

- PumpOne
  - Link architecture
  - Hardware architecture
  - Binding list
  - SIXNET\_RTU\_CFG
    - Res1
      - I/O Wiring
      - Programs
        - PumpOne (\* Basic Training \*)
        - Unt\_LD
      - Functions
      - Function blocks

The main workspace on the right displays the selected resource, **1: Res1 (\* Resource Number 1 \*)**, with a tree view showing its components:

- Parameters
- Variable Groups
- Programs
  - PumpOne (\* Basic Training \*)
  - Unt\_LD
- Functions
- Function blocks

The **Output** window at the bottom shows the following messages:

```
Building configuration data
Linking object files
Relocating object files
Post-compiling code
0 error(s), 0 warning(s)
Compiling resources
0 error(s), 0 warning(s)
RES1: 0 error(s), 0 warning(s)
```

The status bar at the bottom shows the file name **SALES06.JoeS** and the current layer **NUM**.

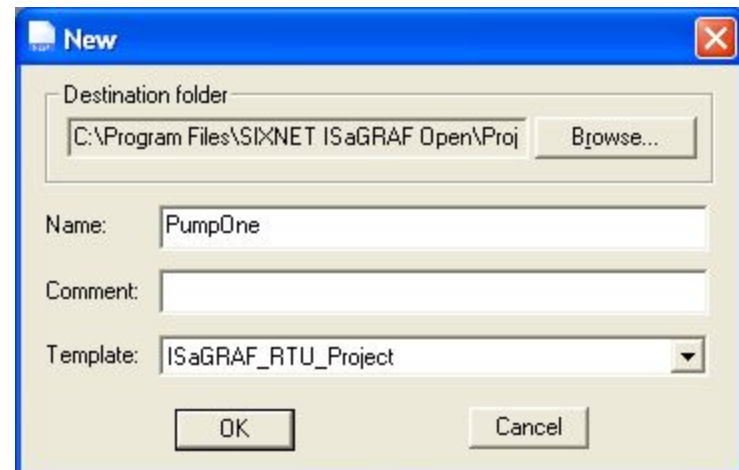
- **Quick start for software programming that will work with any RTU**
- **Embedded Linux controller**
- **Shared IO database**
- **Supports a number of running applications**
  - **Alarming, Datalogging, custom C application, protocol conversion, web server**





- 1 ) ISaGRAF Open - Create and name new project**
- 2 ) SIXNET Tool Kit - Start project**
- 3 ) Configure RTU**
- 4 ) Export Tags To ISAGRAF Project**
- 5 ) Develop simple program & Build (compile) ISAGRAF program**
- 7 ) Load IPM Controller with Tool Kit**
- 8 ) Load ISAGRAF Program with the Open Workbench**
- 9 ) Load Tool Kit & ISaGRAF program in one step**
- 10) Exercise program**
- Let's get started!!**

- Run the Open Workbench
- File > New Project (name = PumpOne)
- Name and select Template (ISaGRAF\_RTU\_Project)
- Save
- Step one complete!

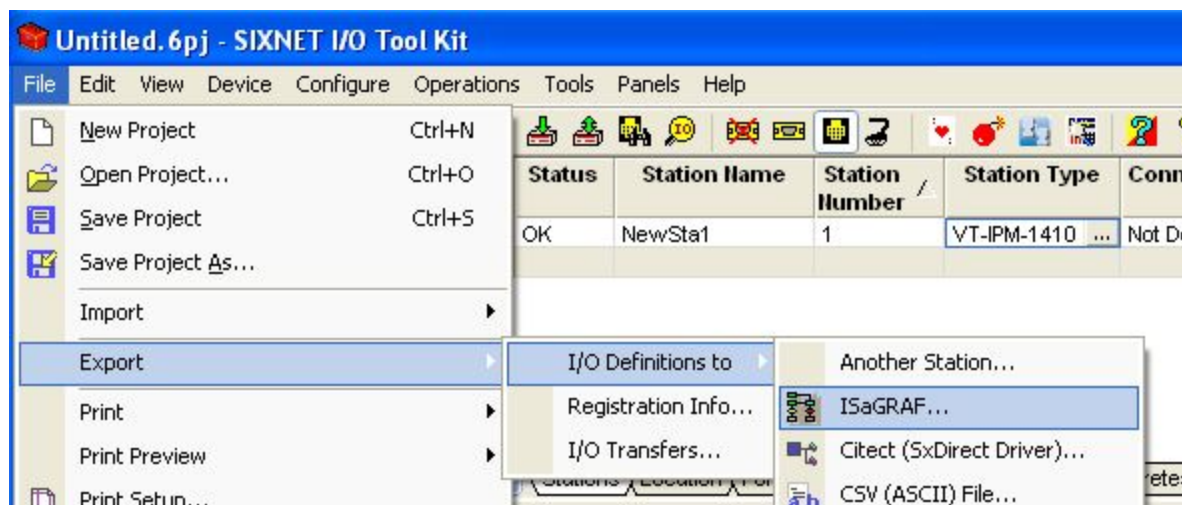




- Open Tool kit
- Start new project (File > New Project)
- Select Project Name
  - Default project location = C:\SIXNET Tools\Projects
- Save – this will automatically lead into the RTU configuration
- Add RTU station to configuration
- Configure station:
  - RTU Type
  - Setup ports
  - Add a virtual I/O
    - Add a DI module and Tag I/O (Tags = TurnOnMotor1 & Level)
    - Add a DO module and Tag I/O (Tag = Motor1)

- **Goto File Menu > Export > I/O Definitions > ISAGRAF**
- Select ISAGRAF Open
- Browse to Project file: Location = C:\Program Files\SIXNET ISaGRAF Open\Projects\ISaGRAF 5.1\Prj
- Select RTU
- Finish

Note: View video to review process



- **Open project**
- **From Resource window right click on Programs and Add Program Type (use FBD )**
- **Open FBD program**
- **Select F3, or the Function block symbol and add AND block**
- **Select F2, or Variable symbol and add variables accordingly**
- **Select F4 function to connect variable to function block**
- **Save**
- **Compile**

**Step 4 complete!**

- **Load Tool Kit configuration first to be sure the port settings are correct**
- **By default all IPM stations are 10.1.0.1**
- **Tools > Device Menu > Select**
  - Choose Serial or Ethernet
- **Ok**
- **Operations Menu > Load > Basic Settings**

- Goto Tools Menu (or Project Tree View)
  - > Communication Link Setup
- Select Device > Single Station
- Select “use project file settings”  
Browse to project file
- Ok

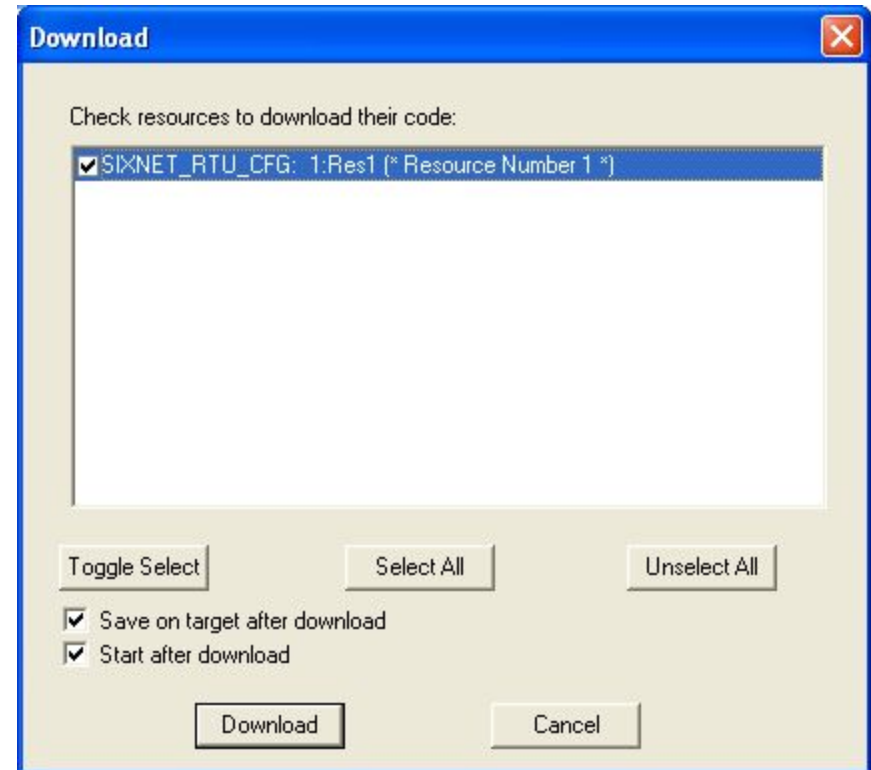
**Note:** The IP address or serial port settings are found in the Tool Kit project file automatically. Otherwise, select “Use these settings” for manual purposes.

**See next slide to complete the load**

The screenshot shows the 'Link Setup' dialog box. It has a blue title bar and a light beige background. The 'Communication to station:' section contains a 'Device:' dropdown menu set to 'Ethernet'. Below it are three radio buttons: 'Single station' (selected), 'Network mode', and 'Passthru mode'. The 'Station address settings:' section has two options. The first, 'Use project file settings:', is selected and includes a folder icon, a file path 'C:\SIXNET Tools\Projects\PUMPONE.6PJ', a 'Station name:' dropdown set to 'PumpOne', and an 'IP Address:' dropdown set to '10.1.0.1'. The second option, 'Use these settings:', is unselected and includes a 'Station number:' text box with 'ANY' and an 'IP Address:' text box with '10 . 1 . 0 . 1'.

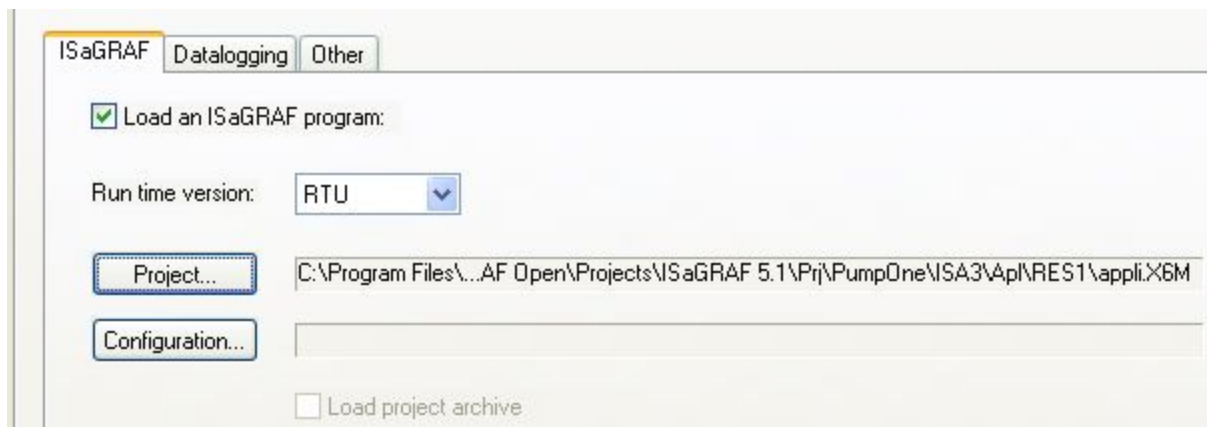
- From Main Workbench window select Debug Menu > Download
- Select Resource (Check box)
- Save on target after download
- Start after download
- Download

**Program is now loaded and running in RTU!**





- From the Tool Kit setup “Files to Load” in RTU configuration
- From the ISaGRAF Tab Check “Load an ISaGRAF program”
- Run time version RTU
- Select project: appli.X6M
- To Load: Operation Menu > Load > Advanced Selected, or Predefined files



- **From the SIXNET Tool Kit run Test I/O to station**

- Test IO will work if Virtual Input modules are used. If Onboard Inputs are used a the RTU will need to have a wired input or use the Workbench debug lock feature.
- Make sure the device menu is setup accordingly

- **Operations – Test I/O**

- **Turn on DI Tags “TurnOnMotor” & “Level”**

- **Result = DO Tag “Motor1” will turn On.**

- Run ISAGRAF Debugger:  
Debug > Debug Target
- Open the program
- Double click on Input Tag
- Select Lock
- Double click on Tag again
- Select “True”
- Do this for both Inputs & Motor1 will turn ON.

