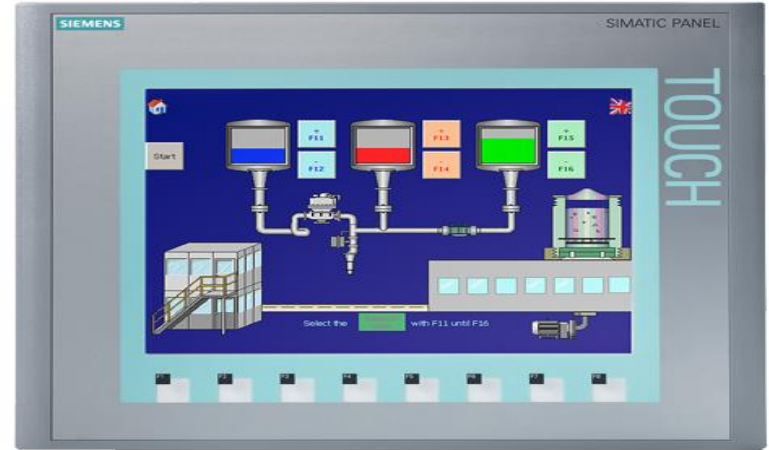


# SOFTWARE SCADA

WINCC FLEXIBLE\_HMI



WINCC



INTOUCH

# HMI-Human Machine Interface



# SIEMENS HMIs



Mobile Panel

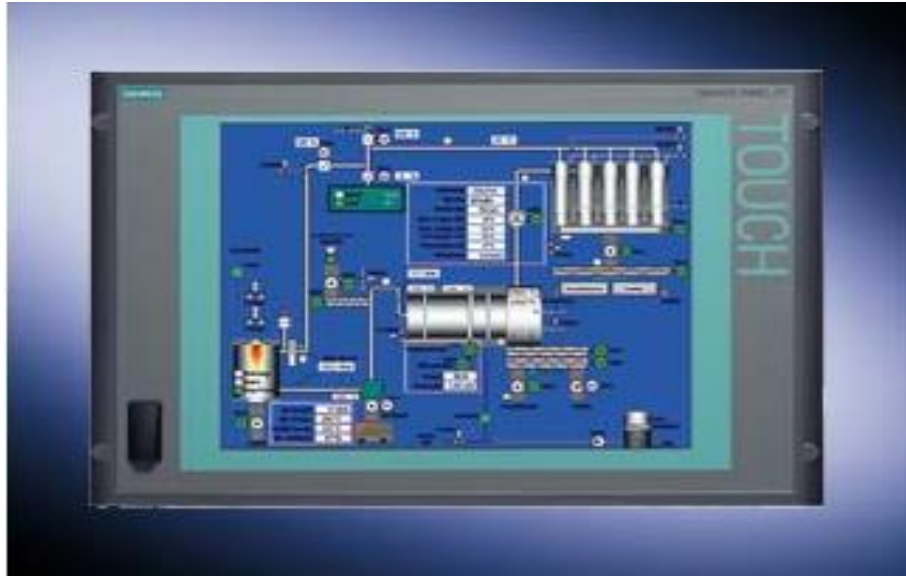


Operator Panel



Touch Panel

# SIEMENS HMI

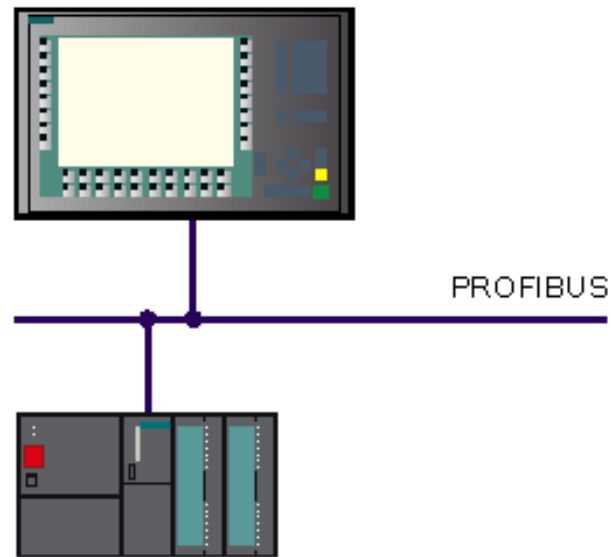


Panel PC

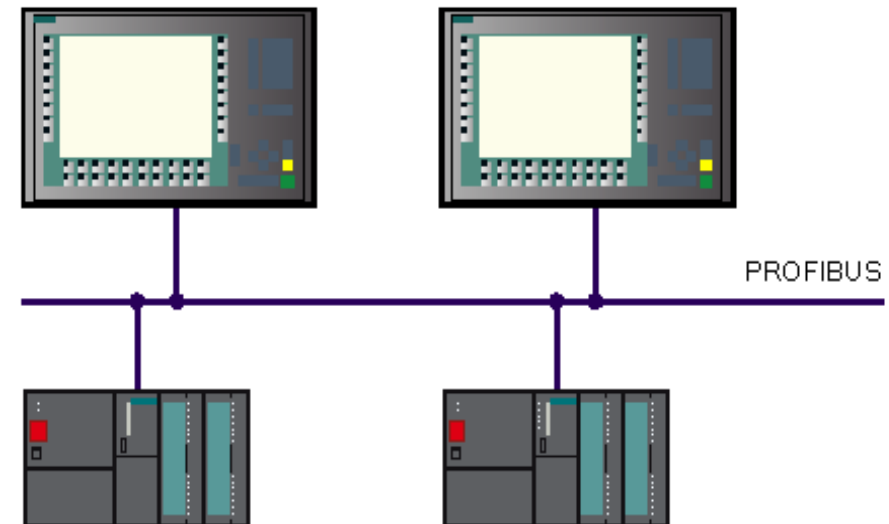


Multi Panel

# HMI APPLICATIONS



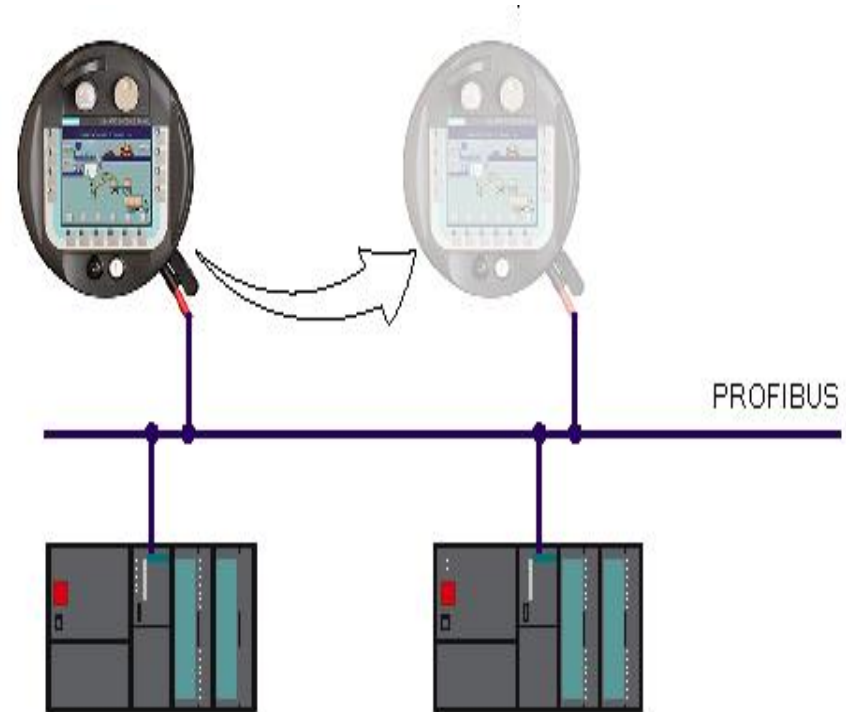
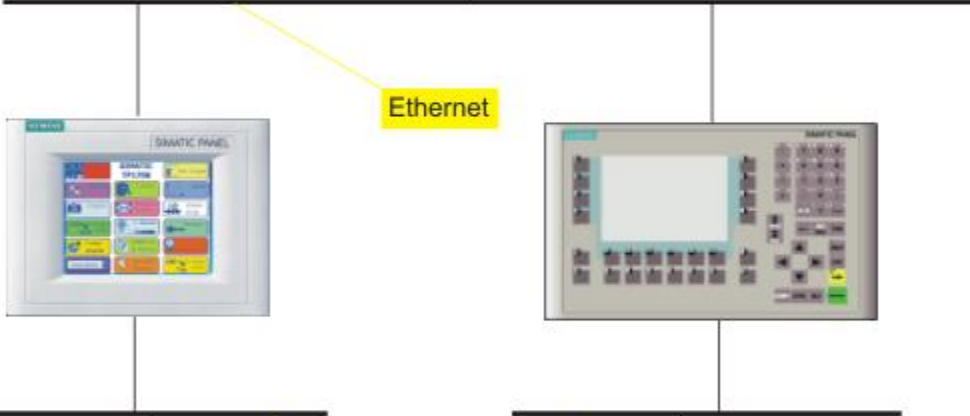
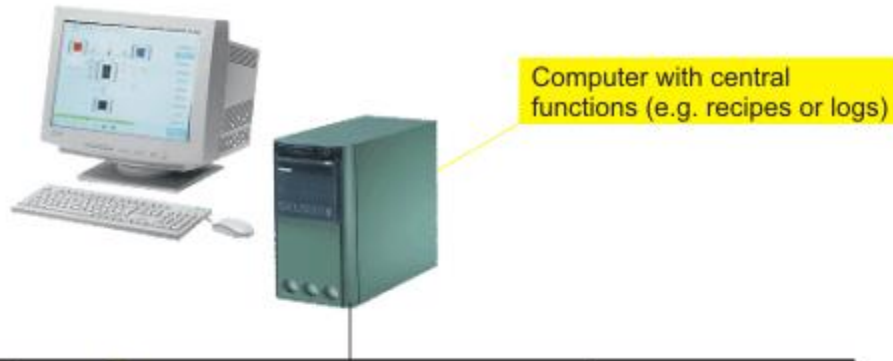
Controller with one HMI devices



Controller with several HMI devices



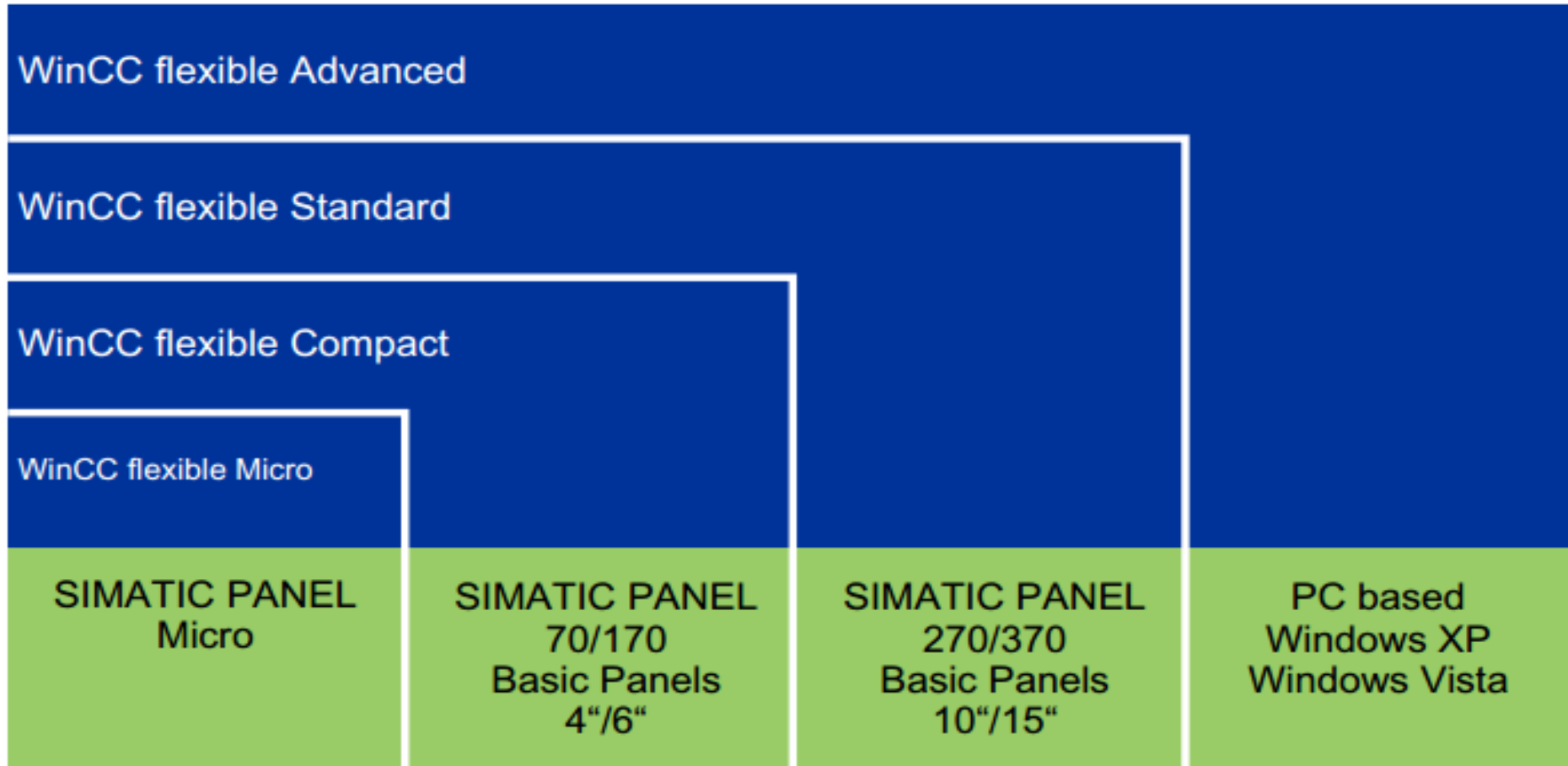
# HMI APPLICATIONS



# HMI Introduction

- Process visualization
- Operator control of the process.
- Displaying alarms.
- Archiving process values and alarms.
- Process and machine parameter management

# Wincc Flexible

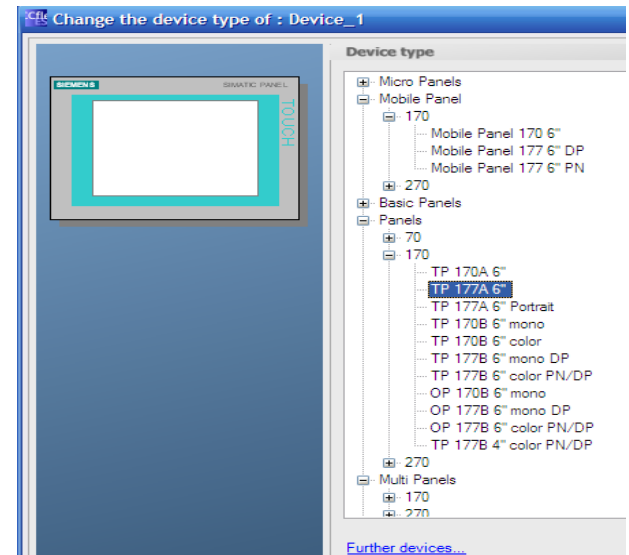


- Wincc Flexible is used for all configuring tasks
- Wincc Flexible covers a performance spectrum ranging from micro panel to pc

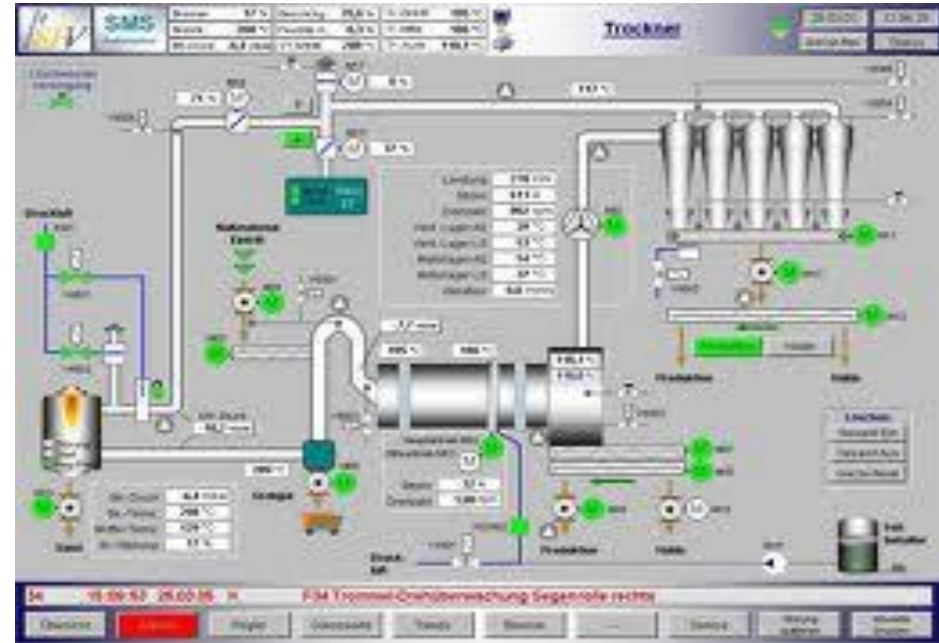
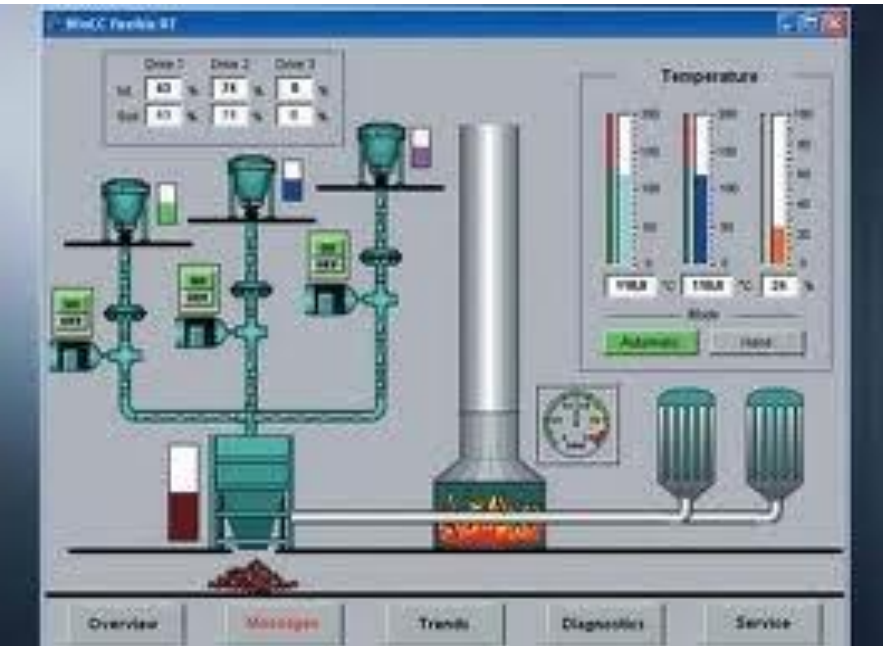


# Wincc Flexible

- Configure and design Screens for HMIs.
- Process visualization base on WinCC flexible Runtime.
- ***Can be change from pc screen mode to HMI screen mode and reverse.***
- ***Understanding well Wincc Flexible is easy to use HMIs***

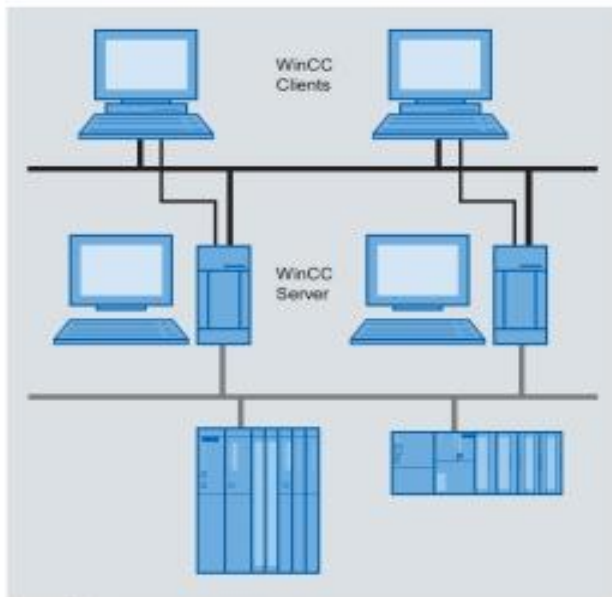


# Wincc Flexible Applications

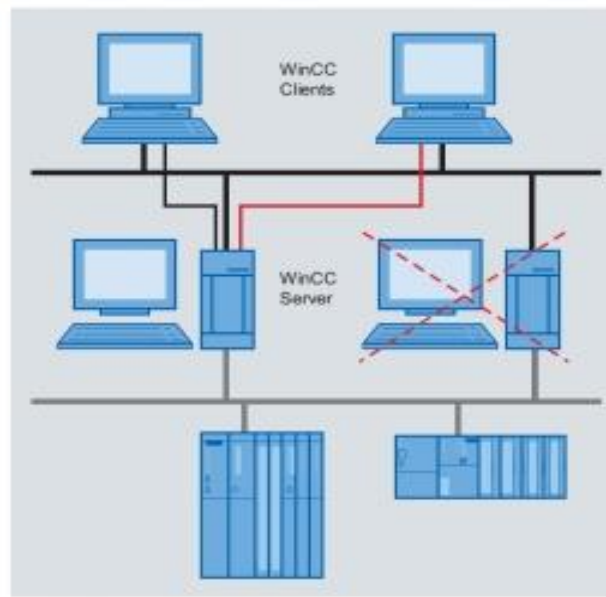


# Communication between HMIs and S7

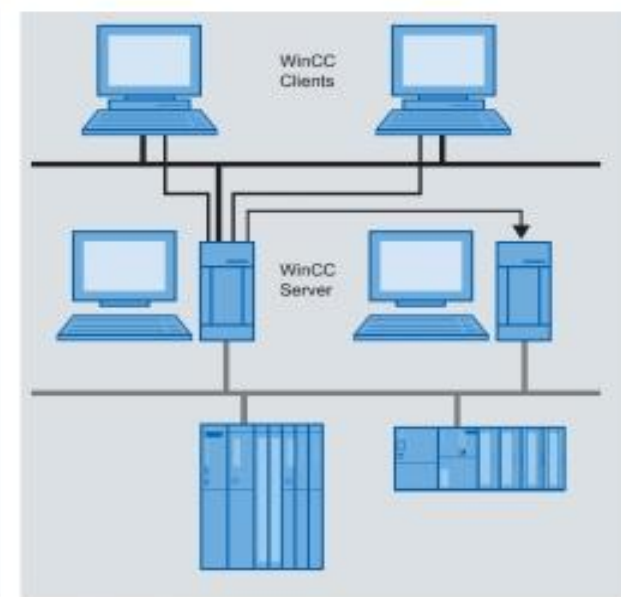
PLC	PROTOCOL
S7200	PPI
S7300	MPI,PROFIBUS,ETHERNET
S7400	MPI,PROFIBUS,ETHERNET



Normalfall



Ausfall eines Client



Wiederkehr des Client

# Supervisory Control And Data Acquisition Using Wincc Flexible

## Working with Step 7

- Wiring the hardware of control system
- Configure hardware, create tags for controlling and monitoring in step7
- Programe and download to plc

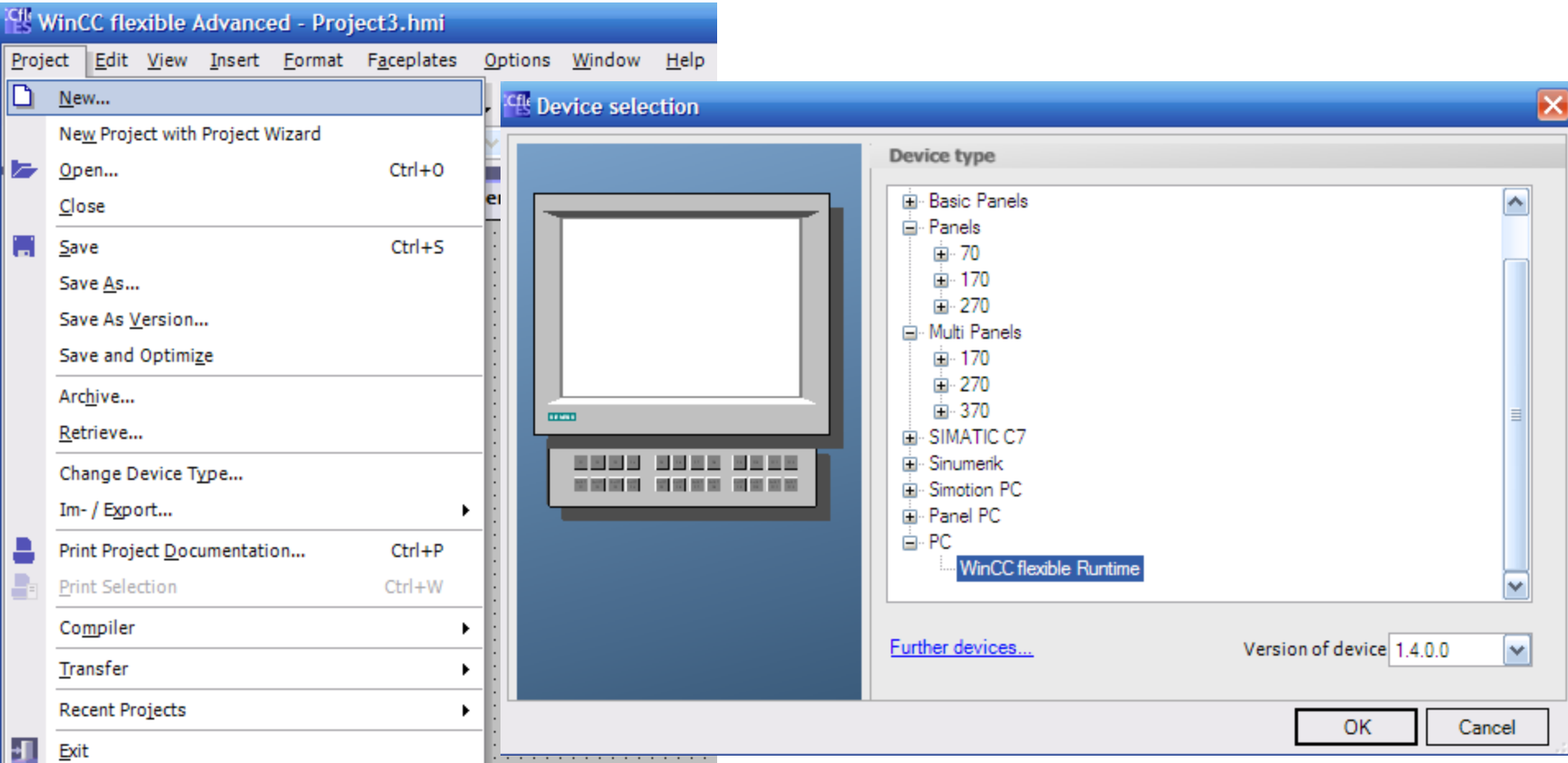
## Working with Wincc

- Create a Project, enter appropriate name.
- Create Driver to connect to PLC
- Create tags to monitor, alias external tags to address in PLC
- Design screens including objects to control and monitor
- Link properties of objects to External tags
- Run and check project

# Creating a new project

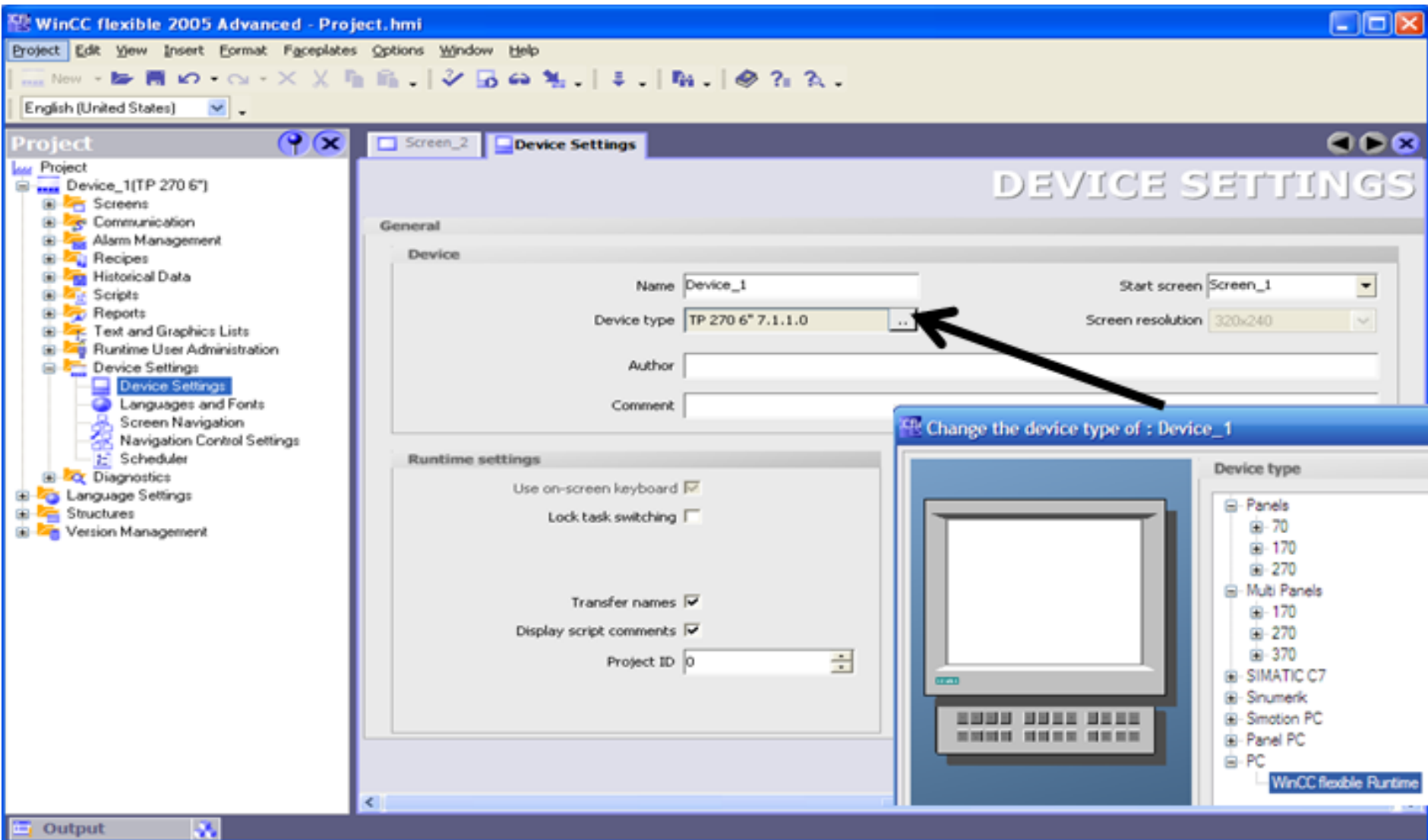
There are two way to create a project

- Using project wizard
- Starting with Empty Project



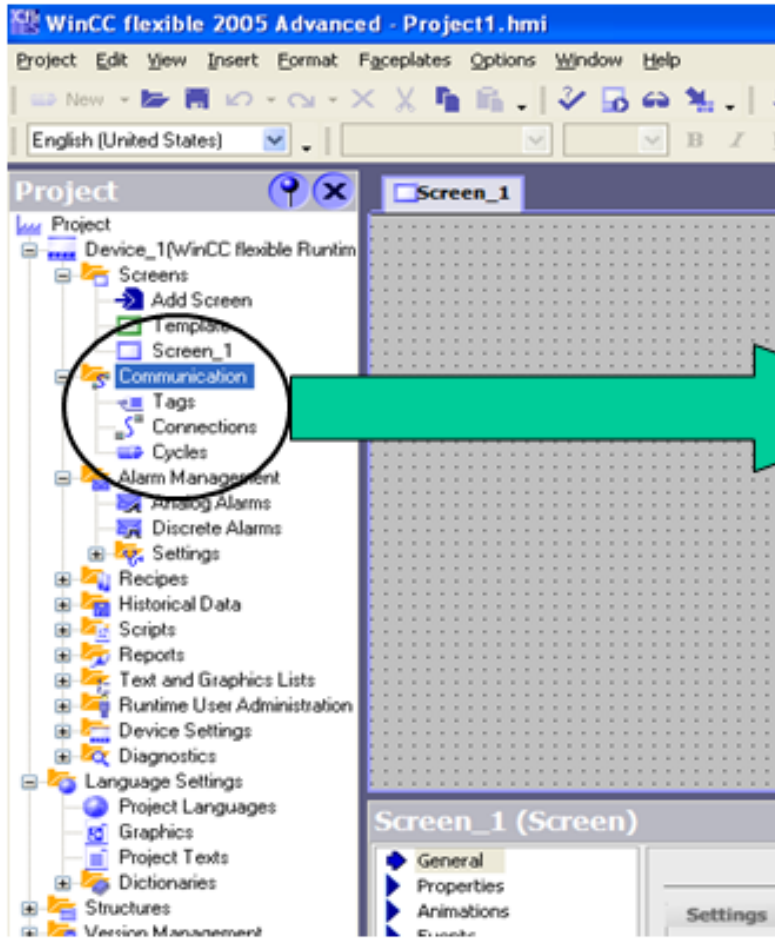
# Selecting devices for designing

Selecting device which is used in the project





# Creating communication Drivers



Communication parameters include: Tags, connections, cycles

# Creating communication Drivers

The screenshot displays the WinCC flexible software interface for configuring communication drivers. The left sidebar shows a tree view with 'Connections' selected. The main window features a table with columns for Name, Communication driver, Online, and Comment. Below the table, the 'Parameters' tab is active, showing configuration options for the 'WinCC flexible Runtime' and 'Station'. The 'HMI device' section includes options for Type (Simatic selected), Baud rate (187500), Address (1), Access point (S7ONLINE), and a checked box for 'Only master on the bus'. The 'Network' section includes Profile (MPI), Highest station address (HSA), Access point (31), and Number of masters (1). The 'PLC device' section includes Address (2), Expansion slot (0), Rack (0), and a checked box for 'Cyclic operation'.

Name	Communication driver	Online	Comment
S7300_CONNECT	SIMATIC S7 300/400	On	

**Parameters** Area pointer

WinCC flexible Runtime

Interface: MPI/DP

Station

**HMI device**

Type:  TTY,  RS232,  RS422,  RS485,  Simatic

Baud rate: 187500

Address: 1

Access point: S7ONLINE

Only master on the bus

**Network**

Profile: MPI

Highest station address (HSA): 31

Number of masters: 1

**PLC device**

Address: 2

Expansion slot: 0

Rack: 0

Cyclic operation

Wincc can connect to many different drivers via MPI, ETHERNET, PROFIBUS....

# Creating communication Drivers

The screenshot displays the SIMATIC Manager interface for configuring communication drivers. The main window is titled "CONNECTIO" and features a table with the following data:

Name	Communication driver	Online	Comment
S7300_CONNECT	SIMATIC S7 300/400	On	

Below the table, the "Parameters" section is active, showing the following configuration options:

- WinCC flexible Runtime:** Interface set to MPI/DP.
- Station:** Represented by a station icon.
- HMI device:** Type: Simatic (selected), Baud rate: 187500, Address: 1, Access point: S7ONLINE, Only master on the bus: checked.
- Network:** Profile: MPI, Highest station address (HSA): 31, Number of masters: 1.
- PLC dev:** Address: 2, Expansion slot: 0, Rack: 0, Cyclic operation: checked.

**Setting parameters:** Interface, type, baud rate, hmi address, network, plc address and slot of the cpu in rack

# Creating communication Drivers

The screenshot displays the WinCC flexible 2005 Advanced interface. The main window is titled "CONNECTIONS" and contains a table with the following data:

Name	Communication driver	Online	Comment
Connection_1	SIMATIC 57 300/400	On	

Annotations in the image include:

- A green box with an arrow pointing to an empty row in the table: "By pressing two clicks on the empty lines a new connection settings appears in the property view."
- A green box with an arrow pointing to the "Interface" dropdown menu in the "Parameters" dialog: "Available interfaces on the HMI device". The dropdown menu shows "MPI/DP" selected, with "MPI/DP" and "ETHERNET" as options.
- A circle around the "Parameters" tab in the dialog.

The "Parameters" dialog box is open, showing the "WinCC flexible Runtime" icon and the "Interface" dropdown set to "MPI/DP". Below the dialog, three sections are visible: "HMI device", "Network", and "PLC device".

**HMI device**

- Type:  TTY,  RS232,  RS422,  RS485,  Simatic
- Baud rate: 187500
- Address: 1
- Access point: S7ONLINE
- Only master on the bus

**Network**

- Profile: MPI
- Highest station address (HSA): 31
- Number of masters: 1

**PLC device**

- Address: 2
- Expansion slot: 0
- Rack: 0
- Cyclic operation

**Setup parameters:** Interface, type, baud rate, hmi address, network, plc address and slot of the cpu in rack

# Creating tags to control and monitor

The screenshot shows the WinCC flexible Advanced - HMI.hmi software interface. The 'Tags' tab is active, displaying a table of tag properties. The table has columns for Name, Connection, Data type, Address, Array elements, and Acquisition cycle. A tag named 'START' is listed with the connection '<Internal tag>', data type 'Bool', and address '<No address>'. A dropdown menu is open for the 'Data type' column, showing a list of available data types: Char, Byte, Int, Word, DInt, DWord, Real, Bool, String, StringChar, Timer, Counter, Date, Time, Date and time, and Time of day. The 'Int' data type is highlighted. Annotations include an arrow pointing to the 'Tags' tab in the Project tree, and text labels 'Internal tag' and 'Available interfaces on WinCC' pointing to the '<Internal tag>' connection and the dropdown menu respectively. The text 'No address' is also present in the table.

Name	Connection	Data type	Address	Array elements	Acquisition cycle
START	<Internal tag>	Bool	<No address>	1	1 s

Available interfaces on WinCC

- Char
- Byte
- Int
- Word
- DInt
- DWord
- Real
- Bool
- String
- StringChar
- Timer
- Counter
- Date
- Time
- Date and time
- Time of day

## Internal tags for wincc

# Creating tags to control and monitor

Pressing two clicks on the empty line to create a new tag

Name	Connection	Data type	Address	Array count	Acquisition cycle	Conn
Tag_2	Connection_1	Bool	Q 4.0	1	1 s	

Internal or External tag

Data type to be transferred

Address Ex: O/P port 4 Bit 0

Tag\_2 (Tag) General

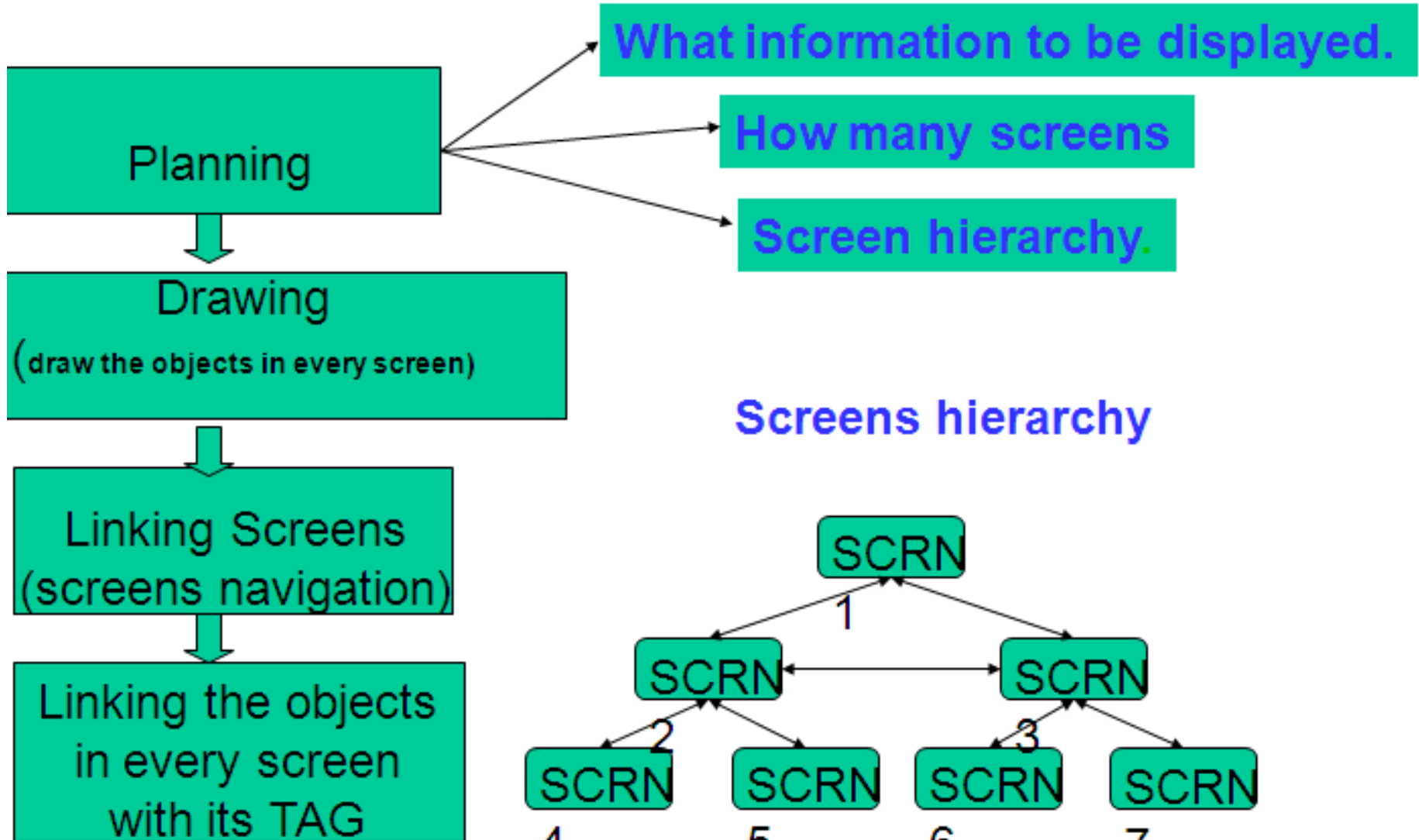
- Char
- Byte
- Int
- Word
- DWord
- Real
- Bool
- String
- StringChar
- Timer
- Counter
- Date
- Time
- Date and time
- Time of day

Name: Tag\_2  
Connection: Connection\_1  
Data type: Bool  
Acquisition mode: Cyclic on use  
Acquisition cycle: 1 s  
Array count: 1  
Settings: Length 0

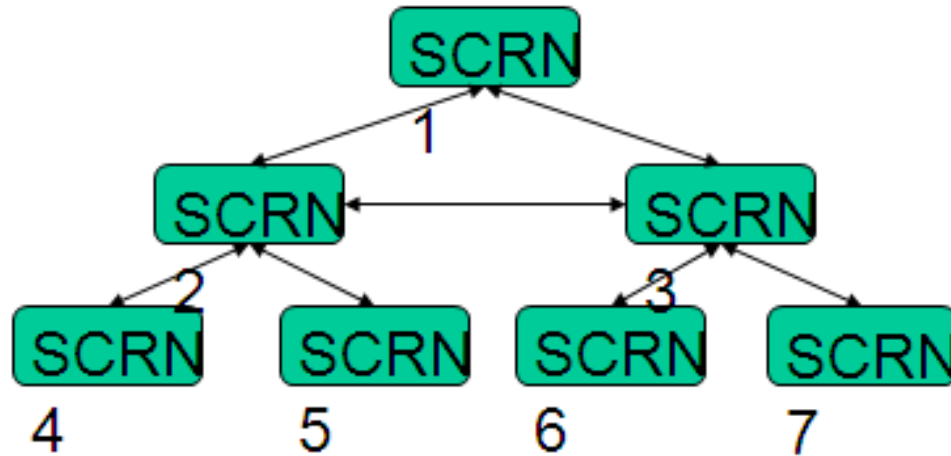
## External tags for plc



# Designing Screens



## Screens hierarchy



# Designing Screens

The screenshot displays the WinCC flexible Advanced - HMI.hmi software interface. The main window shows a project tree on the left and a central design canvas. The project tree includes folders for Screens, Communication, Alarm Management, Recipes, Historical Data, Scripts, Reports, Text and Graphics Lists, Runtime User Administration, Device Settings, Language Settings, Project Languages, and Graphics. The central canvas is labeled 'Screen\_1' and contains a grid of design elements. The right-hand side features a 'Tools' panel with two sections: 'Simple Objects' and 'Enhanced Objects'. The 'Simple Objects' section includes icons for Line, Polyline, Polygon, Ellipse, Circle, Rectangle, Text Field, IO Field, Date-Time Field, Graphic IO Field, Symbolic IO Field, and Graphics View. The 'Enhanced Objects' section includes icons for My Controls, Graphics, and Library. Red arrows point from text labels to specific elements in the project tree and tools panel.

Project

- START-WINCC(WinCC flexible Runtime)
  - Screens
    - Add Screen
    - Template
    - Screen\_1
    - Screen\_2
  - Communication
    - Tags
    - Connections
    - Cycles
  - Alarm Management
    - Analog Alarms
    - Discrete Alarms
    - Settings
  - Recipes
  - Historical Data
  - Scripts
  - Reports
  - Text and Graphics Lists
  - Runtime User Administration
  - Device Settings
  - Language Settings
  - Project Languages
  - Graphics

Screen\_1

Tools

Simple Objects

- Line
- Polyline
- Polygon
- Ellipse
- Circle
- Rectangle
- Text Field
- IO Field
- Date-Time Field
- Graphic IO Field
- Symbolic IO Field
- Graphics View

Enhanced Objects

- My Controls
- Graphics
- Library

Create graphic

Create tags to control and monitor

Create communication to drivers

Create Alarm

Simple Objects

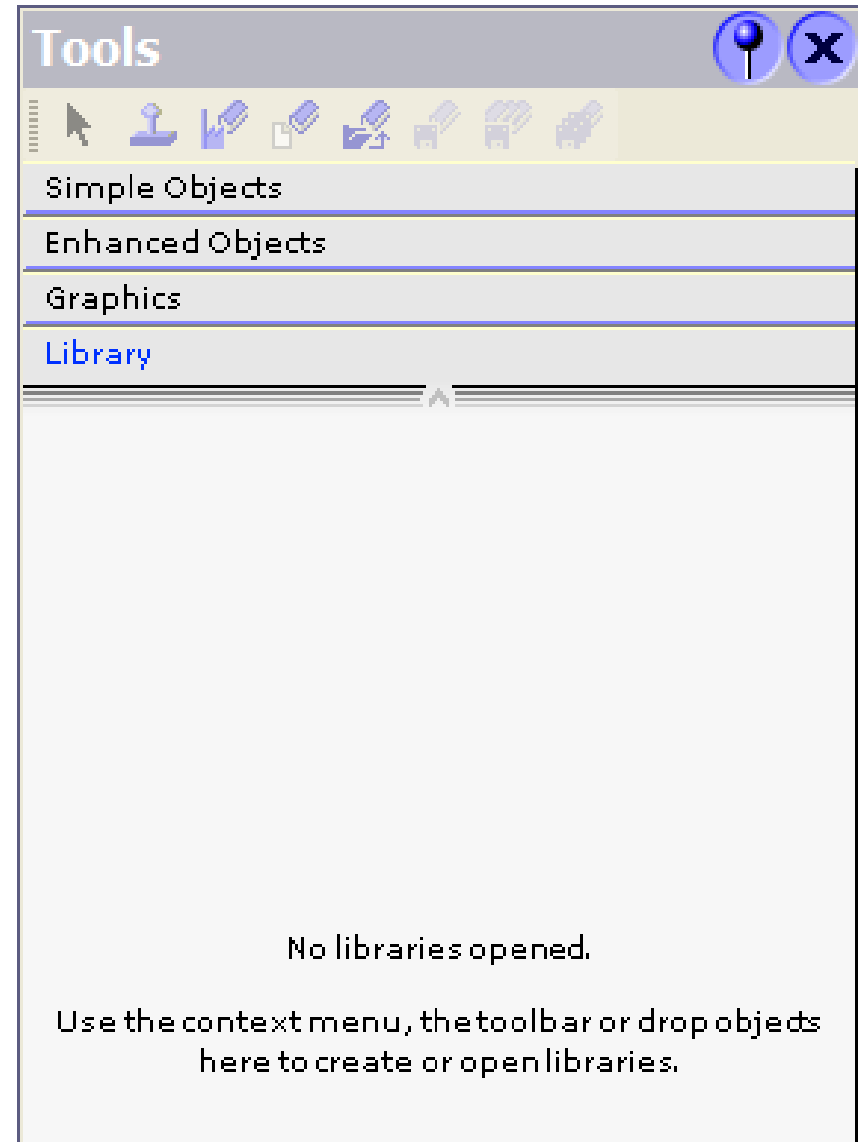
Enhanced Objects

# Designing Screens

The screenshot displays the WinCC flexible 2005 Advanced software interface. The 'Project' tree on the left shows a hierarchy with 'Screens' expanded, containing 'Add Screen', 'Template', 'Screen\_1', 'Screen\_2', and 'Screen\_3'. The 'Screens' menu is open, showing the same options. A green callout bubble points to the 'Add Screen' menu item with the text: 'Double clicks on this shortcut to add new screen.' Another green callout bubble points to the 'Template' menu item with the text: 'Template : what you are going to draw in the template will be applied to all the project screens.' The main workspace shows a SIMATIC screen design with a grid and various graphical elements. The 'Objects' palette on the right lists various graphical objects like Line, Polyline, Polygon, Ellipse, Circle, Rectangle, TextField, IO Field, Date-Time Field, Graphic IO Field, Symbolic IO Field, Graphics View, Button, Switch, and Bar. The 'Screen\_2 (Screen)' properties window is visible at the bottom, showing the 'General' tab with fields for Name (Screen\_2), Number (2), and a checked 'Use template' checkbox.

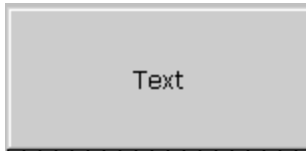
# Objects for designing

- Simple objects
- Enhanced objects
- Graphics
- Library



# Simple Objects

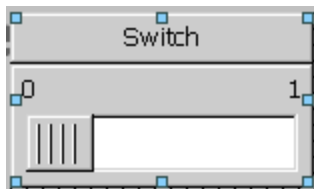
## Button



## Symbolic IO field



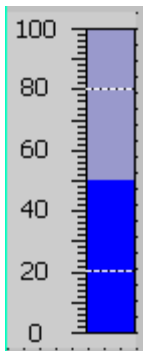
## Switch



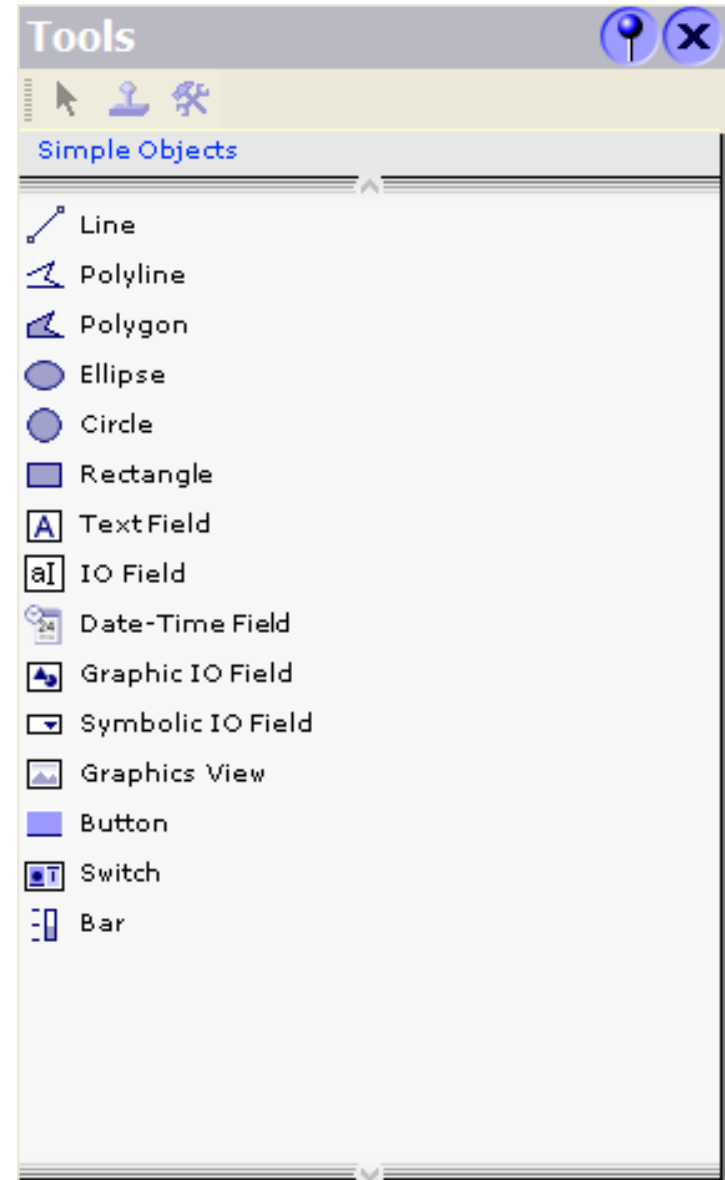
## Graphic



## Bar

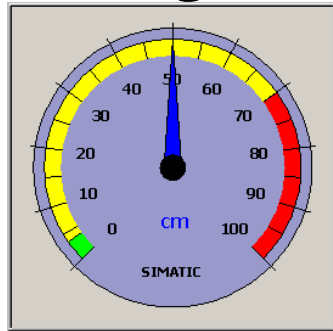


## Date & time field

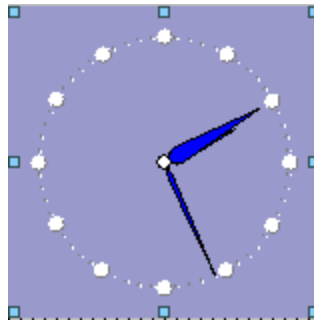


# Enhanced Objects

## Gauge



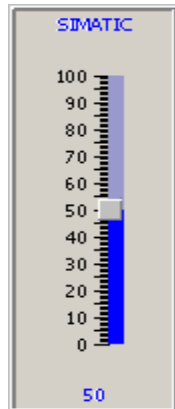
## Clock



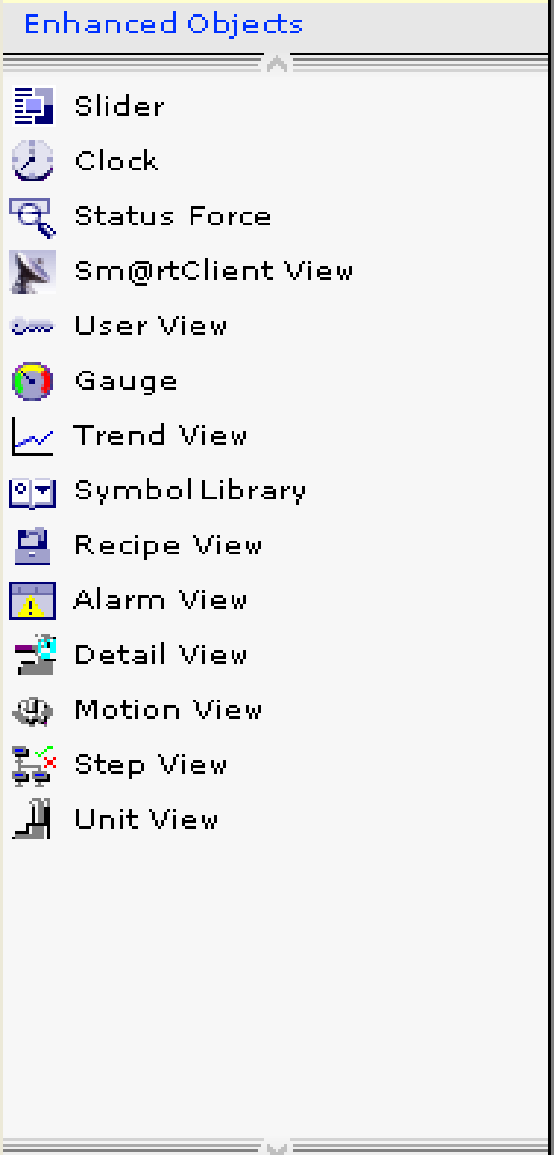
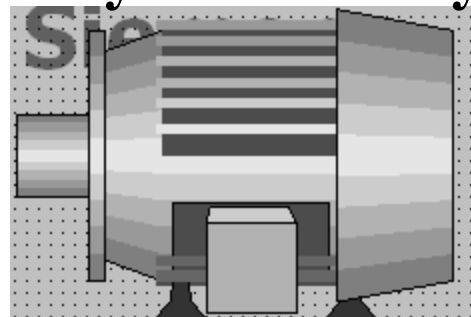
## Status View

Connection	Type	DB-Nr.	Offset	Bit	Data Type	Format	Status Value	Control Value

## Slider



## Symbol library





# Assign properties of objects to tags

The screenshot shows the WinCC flexible 2005 Advanced interface. On the left, a tree view shows the project structure, with 'Appearanc' selected under 'Animations'. The main workspace displays a 'SIMATIC PANEL' with a 'Circle' object. A green box highlights the 'Circle' object, and a red box highlights the 'Appearanc' property in the tree view. A red box also highlights the 'Appearanc' property in the 'Properties' window for the selected object. A table in the 'Appearanc' section shows the mapping of tag values to foreground and background colors.

**Appearanc**

- Diagonal movement
- Horizontal movement
- Vertical movement
- Direct movement
- Visibility

**Circle**

**Appearanc**

Tag: IN1

Type: Bit

Value	Foreground color	Background color	Flashing
0	Black	Red	No
1	Black	Green	No

**Linking the appearance to the tag IN1**

You can link any of this properties to the tags

The tag value may be bit(0 or 1) or an analog value (ex:0→100)

# Assign properties of objects to tags

The screenshot displays the WinCC flexible 2005 Advanced interface. The main workspace shows a SIMATIC PANEL with a switch object labeled 'Switch' and a 'TOUCH' label. The 'Switch\_1 (Switch)' properties window is open, showing the 'General' tab. The 'Process' section is highlighted, showing the 'Tag' field set to an empty dropdown, 'Cycle' set to 1, and 'Value ON' set to 1. A red arrow points from the text 'Pressing the switch will toggle the tag' to the 'Tag' field.

Project

- Device\_1 (TP 270 6")
  - Screens
    - Add Screen
    - Template
    - Screen\_1
    - Screen\_2
    - Screen\_3
  - Communication
  - Alarm Management
  - Recipes
  - Historical Data
  - Scripts
  - Reports
  - Text and Graphics Lists
    - Text Lists
    - Graphics Lists
  - Runtime User Administration
  - Device Settings
  - Diagnostics
  - Language Settings
  - Structures
    - Add Structure
  - Version Management

Screen\_3

SIEMENS SIMATIC PANEL

Siemens: Switch

TOUCH

Switch

Ready made objects has a tags called **process tag**

Pressing the switch will toggle the tag

Switch\_1 (Switch)

General

Settings

Type: Switch

Label: Switch

Text

Text ON: 1

Text OFF: 0

Process

Tag: [ ]

Cycle: 1

Value ON: 1

# Assign properties of objects to tag

The screenshot displays the WinCC flexible 2005 Advanced interface. On the left, the Project tree shows the hierarchy: Project > Device\_1 (TP 270 6") > Screens > Screen\_3. The main workspace shows a gauge object on a screen titled 'Screen\_3'. The gauge is labeled 'Gauge' and 'SIMATIC'. The configuration panel for 'Gauge\_1 (Gauge)' is open, showing the following settings:

- General:** Label: SIMATIC, Unit: km/sec
- Process:** Tag: Tag\_2, Cycle: 100 ms
- View:**  Display decimals,  Display peak value, Background graphic: [dropdown], Dial graphic: [dropdown]

A text box on the right side of the screen contains the text: "When Tag\_2 value changes the pointer moves through the gauge". An arrow points from this text box to the 'Tag' field in the configuration panel.

# Assign properties of objects to tag

The screenshot displays the WinCC flexible 2005 Advanced software interface. The main workspace shows a SIMATIC PANEL with a 'Graphic io field' highlighted in a cyan box. A dashed arrow points from the 'Graphics Lists' folder in the Project tree to the 'Graphic list' dropdown in the 'Display' section of the 'Graphic IO Field' properties dialog. Another arrow points from the 'Tag' dropdown in the 'Process' section to a text box explaining that the tag value changes the image of the io field.

**Graphic list to be assigned to the graphic io field**  
**So first we have to create a graphic list.**

**By means of this tag value the image of the io field will be changed**

**General**

**Settings**  
Mode: Input/output

**Display**  
Graphics list: [Dropdown]  
Scroll bar type: Permanent  
Scroll bar orientation: Vertical

**Process**  
Tag: [Dropdown]  
Cycle: [Input field]  
Bit number: 0

# WinCC Exercises

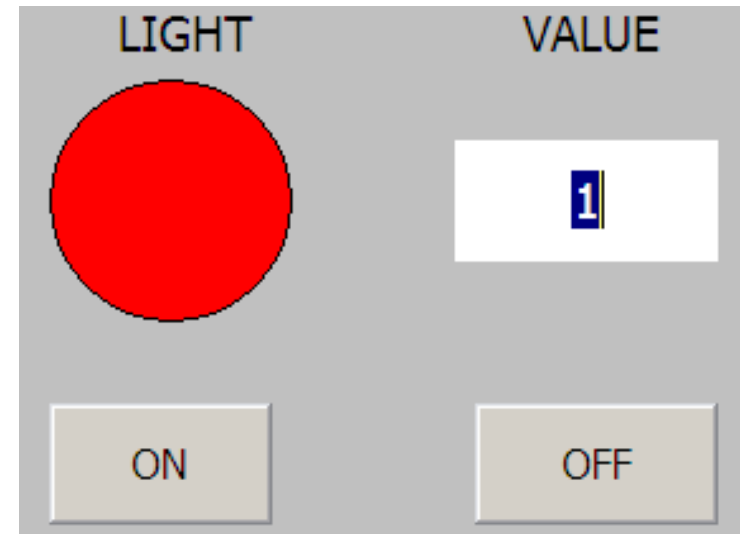
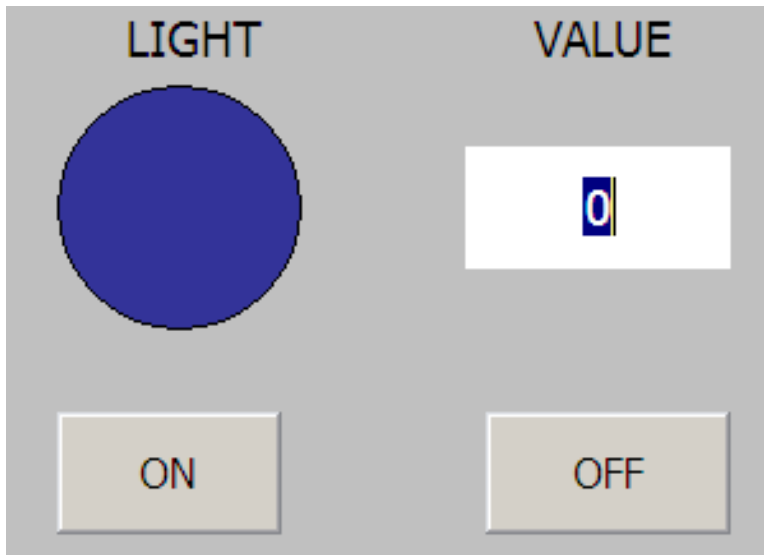
## *Exercise 1:*

A light is controlled by two buttons ON and OFF:

Press ON button, the light is green.

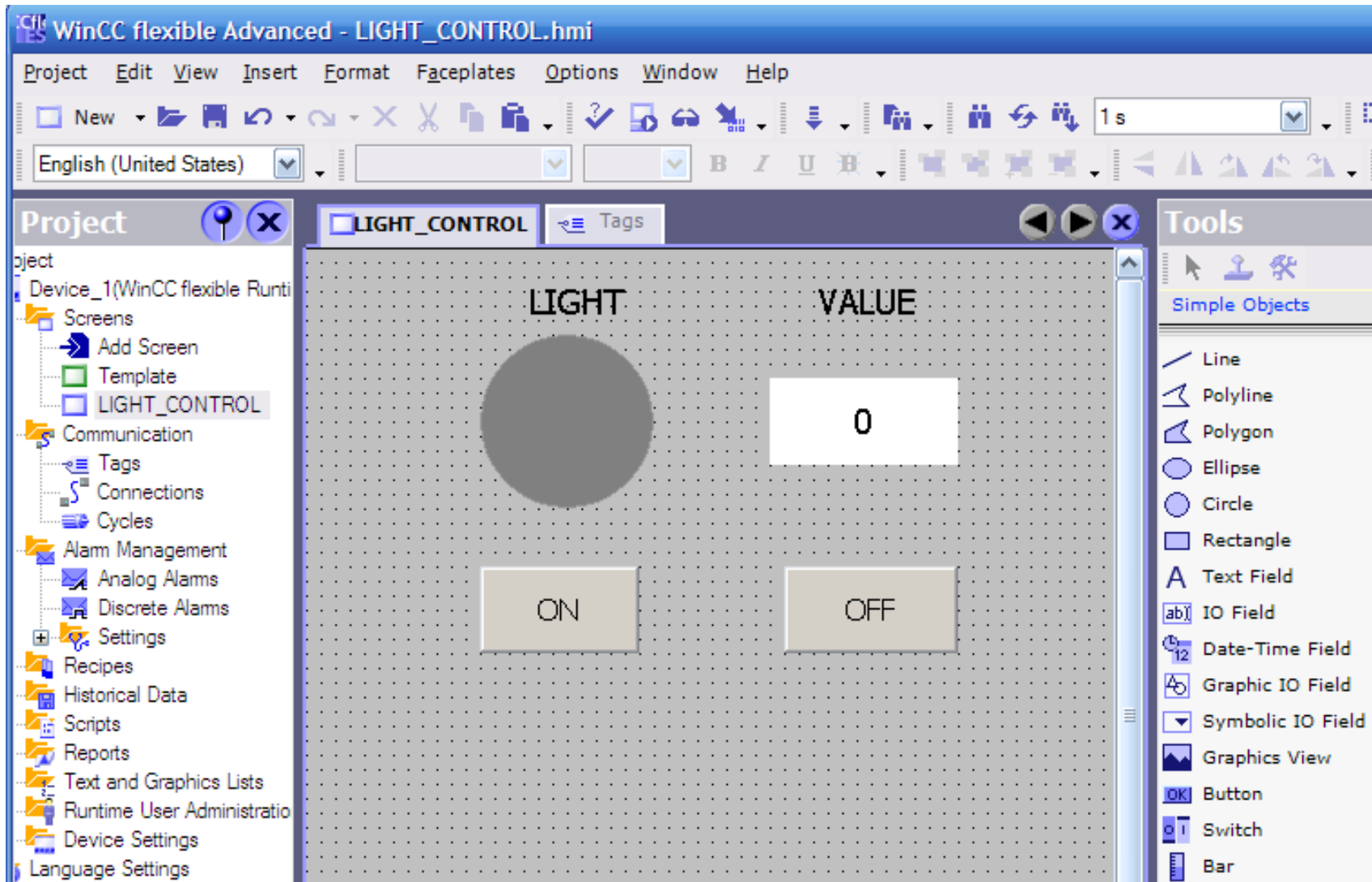
Press OFF button, the light is red.

Design HMI and program for plc to control the light



# WinCC Exercises

## Design screen using simple Objectstst





# WinCC Exercises

Create Internal tag, name “**LIGHT**”, Data type :Bool

The screenshot shows the WinCC flexible Advanced interface for the project 'LIGHT\_CONTROL.hmi'. The 'Tags' tab is active, displaying a table with the following data:

Name	Display ...	Connection	Data type	Address	Array elements	Acquisition cycle
LIGHT		<Internal tag>	Bool	<No address>	1	1 s

The interface also shows a project tree on the left with 'LIGHT\_CONTROL' selected, and a toolbar at the top with various icons and a '1 s' timer.

# WinCC Exercises

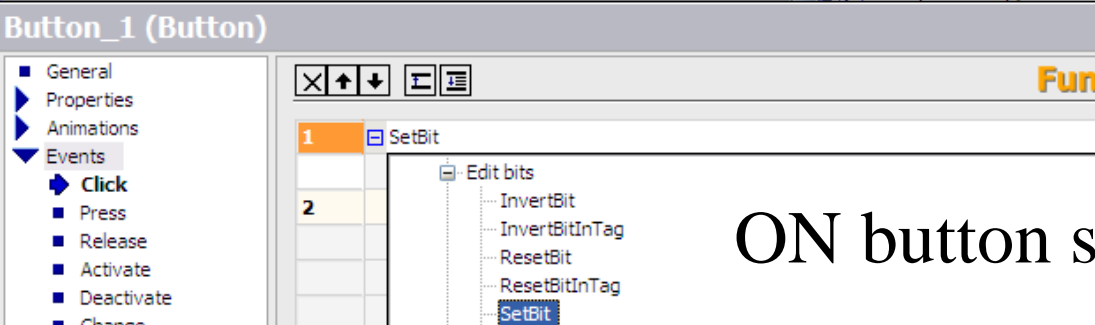
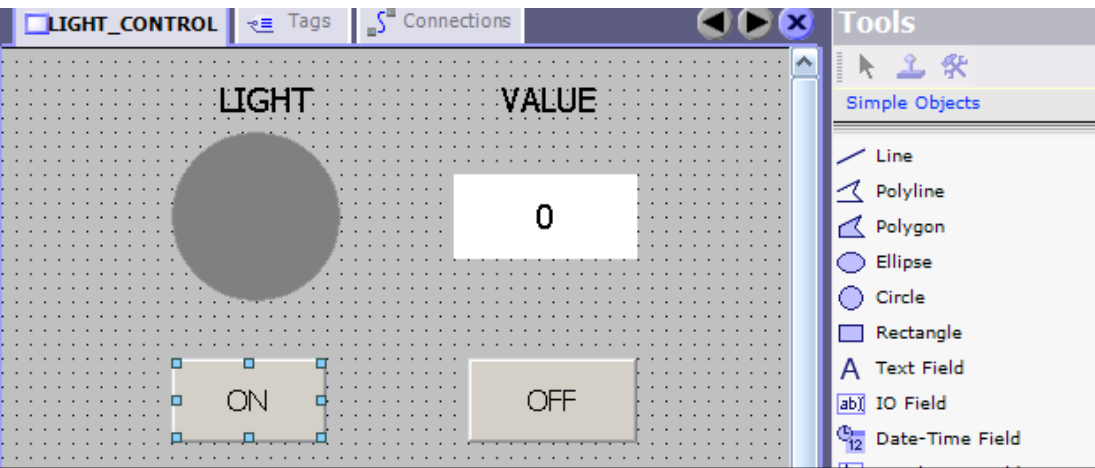
## Link Animation of LIGHT object to tag

The screenshot displays the WinCC flexible Advanced interface for the project 'LIGHT\_CONTROL.hmi'. The main workspace shows a grey circle object labeled 'LIGHT' and a white rectangular object labeled 'VALUE' containing the number '0'. The 'Tools' panel on the right lists 'Simple Objects' including Line, Polyline, Polygon, Ellipse, and Circle. The 'Properties' panel for 'Circle\_1 (Circle)' is open, showing the 'Appearance' tab. The 'Tag' is set to 'LIGHT' and the 'Type' is 'Bit'. A table in the 'Appearance' tab defines the visual state for different tag values.

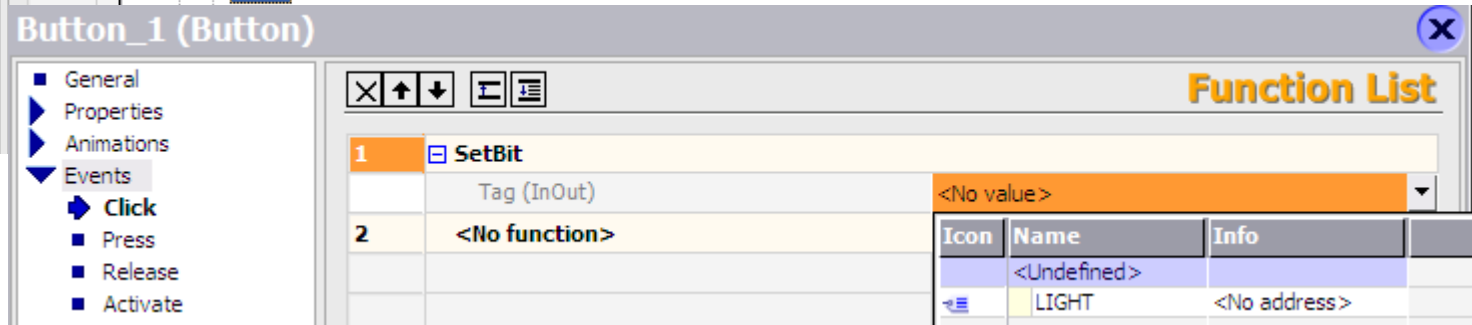
Value	Foreground Color	Background Color	Flash
0	Black	Blue	No
1	Black	Red	No

# WinCC Exercises

Set Event for ON and OFF button to **LIGHT** tag



ON button set **LIGHT** tag



# WinCC Exercises

Set Event for ON and OFF button to **LIGHT** tag

The screenshot displays the WinCC Graphics Designer interface. The main workspace contains a control panel with the following elements:

- A large grey circle labeled "LIGHT".
- A white rectangular field labeled "VALUE" containing the number "0".
- A rectangular button labeled "ON".
- A rectangular button labeled "OFF", which is currently selected with blue handles.

On the right side, there is a "Simple Objects" palette with the following items:

- Line
- Polyline
- Polygon
- Ellipse
- Circle
- Rectangle
- Text Field
- IO Field
- Date-Time Field

At the bottom, the "Button\_3 (Button)" properties window is open, showing the "Events" tab. The "Click" event is selected, and the "Function List" shows the following configuration:

Function	Tag (InOut)
1 ResetBit	LIGHT

OFF button reset **LIGHT** tag

# WinCC Exercises

## Alias I/O fill to LIGHT tag

The screenshot displays the WinCC Graphics Designer interface. The main workspace shows a control panel for a light, consisting of a grey circle labeled "LIGHT", a white rectangular display labeled "VALUE" showing the number "0", and two buttons labeled "ON" and "OFF". The top toolbar includes "Tags" and "Connections" buttons. A "Tools" palette on the right lists various drawing objects: Line, Polyline, Polygon, Ellipse, Circle, Rectangle, Text Field, IO Field, and Date-Time Field. The "IO Field" tool is highlighted. Below the workspace, the "IO Field\_1 (IO Field)" properties window is open, showing the "General" tab. The "Type" section has "Mode" set to "Input/output". The "Process tag" section has "LIGHT" selected in the dropdown and "Cycle" set to "1 s". The "Format" section has "Format type" set to "Decimal" and "Format pattern" set to "9".

# WinCC Exercises

## Save and Run the project

The screenshot shows the WinCC flexible Advanced software interface for a project named "LIGHT\_CONTROL.hmi". The main workspace displays a control panel with a large grey circle labeled "LIGHT", a digital display showing "0" labeled "VALUE", and two buttons labeled "ON" and "OFF". The interface includes a menu bar (Project, Edit, View, Insert, Format, Faceplates, Options, Window, Help), a toolbar with various icons, and a project tree on the left. The project tree shows the following structure:

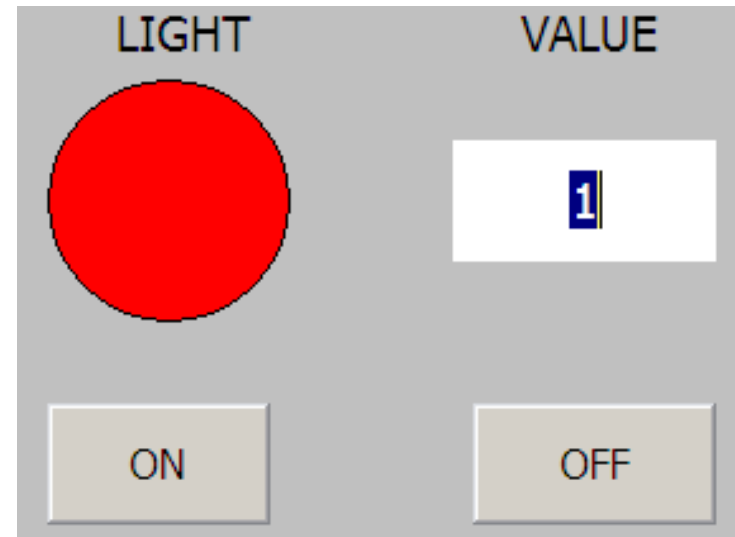
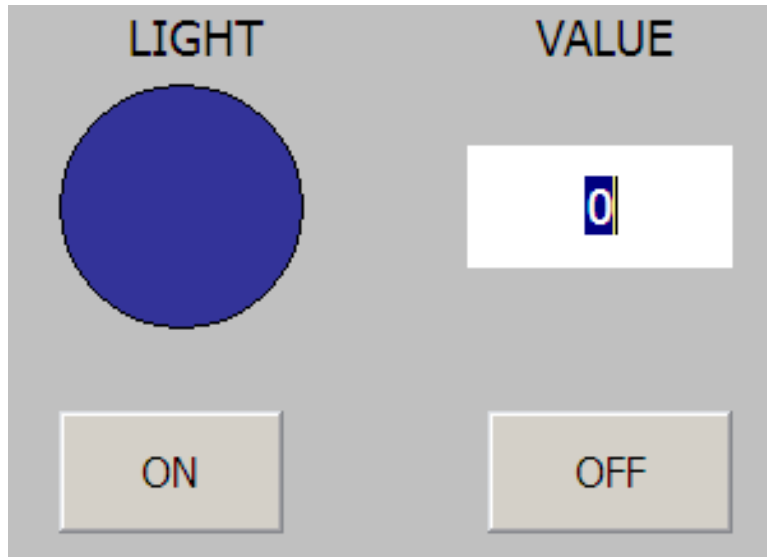
- Project
  - Device\_1(WinCC flexible Runtime)
  - Screens
    - Add Screen
    - Template
    - LIGHT\_CONTROL
  - Communication
    - Tags
    - Connections
    - Cycles
  - Alarm Management
    - Analog Alarms
    - Discrete Alarms
    - Settings
  - Recipes
  - Historical Data
  - Scripts
  - Reports
  - Text and Graphics Lists
  - Runtime User Administration
  - Device Settings
  - Language Settings
  - Project Languages

The tools palette on the right lists the following objects:

- Simple Objects
  - Line
  - Polyline
  - Polygon
  - Ellipse
  - Circle
  - Rectangle
  - Text Field
  - IO Field
  - Date-Time Field
  - Graphic IO Field
  - Symbolic IO Field
  - Graphics View
  - Button
  - Switch
  - Bar

# WinCC Exercises

Press ON and OFF button to check objects effect





# Exercise 2: WinCC Communicate with PLC

## Create driver to connect to PLC

The screenshot shows the WinCC flexible Connections dialog box. The left sidebar contains a tree view with 'Connections' selected. The main area displays a table of connections and configuration panels below.

Name	Communication driver	Online	Comment
S7300_CONNECT	SIMATIC S7 300/400 OPC SIMATIC 500/505 DP SIMATIC 500/505 seriell SIMATIC HMI HTTP Protocol SIMATIC S5 AS511 SIMATIC S5 DP SIMATIC S7 200 SIMATIC S7 300/400	On	

**Parameters** Area pointer

WinCC flexible Runtime Interface: MPI/DP

Station

**HMI device**

Type:  TTY,  RS232,  RS422,  RS485,  Simatic

Baud rate: 187500

Address: 1

Access point: S7ONLINE

Only master on the bus

**Network**

Profile: MPI

Highest station address (HSA): 31

Number of masters: 1

**PLC device**

Address: 2

Expansion slot: 0

Rack: 0

Cyclic operation

# WinCC Communicate with PLC

Create a External tag, name “**LIGHT\_1**”, Data type : Bool, alias to Q0.0 address in S7300 or S7400

The screenshot shows the WinCC flexible Advanced interface for the project 'LIGHT\_CONTROL.hmi'. The 'Tags' tab is active, displaying a table of tag configurations. The table has columns for Name, Display, Connection, Data type, Address, Array elements, and Acquisition cycle. Two tags are listed: 'LIGHT' (Internal tag) and 'LIGHT\_1' (External tag).

Name	Display ...	Connection	Data type	Address	Array elements	Acquisition cycle
LIGHT		<Internal tag>	Bool	<No address>	1	1 s
LIGHT_1		S7300_CONNECT	Bool	Q 0.0	1	1 s

# WinCC Communicate with PLC

Link properties of objects to LIGHT\_1 External tag as doing with “**LIGHT tag**” in exercise 1

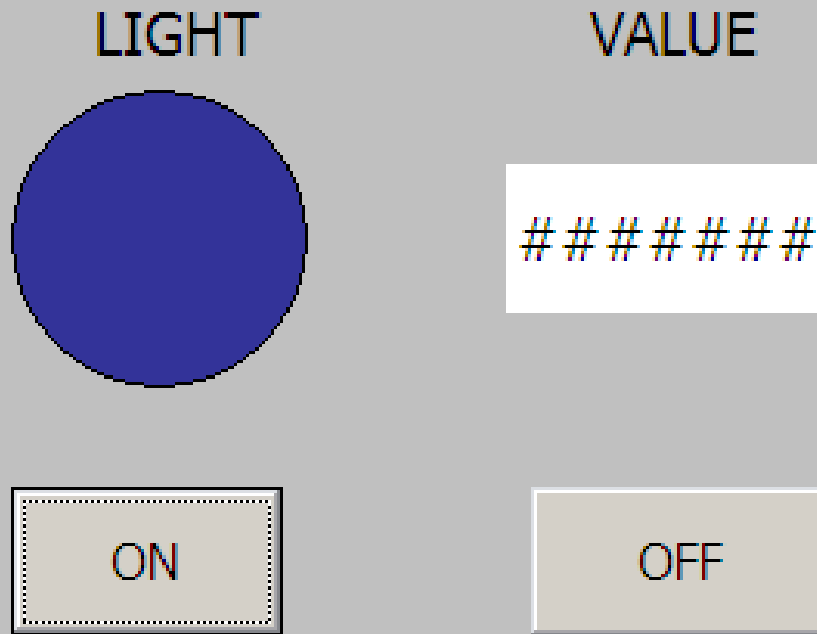
The screenshot displays a WinCC Graphics Designer interface. The main workspace shows a control panel with a grey circle labeled "LIGHT", a white text field labeled "VALUE" containing the number "0", and two buttons labeled "ON" and "OFF". To the right is a "Simple Objects" palette with various shapes like Line, Polyline, Polygon, Ellipse, Circle, Rectangle, Text Field, IO Field, and Date-Time Field.

The "Circle\_1 (Circle)" properties window is open, showing the "Appearance" tab. The "Tag" is set to "LIGHT\_1" and the "Type" is set to "Bit". A table below defines the appearance for different values of the tag.

Value	Foreground Color	Background Color	Flash
0	Black	Blue	No
1	Black	Red	No

# WinCC Communicate with PLC

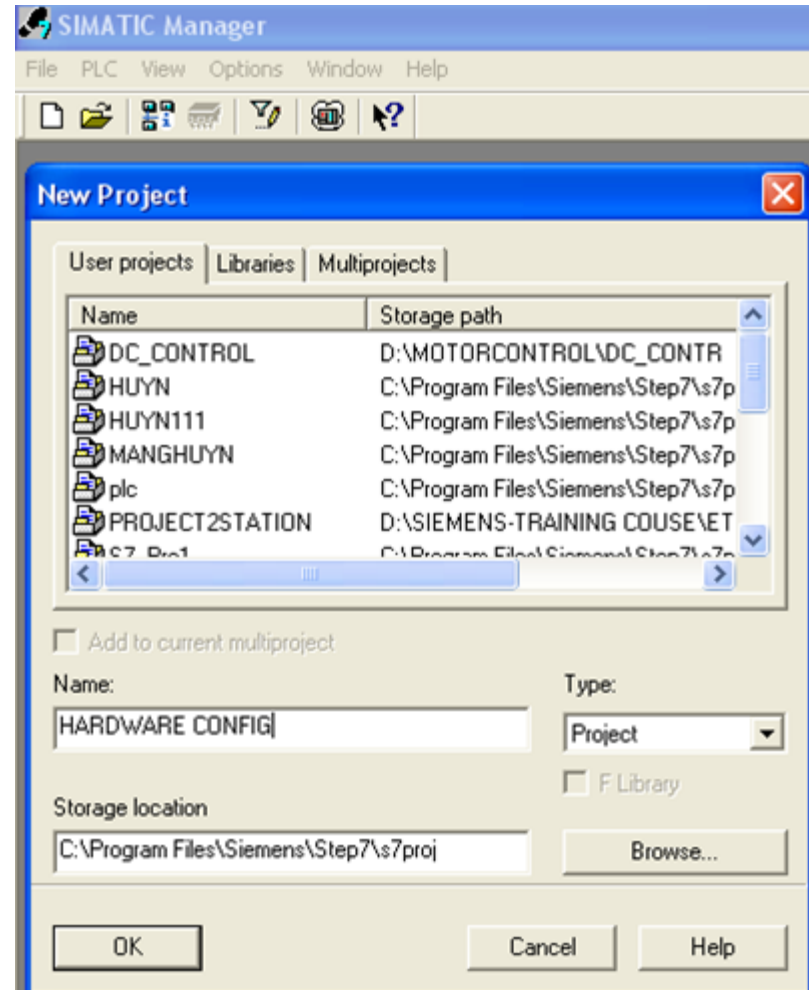
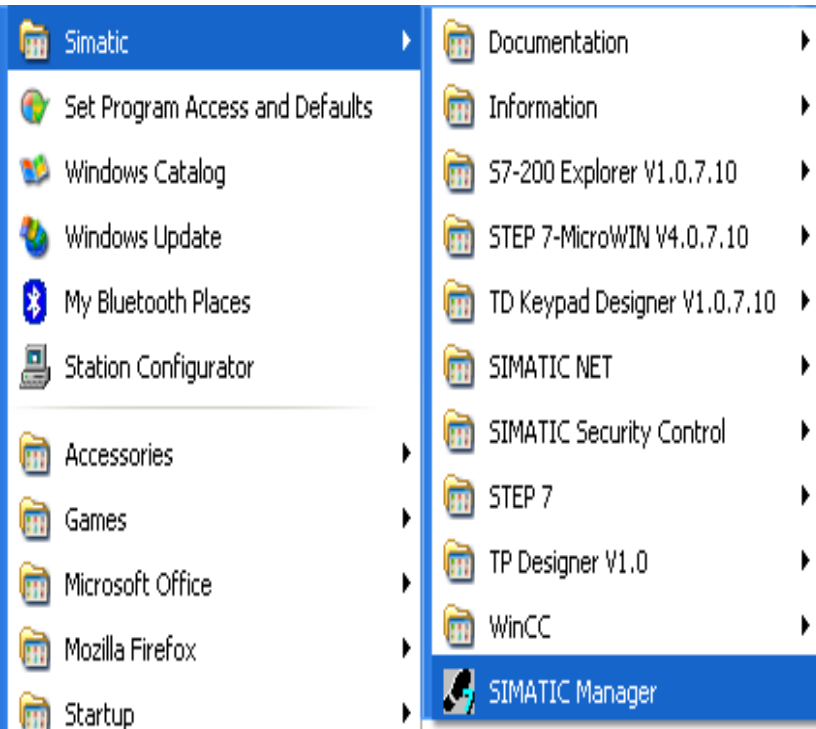
After linking, save and run the project



S7 Simulator software is not opened so wincc can not communicate with plc

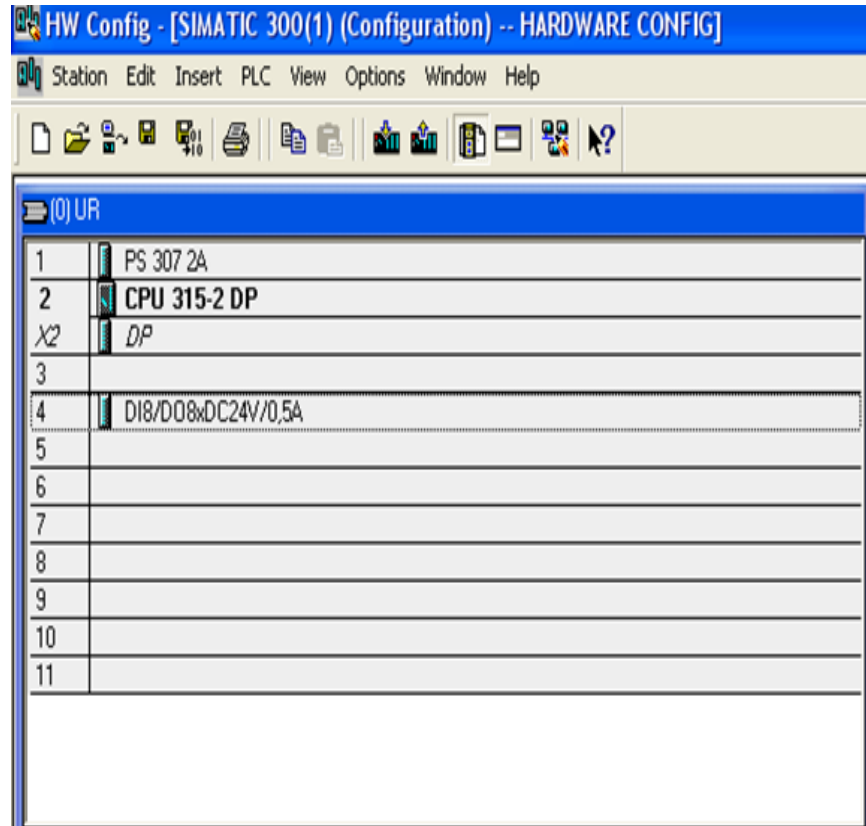
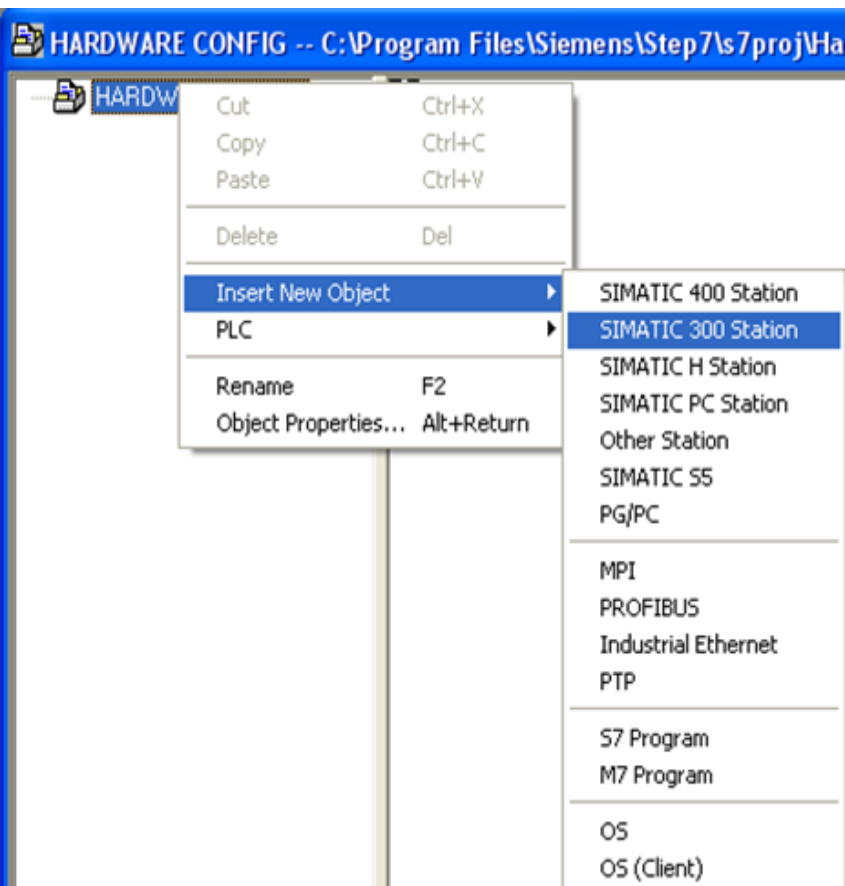
# WinCC Communicate with PLC

Open Simatic manager, create a Project, enter appropriate name



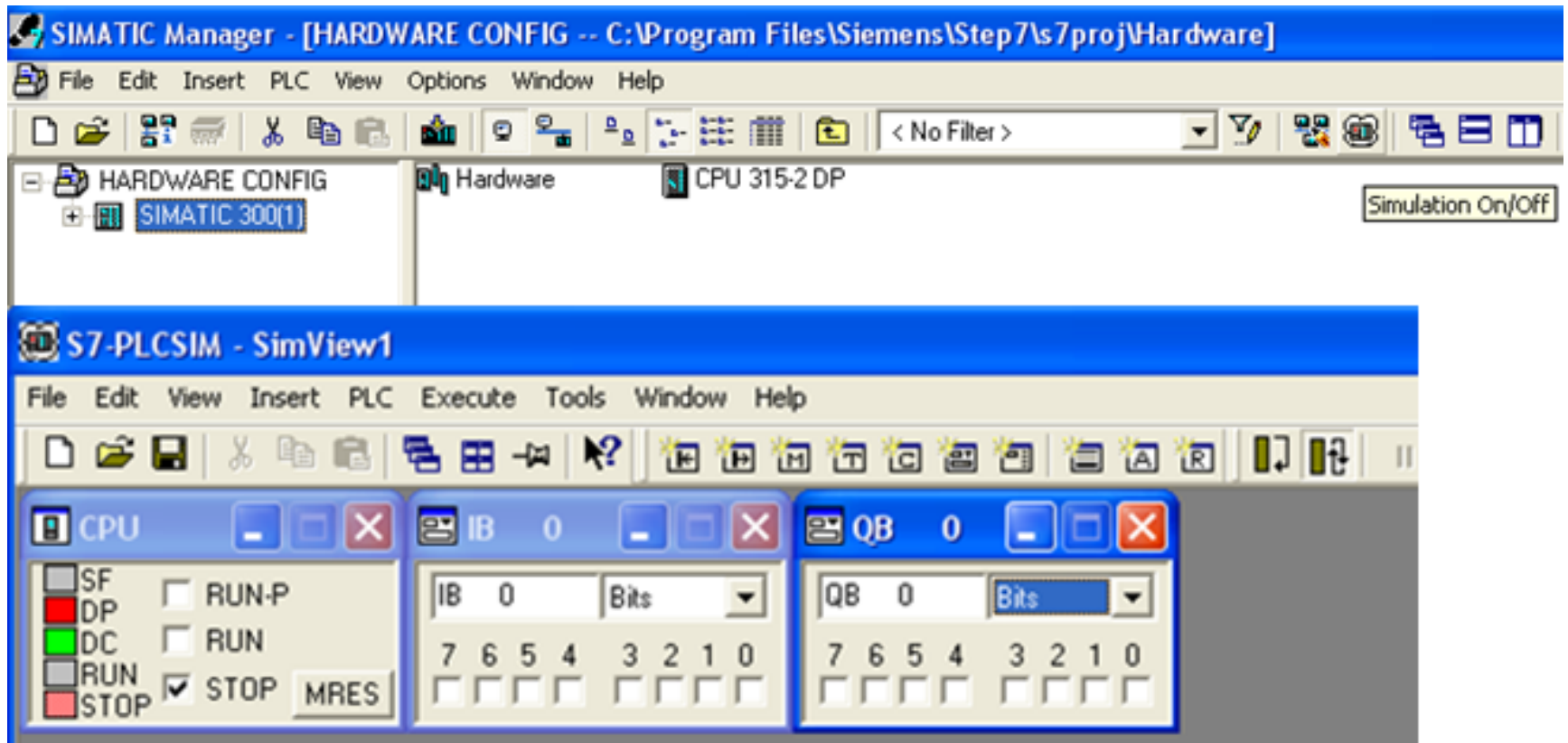
# WinCC Communicate with PLC

Configure hardware for S7 station, insert only the CPU



# WinCC Communicate with PLC

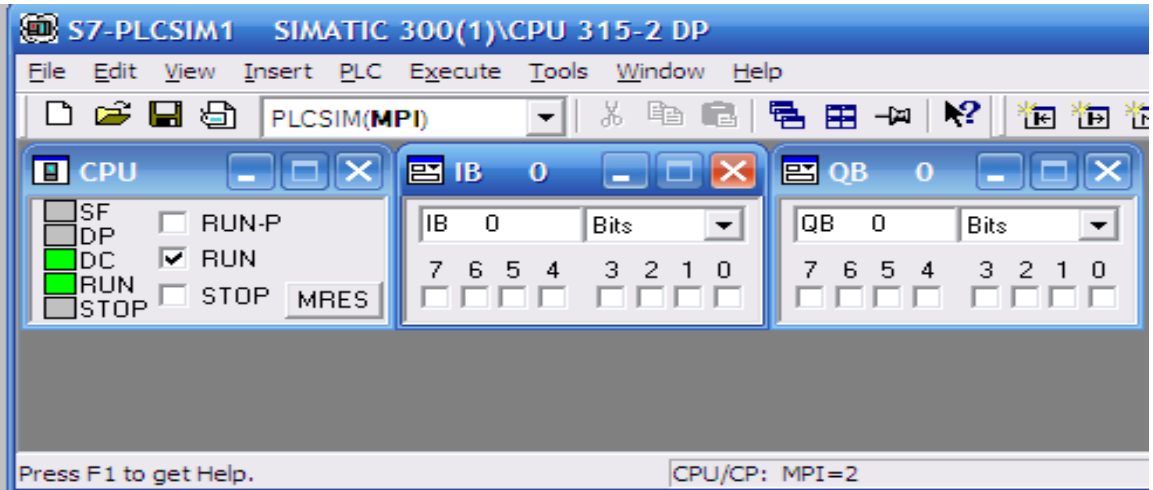
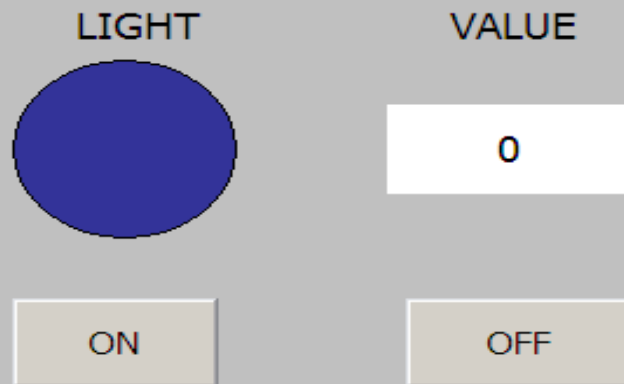
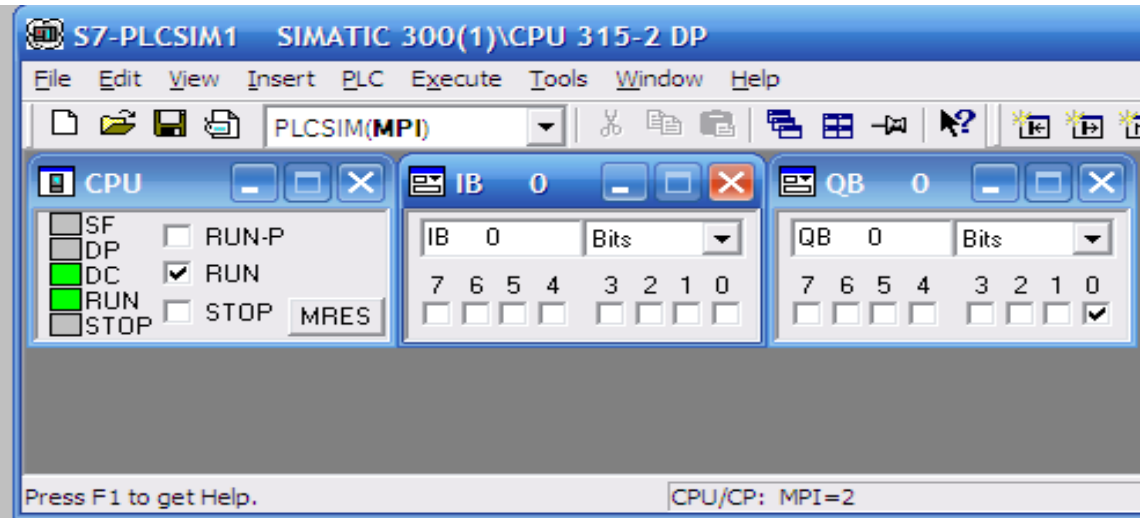
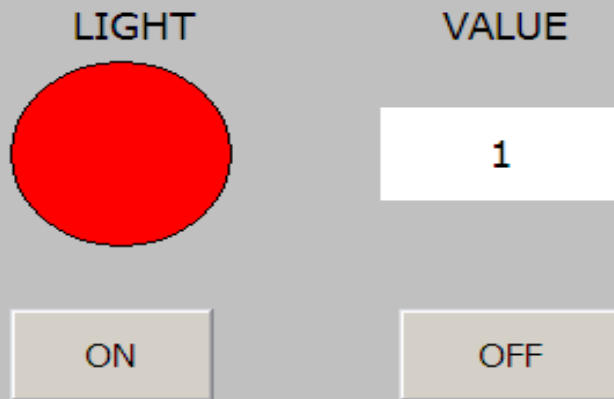
Open simulation software, download s7300 station and then run simulation CPU





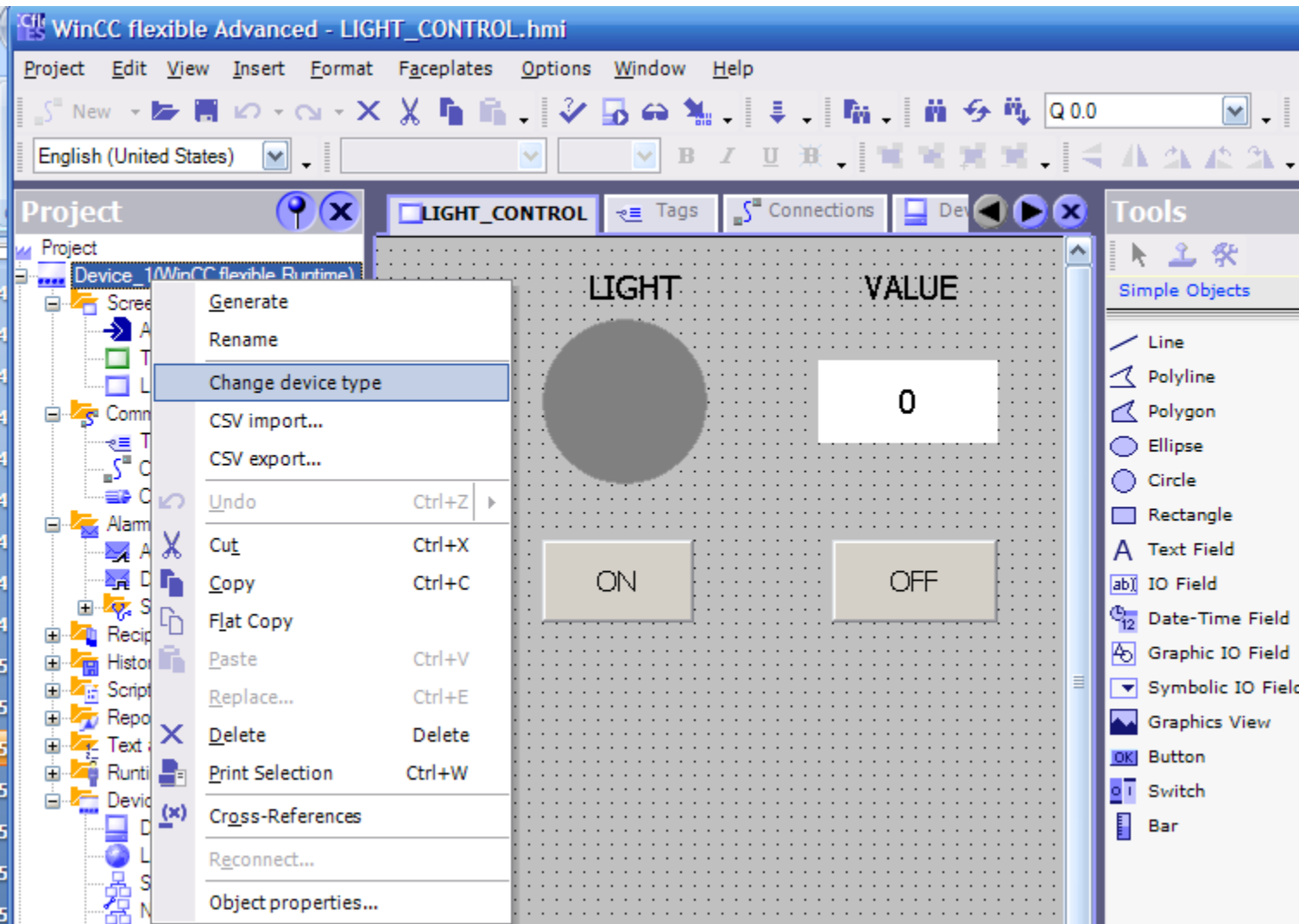
# WinCC Communicate with PLC

After run simulation CPU, Wincc will connect to the cpu and work well



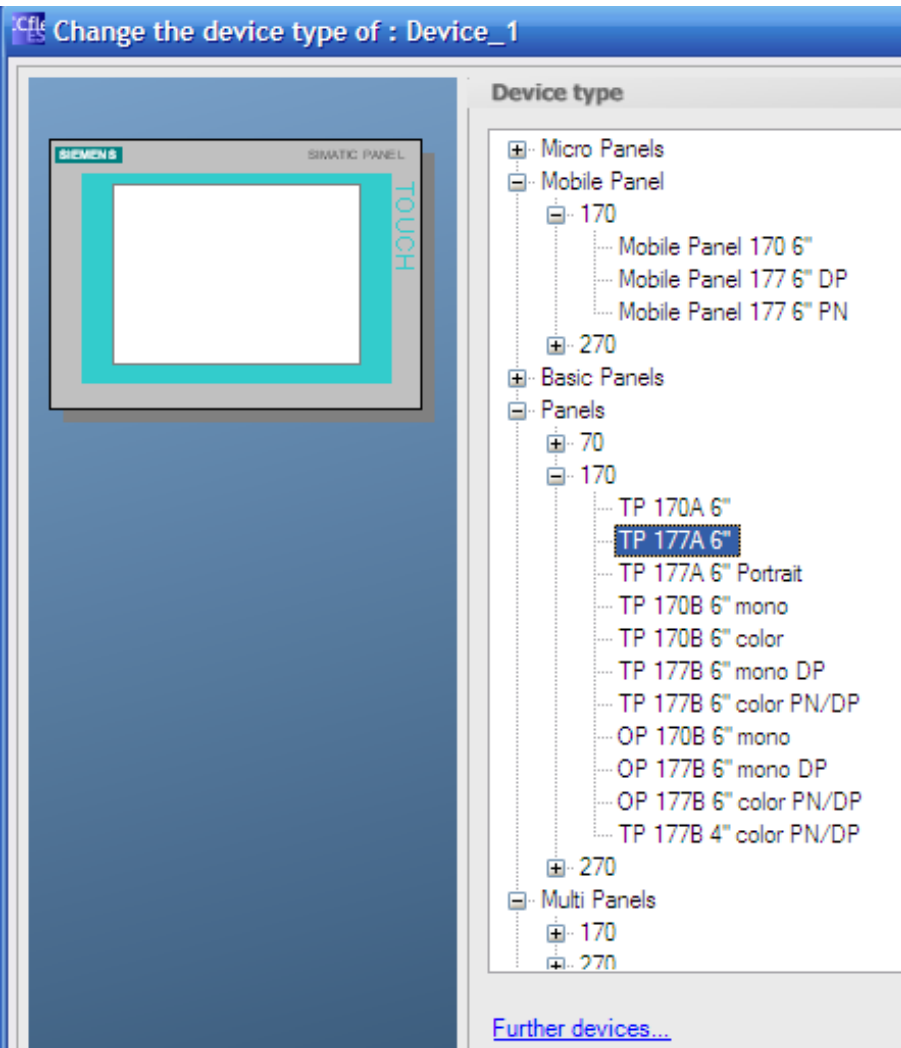
# Change the project from pc mode to HMI mode

Right click on Device\_Wincc/Change device type



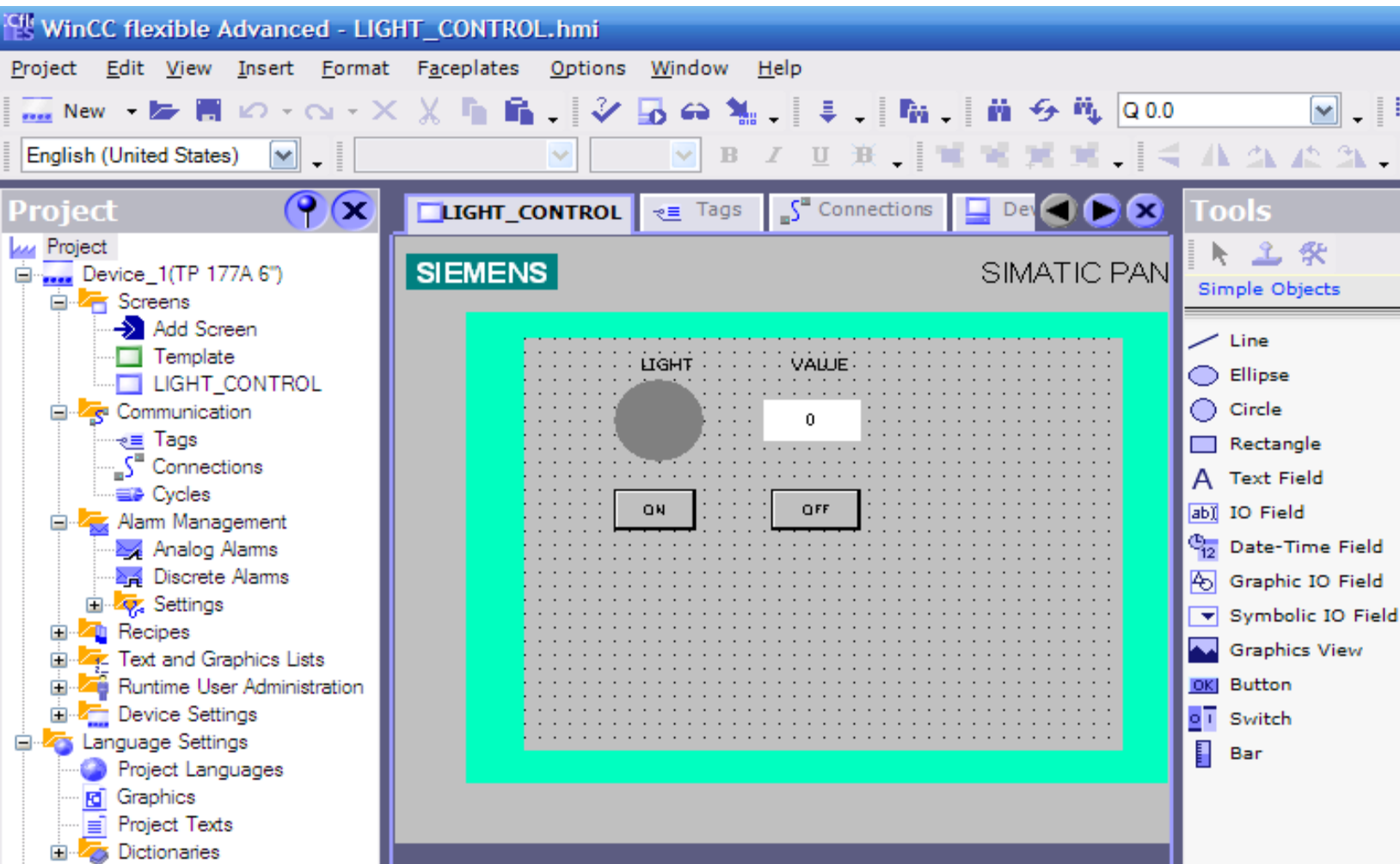
# Change the project from pc mode to HMI mode

Chose any kind of HMI which is used in the project



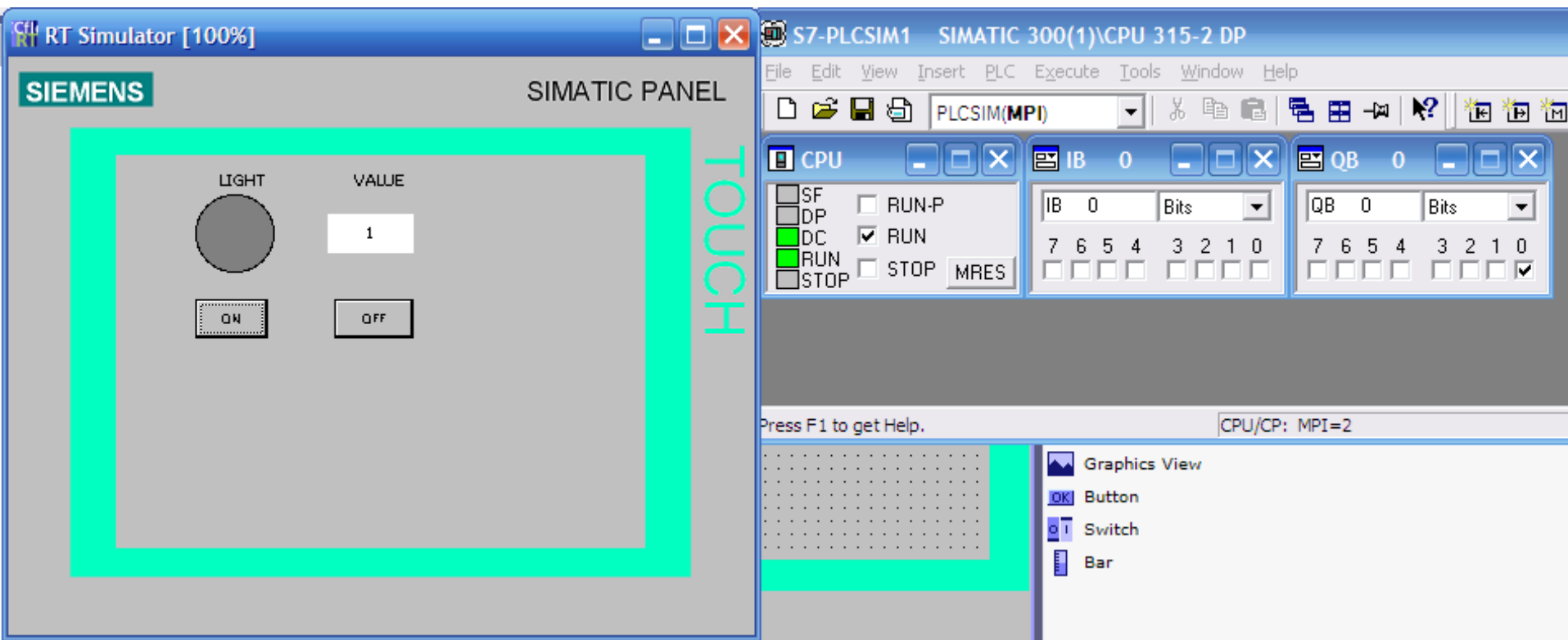
# Change the project from pc mode to HMI mode

After changing, all objects are put into the HMI



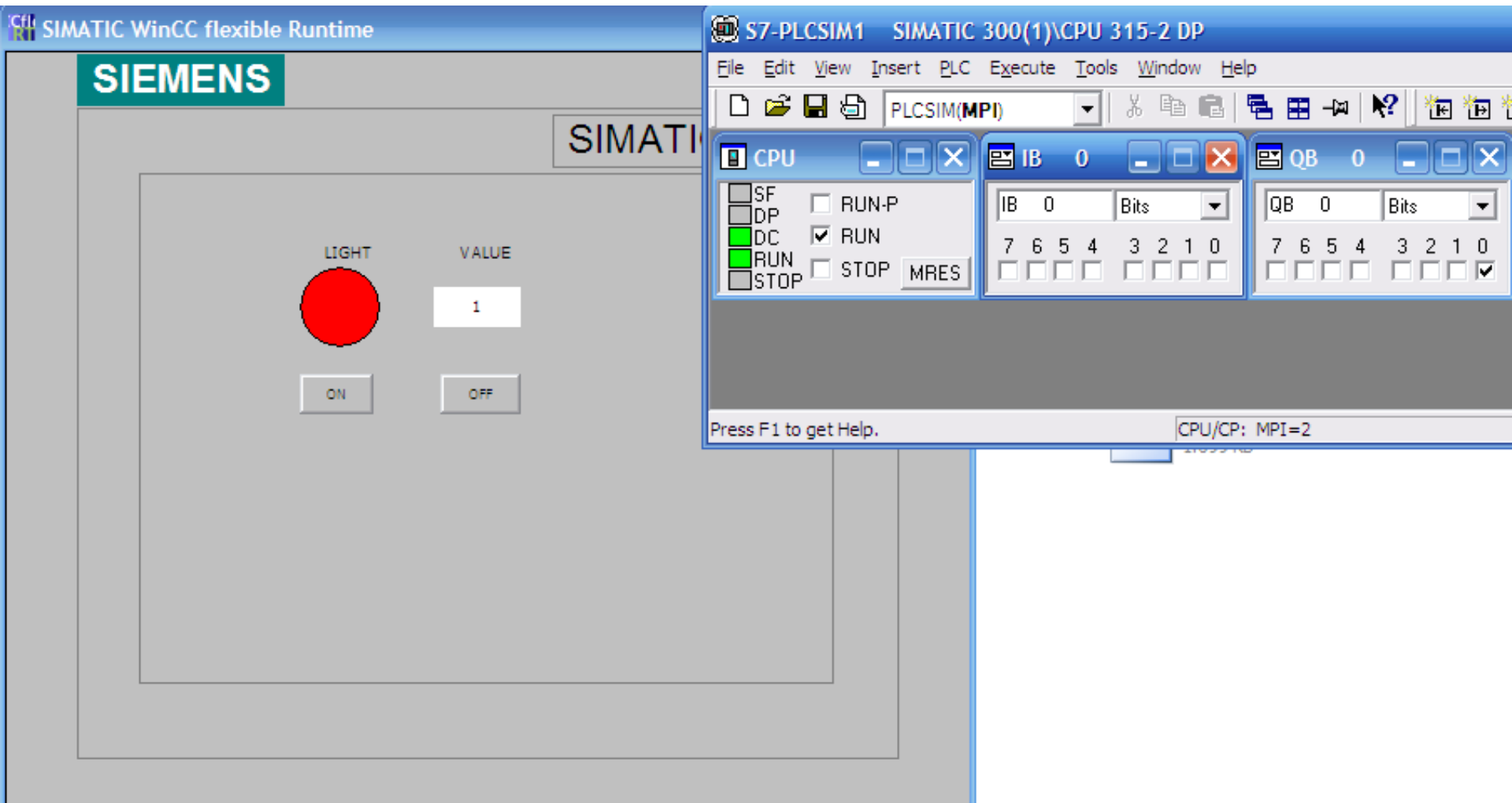
# Change the project from pc mode to HMI mode

Because HMI has no color, so the LIGHT can not change between red and green when the button is pressed



# Change the project from pc mode to HMI mode

You can chose HMIs with color to check again



# Download the project to HMI

WinCC flexible 2005

Project Edit View Insert

File Edit View Insert

English (United States)

SIEMENS

Available programming port on the HMI device

Settings for Device\_1 (WinCC flexible Runtime)

Mode: MPI/DP

Station address: 1

Transfer to: Flash, RAM

Delta transfer: On, Off

Transfer

Apply

Cancel

Screen\_1 (Screen)

General

Settings

Name: Screen\_1

Number: 1

Last press

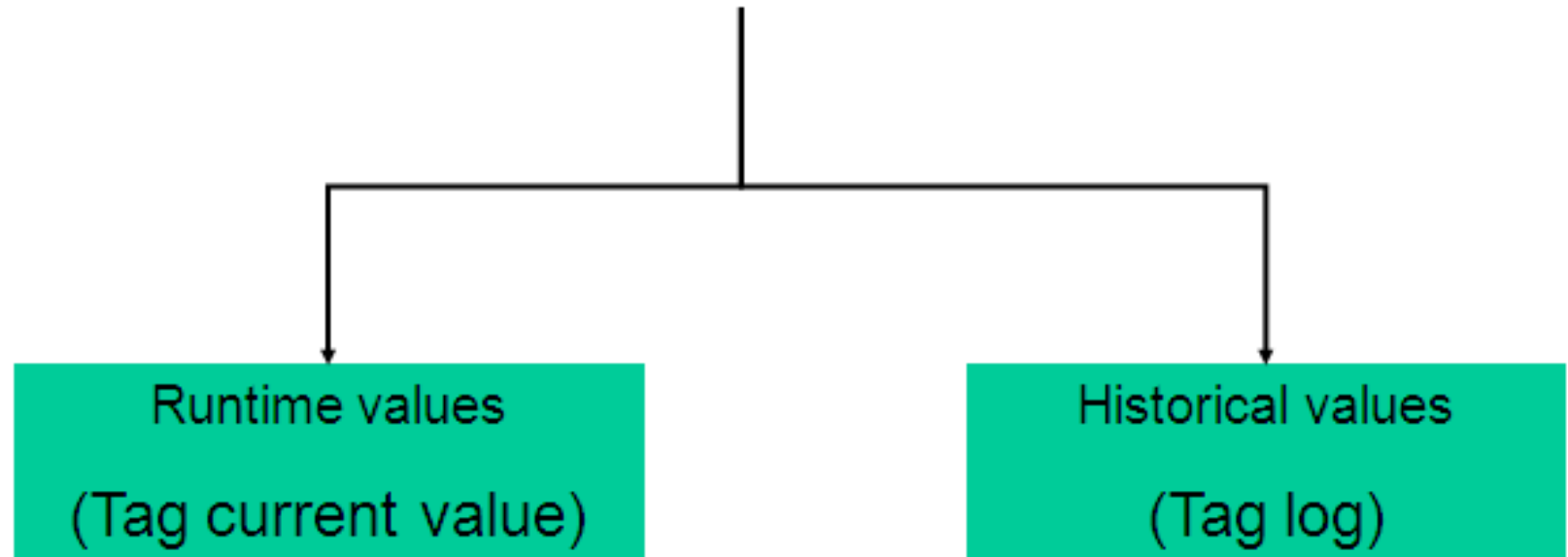
Insert the station address as you define it on the HMI itself (default=1)

Press here



# TREND

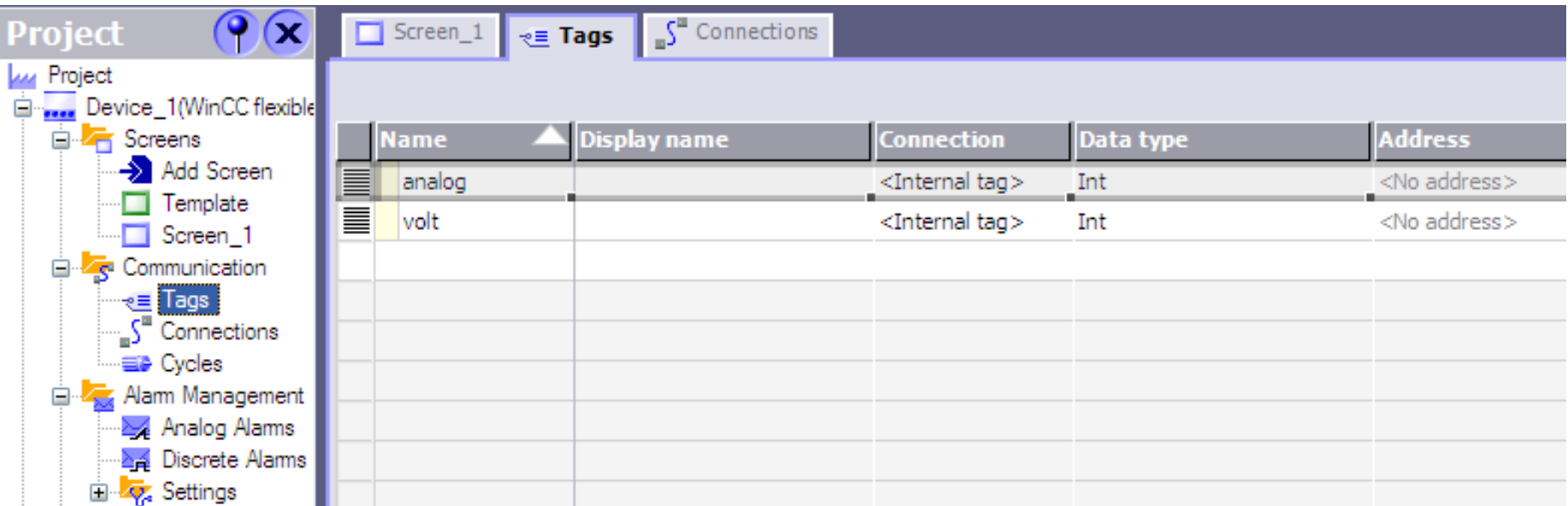
## Trends



Trend is used to display current values and historical values of control systems

# Exercise 3: Display value of internal tag

Create two internal analog tags, name volt and analog

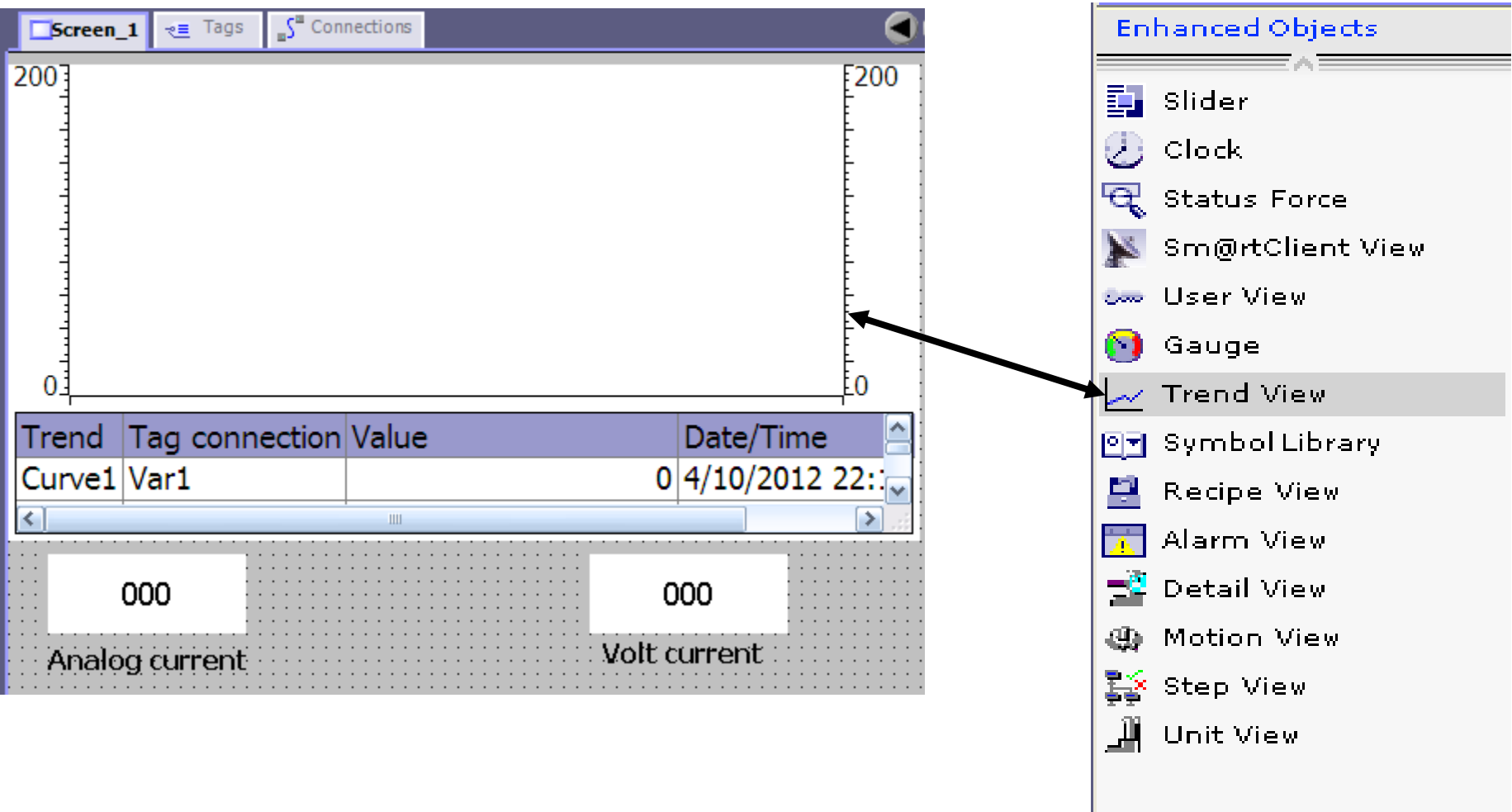


The screenshot shows the SIMATIC Manager interface. The left pane displays the project tree with 'Device\_1 (WinCC flexible)' expanded to show 'Screens' and 'Screen\_1'. The right pane shows the 'Tags' configuration for 'Screen\_1'. The table below represents the data shown in the interface.

Name	Display name	Connection	Data type	Address
analog		<Internal tag>	Int	<No address>
volt		<Internal tag>	Int	<No address>

# Exercise 3: Display value of internal tags

In Enhanced Objects, select Trend View and two I/O fields



The screenshot displays a software interface with a main window titled "Screen\_1" containing a trend view and two I/O fields. The trend view shows a graph with a y-axis from 0 to 200 and a table below it. The table has columns for Trend, Tag connection, Value, and Date/Time. The first row shows "Curve1" for the tag connection, "0" for the value, and "4/10/2012 22:00" for the date/time. Below the table are two I/O fields: "Analog current" and "Volt current", both displaying "000". To the right is a panel titled "Enhanced Objects" with a list of object types. An arrow points from the "Trend View" option in the list to the trend view in the main window.

Trend	Tag connection	Value	Date/Time
Curve1	Var1	0	4/10/2012 22:00

000 Analog current      000 Volt current

- Slider
- Clock
- Status Force
- Sm@rtClient View
- User View
- Gauge
- Trend View**
- Symbol Library
- Recipe View
- Alarm View
- Detail View
- Motion View
- Step View
- Unit View

# Display value of internal tags

Setting properties of trend: Left value, right value, axis, x axis ..etc

The screenshot displays a trend view window titled "Trend View\_1 (Trend View)". At the top, there is a data table with the following content:

Trend	Tag connection	Value	Date/Time
Curve1	Var1	0	4/10/2012 21:3

Below the table, the "Left Value Axis" configuration panel is visible. It includes a "Settings" section with the following options:

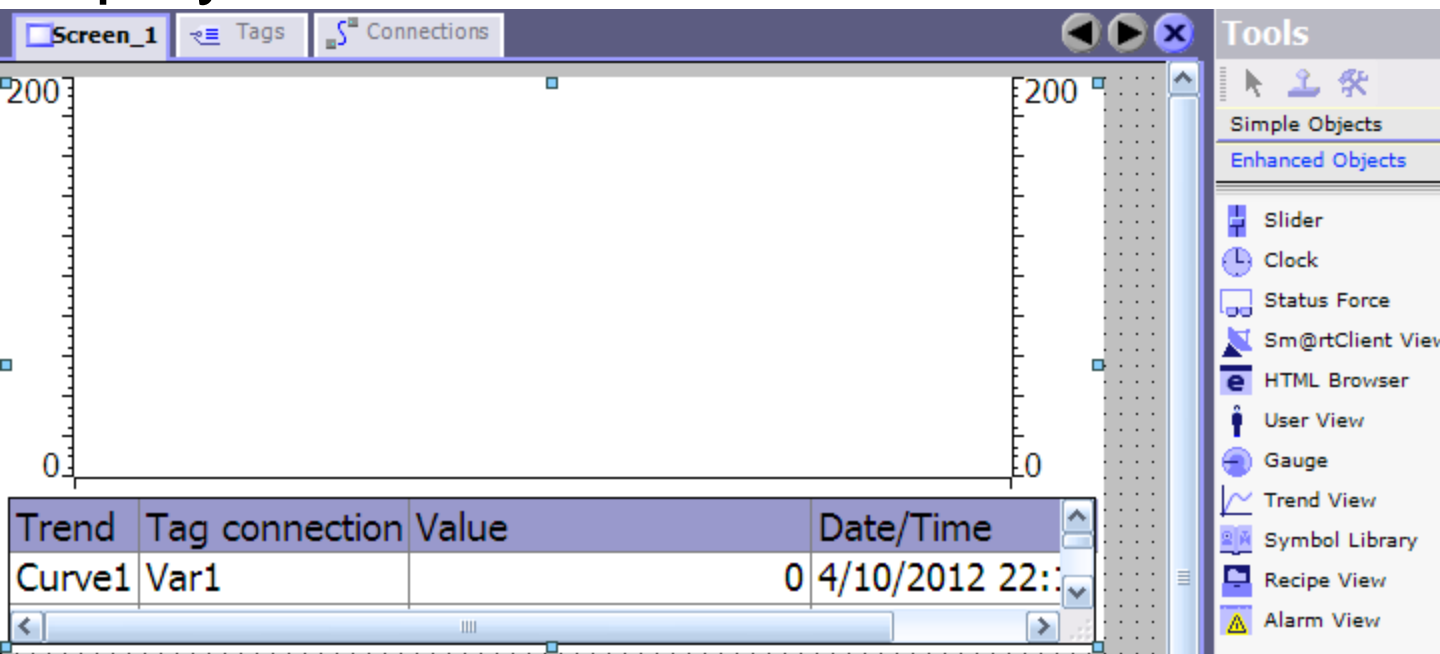
- Displayscale:
- Displaylabel:
- Axis label length: 3
- Auto range:

The "Scale" section contains the following settings:

- Axis begin: 123 0
- Axis end: 123 200
- Help line at value: 0

# Display value of internal tags

Display Trend: Select Trend, tags, color, Trend type.... to display



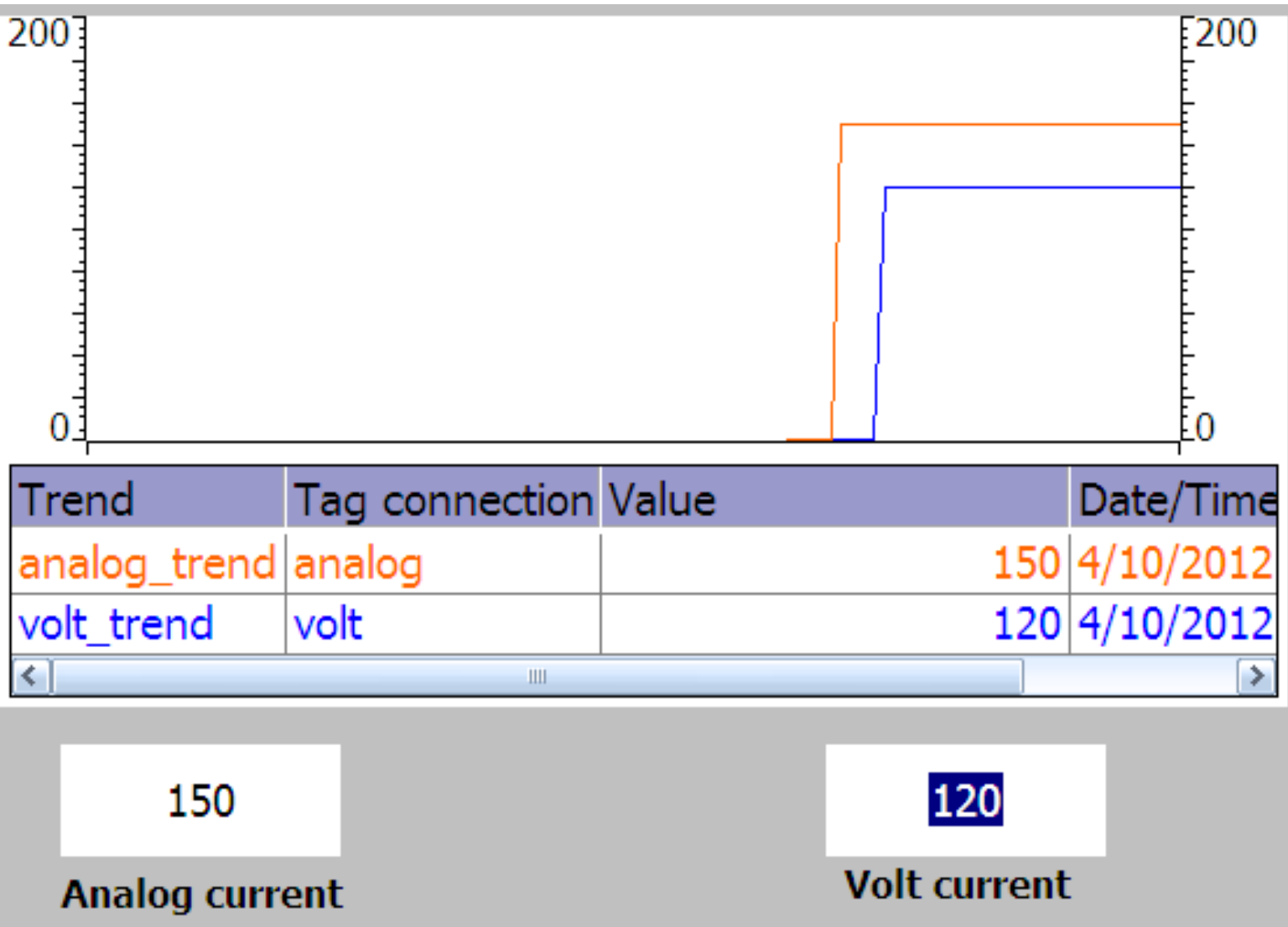
Trend View\_1 (Trend View)

- General
- Properties
  - Appearance
  - Layout
  - X axis
  - Left Value Axis
  - Right Value Axis
  - Axis
  - Flashing
  - Misc
  - Table
  - Trend**
- Animations
- Events

Name	S...	Display limi...	Trend type	Source settin...	Side	Foreground c...
analog_trend	100	No	Realtime cyclic ...	[analog]	Left	255, 102, 0
volt_trend		No	Realtime cy...	[volt]	Left	0, 0, 255

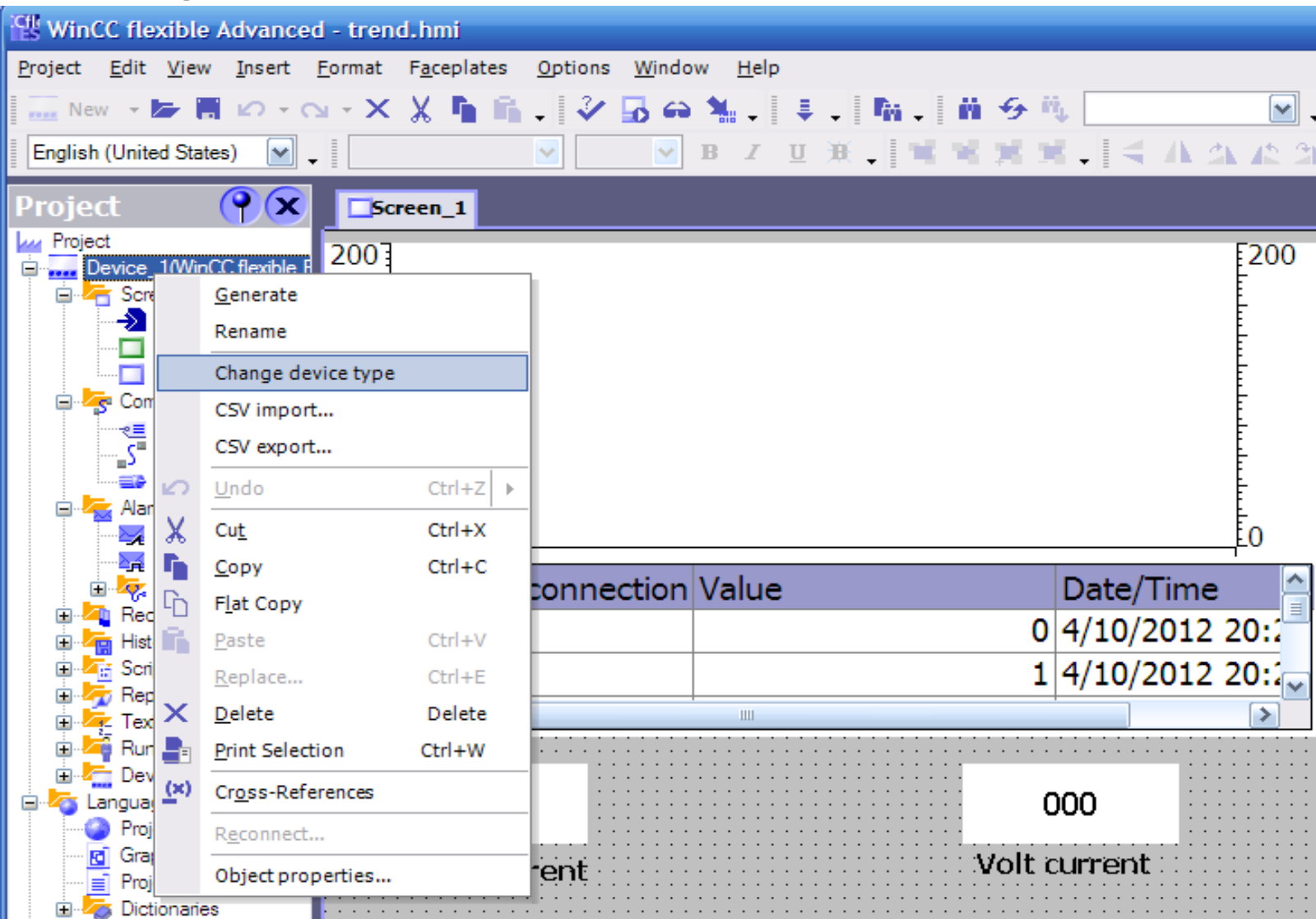
# Display value of internal tags

Run WinCC, enter value of tags to display in Trend



# Display value of internal tags

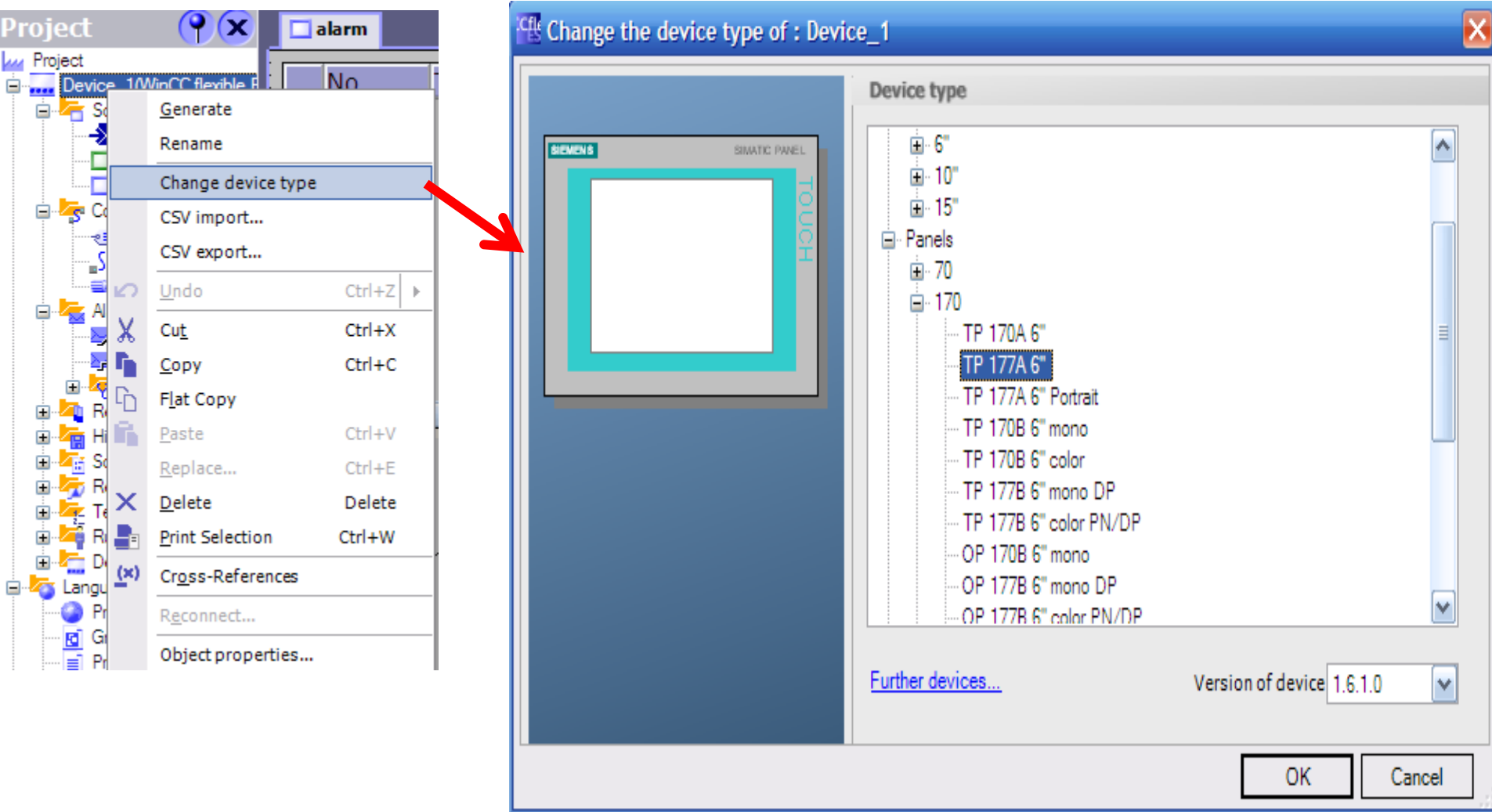
## Change the project from pc mode to HMI mode





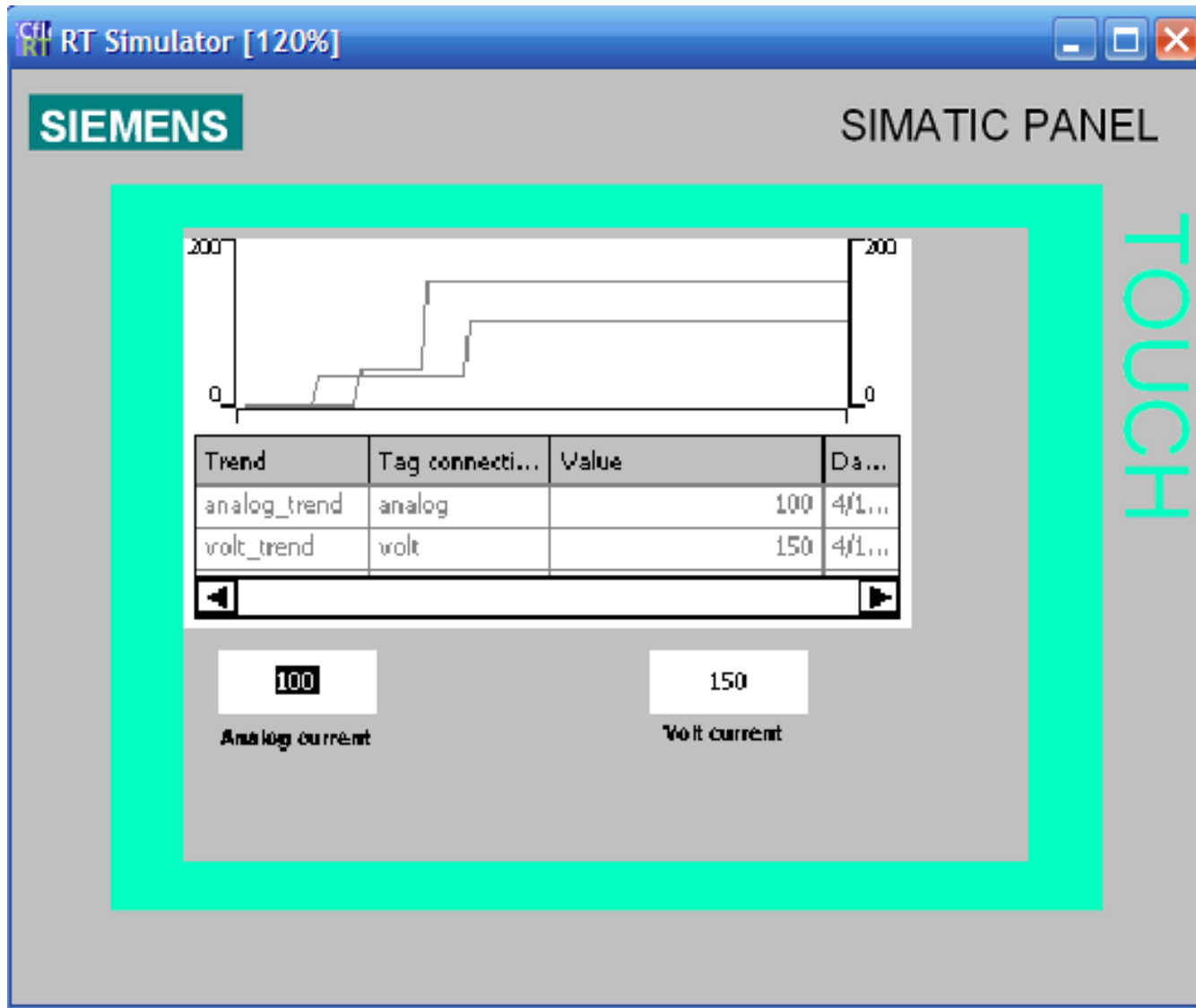
# Display value of internal tags

Chose HMI which is used in the project



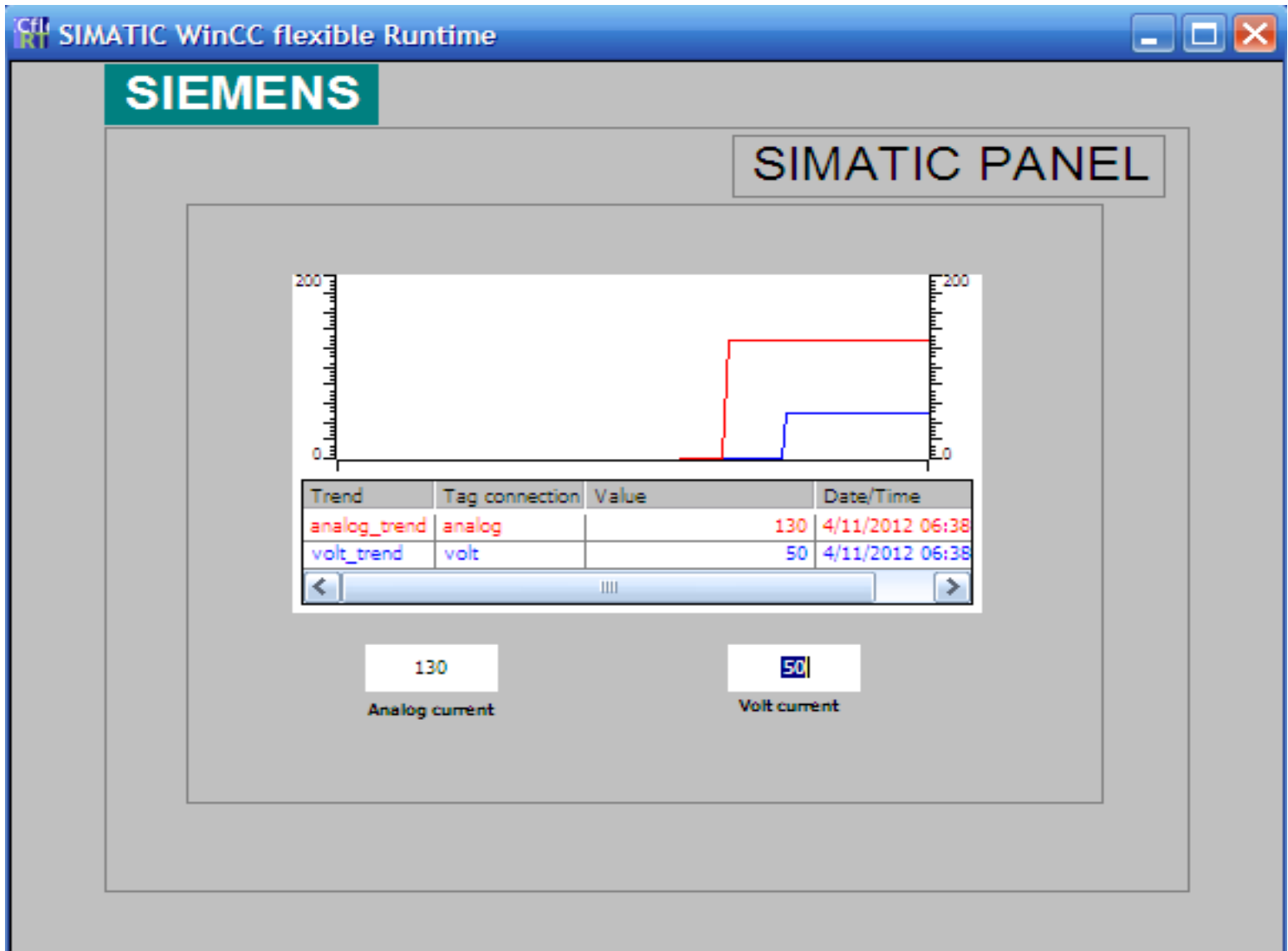
# Display value of internal tags

## After changing, Trend is displayed in HMI



# Display value of internal tags

Chose color HMI to display Trend



# ALARM

## ALARM

### System alarms

System alarms are predefined to display particular states in HMI or PLC.

### User-defined alarm

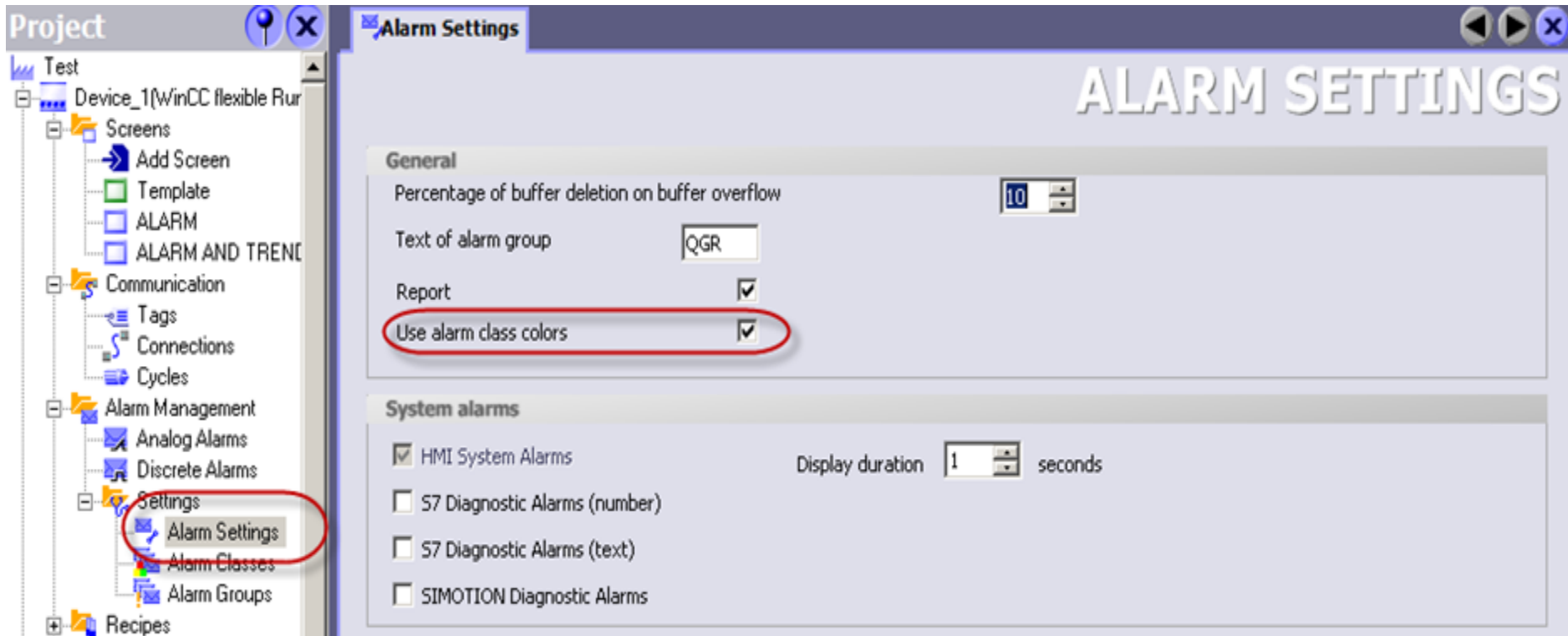
Alarm is used to display process states, measure, report process data from PLC.

### Discrete alarms

### Analog alarms

# Setting up a Alarm

In setting group, double click on alarm setting, check ***Use alarm class colors to display alarm color as runtime***



# Creating Alarm Tags

## Create internal tags

WinCC flexible Advanced - Project\_alarm.hmi

Project Edit View Insert Format Faceplates Options Window Help

New [Icons] 9000 [Dropdown] [Icons]

English (United States) [Dropdown]

Project [Icons]

alarm Alarm Classes Alarm Settings Analog Alarms **Tags** Discrete Alarms Alarm Logs

Name	Display name	Connection	Data type	Address
analog		<Internal tag>	Int	<No address>
volt		<Internal tag>	Int	<No address>
limit		<Internal tag>	Int	<No address>
sensor_fail		<Internal tag>	Int	<No address>

# Creating alarm tag

## Create analog Alarm, set limit and mode trigger

The screenshot shows the WinCC flexible Advanced software interface. The title bar reads 'WinCC flexible Advanced - Project\_alarm.hmi'. The menu bar includes 'Project', 'Edit', 'View', 'Insert', 'Format', 'Faceplates', 'Options', 'Window', and 'Help'. The toolbar contains various icons for file operations and editing, with a numeric input field set to '9000'. The language is set to 'English (United States)'. The left sidebar shows a project tree with 'Analog Alarms' selected under 'Alarm Management'. The main workspace displays a table titled 'ANALOG ALARMS' with the following data:

Text	Number	Class	Trigger tag	Limit	Trigger mode
analog_over	1	Errors	analog	1000	On rising edge
volt_over	2	Errors	volt	450	On falling edge
limit_fail	3	Errors	limit	1500	On falling edge

# Creating Alarm Tags

Create a discrete Alarm, chose bit number to trigger

C flexible Advanced - Project\_alarm.hmi

Edit View Insert Format Faceplates Options Window Help

United States)

alarm Alarm Classes Alarm Settings Analog Alarms Tags Discrete Alarms Alarm Logs

## DISCRETE ALARM

Text	Number	Class	Trigger Tag	Trigger bit	Trigger address
sensor_fail	1	Errors	sensor_fail	0	0



# Display Alarm

In Enhanced Objects Group, Select Alarm View and 4 I/O fields to enter value of tags

The screenshot shows a software interface for displaying alarms. The main window has a title bar with tabs: 'alarm', 'Alarm Classes', 'Alarm Settings', 'Analog Alarms', 'Tags', and 'Discrete Alarms'. Below the tabs is a table with columns: 'No.', 'Time', 'Date', 'Status', 'Text', 'GR', and 'PLC'. The table is currently empty. Below the table are four input fields, each containing '000000', labeled 'Analog alarm', 'Volt alarm', 'Limit alarm', and 'Sensor alarm'. To the right, a menu titled 'Enhanced Objects' is open, listing various view types: Slider, Clock, Status Force, Sm@rtClient View, User View, Gauge, Trend View, Symbol Library, Recipe View, Alarm View, Detail View, Motion View, Step View, and Unit View. An arrow points from the 'Alarm View' option in the menu to the main alarm display area.

# Display Alarm

*Run wincc, enter value of tags over and under limit to display alarm*

	No.	Time	Date	Status	Text	GR	PLC
!	1	23:46:42	4/10/2012	C	sensor_fail	0	<inter
!	1	23:46:25	4/10/2012	C	analog_over	0	<inter
!	2	23:46:17	4/10/2012	CD	volt_over	0	<inter
!	3	23:46:17	4/10/2012	C	limit_fail	0	<inter

6000

700

400

1

Analog alarm

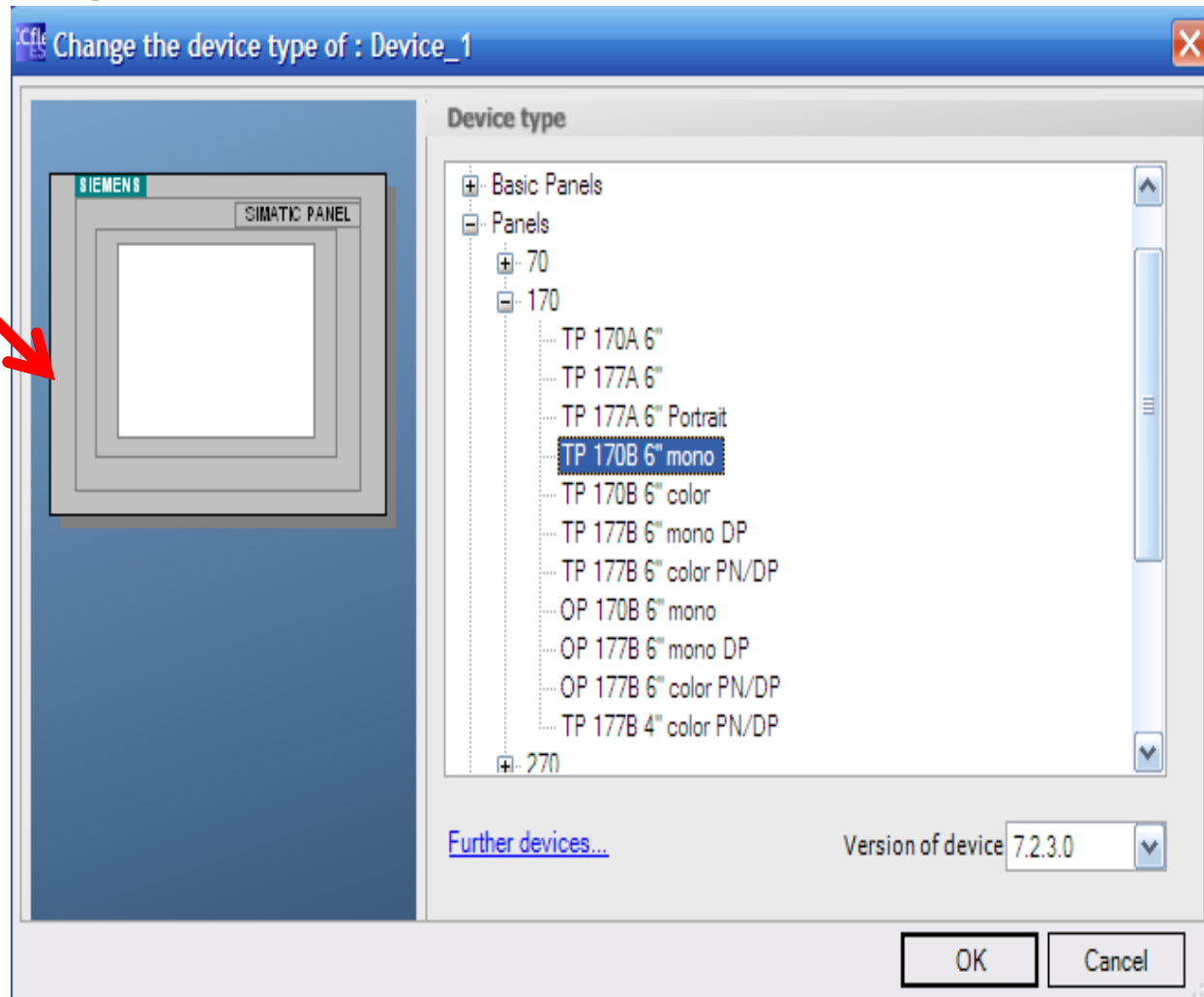
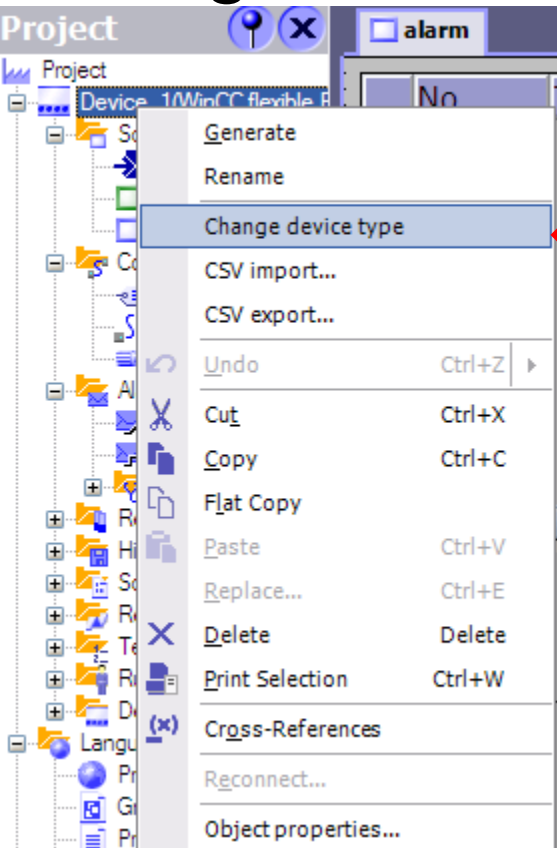
Volt alarm

Limit alarm

Sensor alarm

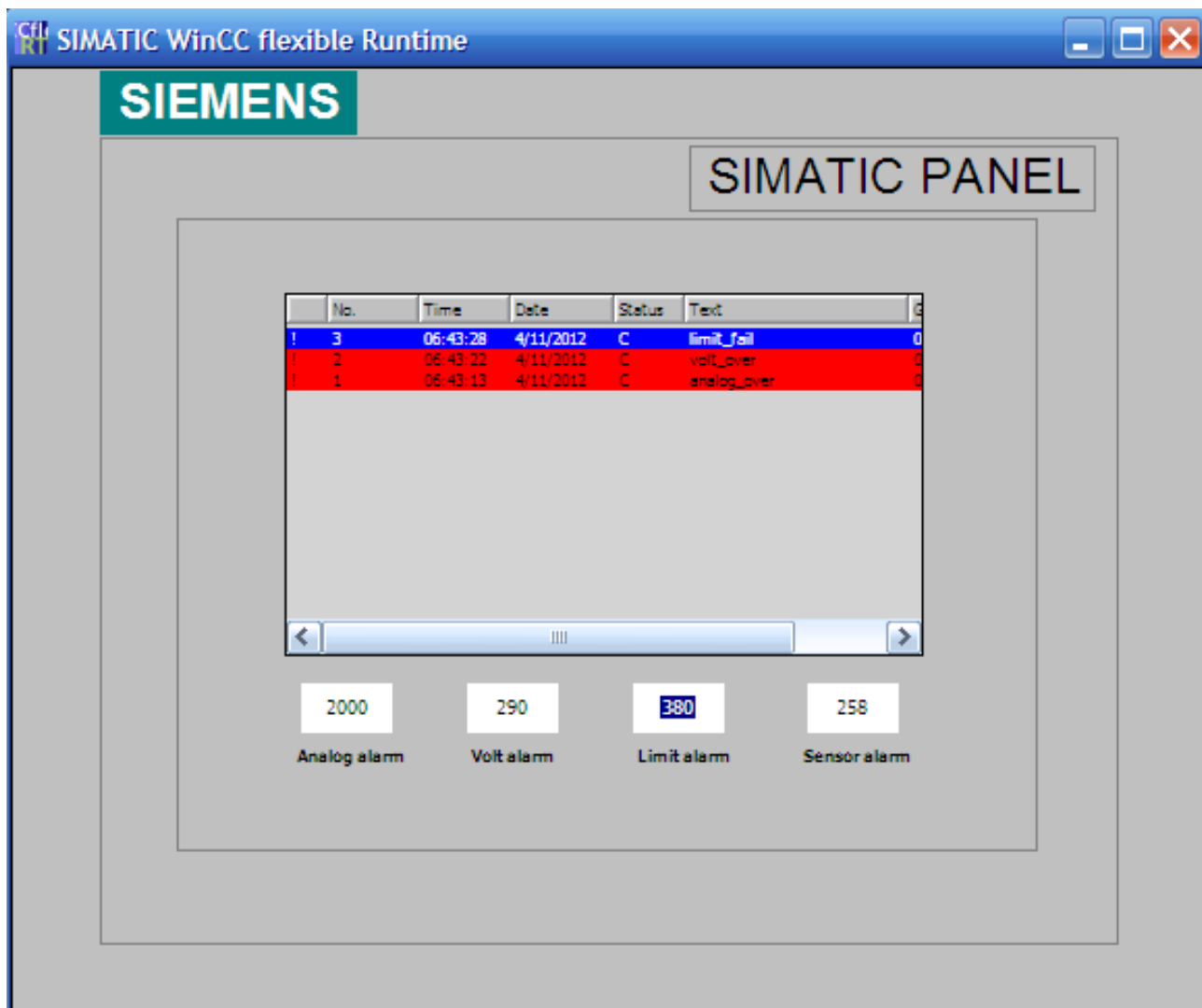
# Display Alarm in HMI

## Change wincc from pc mode to HMI mode



# Display Alarm in HMI

After changing, alarms are displayed in HMI



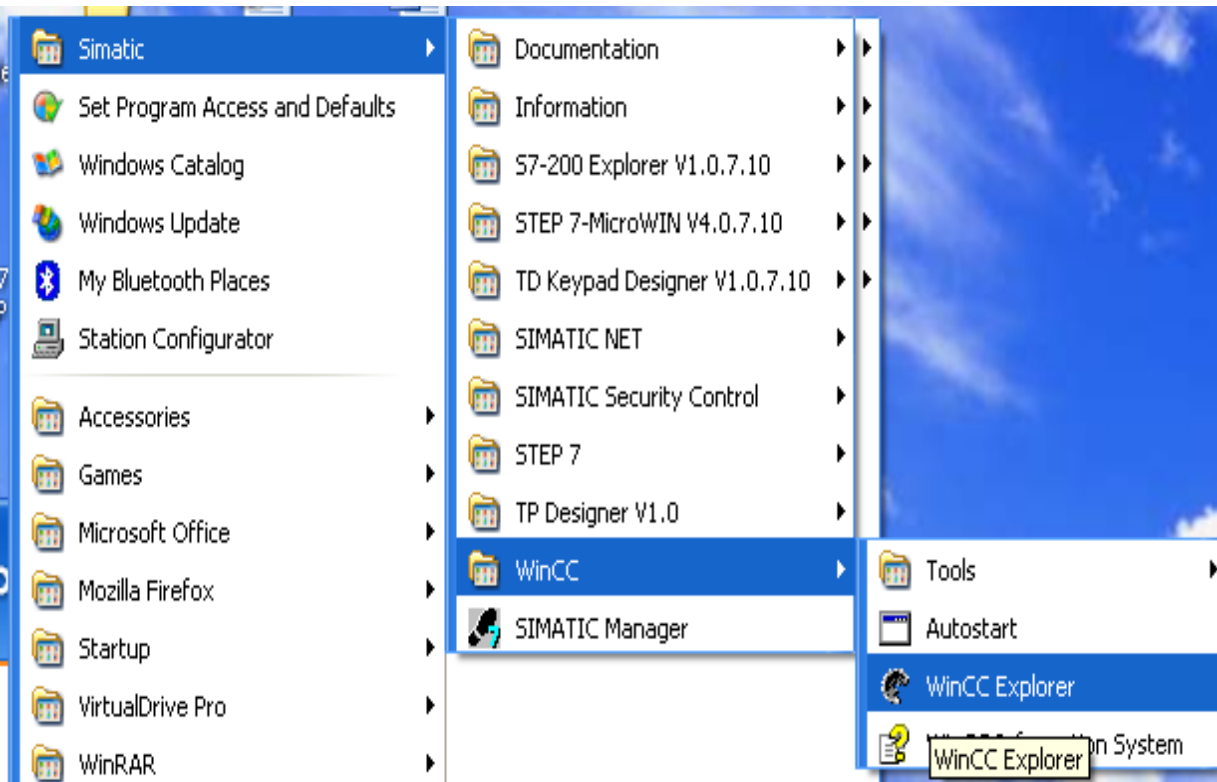
# WINCC

## Thiết kế ứng dụng dùng WinCC

- Khởi động WinCC
- Tạo một Project mới
- Tạo Tag nội để mô phỏng hoạt động của WinCC.
- Tạo giao diện điều khiển và giám sát dùng Tag nội.
- Tạo Driver kết nối PLC
- Tạo Tag ngoại (External Tag) để liên kết với S7
- Tạo giao diện điều khiển và giám sát thiết bị dùng Tag ngoại.
- Thiết lập các thuộc tính và viết chương trình cho các đối tượng.
- Bài tập ứng dụng.

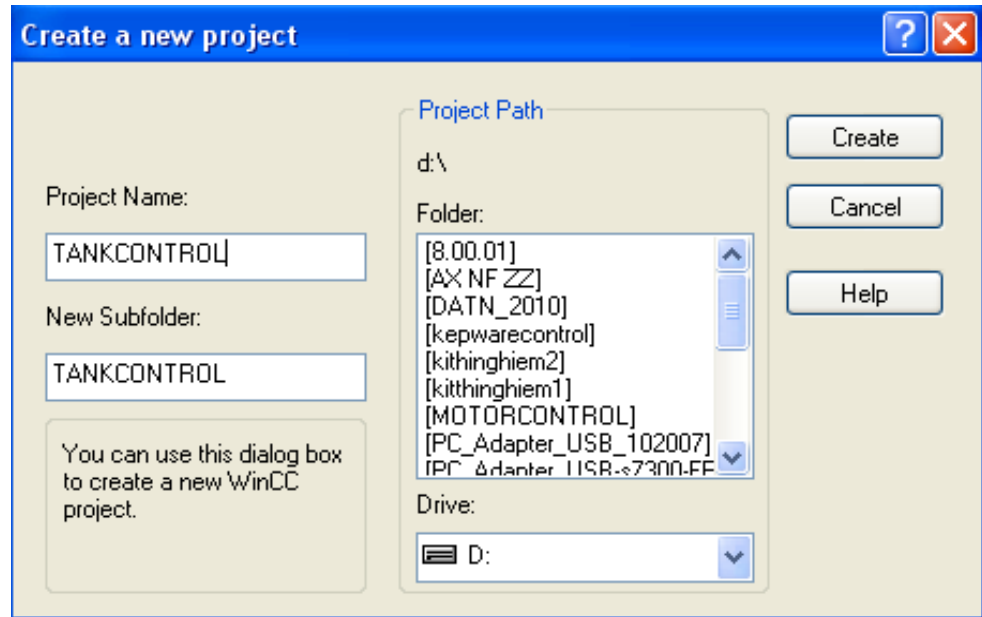
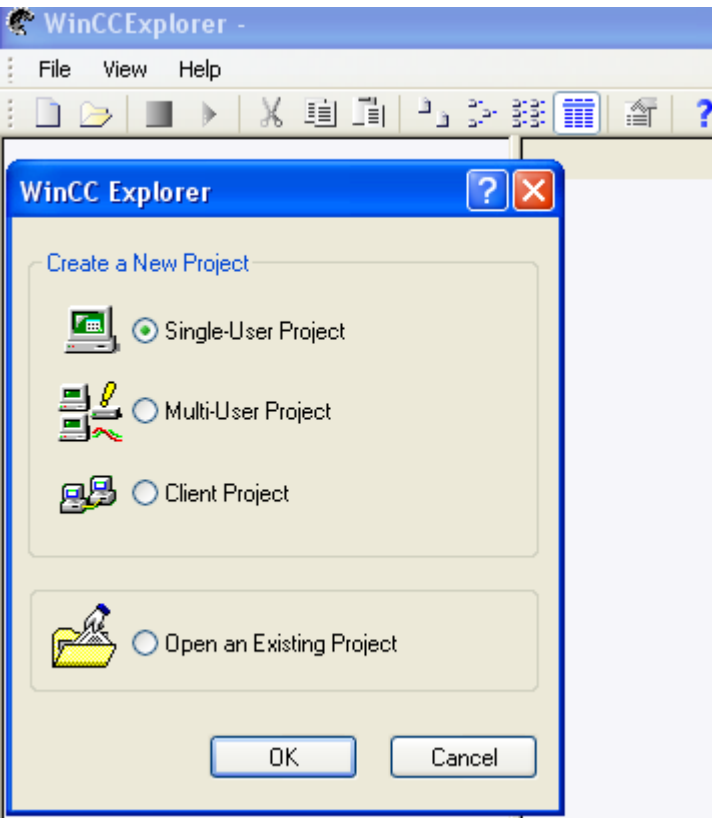
# WINCC

## Khởi động WinCC

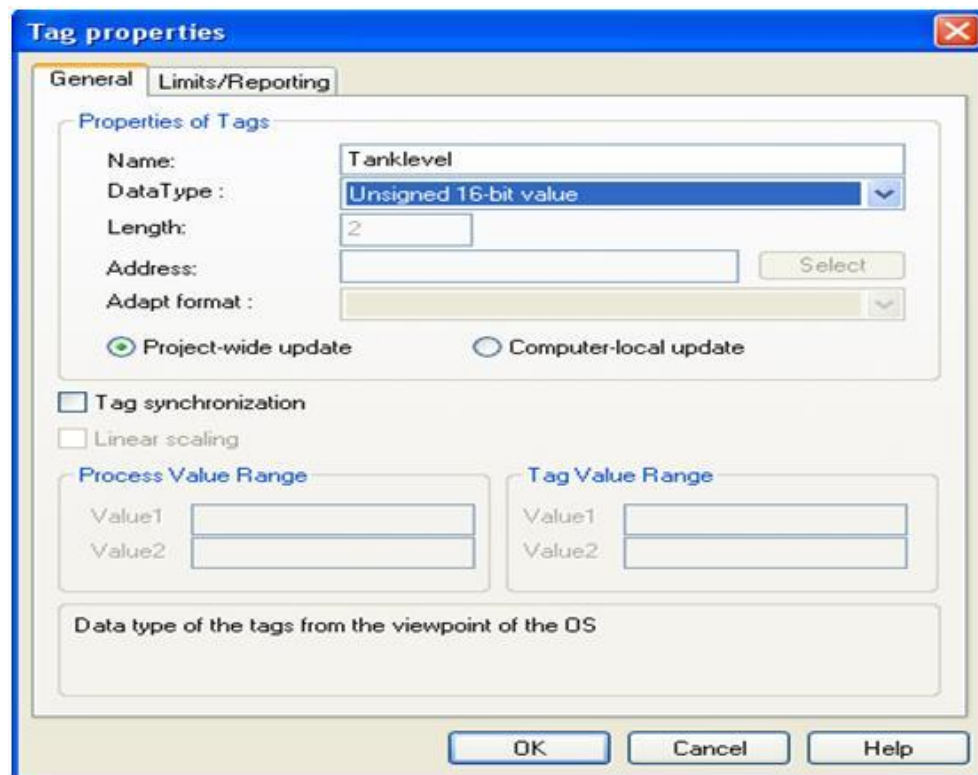
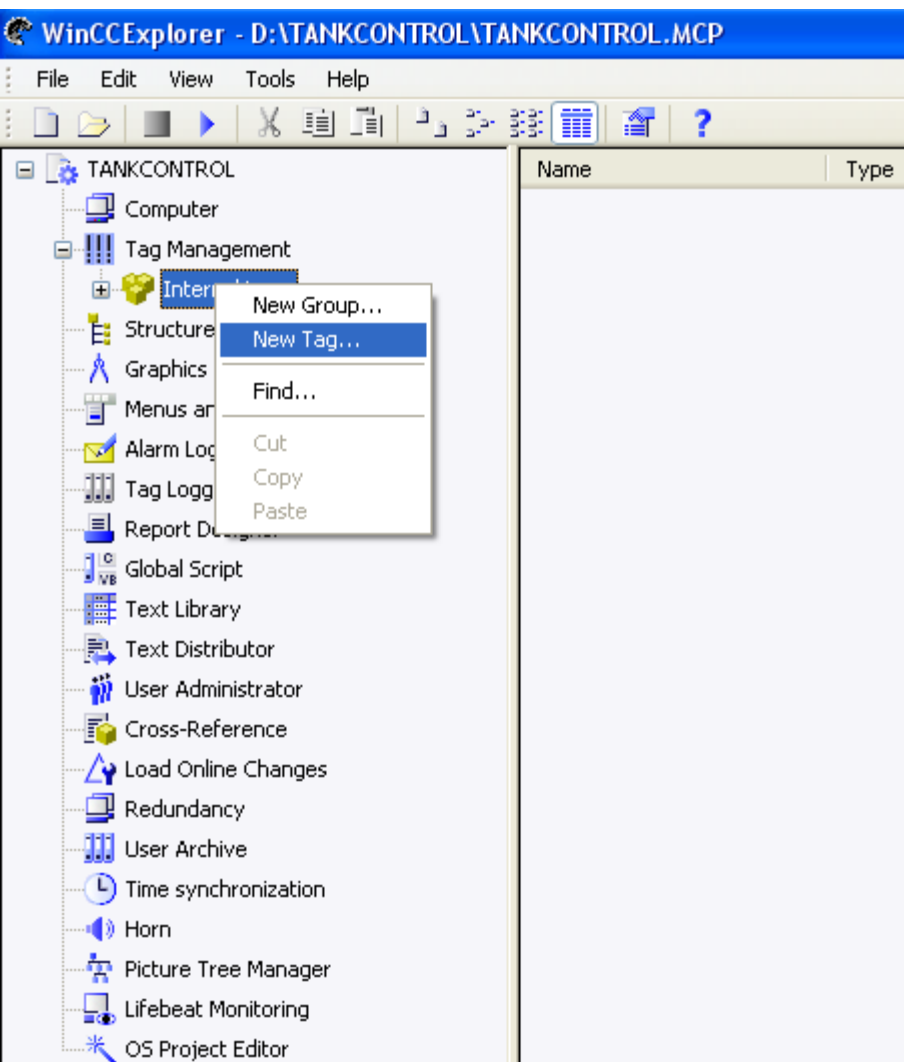


Tạo một project mới, đặt tên, chọn thư mục để lưu project.

# WINCC

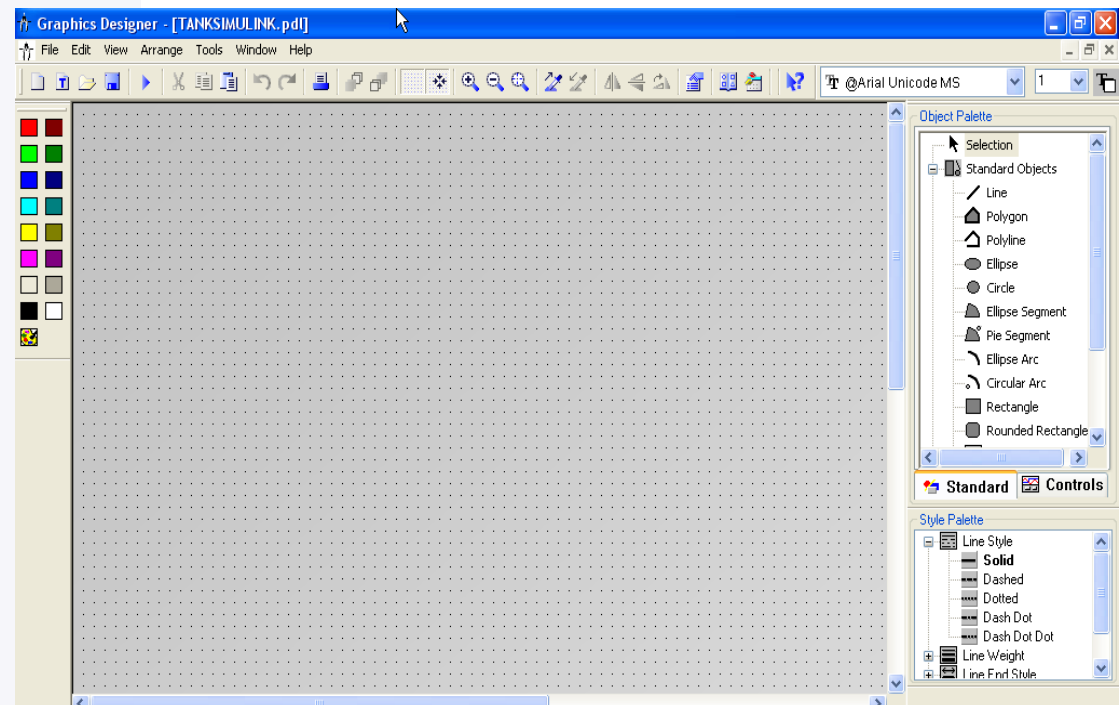
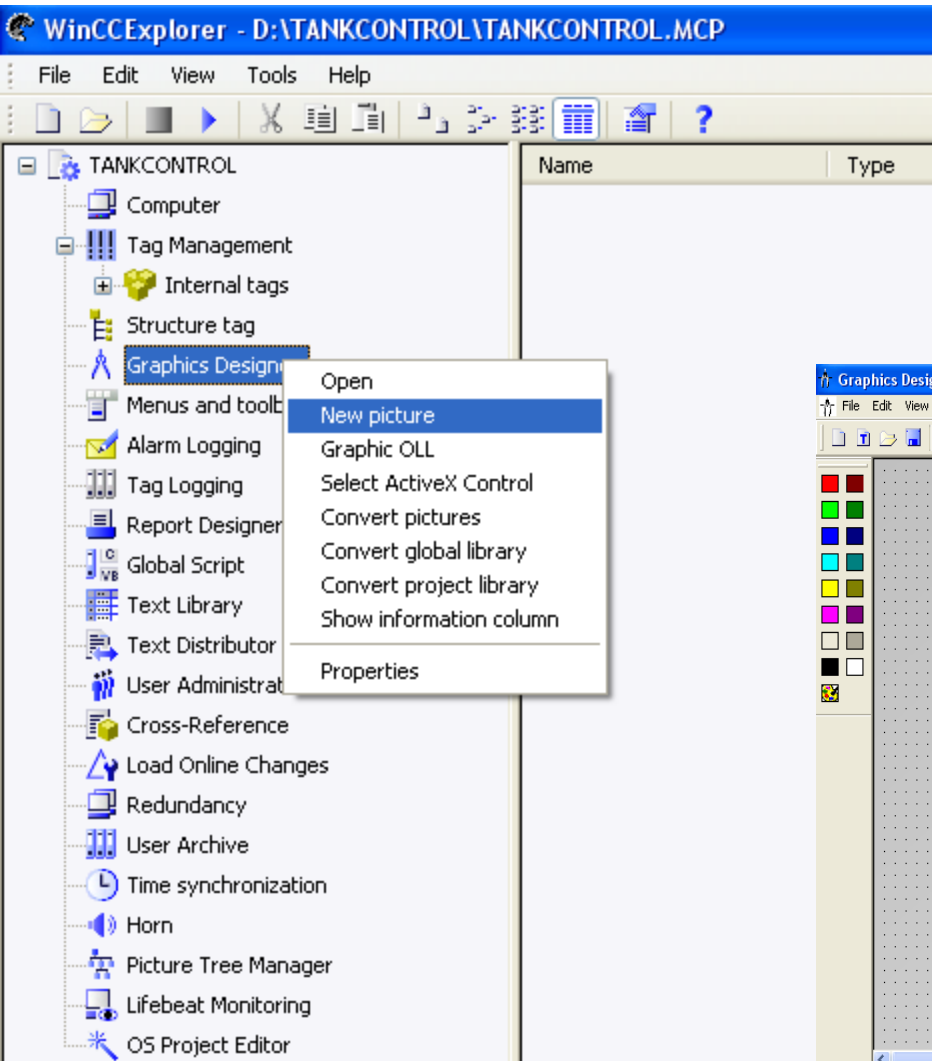


# Tạo Tag nội (Internal Tag) trong WinCC, chọn kiểu dữ liệu



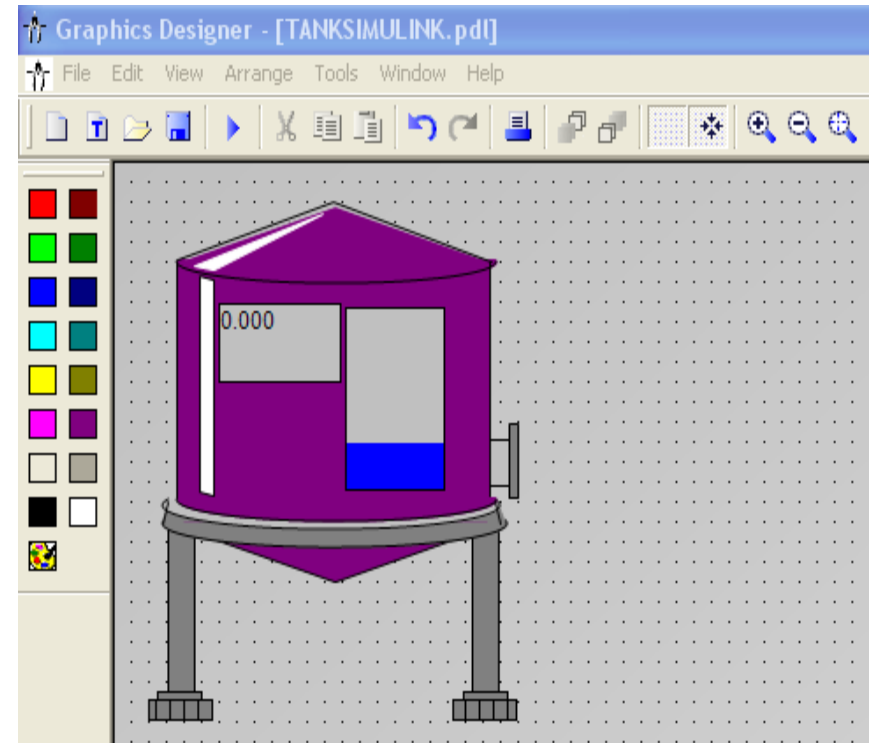
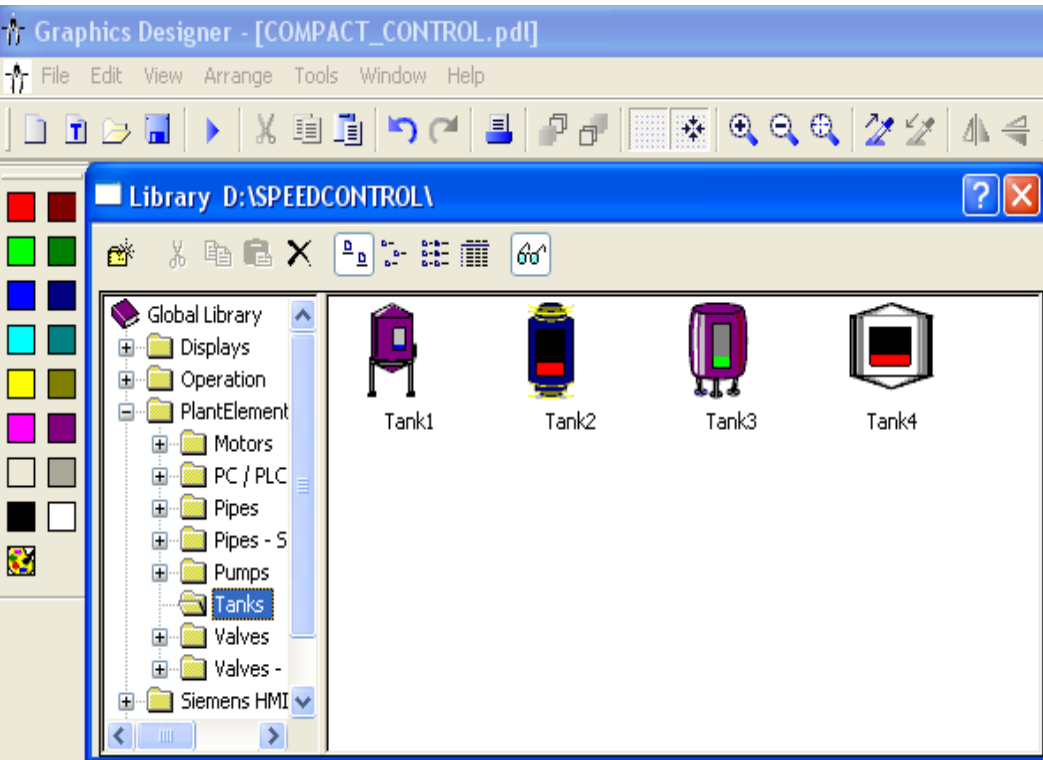


# Tạo giao diện mô phỏng có tên là TANKSIMULINK



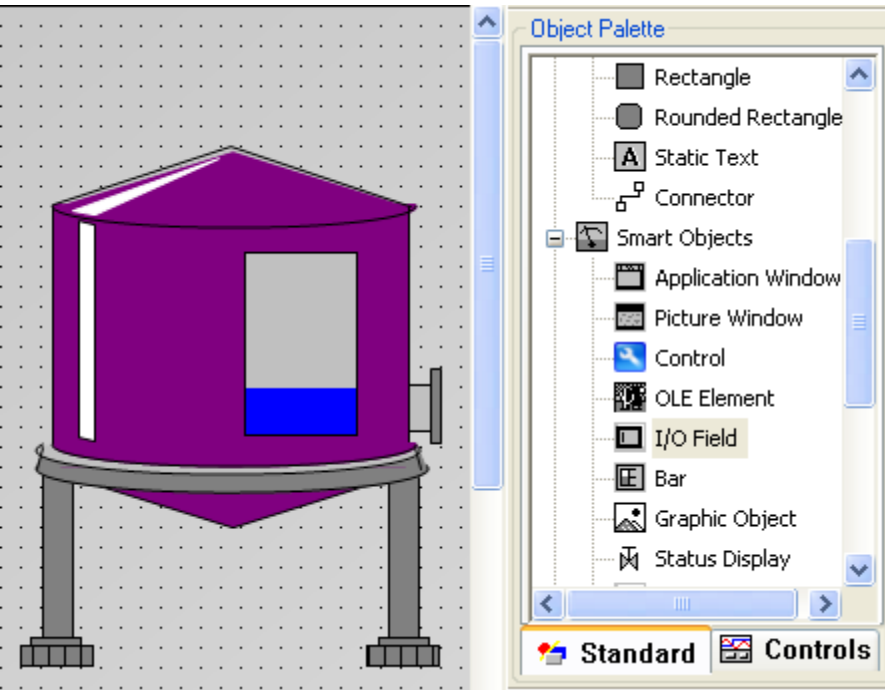
# WINCC

Tạo các đối tượng cần điều khiển và giám sát trên giao diện điều khiển



# WINCC

## Tạo đối tượng xuất nhập dữ liệu dùng I/O Field



**Thiết lập thuộc tính cho các đối tượng.**

**Thiết lập cho Tank:** Chọn Tank/Properties/Tag assignment/Fill Level/Chọn tag có tên là Tanklevel đã tạo trước đó.

# WINCC

The image shows two overlapping windows from the SIMATIC Manager software. The top window is the 'Object Properties' dialog for 'Tank1'. The bottom window is the 'Tags' dialog for the project 'D:\TANKCONTROL\TANKCONTROL.mcp'.

**Object Properties - Tank1**

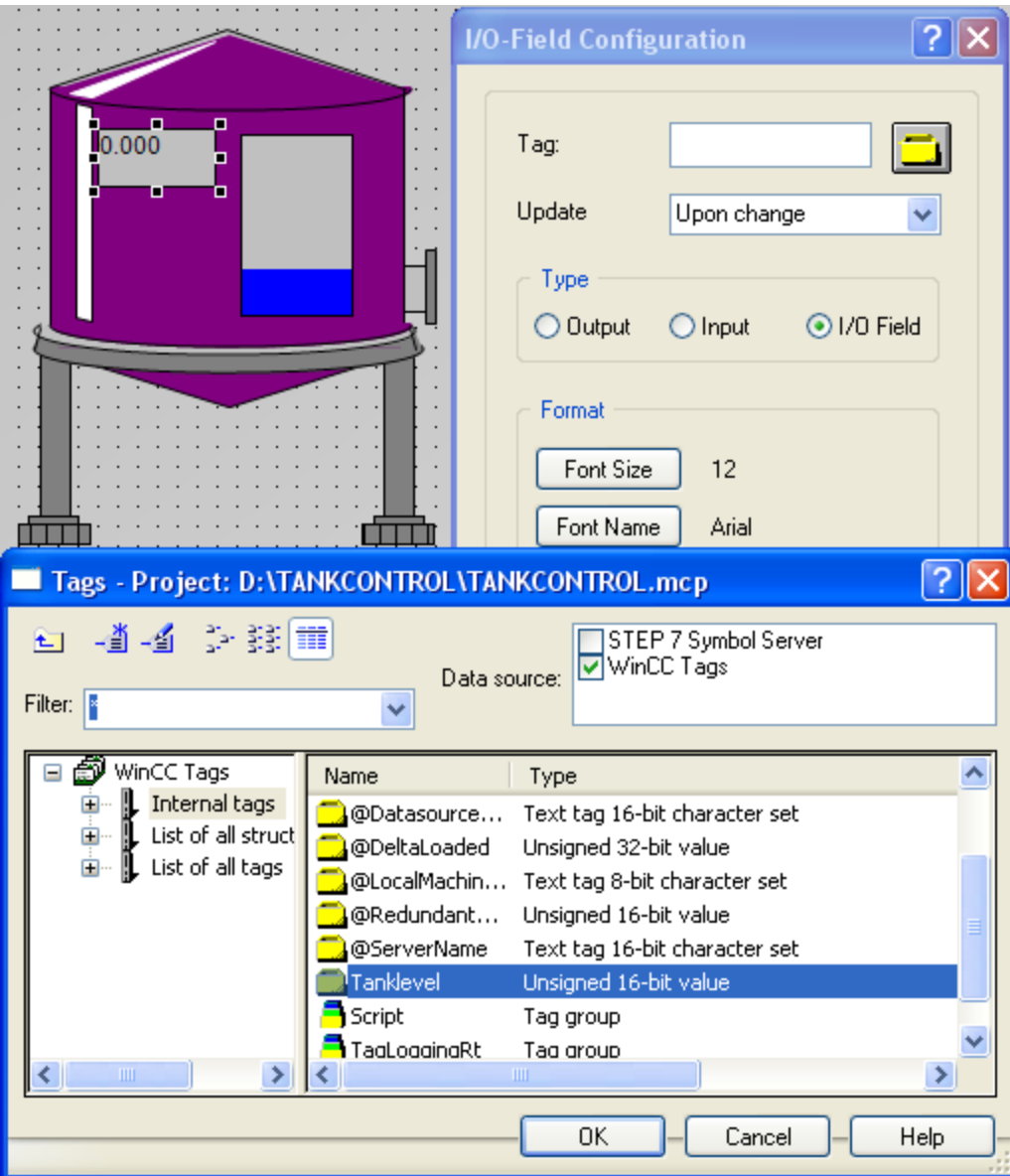
Attribute	St...	Dyna...	Up...	I
Fill Level	25.0000			<input type="checkbox"/>
Maximum Value	100.000			<input type="checkbox"/>
Minimum Value	0.00000			<input type="checkbox"/>

**Tags - Project: D:\TANKCONTROL\TANKCONTROL.mcp**

Data source:  STEP 7 Symbol Server,  WinCC Tags

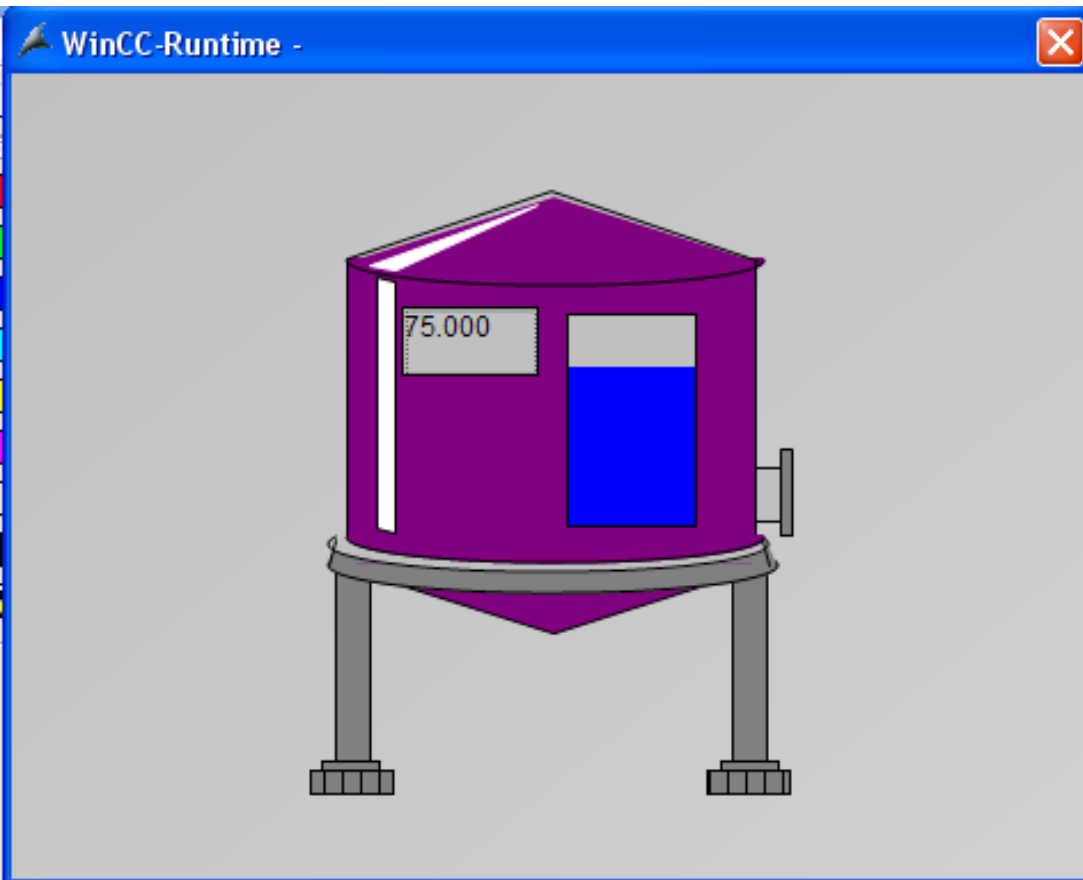
Name	Type	Pa
@Connected...	Unsigned 16-bit value	
@CurrentUser	Text tag 8-bit character set	
@CurrentUse...	Text tag 16-bit character set	
@Datasource...	Text tag 16-bit character set	
@DeltaLoaded	Unsigned 32-bit value	
@LocalMachin...	Text tag 8-bit character set	
@Redundant...	Unsigned 16-bit value	
@ServerName	Text tag 16-bit character set	
Tanklevel	Unsigned 16-bit value	
Script	Tag group	
TagLoggingRt	Tag group	

# WINCC



**Thiết lập thuộc tính cho I/O field: Chọn I/O field configuration/chọn tag có tên là Tanklevel/Thời gian cập nhật là Upon Change**

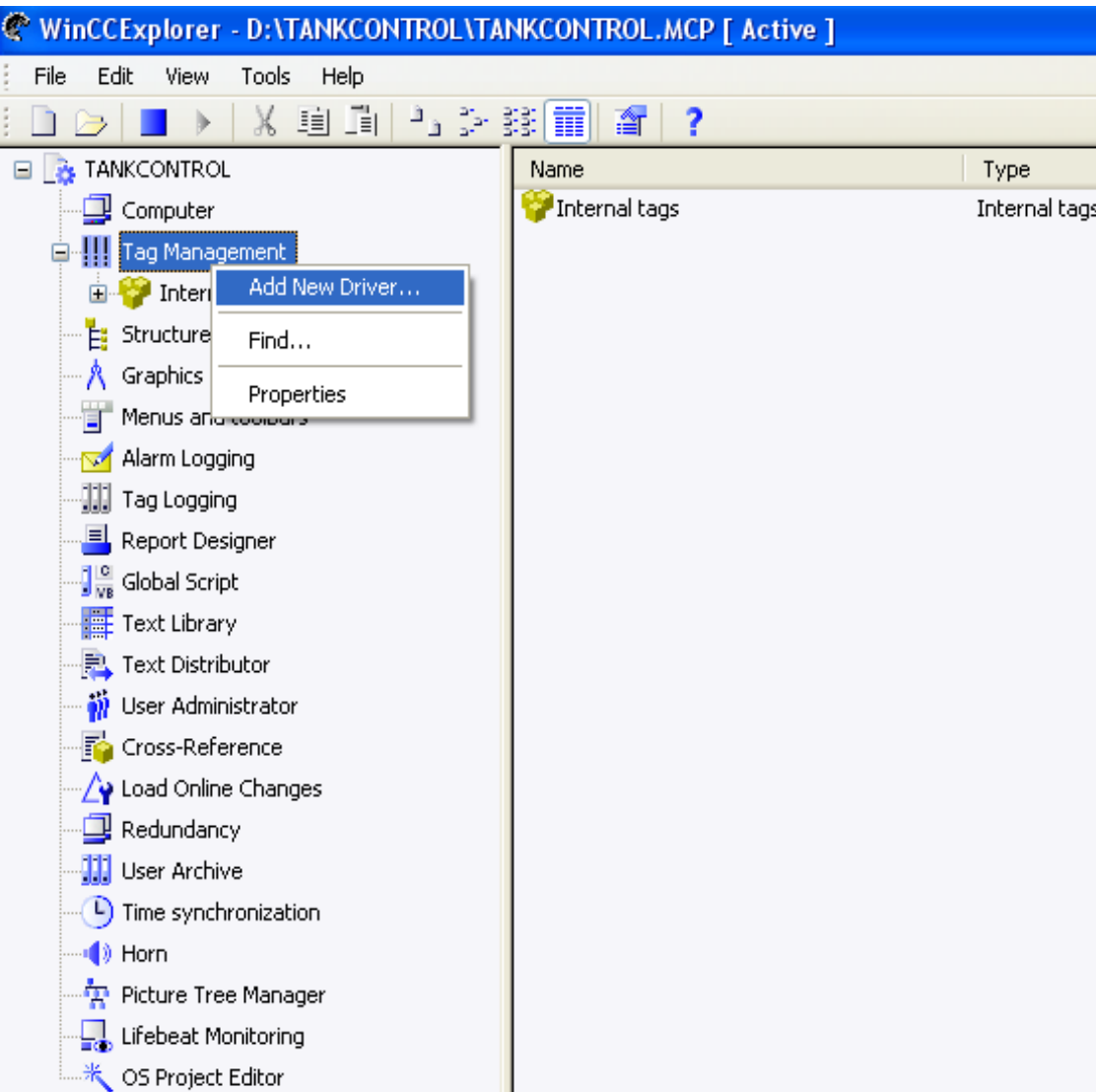
# WINCC



Sau khi đã thiết lập xong các thông số. Chạy giao diện có tên là TANKSIMULATION, nhập thông số vào I/O field và quan sát mức fill của Tank.

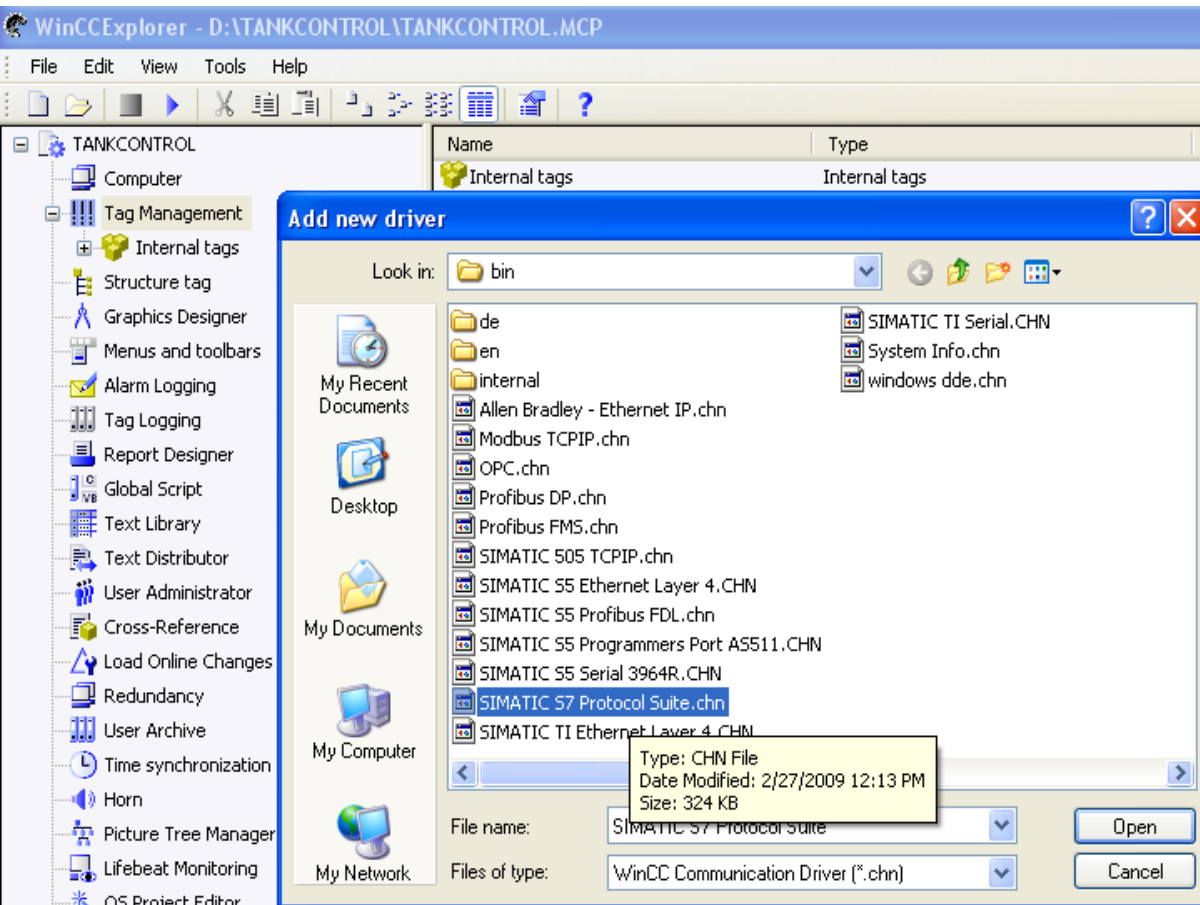
# WINCC

Tạo Driver kết nối giữa WinCC với S7



# WINCC

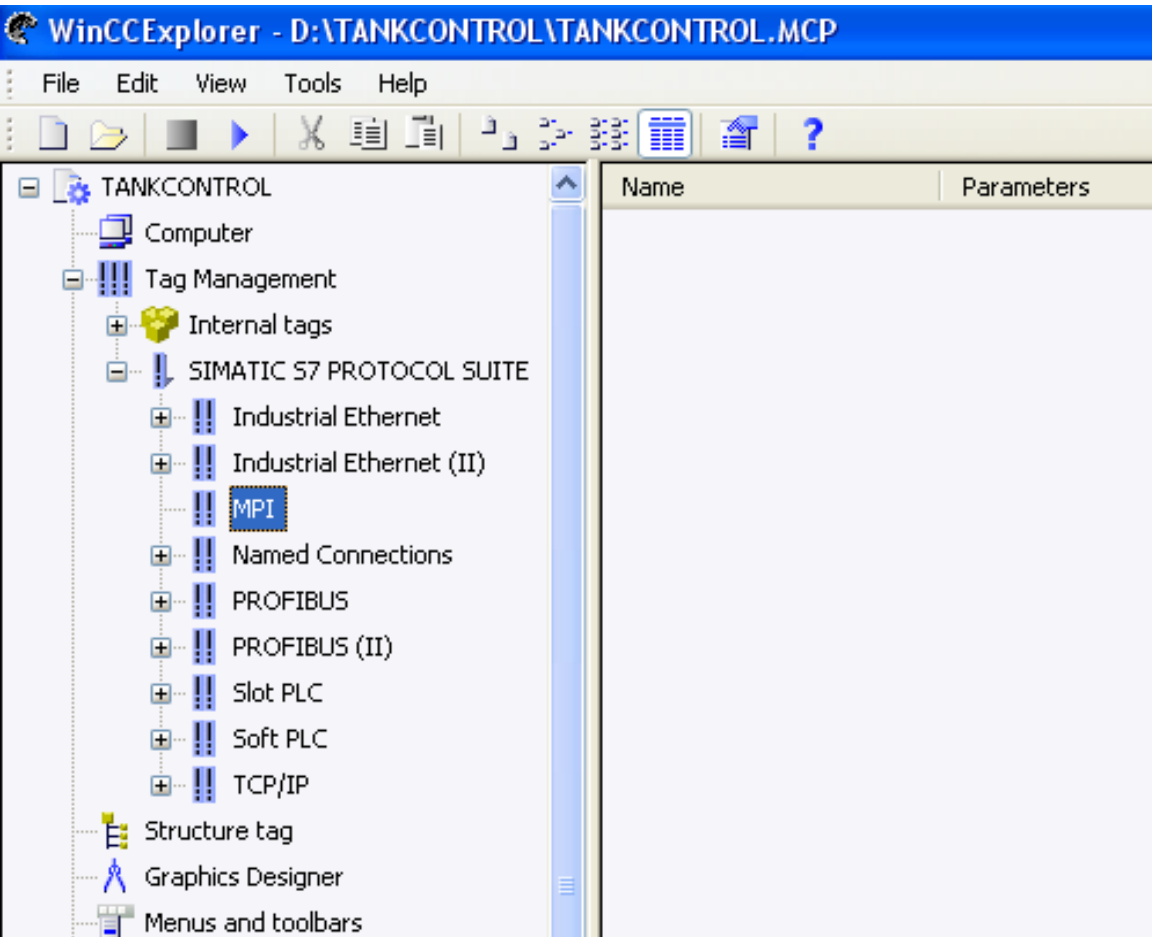
Chọn Driver kết nối  
giữa WinCC và S7:  
SIMATIC S7 Protocol  
Suite.CHN





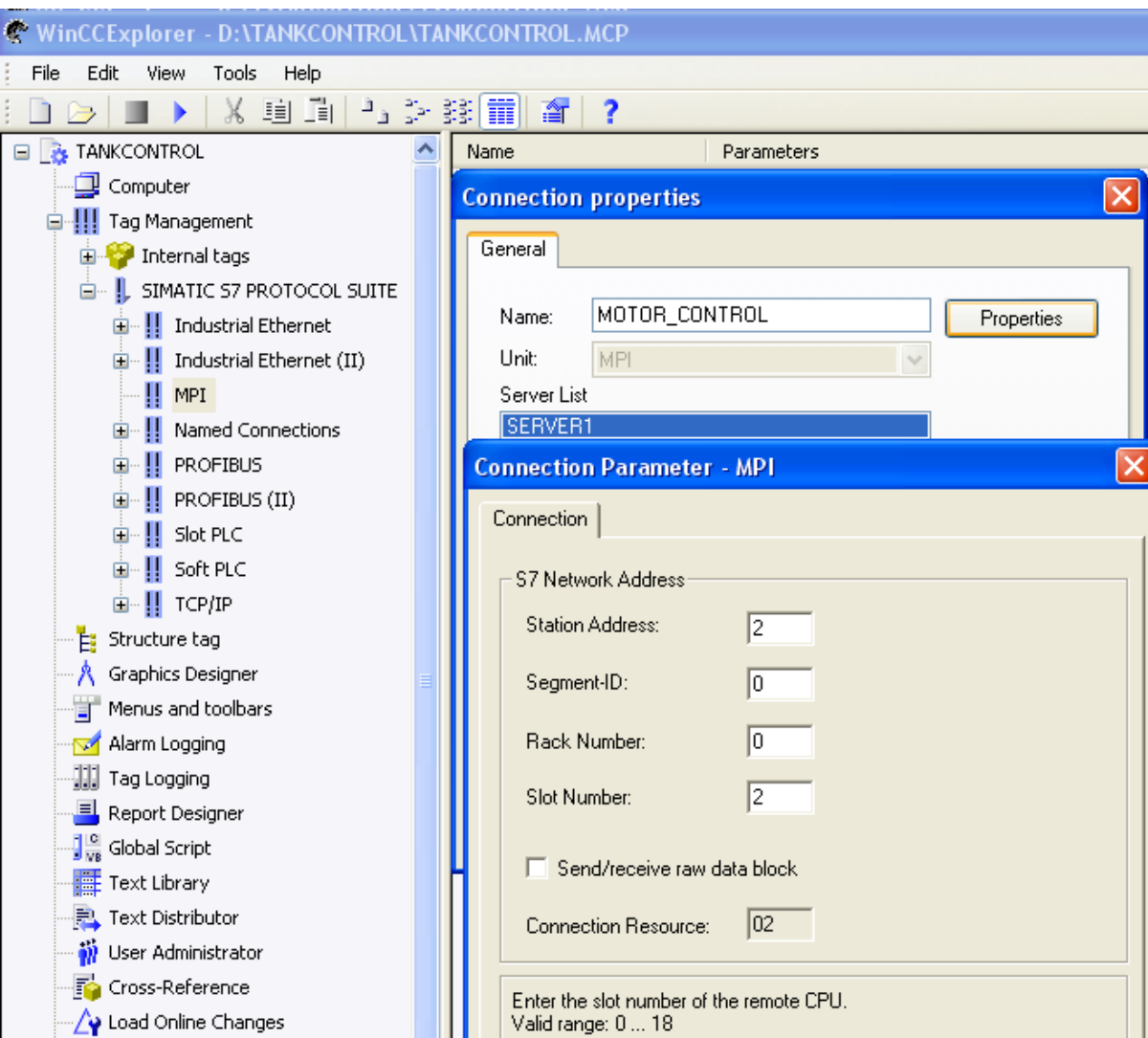
# WINCC

Chọn chuẩn truyền  
thông theo MPI,  
Profibus hoặc TCP/IP



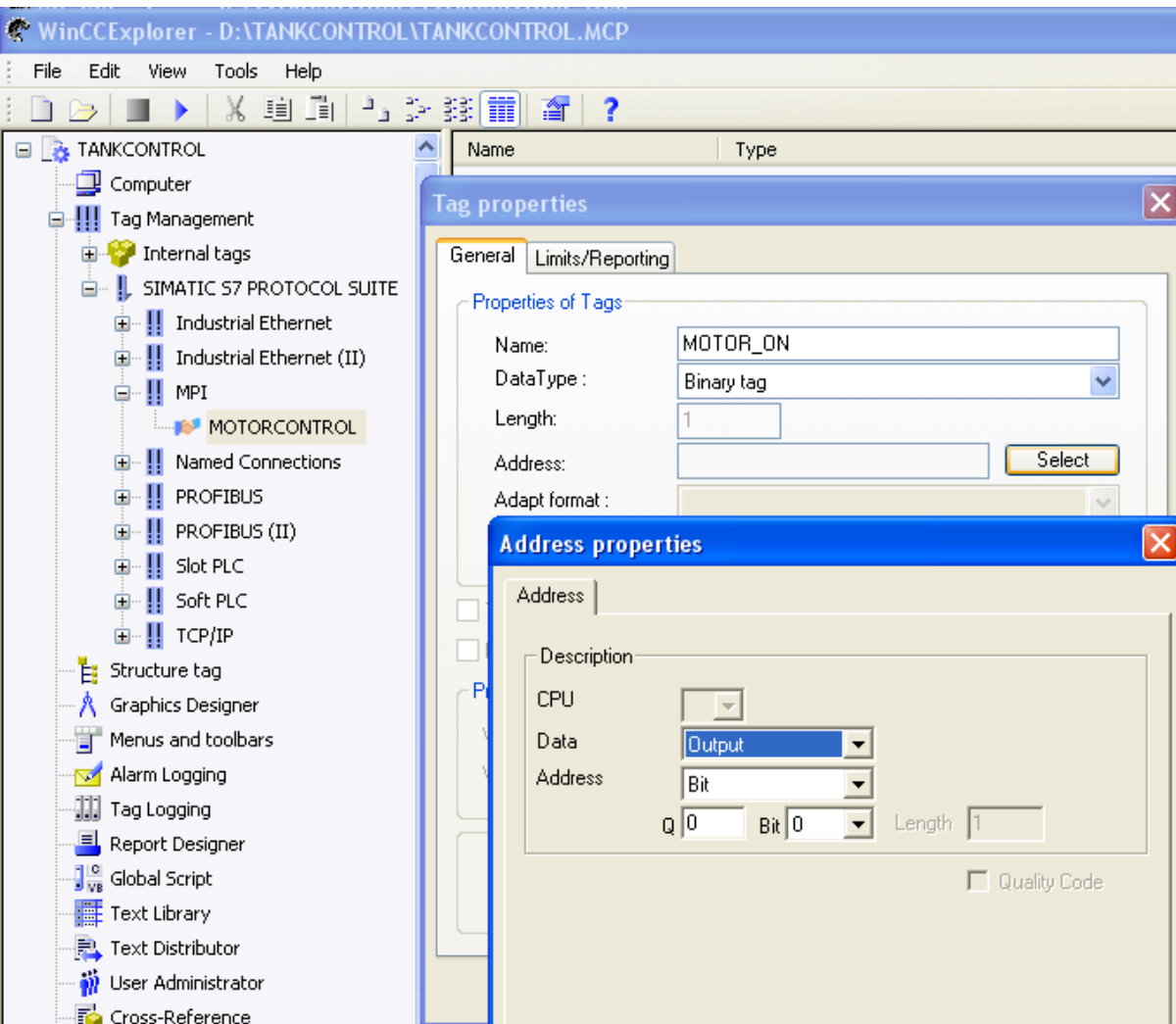
# WINCC

Đặt tên cho Driver kết nối



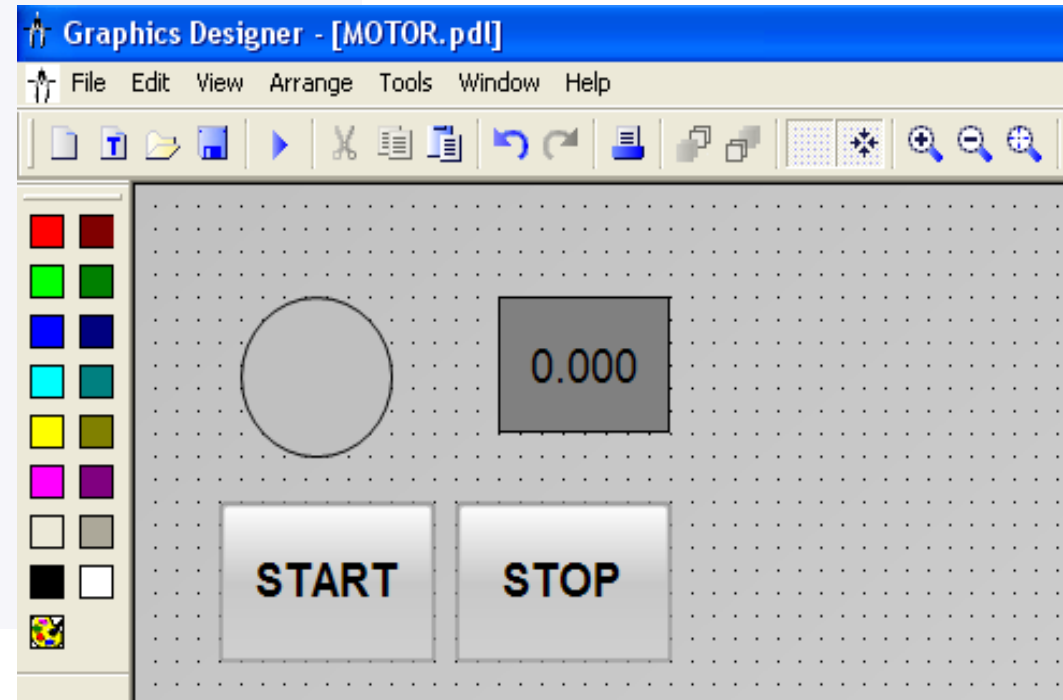
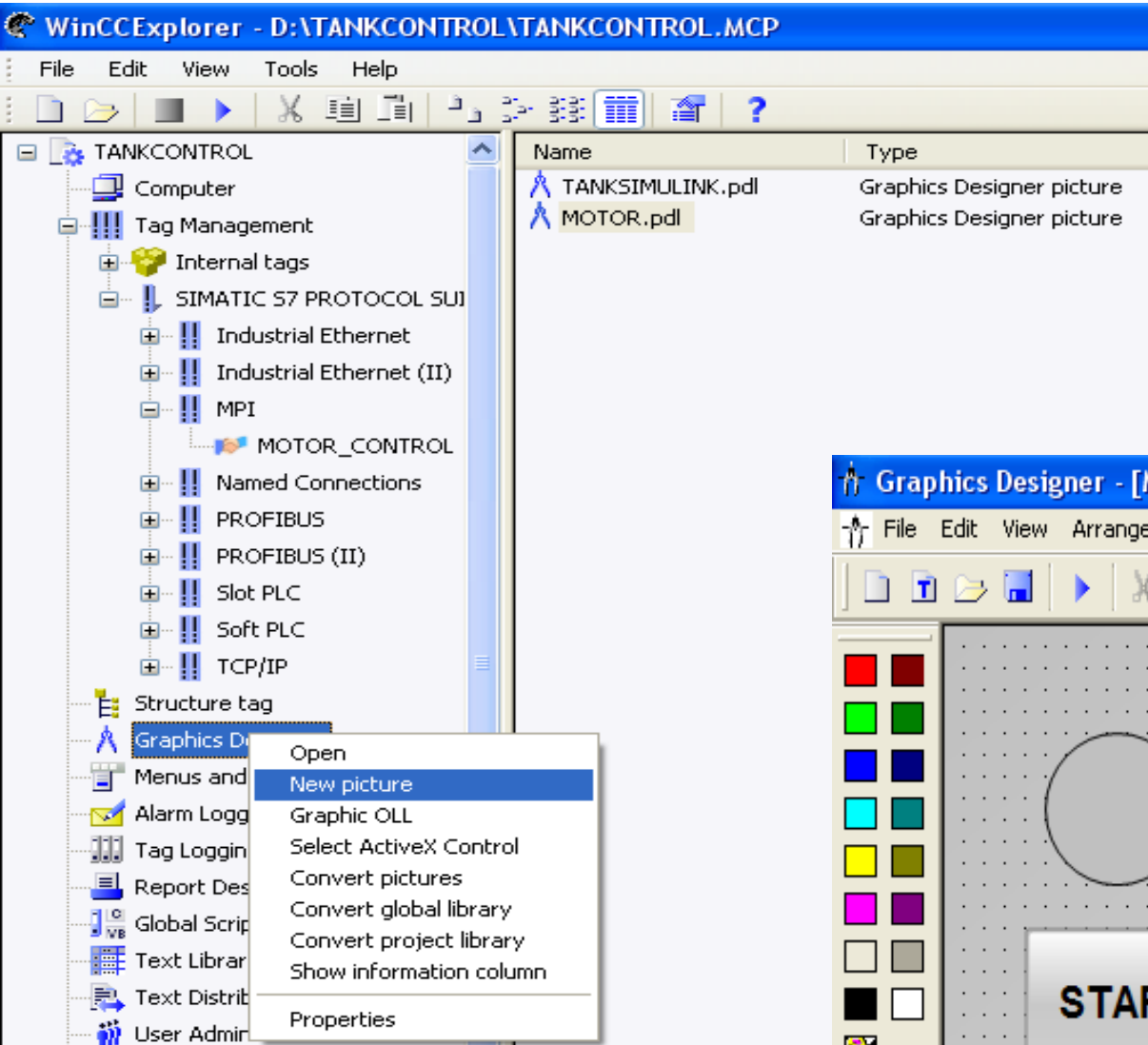
# WINCC

Tạo Tag kết nối giữa WinCC và S7

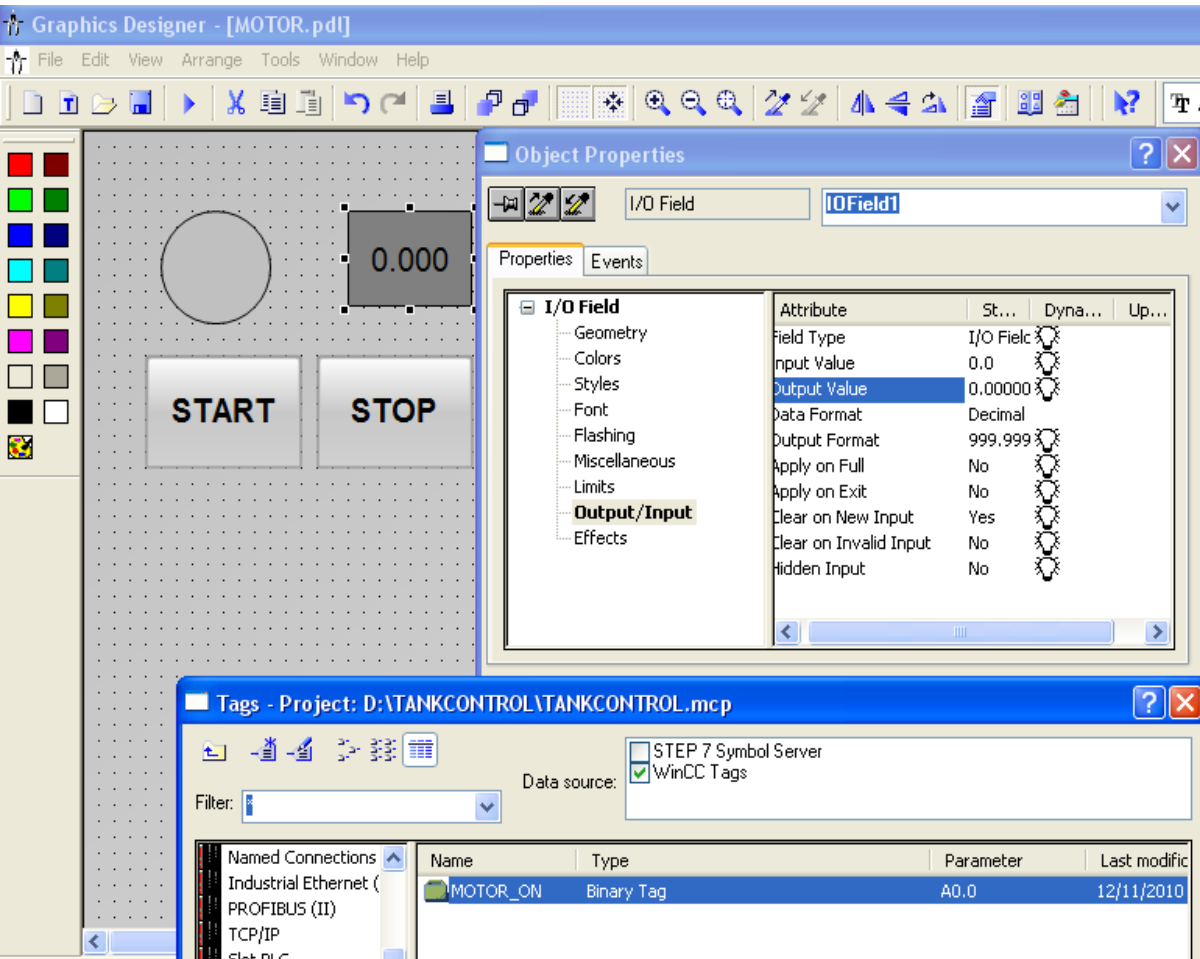


# WINCC

Tạo một giao diện điều khiển mới có tên là MOTOR.



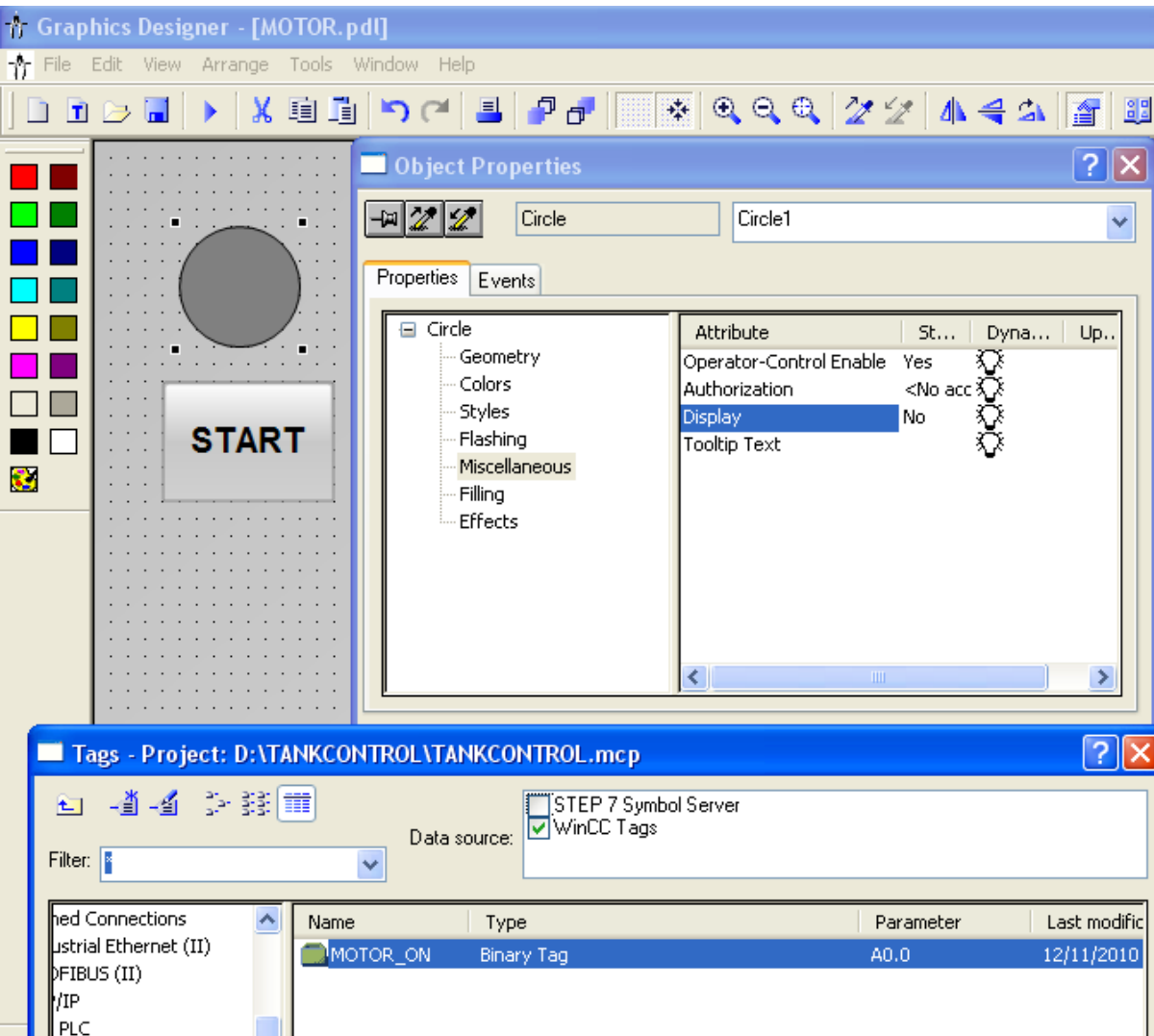
# WINCC



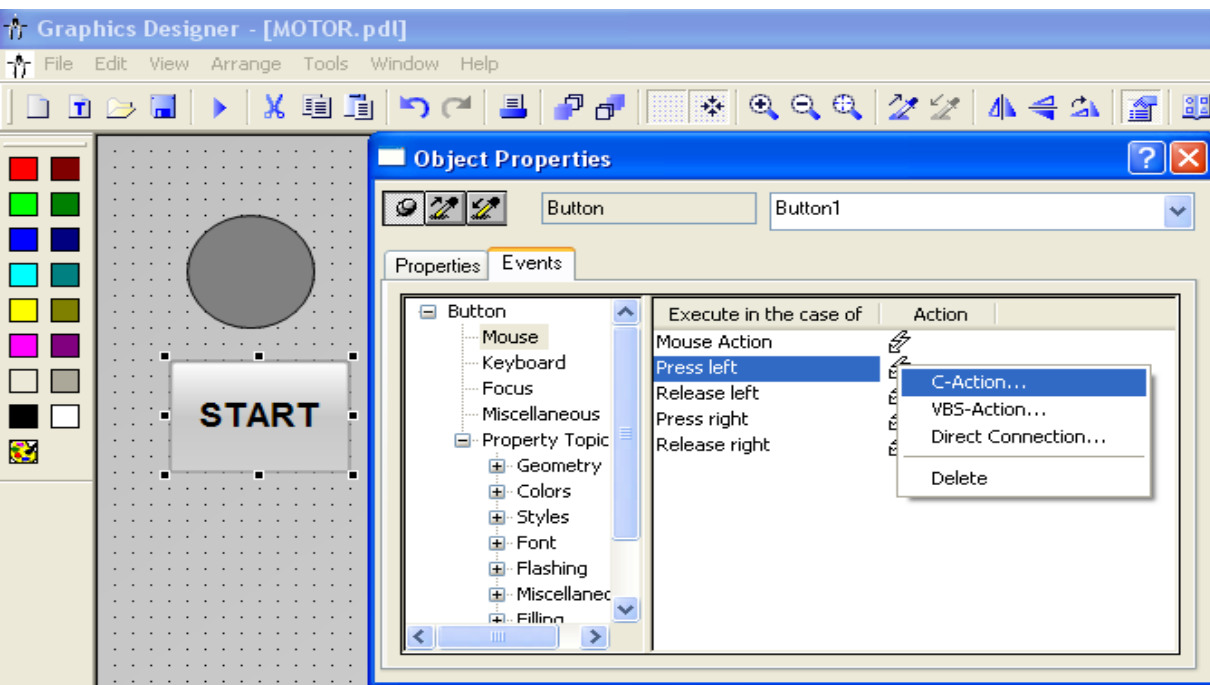
Thiết lập thuộc tính cho các đối tượng.  
**I/O field:** Chọn Properties/chọn Output\_Input/ Output Value/Right Click/Chọn Tag có tên là MOTOR\_ON đã tạo trước đó/Chọn Ok.

# WINCC

Chọn đèn hiển thị, thuộc tính Display, chọn tag để điều khiển hiển thị



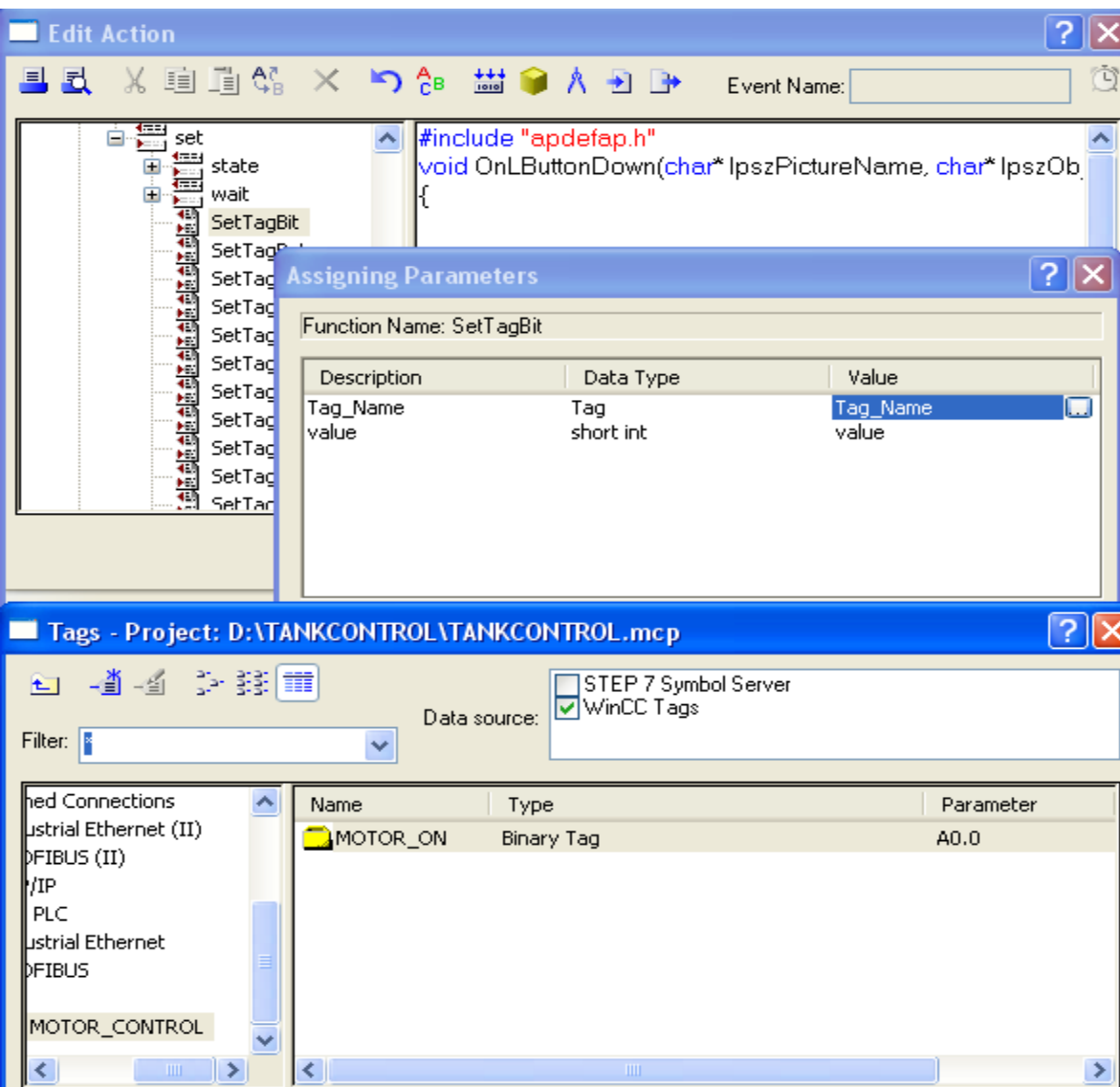
# WINCC



Viết chương trình cho nút nhấn START và STOP.

**Nút START:** Double Click/ Events/Press left/C\_action/Set TagBit/Tag Name/Chọn Tag MOTOR\_ON và đặt gán giá trị bằng 1.

# WINCC



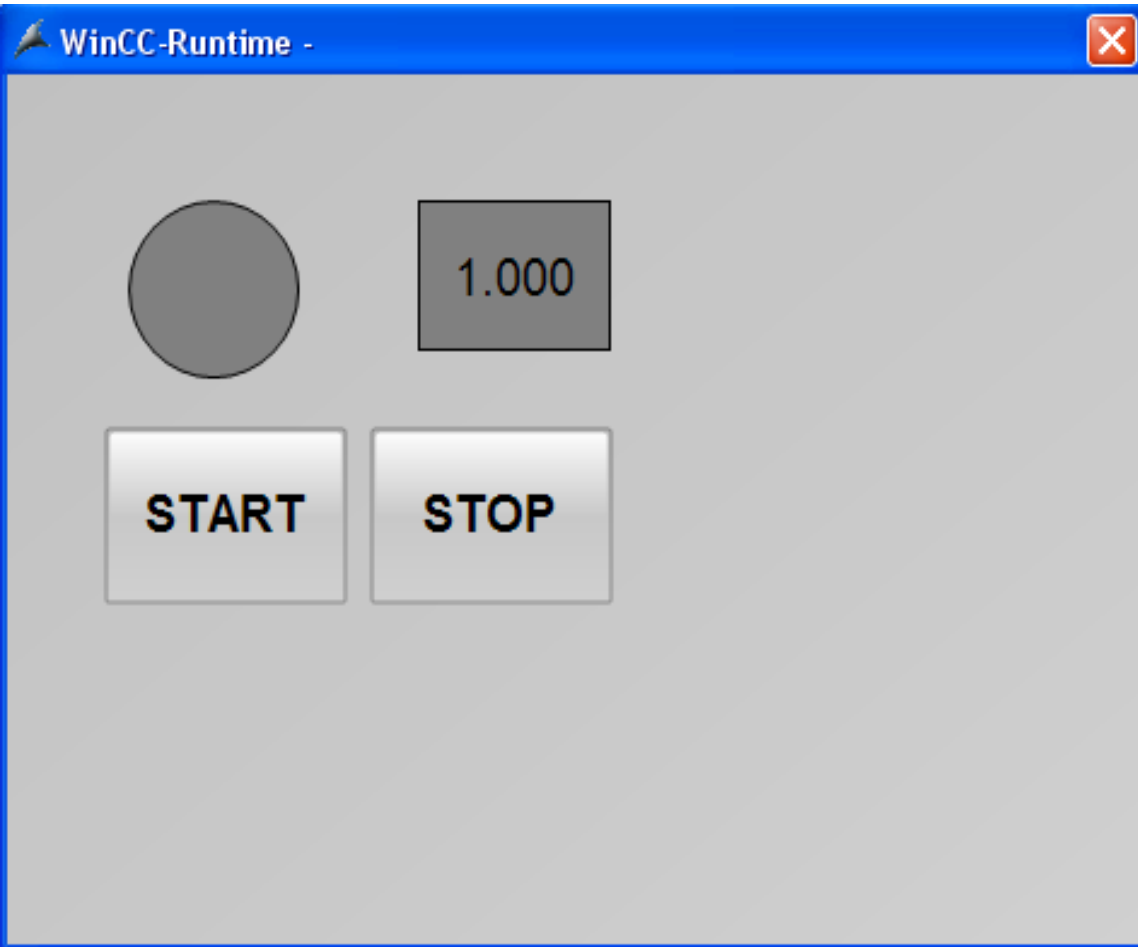
Viết chương trình cho nút nhấn START và STOP.

**Nút START:** Double Click/ Events/Press left/C\_action/Set TagBit/Tag Name/Chọn Tag MOTOR\_ON và đặt gán giá trị bằng 1.

**Thực hiện tương tự cho nút Stop, nhưng gán giá trị bằng 0**



# WINCC



Sau khi thiết lập xong các tham số. Chạy WinCC để kiểm tra kết quả.

Chú ý: Để WinCC có thể liên kết với S7 trong hai trường hợp.

Phần mềm Simulink của S7 đã được mở.

Wincc phải được kết nối đến PLC thực.

# WINCC

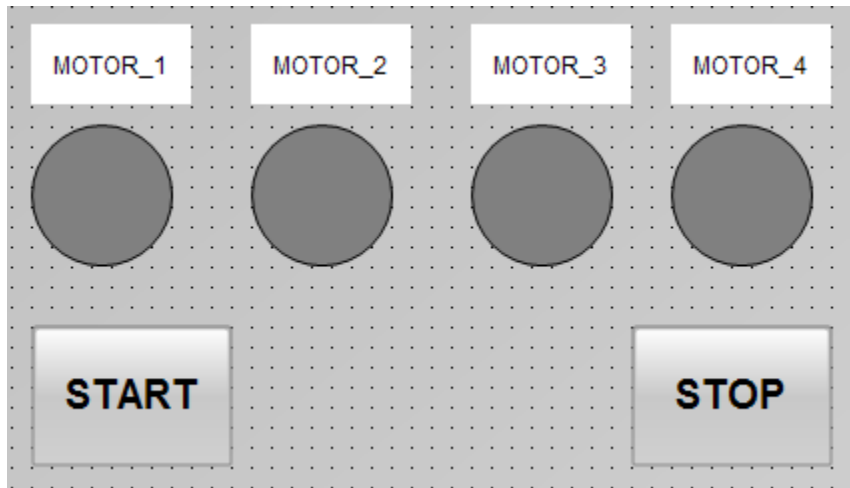
## **VD:Thiết kế giao diện dùng WinCC.**

Viết chương trình điều khiển 4 động cơ hoạt động như sau:

Nhấn START, Các động cơ chạy tuần tự cách nhau 2 giây. Khi động cơ nào chạy thì đèn tương ứng sáng màu xanh, khi động cơ Off thì các động cơ tắt lần lượt cách nhau 2 giây.

Chạy mô phỏng dùng SIMULINK

Liên kết WinCC với S7 300 hoặc S7 400 để điều khiển thiết bị.



# INTOUCH

**InTouch**

**Application Manager**

**Window Maker**

**Window Viewer**

**Archestra (Galaxy)**

**Thiết kế ứng dụng dùng Intouch**

**Tạo Internal Tags**

**Tạo I/O Tags**

**OPC**

**OPC RSLinx**

**OPC KeepServer**

**OPC LINK**

**FactorySuit GateWay(FSGateway)**

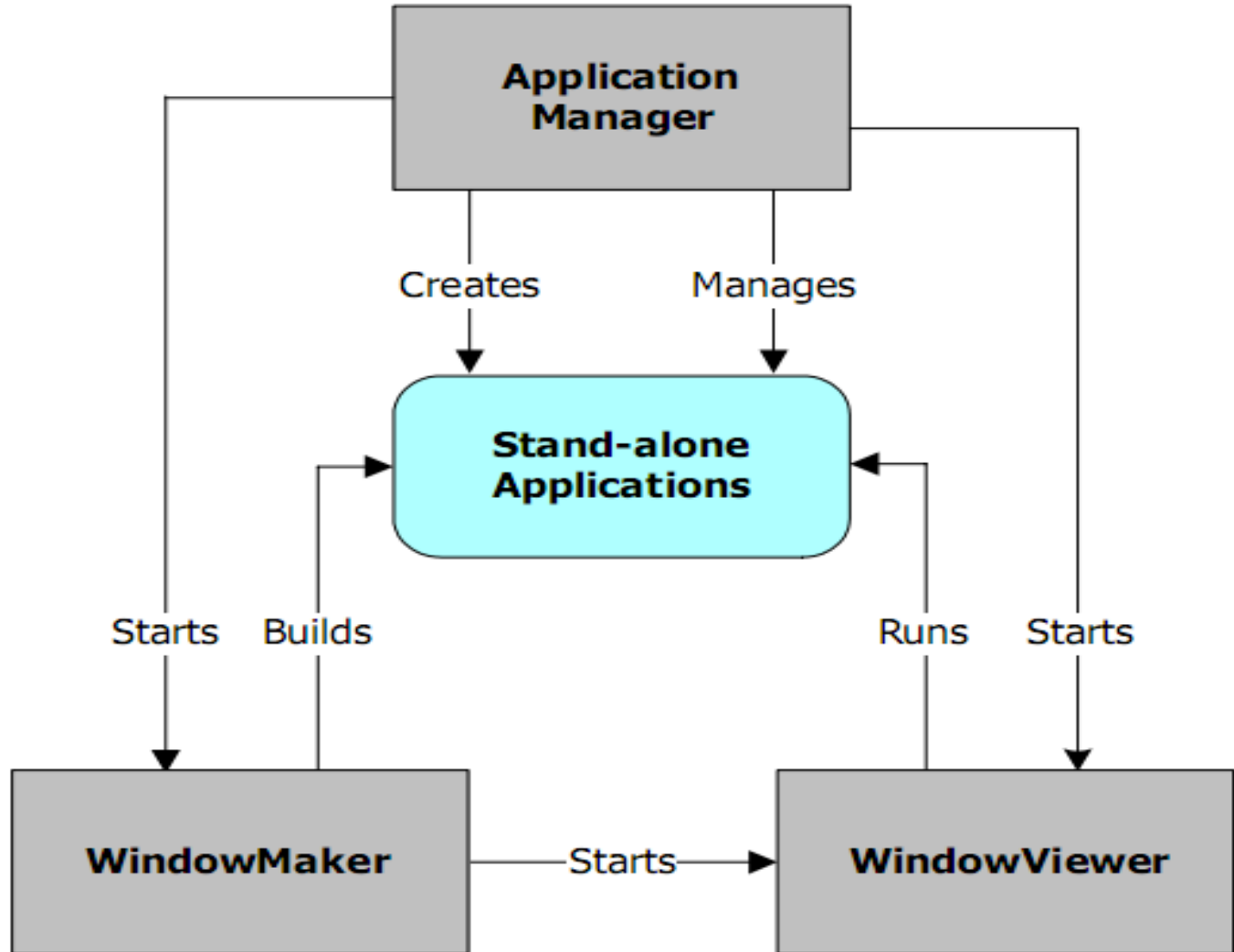
**Tạo hiệu ứng cho các đối tượng**

**Trend**

**Alarm**

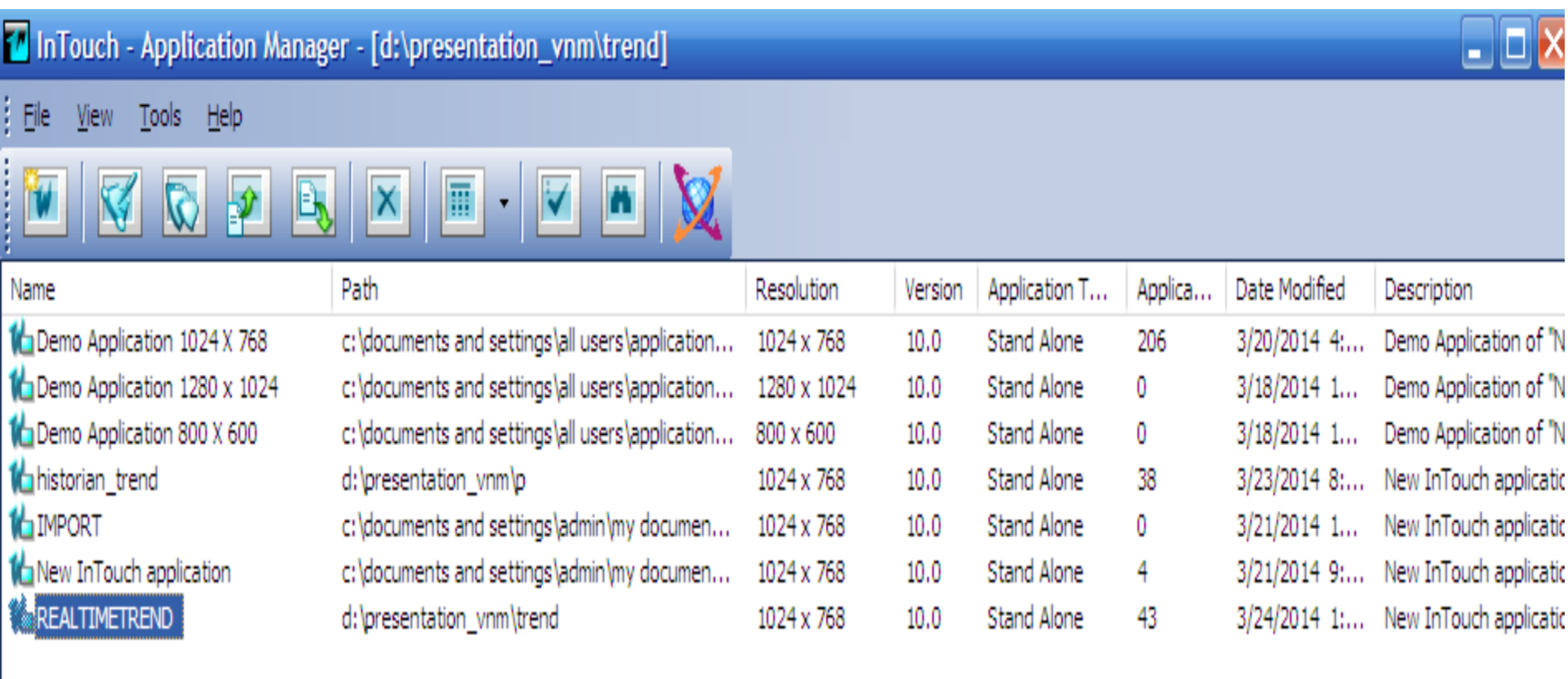
# In Touch

## InTouch phiên bản cũ



# InTouch

## InTouch Application Manager: Quản lý tất cả các ứng dụng đã được tạo từ InTouch

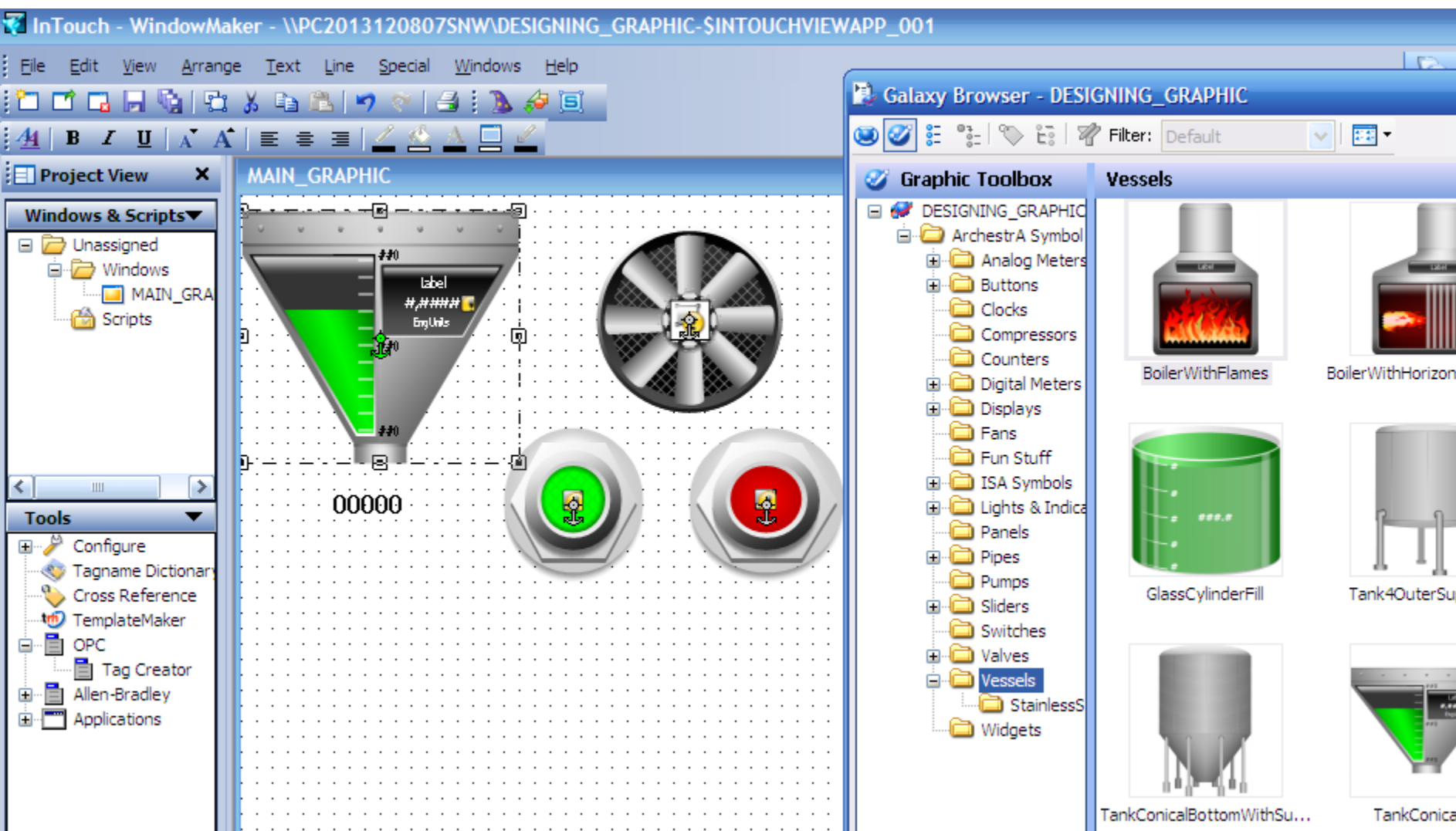


The screenshot shows the InTouch Application Manager window. The title bar reads "InTouch - Application Manager - [d:\presentation\_vnm\trend]". The menu bar includes "File", "View", "Tools", and "Help". Below the menu bar is a toolbar with various icons. The main area displays a table of applications.

Name	Path	Resolution	Version	Application T...	Applica...	Date Modified	Description
Demo Application 1024 X 768	c:\documents and settings\all users\application...	1024 x 768	10.0	Stand Alone	206	3/20/2014 4:...	Demo Application of "N
Demo Application 1280 x 1024	c:\documents and settings\all users\application...	1280 x 1024	10.0	Stand Alone	0	3/18/2014 1...	Demo Application of "N
Demo Application 800 X 600	c:\documents and settings\all users\application...	800 x 600	10.0	Stand Alone	0	3/18/2014 1...	Demo Application of "N
historian_trend	d:\presentation_vnm\p	1024 x 768	10.0	Stand Alone	38	3/23/2014 8:...	New InTouch applicatic
IMPORT	c:\documents and settings\admin\my documen...	1024 x 768	10.0	Stand Alone	0	3/21/2014 1...	New InTouch applicatic
New InTouch application	c:\documents and settings\admin\my documen...	1024 x 768	10.0	Stand Alone	4	3/21/2014 9:...	New InTouch applicatic
<b>REALTIMETREND</b>	d:\presentation_vnm\trend	1024 x 768	10.0	Stand Alone	43	3/24/2014 1:...	New InTouch applicatic

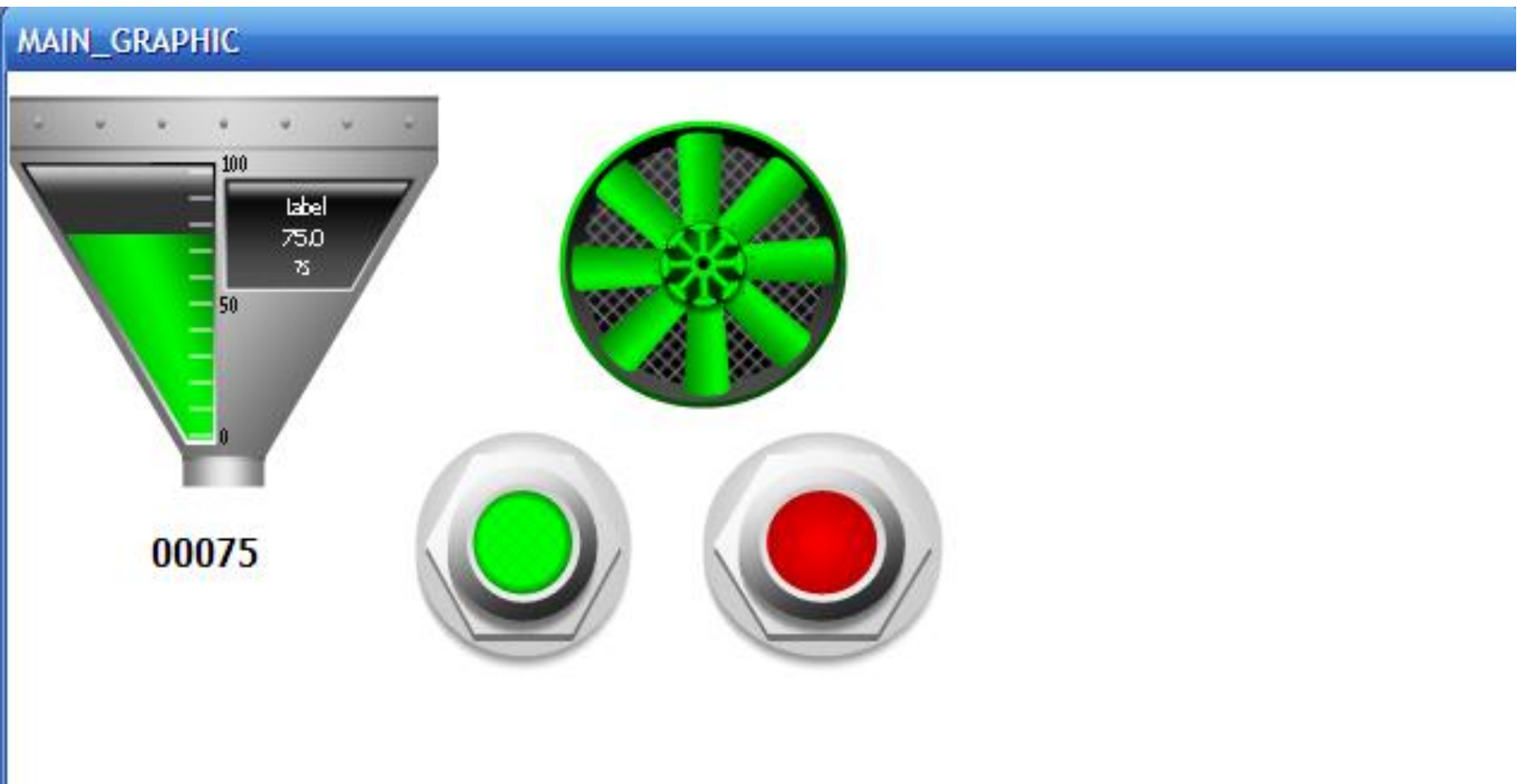
# InTouch

## Window Maker: Được sử dụng để thiết kế ứng dụng cho Intouch



# InTouch

**Window Viewer: Được sử dụng để chạy các ứng dụng cho Intouch**

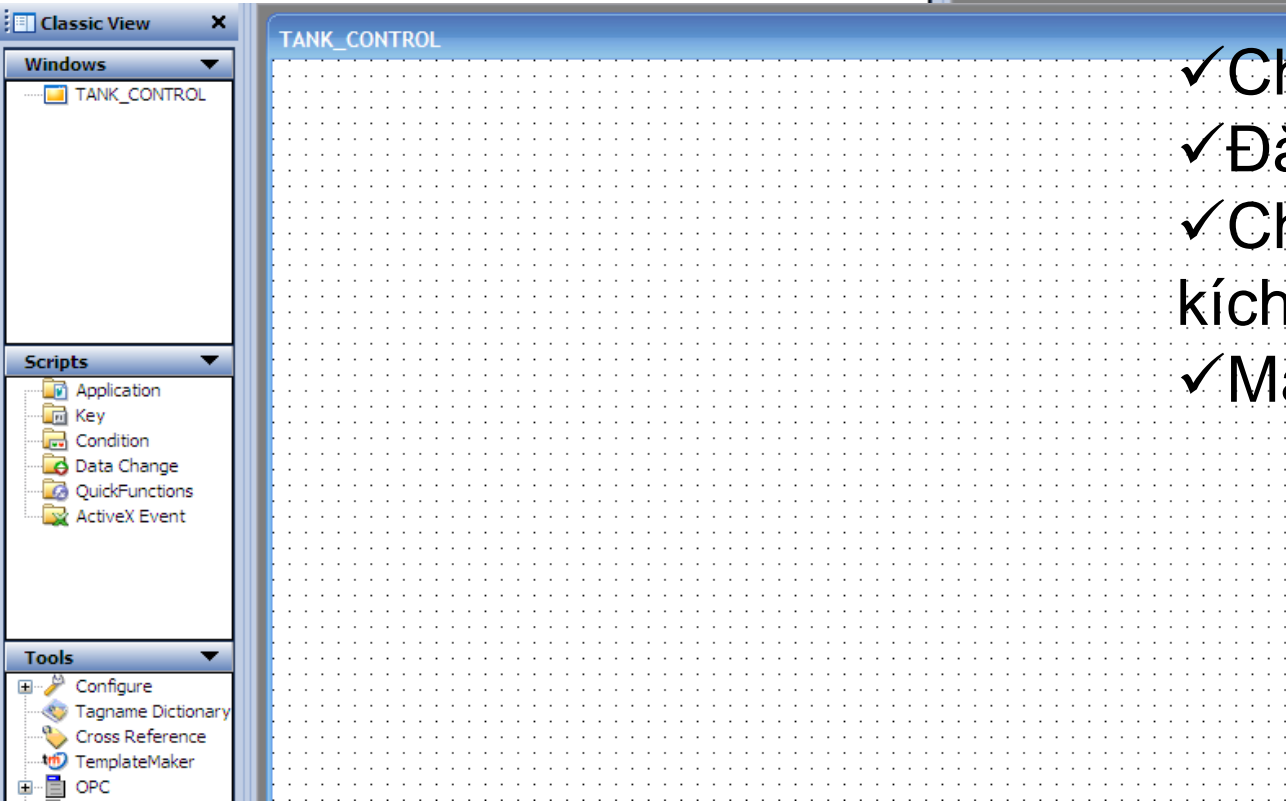
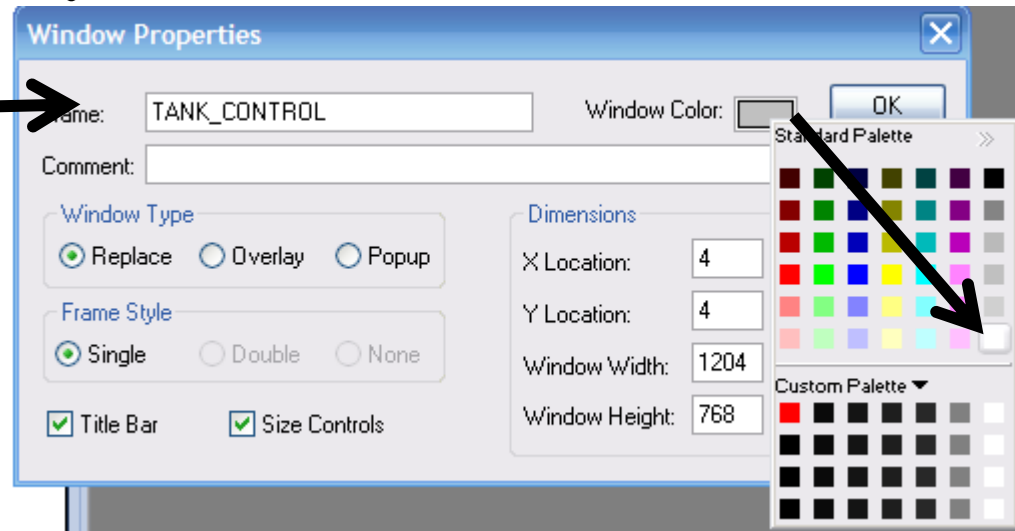
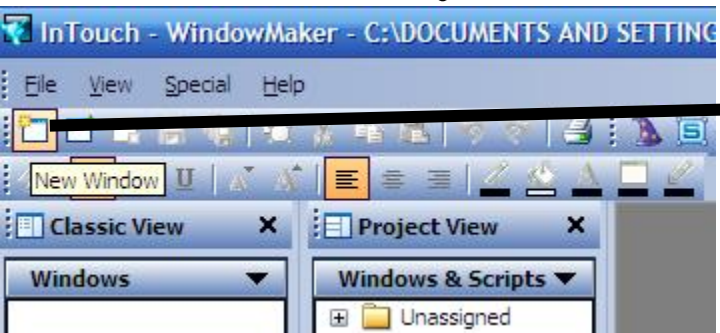


# THIẾT KẾ ỨNG DỤNG DÙNG INTOUCH

- ✓ Thiết kế giao diện.
  - Tạo giao diện từ các đối tượng trong Intouch
  - Tạo giao diện từ các đối tượng trong ArchestrA
- ✓ Tạo Tags
  - Internal Tags
  - I/O Tags
- ✓ Gán thuộc tính của các đối tượng với Tags tương ứng
- ✓ Chạy ứng dụng từ Window Viewer

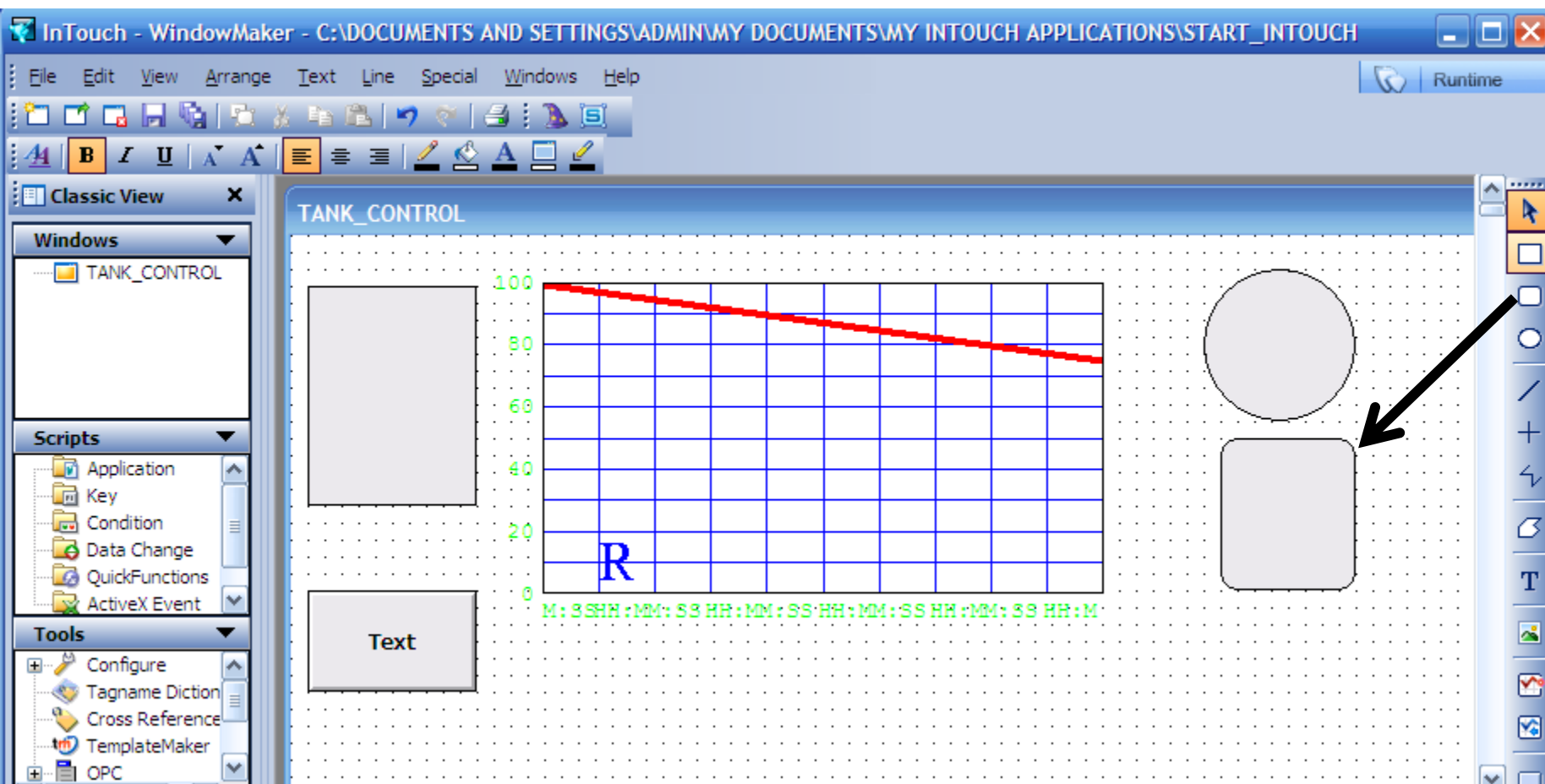


# TẠO GIAO DIỆN TỬ INTOUCH



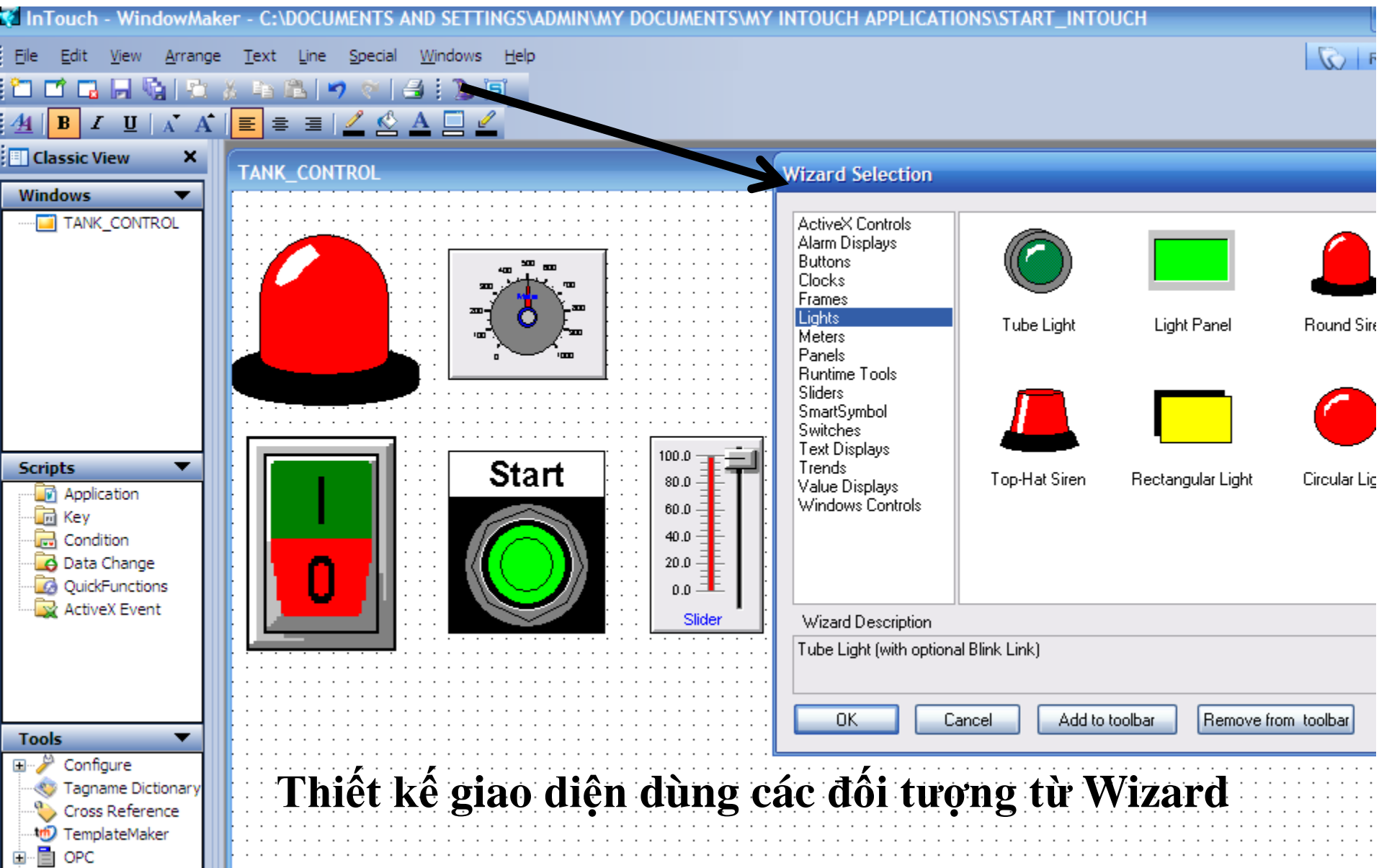
- ✓ Chọn New Window
- ✓ Đặt tên
- ✓ Chọn vị trí định vị Chọn kích thước
- ✓ Màu sắc cho giao diện

# THIẾT KẾ GIAO DIỆN TỪ INTOUCH



Thiết kế giao diện dùng các đối tượng cơ bản từ thanh công cụ

# THIẾT KẾ GIAO DIỆN TỪ INTOUCH



The screenshot displays the InTouch software interface for designing a control panel. The main workspace shows a 'TANK\_CONTROL' panel with several components: a red dome-shaped light, a circular gauge, a vertical slider, a rectangular light panel, and a 'Start' button. A 'Wizard Selection' dialog box is open, listing various control types. The 'Lights' category is selected, and the 'Tube Light' option is highlighted. The dialog also shows a 'Wizard Description' for the selected 'Tube Light' and buttons for 'OK', 'Cancel', 'Add to toolbar', and 'Remove from toolbar'. An arrow points from the 'Wizard Selection' dialog to the 'Tube Light' icon in the main workspace.

**Wizard Selection**

- ActiveX Controls
- Alarm Displays
- Buttons
- Clocks
- Frames
- Lights
- Meters
- Panels
- Runtime Tools
- Sliders
- SmartSymbol
- Switches
- Text Displays
- Trends
- Value Displays
- Windows Controls

Tube Light      Light Panel      Round Sire

Top-Hat Siren      Rectangular Light      Circular Lig

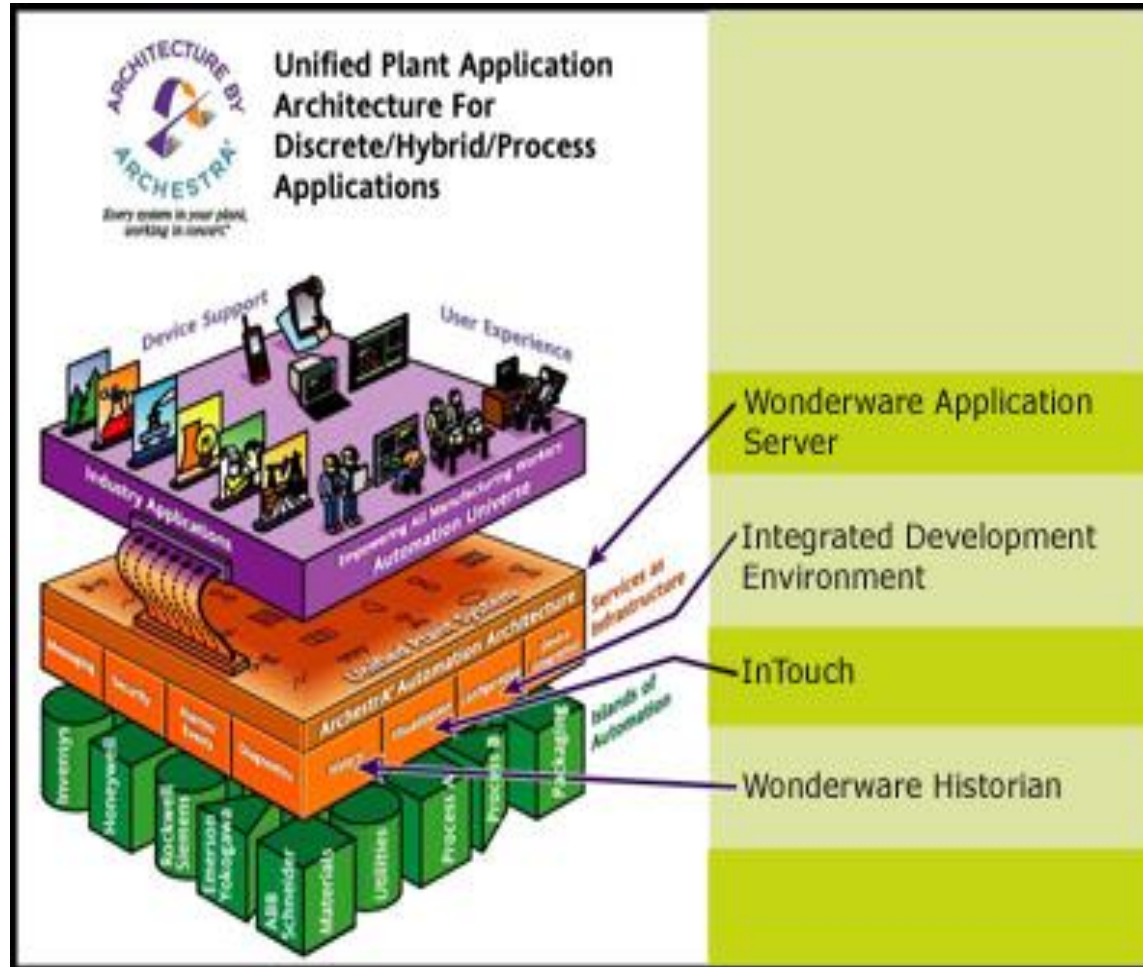
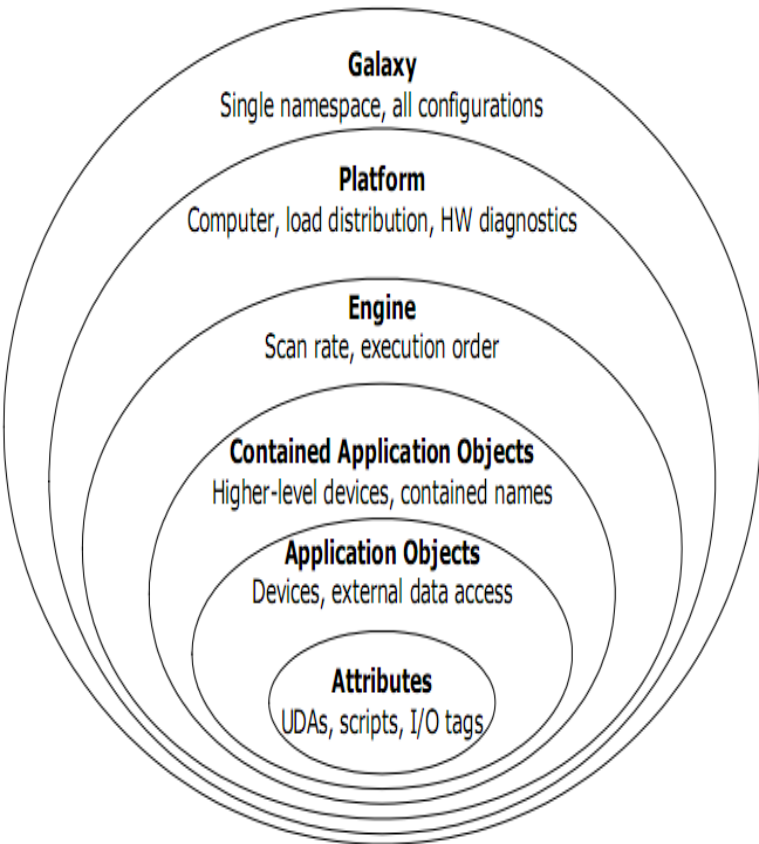
Wizard Description  
Tube Light (with optional Blink Link)

OK      Cancel      Add to toolbar      Remove from toolbar

**Thiết kế giao diện dùng các đối tượng từ Wizard**

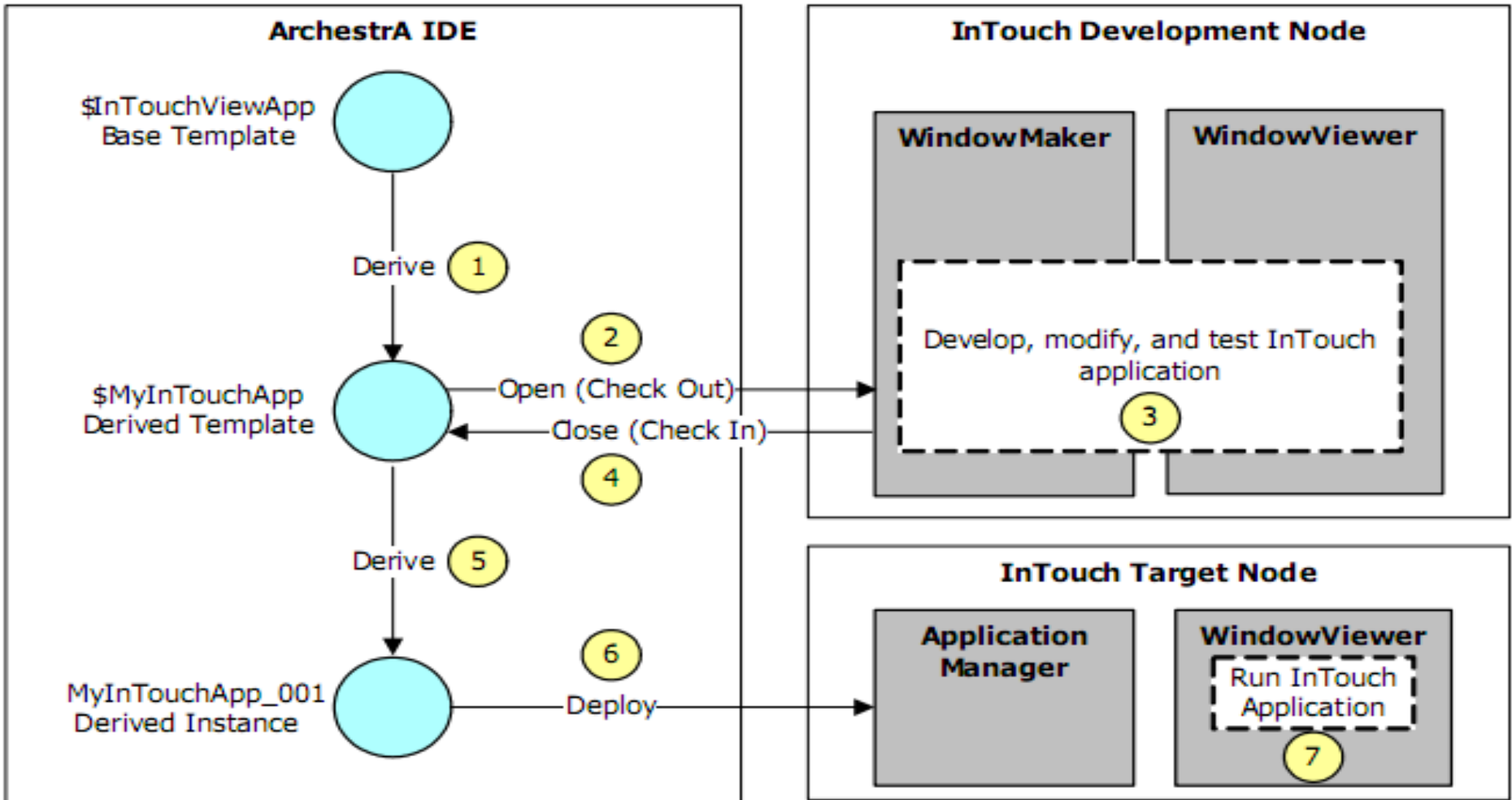
# GALAXY

## Tích hợp ArchestrA IDE trong InTouch

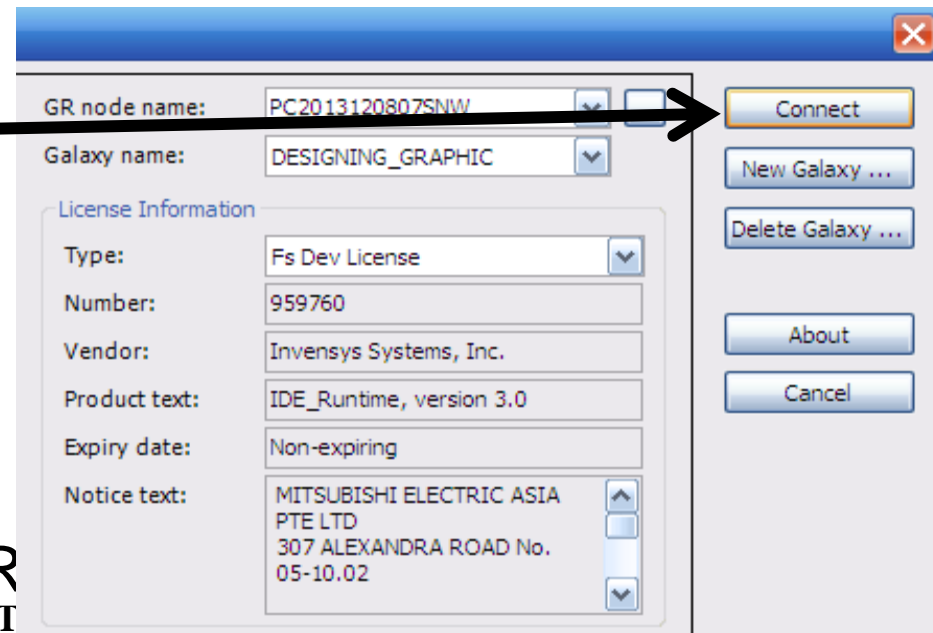
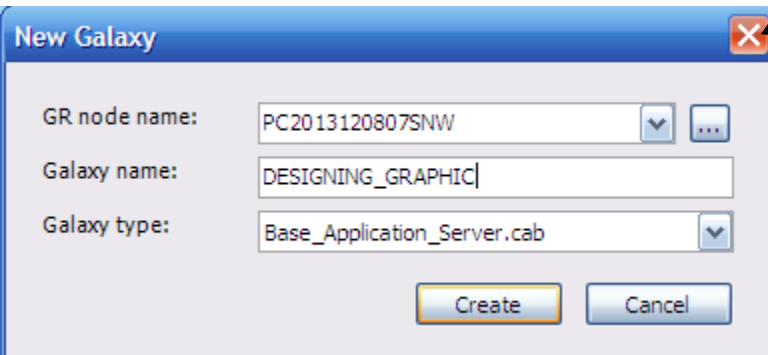
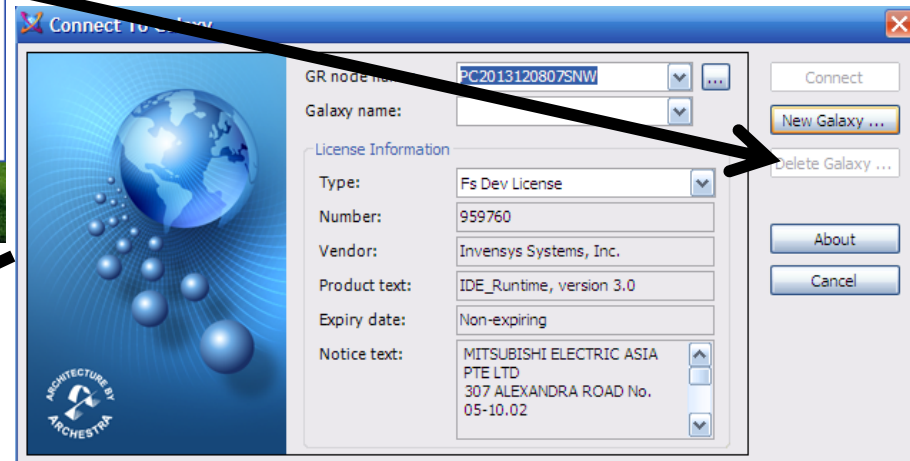
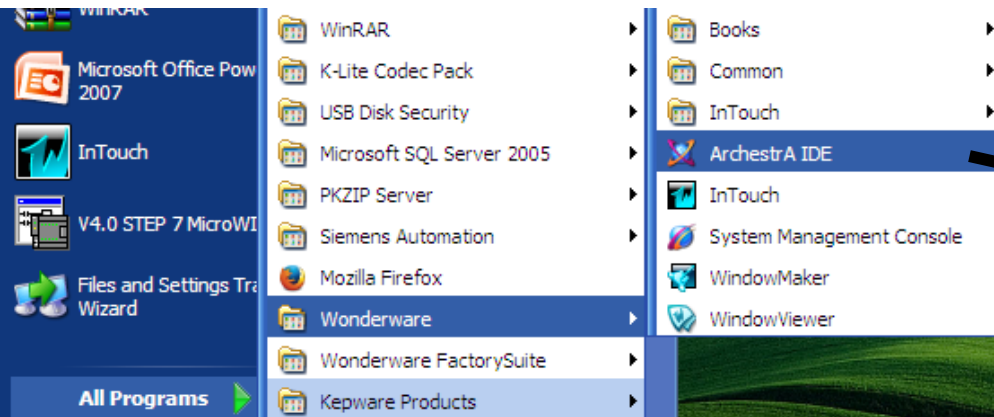


# GALAXY

## Tích hợp Archestra IDE trong InTouch

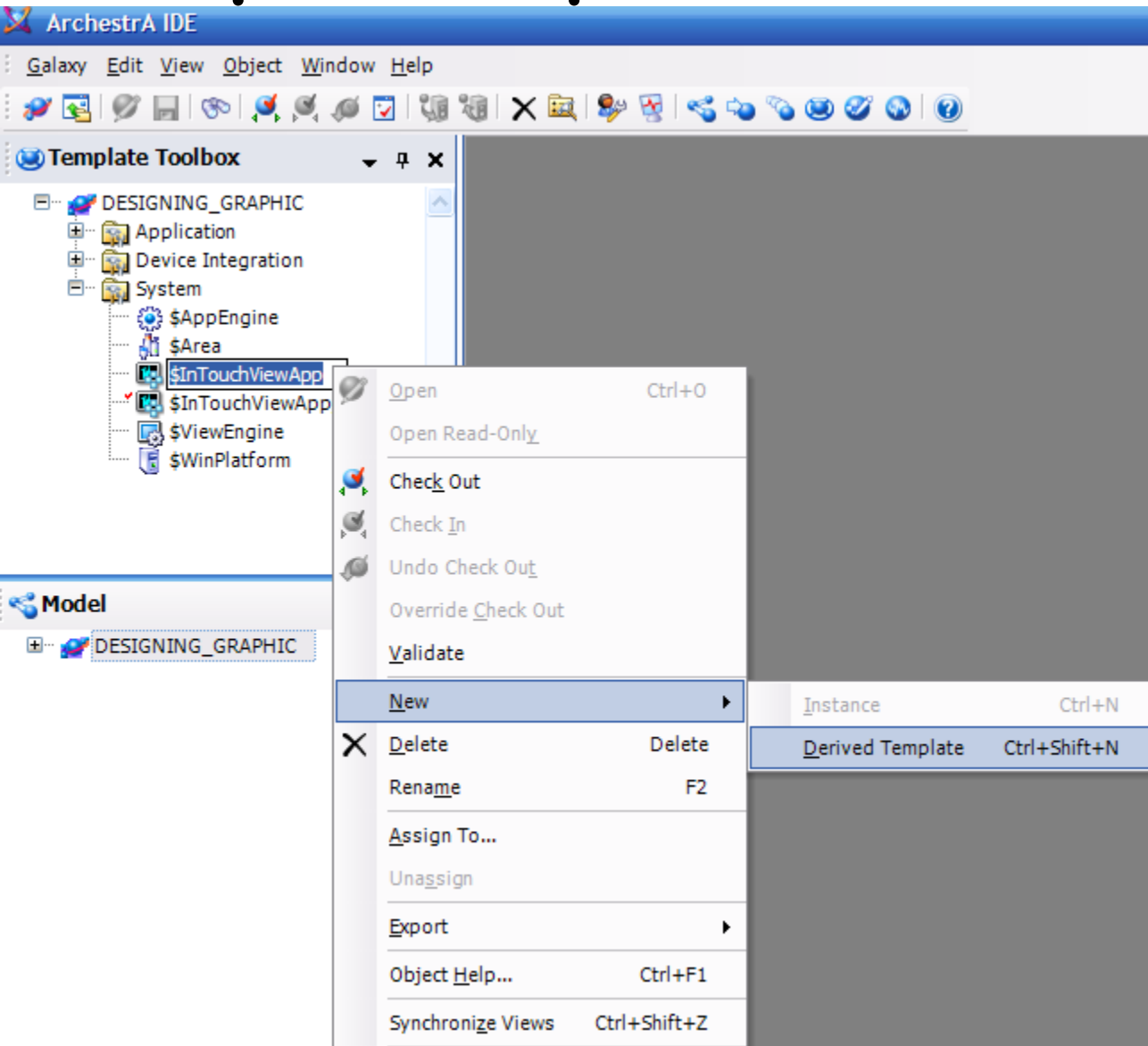


# THIẾT KẾ GIAO DIỆN TỪ ARCHESTRA



- ✓ Mở Orchestra IDE
- ✓ Chọn New Galaxy
- ✓ Đặt tên cho Galaxy
- ✓ Chọn Creat để tạo mới
- ✓ Chọn connect để kết nối đến GR

# TẠO ỨNG DỤNG INTOUCH TỪ ARCHESTRA

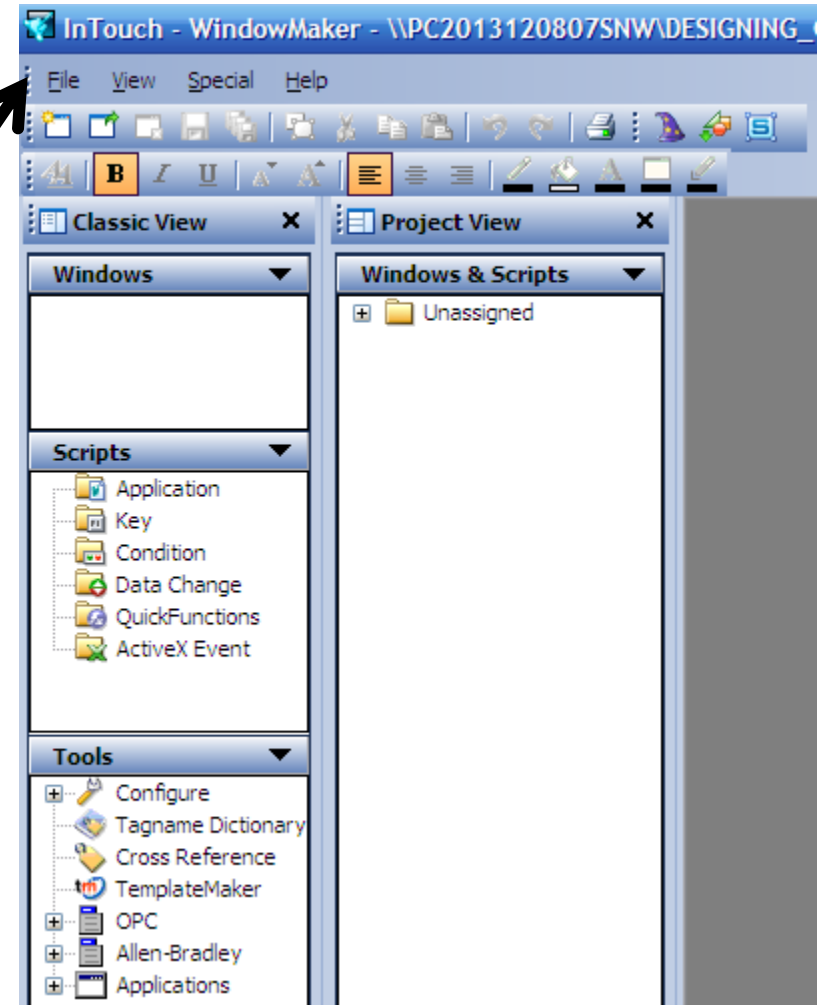
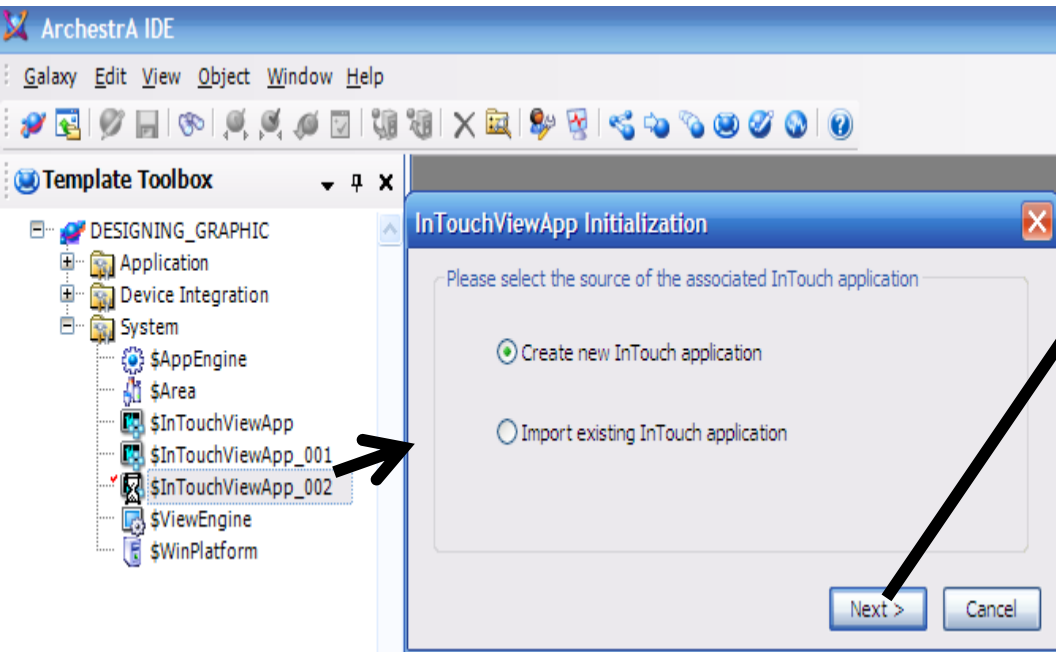


✓ Tạo các ứng dụng để chạy trong intouch.

✓ Có thể tạo nhiều ứng dụng khác nhau



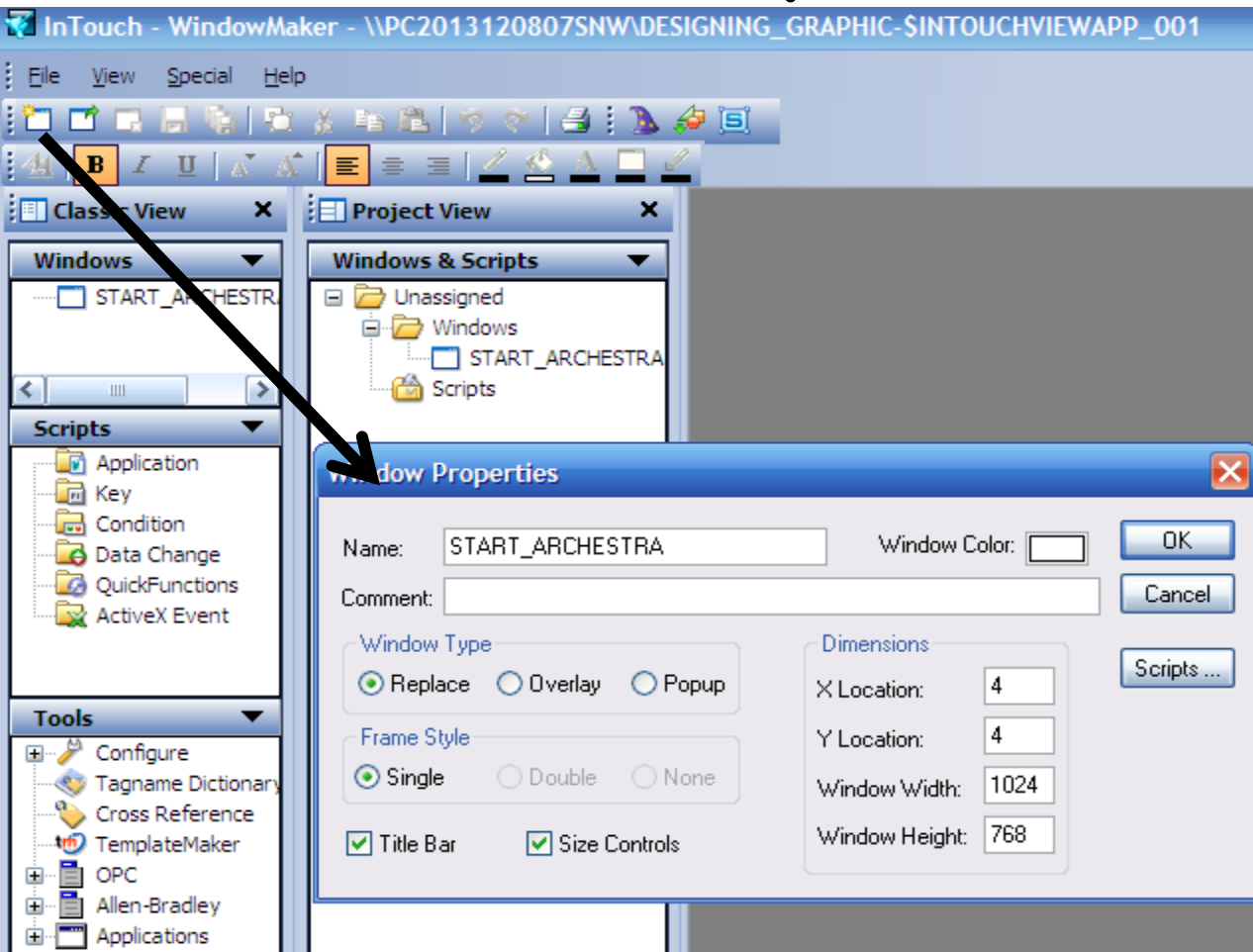
# TẠO ỨNG DỤNG INTOUCH TỪ ARCHESTRA



- ✓ Khởi tạo ứng dụng để thiết kế giao diện trong Intouch
- ✓ Chọn Next, Đặt tên cho ứng dụng

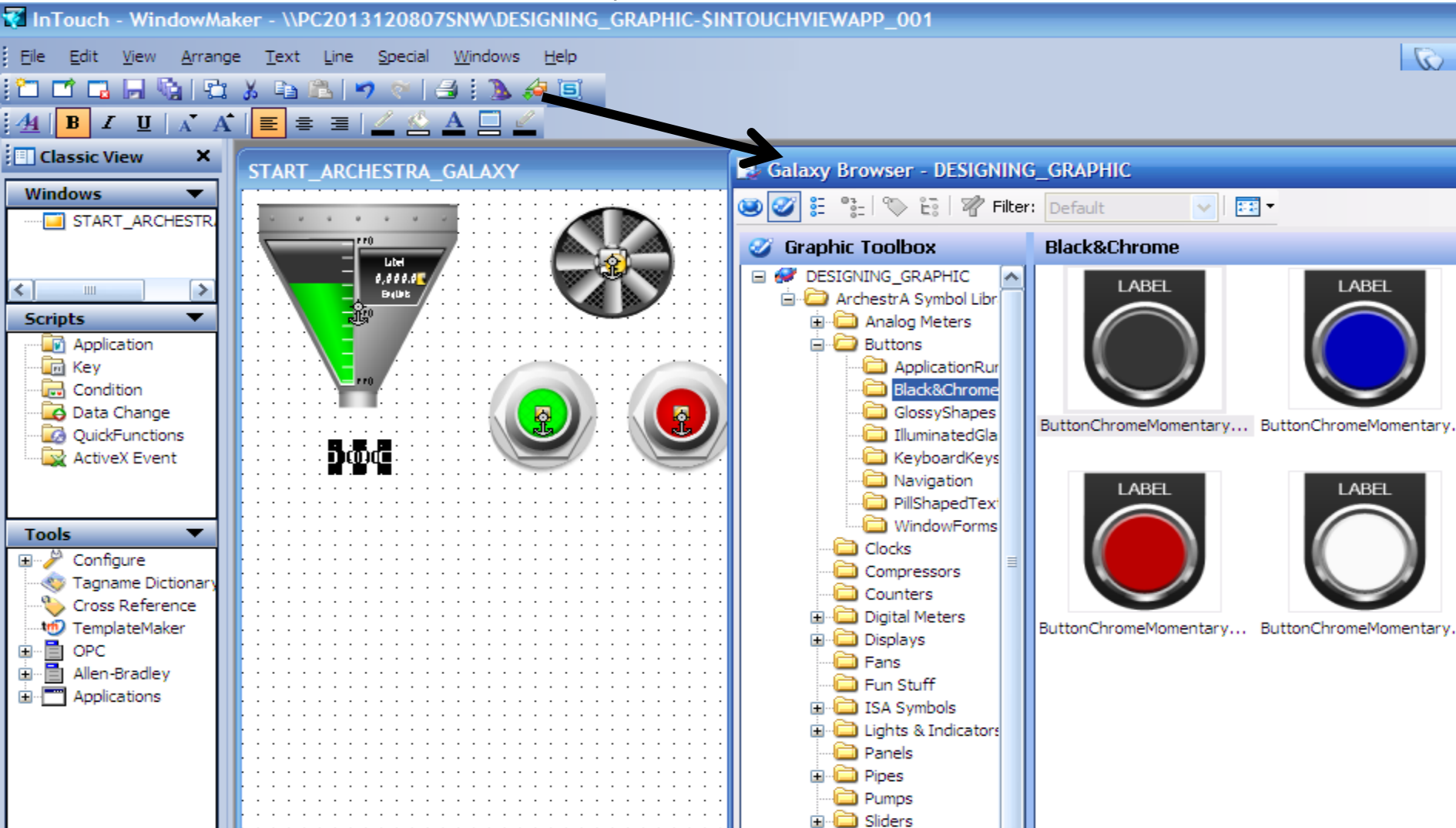


# THIẾT KẾ GIAO DIỆN INTOUCH TỪ ARCHESTRA



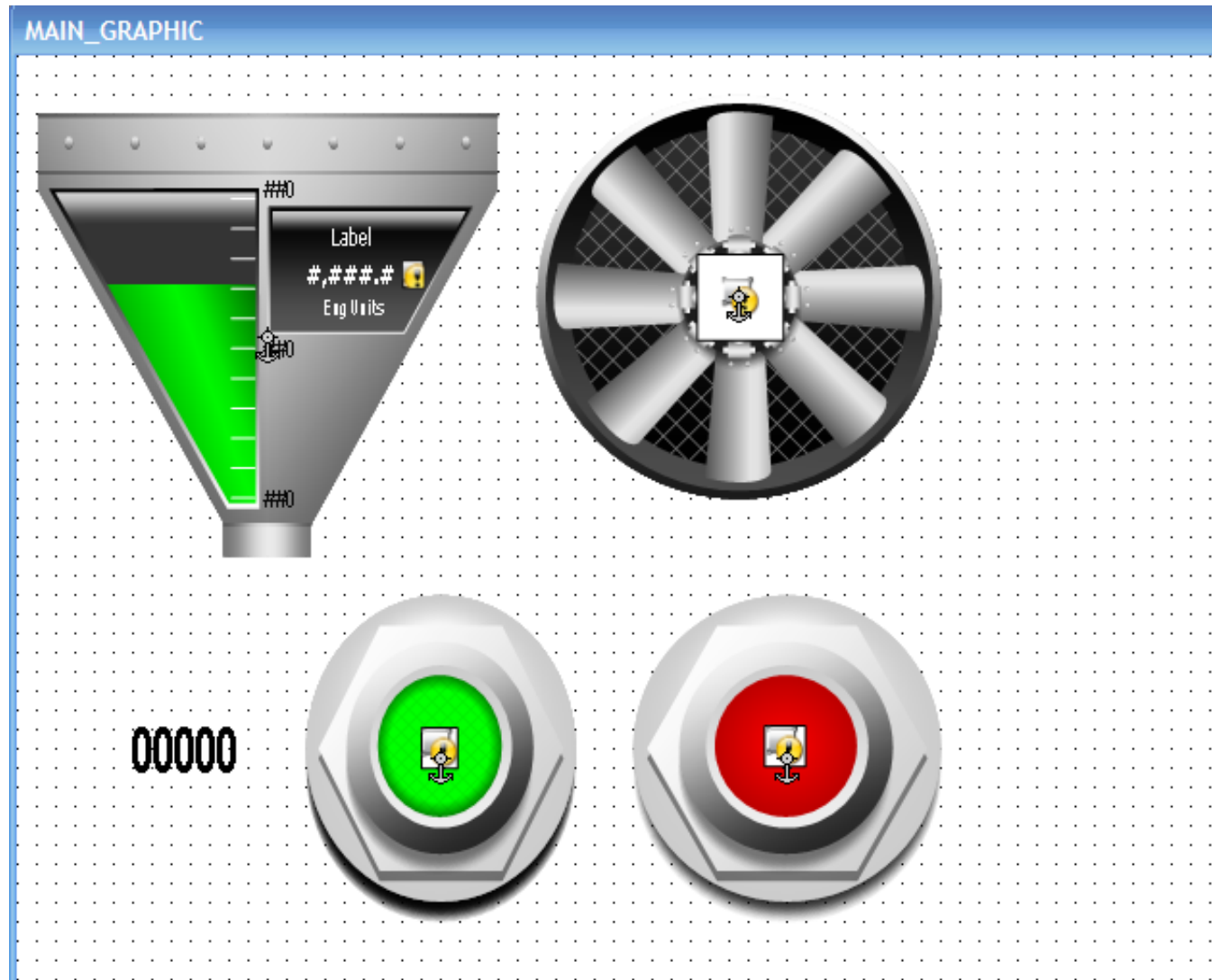
- ✓ Tạo giao diện cho ứng dụng, có thể tạo nhiều giao diện để sử dụng
- ✓ Đặt tên, chọn vị trí, kích thước và màu sắc nền cho giao diện

# THIẾT KẾ GIAO DIỆN INTOUCH TỪ ARCHESTRA



✓ Chọn các đối tượng để thiết kế giao diện từ thư viện của ArchestrA

# THIẾT KẾ GIAO DIỆN INTOUCH TỪ ARCHESTRA



Thiết kế giao diện điều khiển và giám sát như hình vẽ

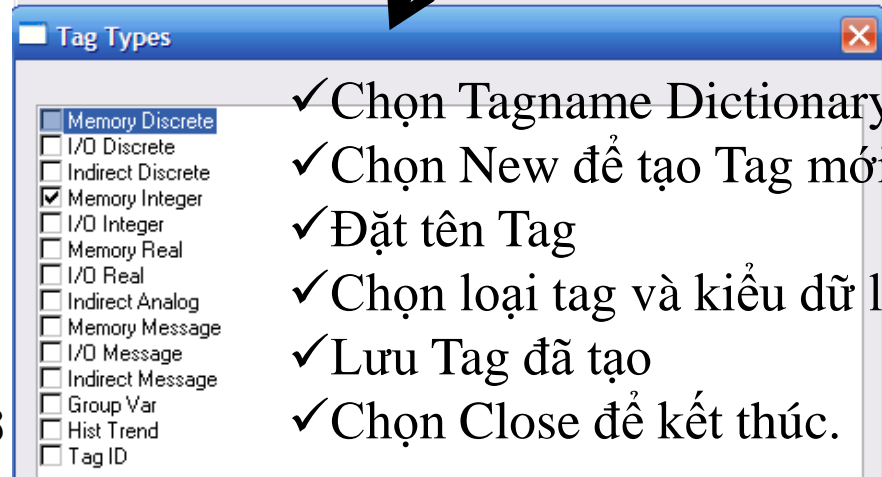
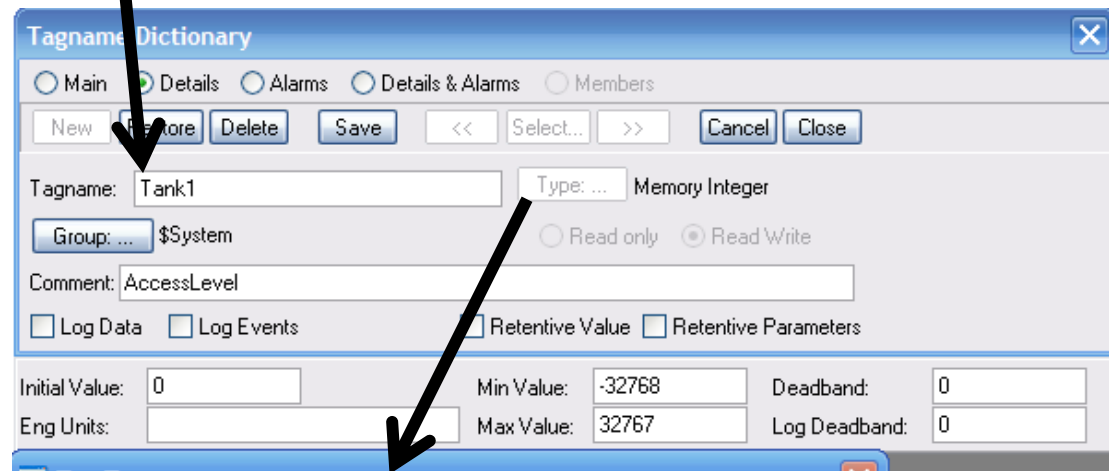
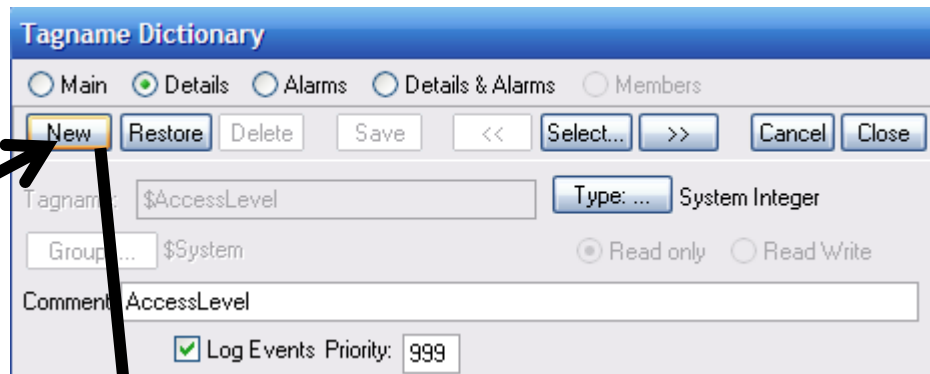
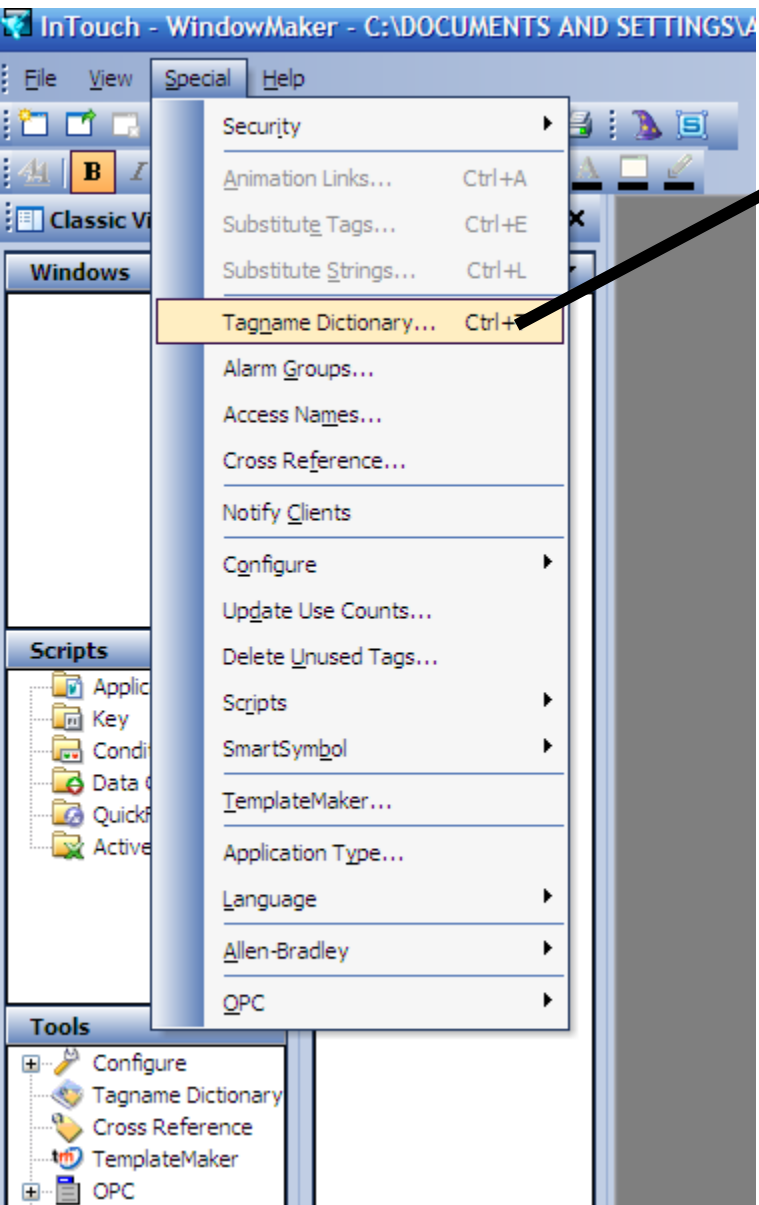
# TAGS IN INTOUCH

**Tags trong Intouch có 2 loại**

**Internal Tags:** Những Tags chỉ sử dụng trong InTouch, không giao tiếp với Controller.

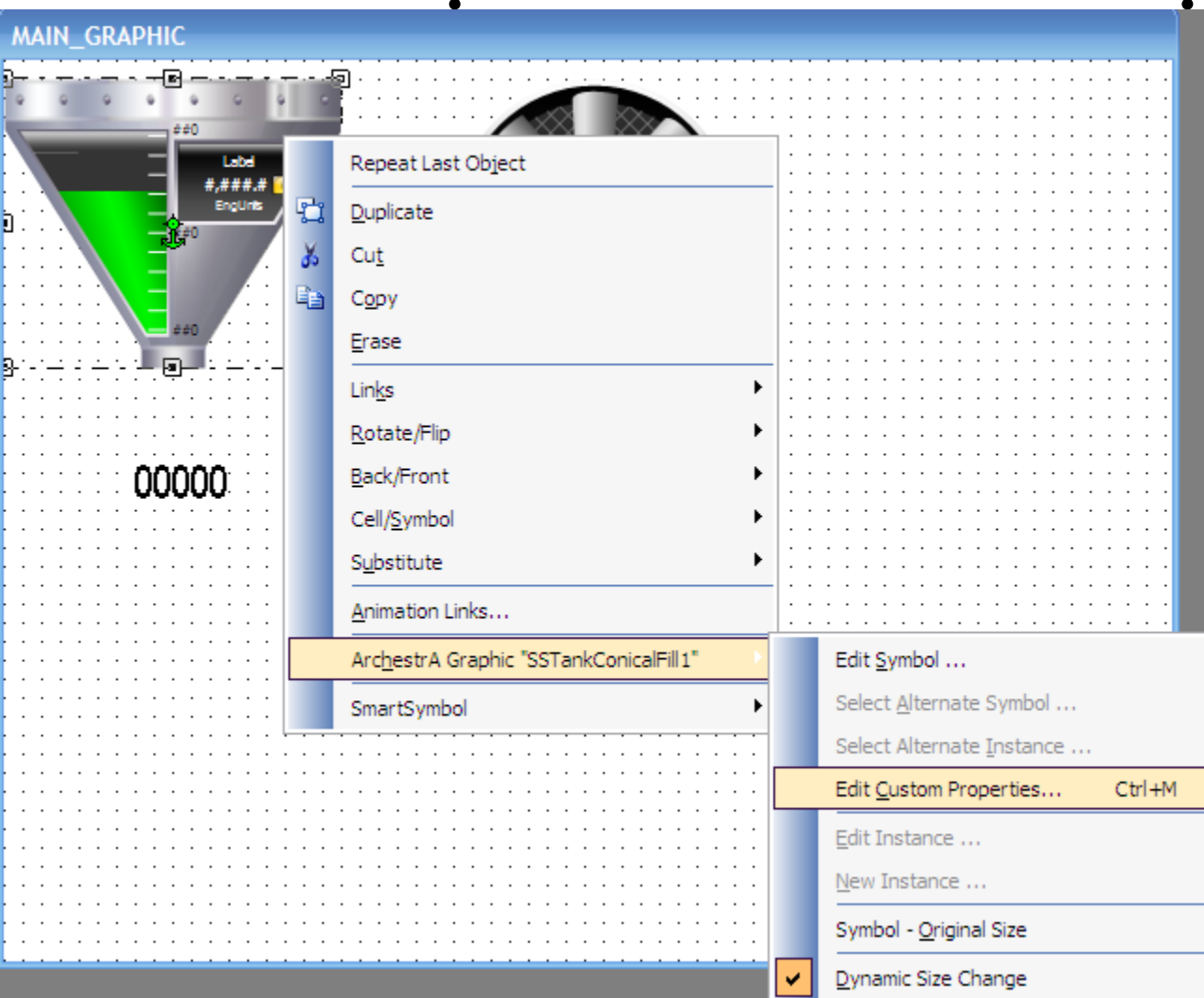
**I/O Tags:** Những Tags được sử dụng để giao tiếp với Controller

# TẠO INTERNAL TAGS

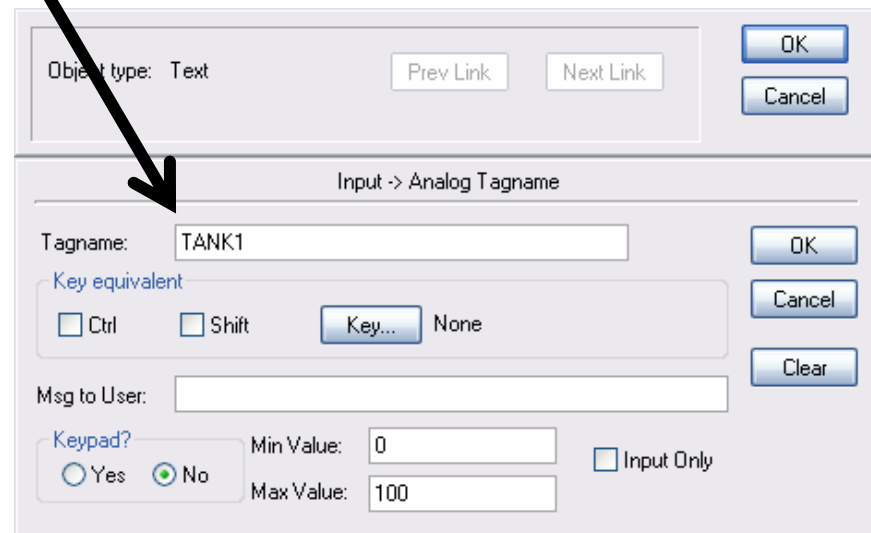
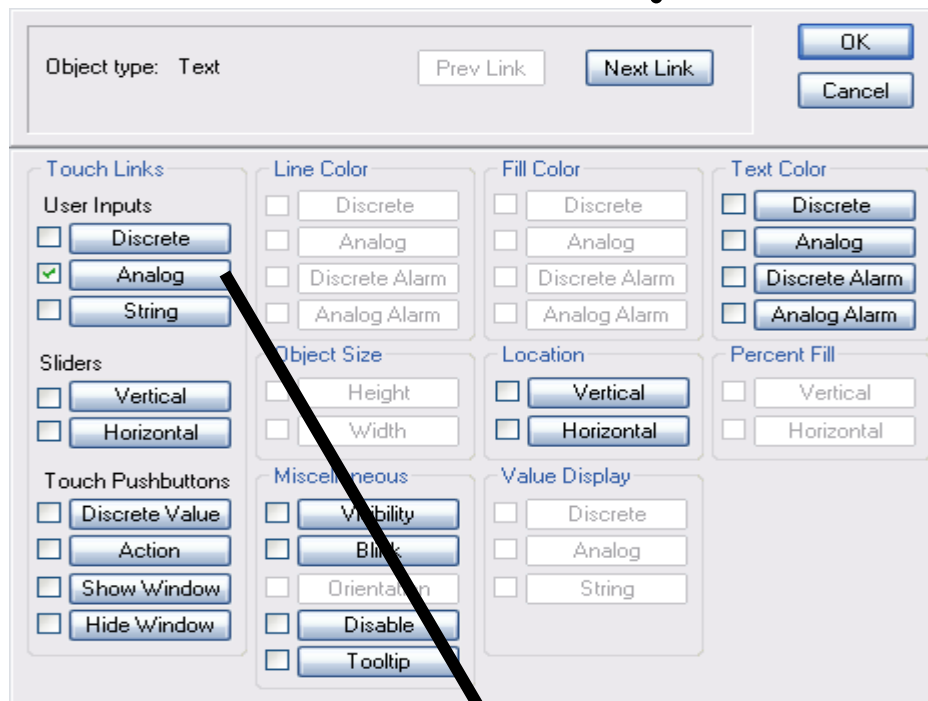
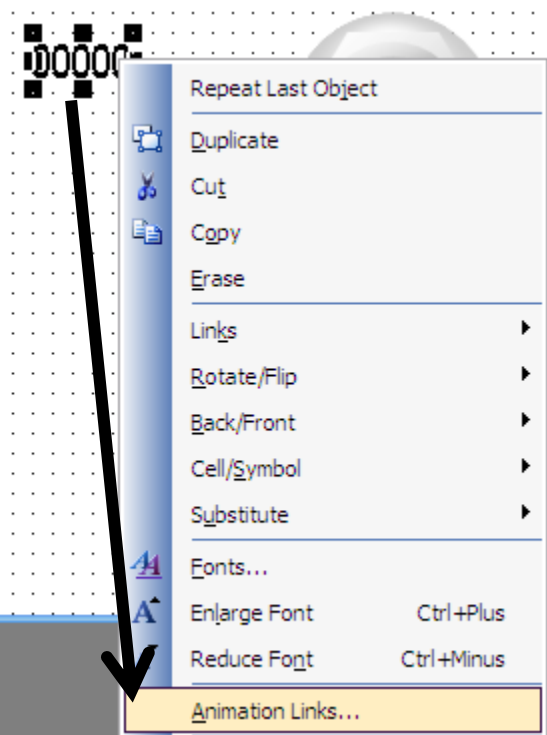


- ✓ Chọn Tagname Dictionary
- ✓ Chọn New để tạo Tag mới
- ✓ Đặt tên Tag
- ✓ Chọn loại tag và kiểu dữ liệu
- ✓ Lưu Tag đã tạo
- ✓ Chọn Close để kết thúc.

# GÁN THUỘC TÍNH CỦA ĐỐI TƯỢNG VỚI TAGS



# GÁN THUỘC TÍNH CỦA ĐỐI TƯỢNG VỚI TAGS

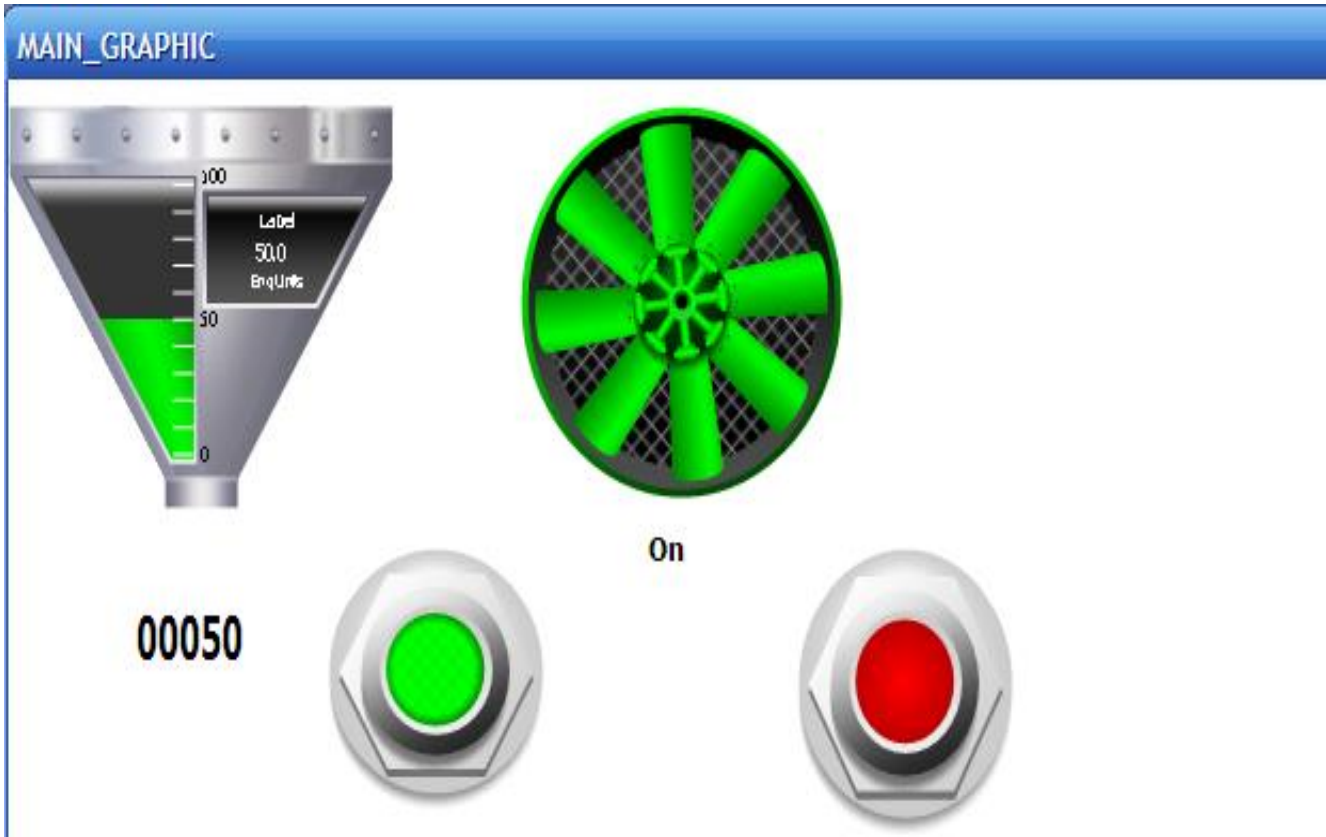


✓ Chọn Text từ thành công cụ, nhập số 0 tương ứng với số chữ số cần nhập cho tag.

✓ Chọn Animation Link, kiểu dữ liệu và Tag để nhập dữ liệu.

✓ Thực hiện tương ứng cho các tag còn lại

# CHẠY WINDOW VIEWER



- ✓ Chạy Runtime từ window viewer
- ✓ Nhập giá trị cho các tag TANK và FAN để kiểm tra kết quả



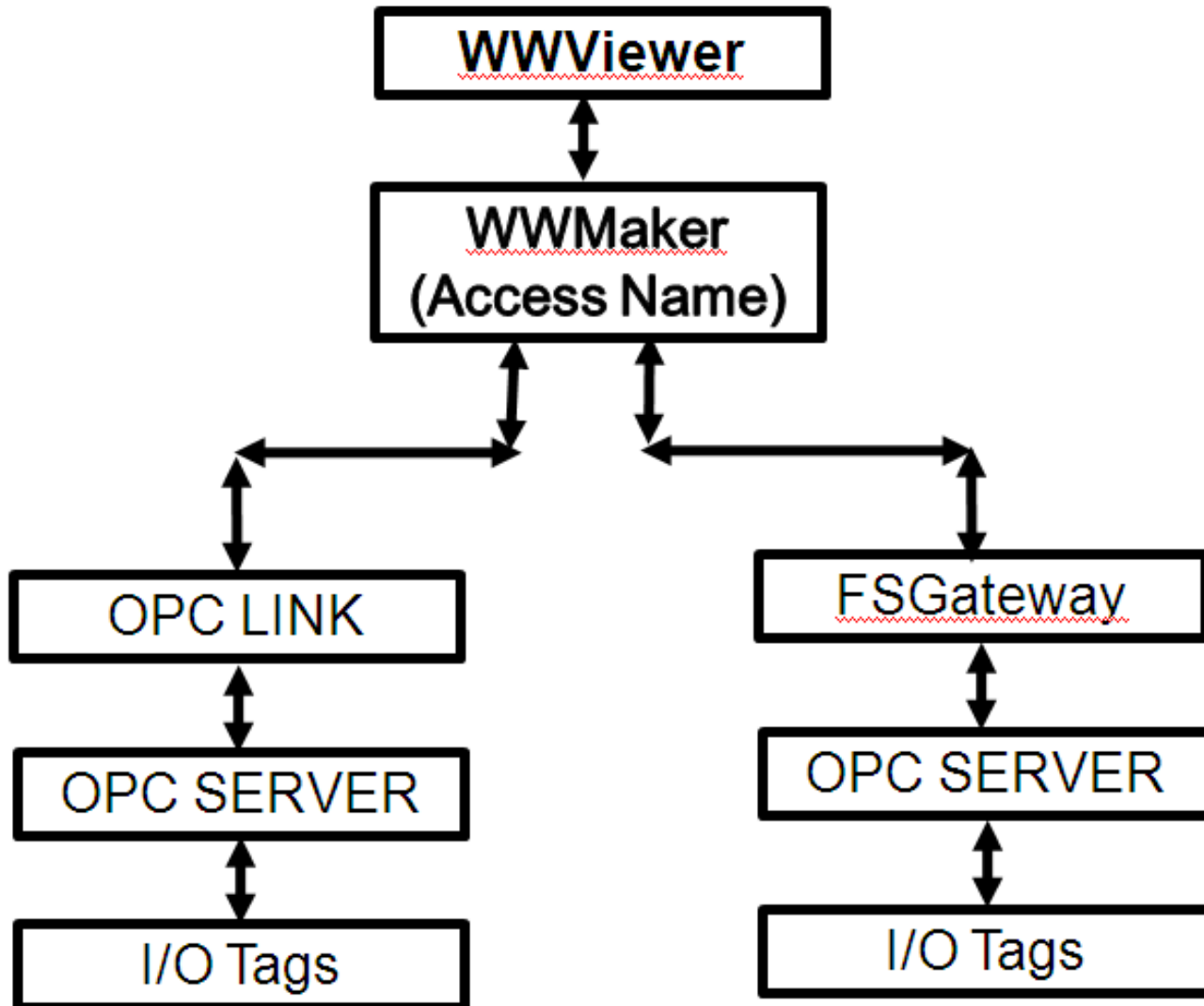
# I/O TAGS

**I/O Tags: Những Tags được sử dụng để giao tiếp với PLC**

**Cách tạo I/O tags sử dụng trong InTouch**

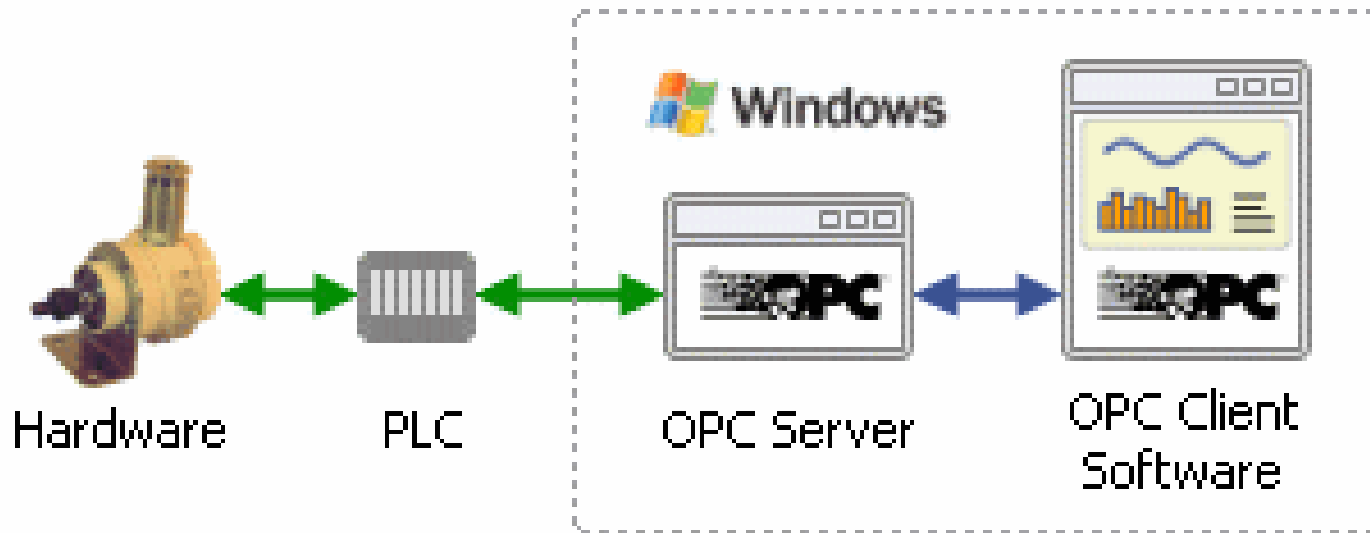
- ✓ Tạo các tag cần điều khiển trong PLC.
- ✓ Sử dụng OPC Server để cập nhật các tag đã tạo
- ✓ Dùng OPCLINK hay FSGateway đọc dữ liệu từ OPC Server
- ✓ Tạo Access name trong InTouch để liên kết với OPCLINK hay FSGateway
- ✓ Tạo các tag trong Intouch để sử dụng.

# OPC LINK và FSGateway



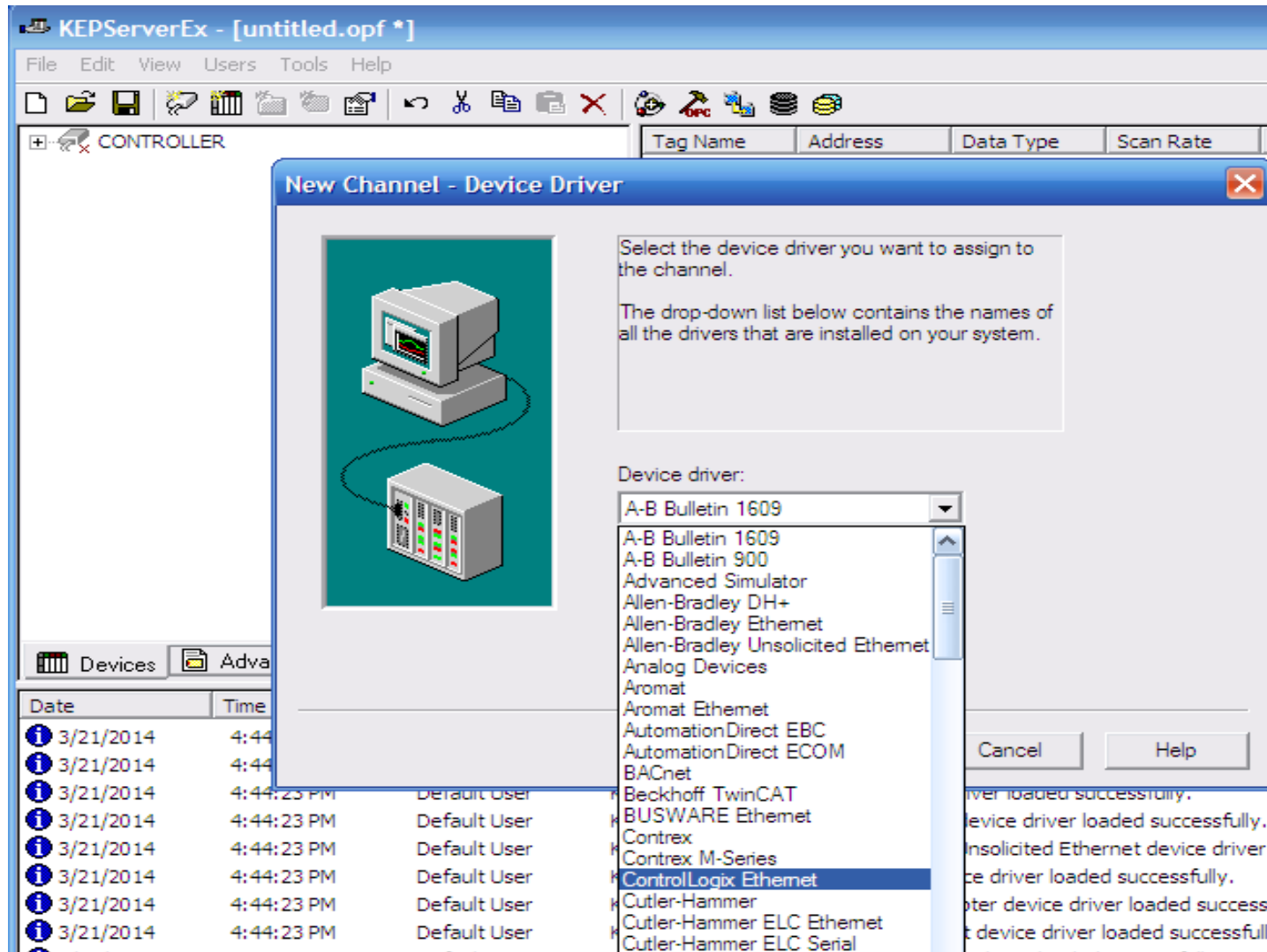
# OPC SERVER

**OPC Server:** Tích hợp sẵn các driver, có khả năng giao tiếp với các bộ controller và các phần mềm ứng dụng.

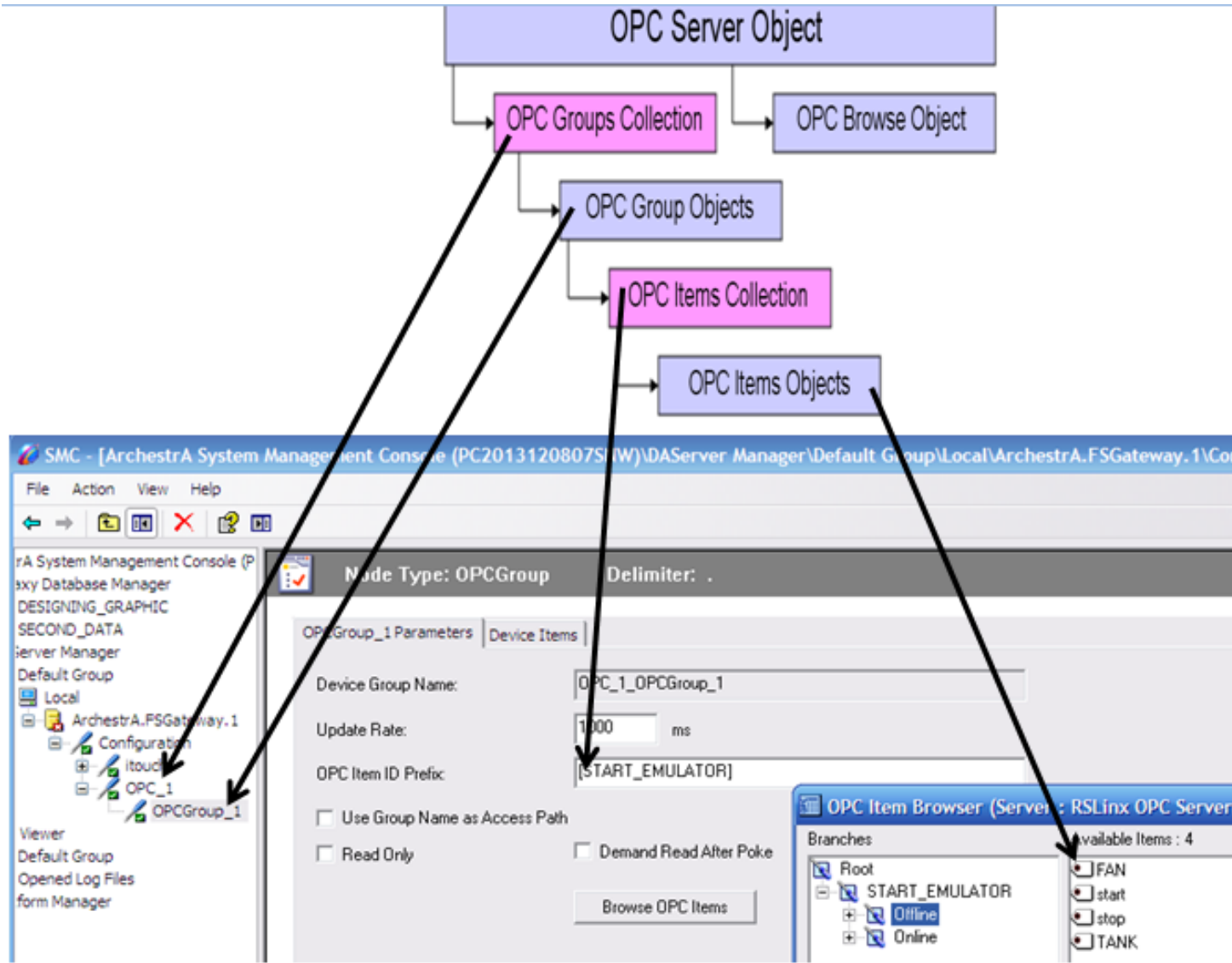


# OPC KEEPSERVER

**KeepServer OPC:** Tích hợp sẵn các driver, có khả năng giao tiếp với các bộ controller và các phần mềm ứng dụng.

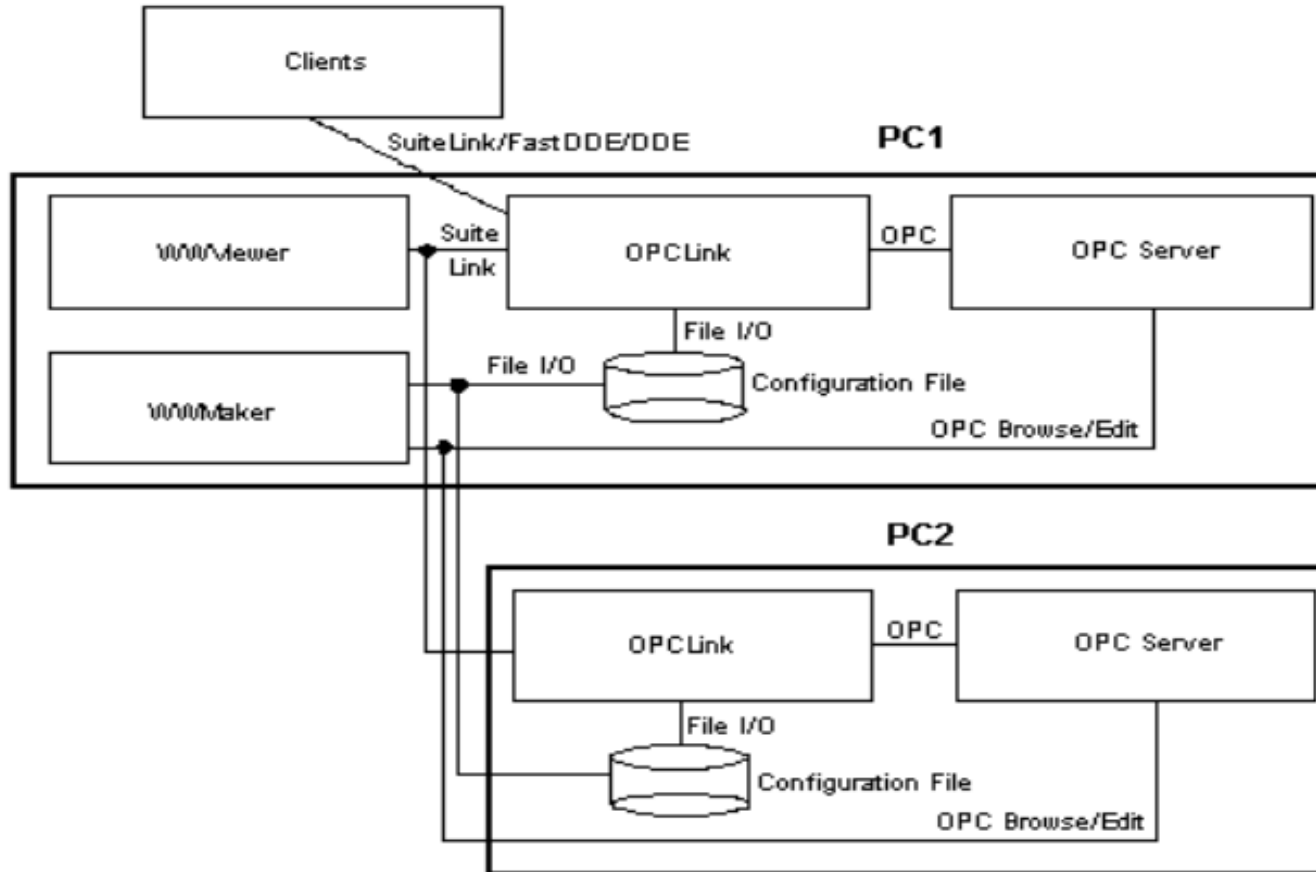


# CÁC THÀNH PHẦN CỦA OPC SERVER



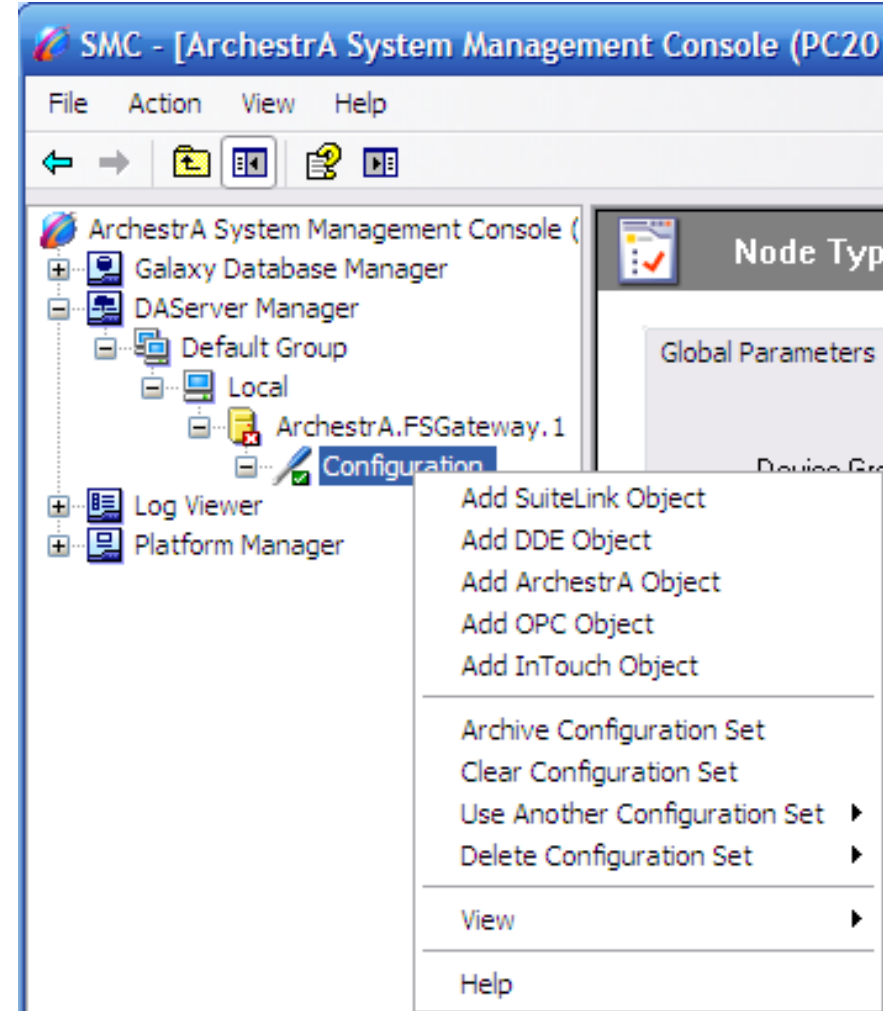
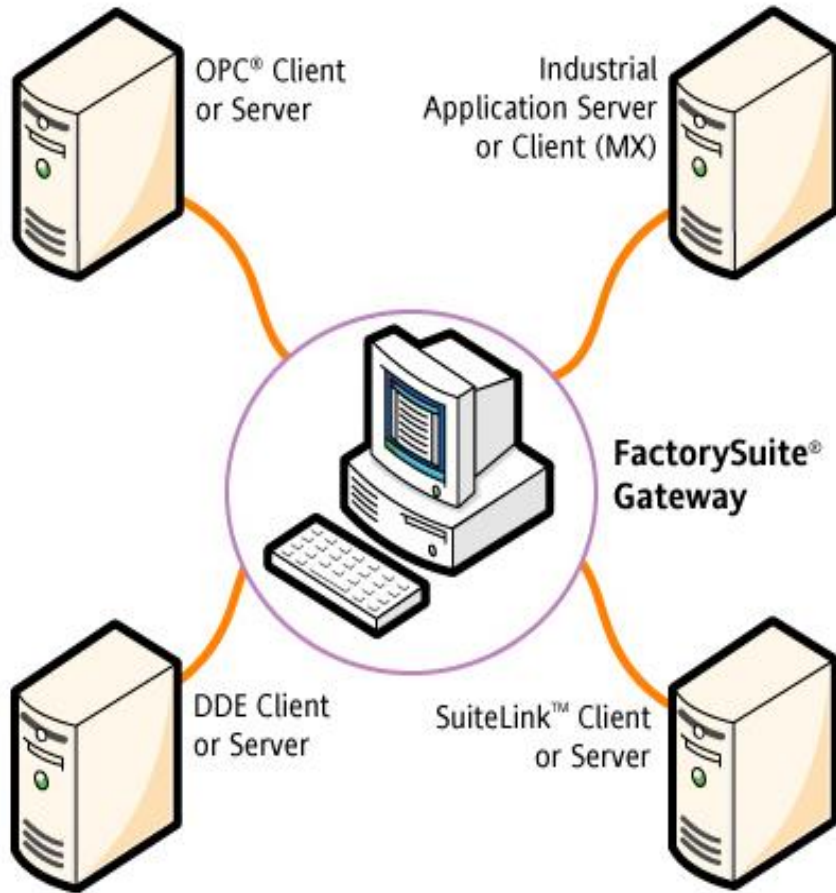
# OPC LINK

**OPC Link:** Hoạt động như một bộ chuyển đổi giao thức cho phép chương trình ứng dụng truy xuất dữ liệu từ các OPC Server.



# FACTORYSUITE GATEWAY

**FactorySuit Gateway(FSGateway):** Cho phép chương trình ứng dụng của Wonderware truy xuất dữ liệu từ các OPC.



# CẬP NHẬT DỮ LIỆU TỪ PLC DÙNG OPC SERVER

## Cập nhật dữ liệu dùng RSLinx OPC

Offline  RUN  OK  BAT  I/O

Path: AB\_VBP-1\1\*

Scope: START\_EMULA Show... Show All

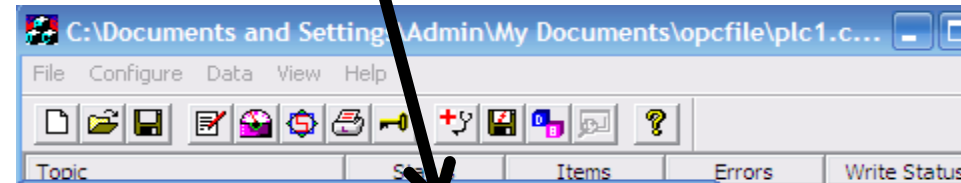
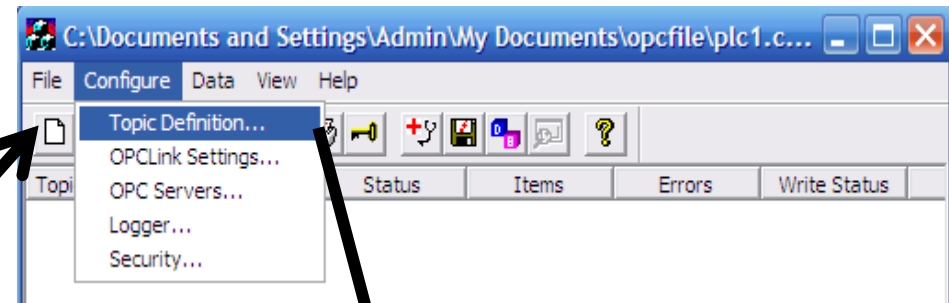
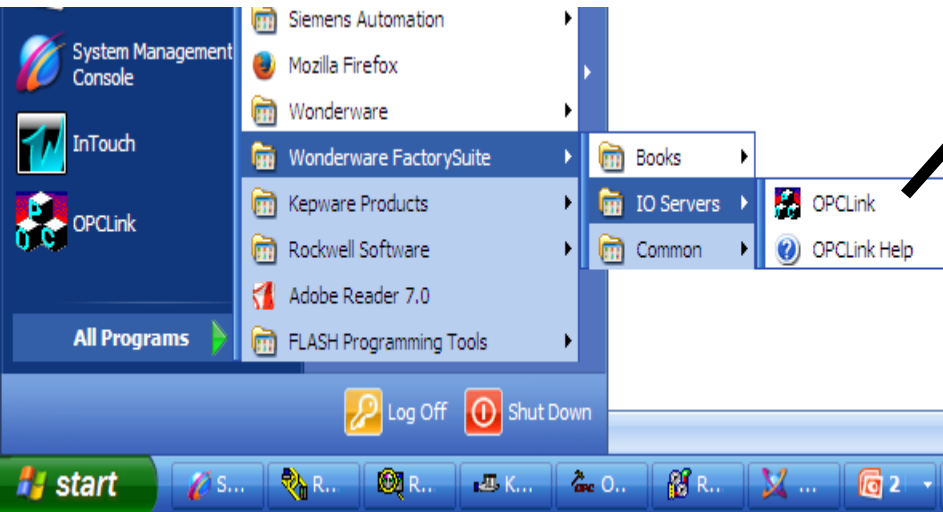
Name	Alias For	Base Tag	Data Type
motor			BOOL
start			BOOL
stop			BOOL
+volt			INT

**Tạo Project trong PLC, đặt các tag cần giao tiếp với Intouch trong Controller Tag. Download Project đến PLC.**

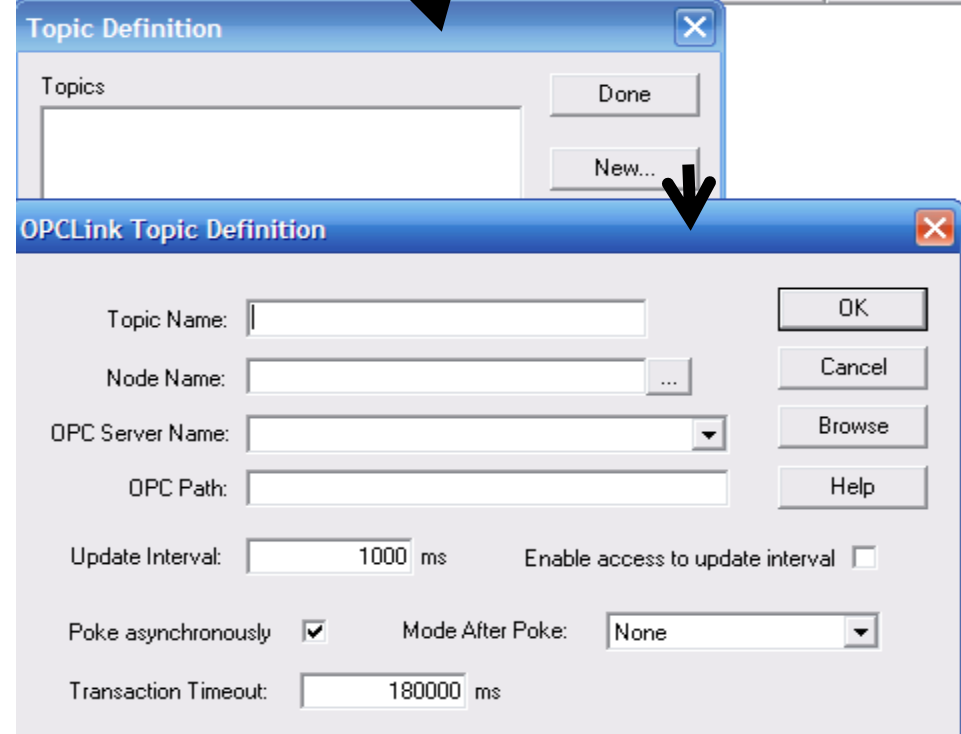


# CHẠY OPC DÙNG OPCLINK

## Chạy phần mềm OPCLink



## Mở OPCLink, Tạo một Topic mới.



# CHẠY OPC DÙNG OPCLINK

## Tạo Topic cho OPCLink

Tên Topic được sử dụng trong Intouch.

Tên máy tính chạy OPC Server

OPC lưu dữ liệu từ PLC

OPCLink Topic Definition

Topic Name: Em

Node Name: ...

OPC Server Name: RSLinx OPC Server

OPC Path: CCOPC.XMLWrapper  
KEPware.KEPServerEx.V4  
OPC.SimaticHMI.HmiRTm  
OPCServer.WinCC  
RSLinx OPC Server  
RSLinx Remote OPC Server

Update Interval: Update interval

Poke asynchronously  Mode After Poke: None

Transaction Timeout: 180000 ms

Poke mode:

- Control mode
- Transition mode
- Full optimization

Lifecycle Settings

Lifecycle

Timeout: 0 ms

OK  
Cancel  
Browse  
Help

# TẠO ACCESS NAME TRONG INTOUCH

## Tạo Access Name sử dụng cho Intouch

The image shows a screenshot of the InTouch software interface. The main window is titled "InTouch - WindowMaker - \\PC2013120807SNW\DESIGNING\_GRAPHIC-SINTOUCHVIEWAPP\_001". The "OPC Tag Creator" dialog box is open, showing the "OPC Configuration" section with "RSLink OPC Server on localhost" selected. The "Access Names" section is empty. Below it, the "Access Name" dialog box is open, showing the "Access Name" field with "PLC1" entered. The "Application Name" field is circled in red and contains "OPCLINK". The "Node Name" field is empty. The "Topic Name" field contains "EM". The "Which protocol to use" section has "DDE" selected. The "When to advise server" section has "Advise only active items" selected. The "Topic Properties" section has "OPC Server Node" empty, "OPC Server" set to "RSLink OPC Server", "OPC Path" empty, and "Update Interval" set to "1000 ms".

**Tạo Access Name**

**Access Name sử dụng cho Intouch**

**Tên ứng dụng phải là OPCLINK**

**Topic Name đã tạo từ OPCLINK**

# TẠO TAG TRONG INTOUCH

Tạo tag để sử dụng cho Intouch

OPC Configuration: Configure... About... Done

RSLink OPC Server on localhost Language... Help

ItemID: [START\_EMULATOR]TANK

Filter: \*

Access Rights: all tags

Data types: use native type

Browse OPC:

- START\_EMULATOR
  - Offline
  - Program:MainProgram
  - Online

Access Names: PLC1

Tag Creation Progress

Creation Time	Tagname	Tag Type	Access Name	Itemname	OPC Type
2014/03/20 08:25:01.671	i START_EMULATOR_TANK_PLC1	I/O Integer	PLC1	[START_EMULATOR]T...	signed word

Create Tag

Tagname: i START\_EMULATOR\_TANK\_PLC1

Comment: [START\_EMULATOR]TANK

Tag Type:

- Discrete
- Integer
- Real
- Message

Item: i[START\_EMULATOR]TANK

Access Name: PLC1

OK Cancel Abort Help

- ✓ Chọn Tag cần sử dụng trong Intouch
- ✓ Chọn kiểu dữ liệu của Tag
- ✓ Chọn OK để tạo Tag, thực hiện tương tự cho các Tag còn lại

# TẠO HIỆU ỨNG CHO CÁC ĐỐI TƯỢNG

Tạo tag để sử dụng cho Intouch

The screenshot illustrates the configuration of a text object in Intouch. The main window shows a 'Text' object with 'Analog' selected under 'User Inputs'. A dialog box 'Input -> Analog Tagname' is open, showing 'Tagname:' and 'Key equivalent' options. A 'Select Tag' dialog is also open, displaying a list of tags with columns for Tagname, Tag Type, and Access Name. The tag 'i START\_EMULATOR\_TANK\_PLC1' is selected.

Tagname	Tag Type	Access Name	Ala
\$OperatorDomainEntered	System Message		
\$OperatorEntered	System Message		
\$OperatorName	System Message		
\$PasswordEntered	System Message		
\$Second	System Integer		
\$startDdeConversations	System Discrete		
\$System	System Alarm...		
\$Time	System Integer		
\$TimeString	System Message		
\$VerifiedUserName	System Message		
\$Year	System Integer		
d_START_EMULATOR_FAN_PLC1	I/O Discrete		\$S
i START_EMULATOR_TANK_PLC1	I/O Integer		\$S

- ✓ Chọn Text để nhập dữ liệu
- ✓ Chọn kiểu dữ liệu của Tag
- ✓ Chọn Tag cần nhập dữ liệu

# TẠO HIỆU ỨNG CHO CÁC ĐỐI TƯỢNG

## Gán thuộc tính cho Tank

The screenshot shows a software interface for configuring a Tank object. The Tank is a funnel-shaped container with a green liquid level. The 'Edit Custom Properties' window is open, showing the 'EngUnits' property. The 'Value' property is selected, and the 'Select Tag' dialog is open, showing a list of tags. The tag 'i\_START\_EMULATO...' is selected.

**Custom Properties**

Name	Default Value
EngUnits	
FillColor	Green
Max	100
Min	0
Value	---
ValueColor	White

**Select Tag**

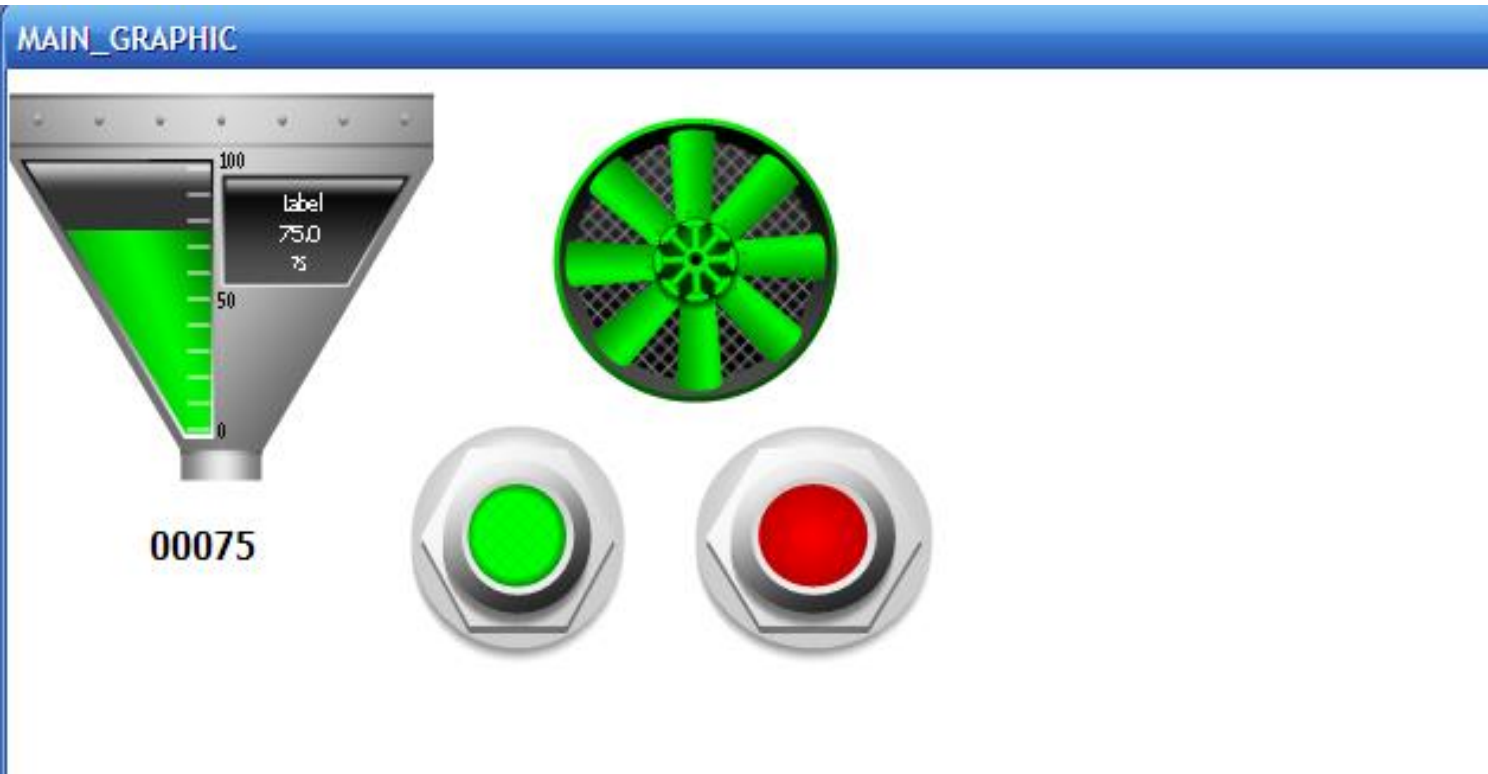
Tag Source: <local>

Tagname	Tag Type	Access Name	Alarm Group
\$OperatorDomainE...	System Message		
\$OperatorEntered	System Message		
\$OperatorName	System Message		
\$PasswordEntered	System Message		
\$Second	System Integer		
\$StartDdeConvers...	System Discrete		
\$System	System Alarm...		
\$Time	System Integer		
\$TimeString	System Message		
\$VerifiedUserName	System Message		
\$Year	System Integer		
d_START_EMULAT...	I/O Discrete		\$System
i_START_EMULATO...	I/O Integer		\$System

- ✓ Chọn Tank để gán thuộc tính
- ✓ Gán thuộc tính Value đến Tag điều khiển.
- ✓ Thực hiện tương tự cho các đối tượng khác

# CHẠY RUNTIME

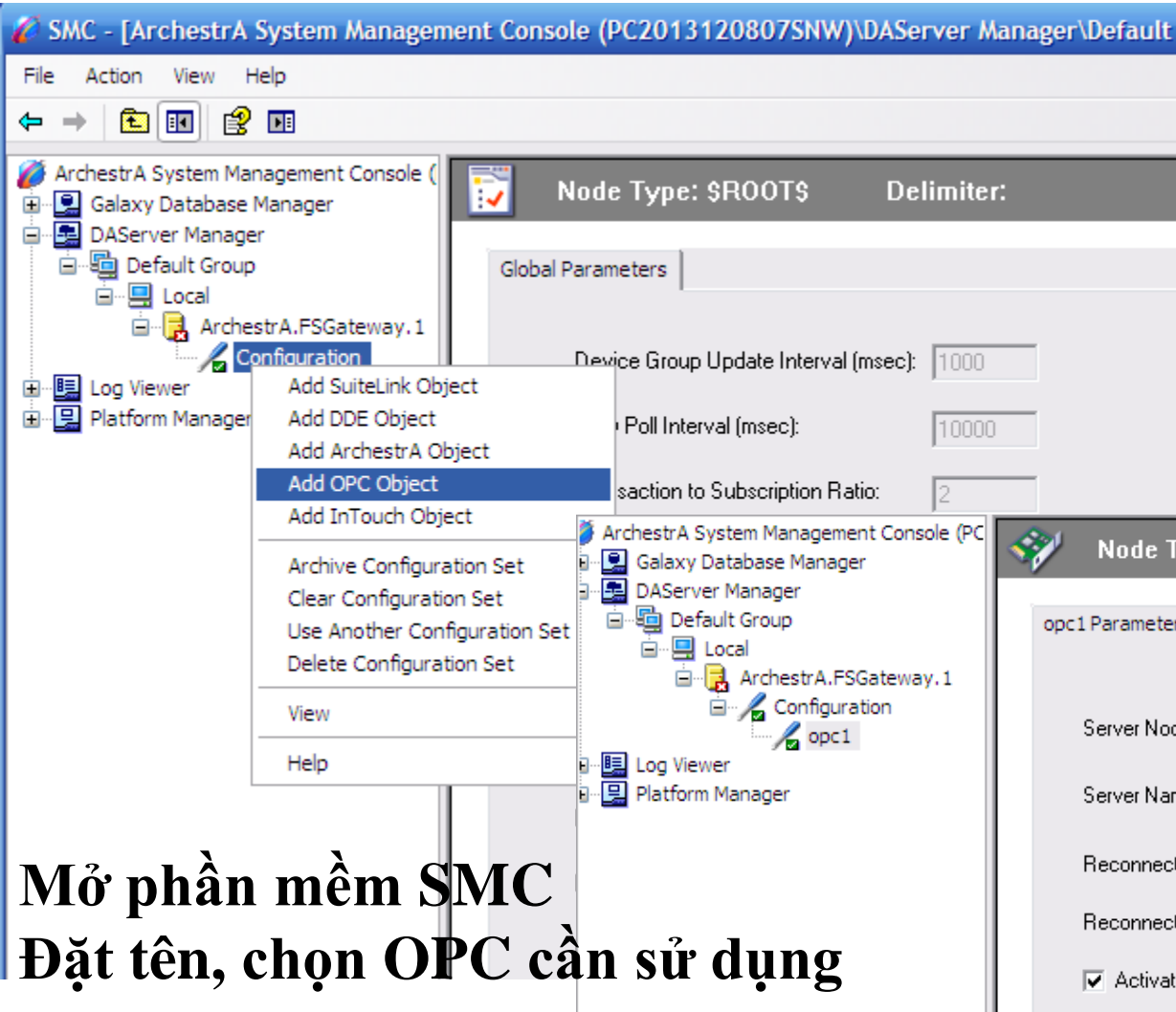
Chạy Window Viewer, nhập giá trị để kiểm tra đề quả



**Lưu ý: Để chạy Runtime trong Window Viewer, Các phần mềm Rslink, OPCLINK phải luôn được mở.**

# CẬP NHẬT DỮ LIỆU TỪ OPC SERVER

## Cập nhật dữ liệu dùng FSGateway



Máy tính chạy OPC Server



Mở phần mềm SMC  
Đặt tên, chọn OPC cần sử dụng



# CẬP NHẬT DỮ LIỆU TỪ OPC SERVER

## Cập nhật dữ liệu dùng FSGateway

The screenshot displays the InTouch configuration interface. On the left, a tree view shows the project structure with 'opc1' and 'plc1' highlighted. The main window is titled 'Node Type: OPCGroup' and 'Delimiter: .'. It has two tabs: 'plc1 Parameters' and 'Device Items'. The 'Device Items' tab is active, showing the following settings:

- Device Group Name:
- Update Rate:  ms
- OPC Item ID Prefix:
- Use Group Name as Access Path
- Read Only
- Demand Read After Poke
- 

An arrow points from the 'opc1\_plc1' text field to the 'OPC Item Browser' dialog box. The dialog box is titled 'OPC Item Browser (Server : RSLinx OPC Server on localhost)'. It shows a tree view of 'Branches' and a list of 'Available Items'.

**Branches:**

- Root
  - START\_EMULATOR
    - Offline
    - Online

**Available Items:**

- FAN
- start
- stop
- TANK

**Basket (Selected Items):**

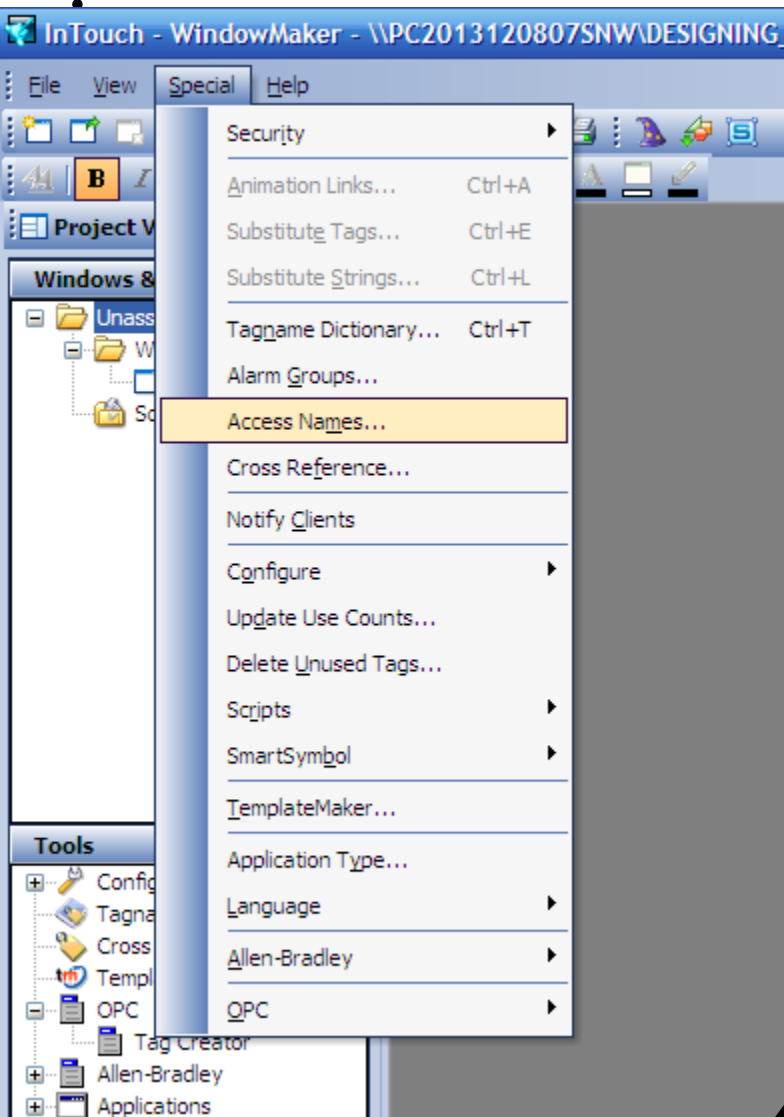
- [START\_EMULATOR]FAN
- [START\_EMULATOR]start
- [START\_EMULATOR]stop
- [START\_EMULATOR]TANK

Buttons at the bottom of the dialog: OK, Filter..., Cancel.

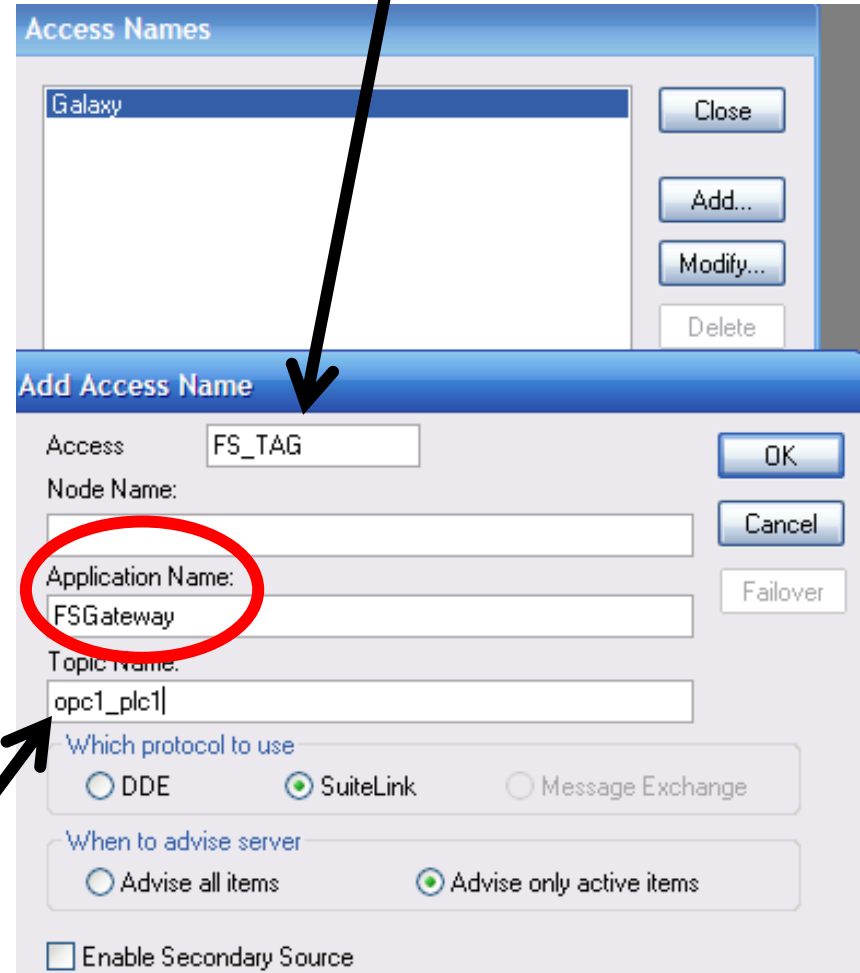
**Tên Topic sử dụng trong Access Nam trong InTouch**

# TẠO ACCESS NAMES TRONG INTOUCH

## Tạo Access Names



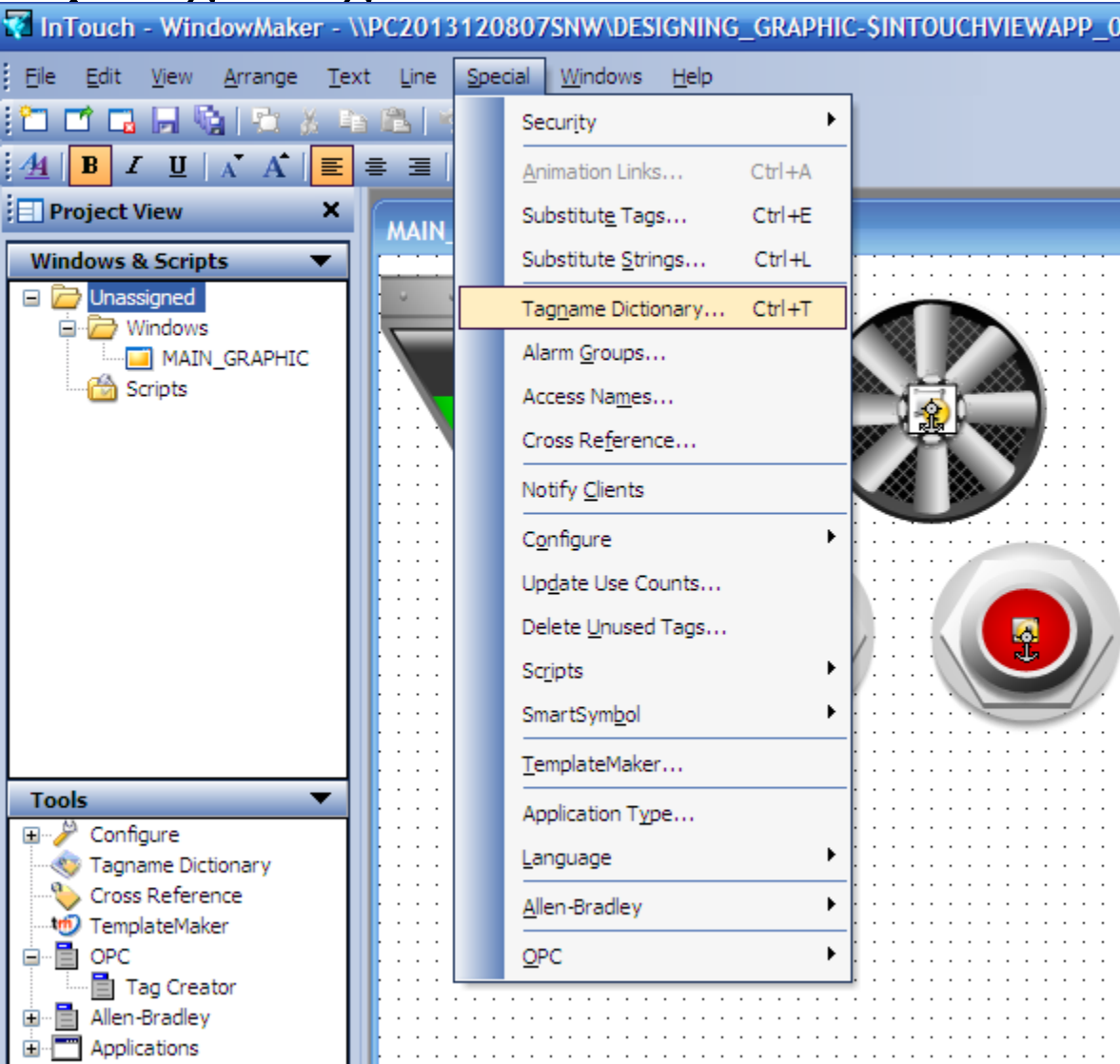
## Access Names sử dụng trong Intouch



## Topic Names đã tạo trong FSGateway

# TẠO TAG SỬ DỤNG TRONG INTOUCH

## Tạo tag trong Intouch



# TẠO TAG SỬ DỤNG TRONG INTOUCH

Tên tag trong Intouch

Loại Tag

Tagname Dictionary

Main Details Alarms Details & Alarms Members

New Restore Delete Save << Select... >> Cancel Close

Tagname: TANK Type: ... I/O Integer

Group: ... \$System Read only Read Write

Comment: AccessLevel

Log Data Log Events Retentive Value Retentive Parameters

Initial Value: 0 Min EU: -32768 Max EU: 32767

Deadband: 0 Min Raw: -32768 Max Raw: 32767

Eng Units: Log Deadband: 0 Conversion Linear Square Root

Access Name: ... FS\_TAG

Item: TANK Use Tagname as Item Name

Tạo tag FAN

Tagname Dictionary

Main Details Alarms Details & Alarms Members

New Restore Delete Save <>

Tagname: FAN

Group: ... \$System

Comment: AccessLevel

Log Data Log Events

Initial Value: 0

Deadband: 0

Eng Units:

Access Name: ... FS\_TAG

Item: FAN

Tên Tag đã khai báo trong FSGateway

# TẠO HIỆU ỨNG CHO ĐỐI TƯỢNG

MAIN\_GRAPHIC

00000

EngUnits  
Fill Color  
Max  
Min  
Value  
Value Color

Value

5 of 6

Double

Default Value

Select Tag

Tag Source: <local>

Tagname	Tag Type	Access Name	Alarm Group
\$OperatorDomainE...	System Message		
\$OperatorEntered	System Message		
\$OperatorName	System Message		
\$PasswordEntered	System Message		
\$Second	System Integer		
\$StartDdeConvers...	System Discrete		
\$System	System Alarm...		
\$Time	System Integer		
\$TimeString	System Message		
\$VerifiedUserName	System Message		
\$Year	System Integer		
FAN	I/O Integer	FS_TAG	\$System
TANK	I/O Integer	FS_TAG	\$System

Dot Field: <none>

Filter: <none>

OK

Cancel

Status

This property is overridden. The original value attribute was '...'. The property has the following Invalid Value. This field cannot be empty. (Property Value) To configure an empty reference as the default value.

Gán thuộc tính TANK

Gán thuộc tính FAN

Value

5 of 5

Boolean

Select Tag

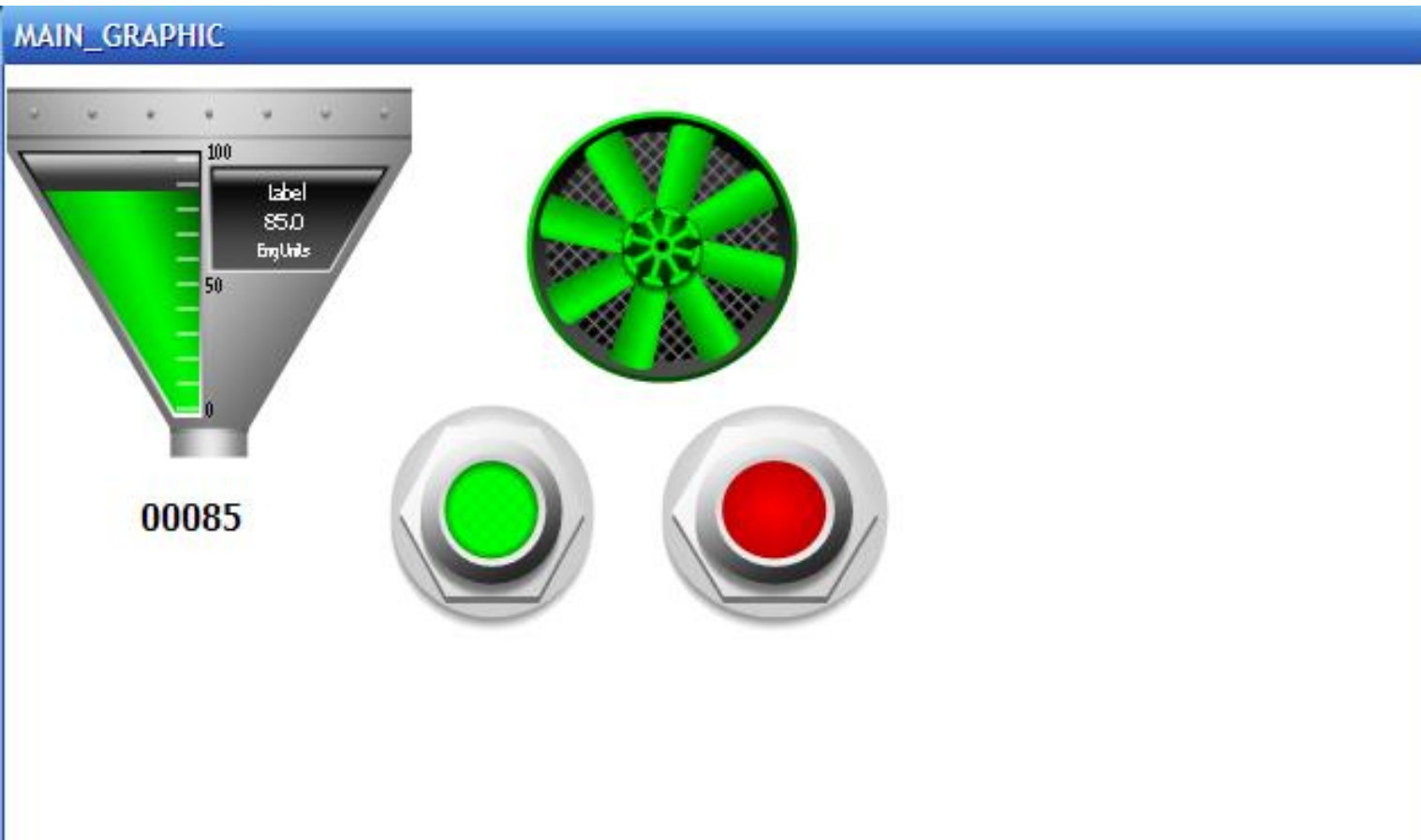
Tag Source: <local>

Tagname	Tag Type	Access Name	Alarm Group
\$OperatorDomainE...	System Message		
\$OperatorEntered	System Message		
\$OperatorName	System Message		
\$PasswordEntered	System Message		
\$Second	System Integer		
\$StartDdeConvers...	System Discrete		
\$System	System Alarm...		
\$Time	System Integer		
\$TimeString	System Message		
\$VerifiedUserName	System Message		
\$Year	System Integer		
FAN	I/O Integer	FS_TAG	\$System
TANK	I/O Integer	FS_TAG	\$System

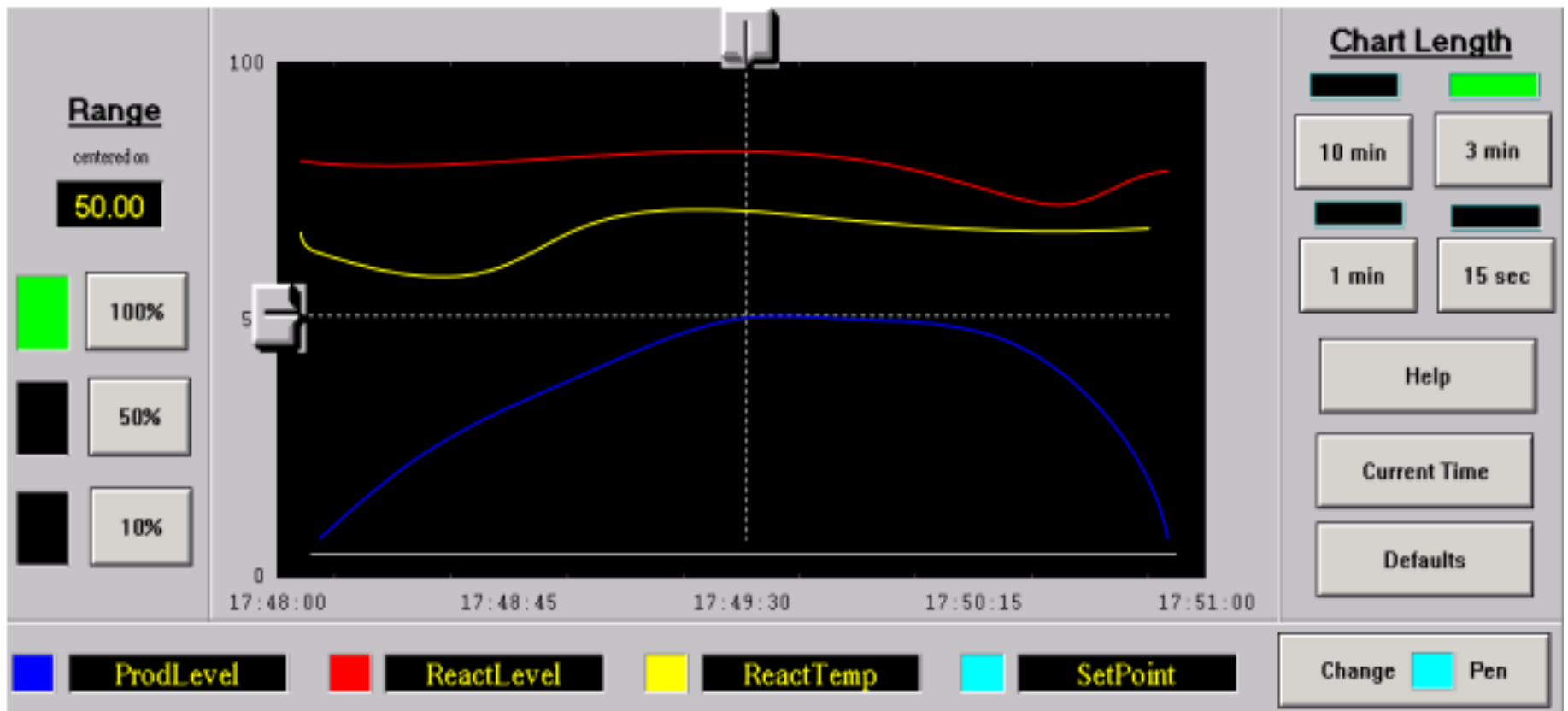
Status

This property is overridden. The original value attribute was '...'. The property has the following Invalid Value. This field cannot be empty. (Property Value) To configure an empty reference as the default value.

# CHẠY RUNTIME



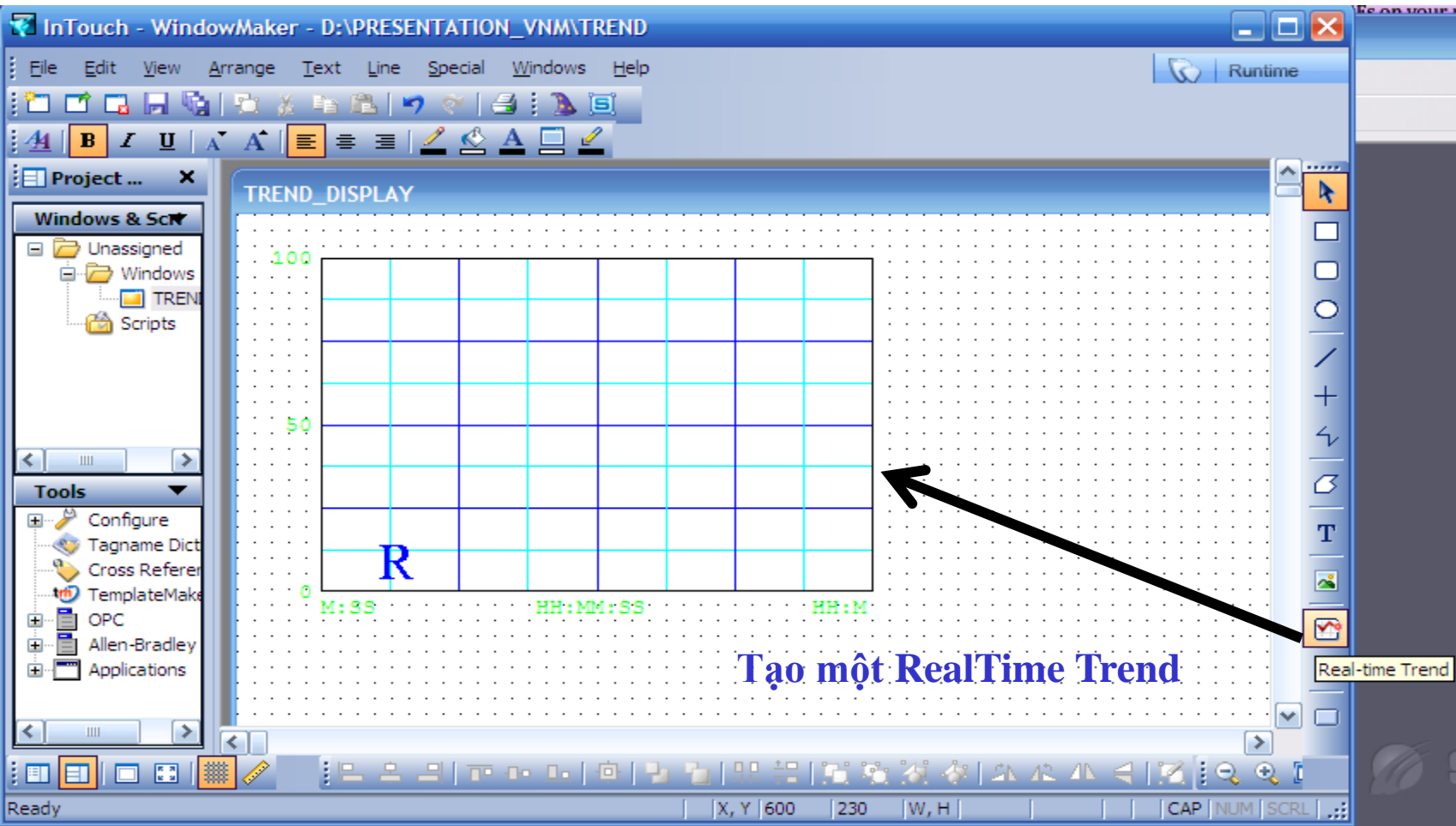
# VẼ ĐỒ THỊ DÙNG TREND



**Hiện thị đồ thị quá trình xử lý dạng đồ thị, có 2 loại**

- ✓ RealTime Trend: Hiện thị quá trình xử lý theo thời gian thực
- ✓ Historical Trend: Hiện thị quá trình xử lý trong quá khứ

# REALTIME TREND



## Cấu hình RealTime Trend

- ✓ Tạo một RealTime Trend
- ✓ Chọn Tag để hiển thị cho Trend
- ✓ Chọn khoảng thời gian hiển thị và thời gian cập nhật cho Trend
- ✓ Có thể chọn lựa các chức năng khác cho Trend



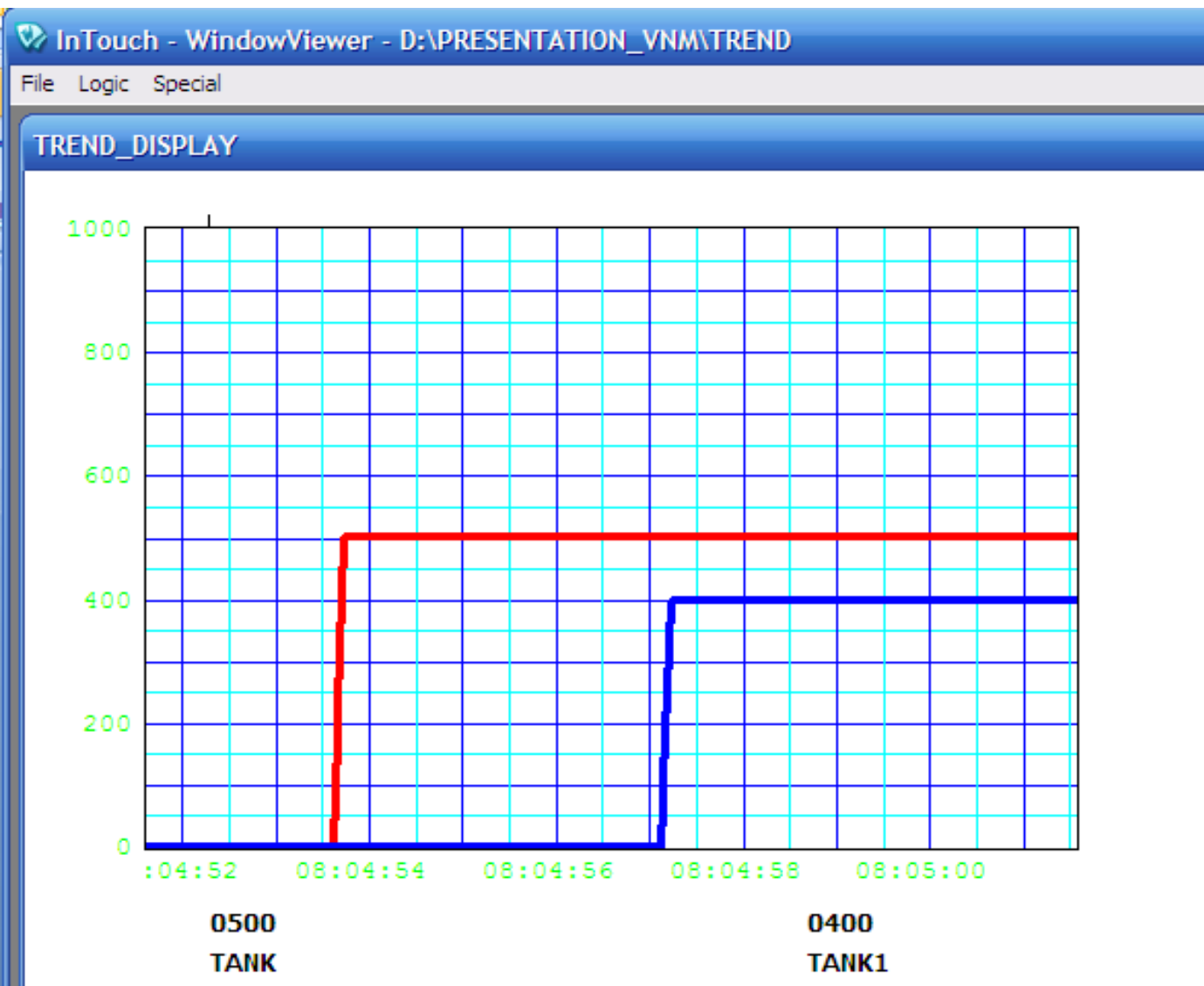
# REALTIME TREND

The screenshot shows the InTouch - WindowMaker interface. The main window is titled "TREND\_DISPLAY" and displays a real-time trend chart with a y-axis ranging from 0 to 1000. A "Real Time Trend Configuration" dialog box is open, allowing users to customize the trend display. The dialog includes fields for Comment, Time (Time Span, Interval, and units), Color (Chart Color, Border Color), Time Divisions (Number of Major Div, Minor Div/Major Div, Top/Bottom Labels, Major Div/Time Label, HH:MM:SS Display), Value Divisions (Number of Major Div, Minor Div/Major Div, Left/Right Labels, Major Div/Value Label, Min/Max Value), and a Pen table for defining different data series.

Pen	Expression	Color	Width
1	TANK	Red	4
2	TANK1	Blue	4
3		Yellow	1
4		Black	1

✓ Chọn Tag để vẽ đồ thị, thiết lập các thông số khác cho Trend

# REALTIME TREND



Chọn RunTime để hiển thị đồ thị

Lưu ý: Chọn Time Span và Sample Interval phù hợp để hiển thị

# HISTORICAL TREND

The image shows a screenshot of the InTouch - WindowMaker software interface. The main window is titled "InTouch - WindowMaker - D:\PRESENTATION\_VNM\TREND". The interface includes a menu bar (File, Edit, View, Arrange, Text, Line, Special, Windows, Help), a toolbar, and a Project Explorer on the left showing a tree structure with folders like "Unassigned", "Windows", and "TREND". The main workspace displays a historical trend chart with multiple data series (green, red, yellow) and a time axis labeled "MM DD HH MM SS".

Overlaid on the interface are two dialog boxes:

- Tagname Dictionary:** Located in the top-left, it shows details for a tag named "FILL\_TANK". The "Log Data" checkbox is checked. Other fields include "Group: \$System", "Comment: AccessLevel", "Initial Value: 0", "Min Value: 0", "Eng Units:", and "Max Value: 1000".
- Historical Logging Properties:** Located in the bottom-left, it has the "Enable Historical Logging" checkbox checked. It includes settings for "Keep Log Files for: 2 days", "Store Log Files in Application Directory", "Printing Control" (Default % of page to print on: 50%, Max consecutive time to spend printing: 500 msec, Time to wait between printing: 2000 msec), and a "Select Printer Font..." button.

A "Security" menu is open, showing options like "Animation Links...", "Substitute Tags...", "Tagname Dictionary...", "Alarm Groups...", "Access Names...", "Cross Reference...", "Notify Clients", "Configure", "Update Use Counts...", "Delete Unused Tags...", "Scripts", "SmartSymbol", "TemplateMaker...", "Application Type...", "Language", "Allen-Bradley", and "OPC". The "Configure" option is highlighted, and its sub-menu is also open, showing "WindowMaker...", "WindowViewer...", "Alarms...", "Historical Logging..." (highlighted), "Distributed Name Manager...", and "Wizard/ActiveX Installation...".

Tạo các tag để sử dụng

Cấu hình để cho phép lưu trữ dữ liệu

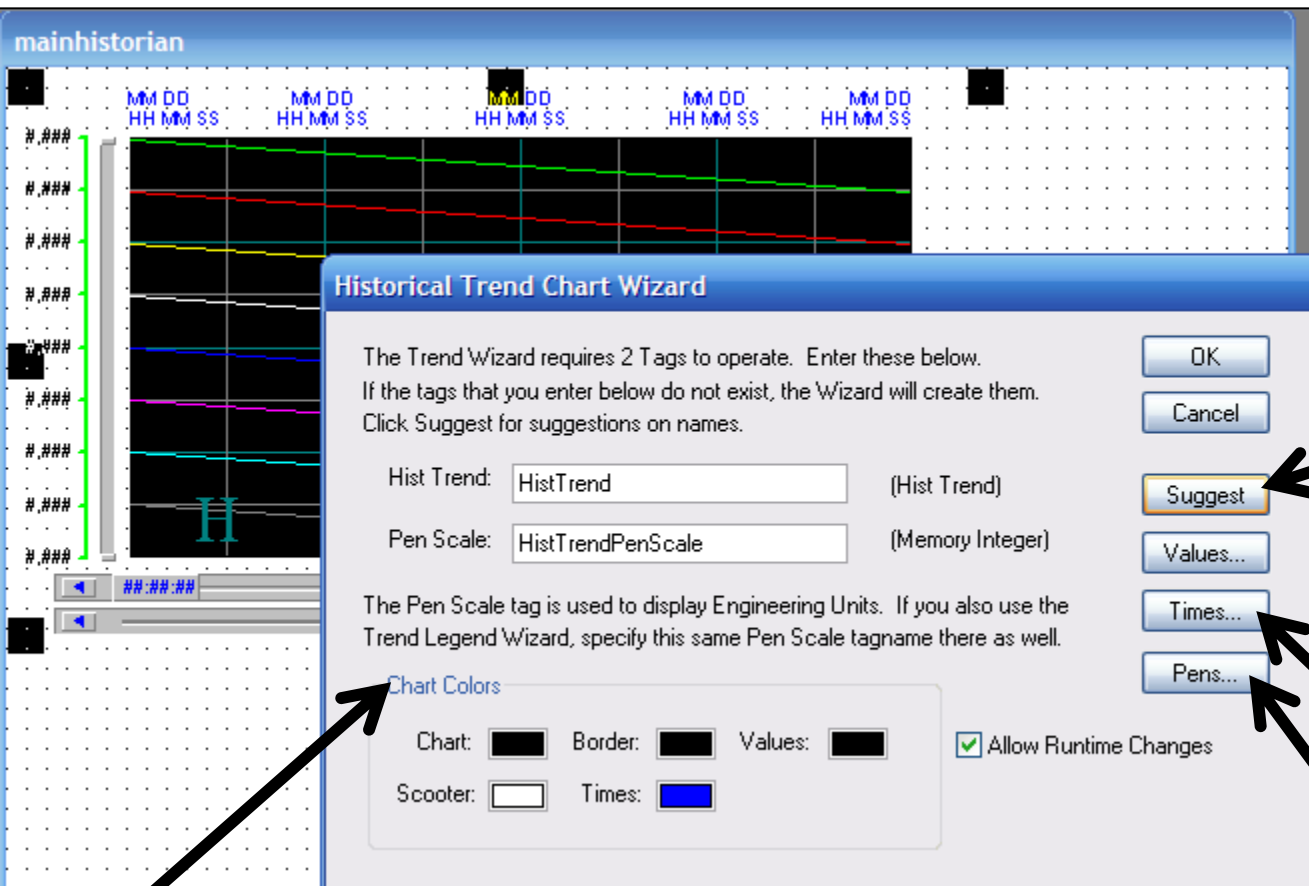
# HISTORICAL TREND

The screenshot shows the InTouch software interface. The main window displays a historical trend plot with multiple colored lines (green, red, yellow, white, blue, purple, cyan) on a black background. The plot has a grid and time labels at the top: MM DD HH MM SS. A black arrow points from the 'Trends' option in the WinZard wizard to the main plot area. The WinZard wizard is titled 'Wizard Selection' and lists various control types. The 'Trends' option is selected, and the 'Hist Trend w/Scooters and Scale' wizard is chosen. The wizard description reads: 'Hist Trend with Left/Right Scooters (showing time) and EU Scale'. The wizard has buttons for 'OK', 'Cancel', 'Add to toolbar', and 'Remove from toolbar'. The left sidebar shows a project tree with 'mainhistorian' selected. The bottom left shows a 'Tools' menu with options like 'Configure', 'Tagname Dict', 'Cross Refer', 'TemplateMake', 'OPC', 'Allen-Bradley', and 'Applications'.

## Cấu hình Historical Trend dùng WinZard

- ✓ Tạo một Historical Trend
- ✓ Chọn Tag để hiển thị cho Historical Trend
- ✓ Chọn khoảng thời gian hiển thị và thời gian cập nhật cho Trend
- ✓ Có thể chọn lựa các chức năng khác cho Trend

# HISTORICAL TREND



Chọn Suggest để tạo Hist Trend tag dùng WinZard

Thiết lập giá trị cho Trend

Thiết lập thời gian

Chọn tag để vẽ đồ thị

Chọn màu sắc cho Trend

# HISTORICAL TREND

The screenshot displays a software interface for creating a historical trend chart. On the left, a 'Project ...' window shows a file tree with 'Unassigned', 'Windows', 'TREND', and 'Scripts' folders. Below it, a 'Tools' menu includes options like 'Configure', 'Tagname Dict', 'Cross Refer', 'TemplateMak', 'OPC', 'Allen-Bradley', and 'Applications'. The main area shows a historical trend chart with a black background and several colored lines (green, red, yellow, blue, purple, cyan) representing data over time. The chart has a vertical axis labeled 'FILL\_TAN' and a horizontal axis with time markers in MM DD HH MM SS format. Two dialog boxes are overlaid on the chart. The 'Historical Trend Chart Wizard' dialog box contains the following text: 'The Trend Wizard requires 2 Tags to operate. Enter these below. If the tags that you enter below do not exist, the Wizard will create them. Click Suggest for suggestions on names.' It has input fields for 'Hist Trend: HistTrend (Hist Trend)' and 'Pen Scale: HistTrendPenScale (Memory Integer)'. Below this, it says 'The Pen Scale tag is used to display Engineering Units. If you also use the Trend Legend Wizard, specify this same Pen Scale tagname there as well.' There are buttons for 'OK', 'Cancel', 'Suggest', 'Values...', 'Times...', and 'Pens...'. The 'Chart Colors' section has color swatches for 'Chart: [black]', 'Border: [black]', 'Values: [black]', 'Scooter: [white]', and 'Times: [blue]'. The 'Trend Pens' dialog box has a table for defining pen colors for tags. An arrow points from the 'Trend Pens' dialog to the 'Values' field in the 'Historical Trend Chart Wizard' dialog.

Pen	Enter existing tags to trend:	Colors:
1	FILL_TANK	Green
2	MIX_TANK	Red
3		Yellow

Chọn Tag và màu sắc tương ứng để vẽ đồ thị

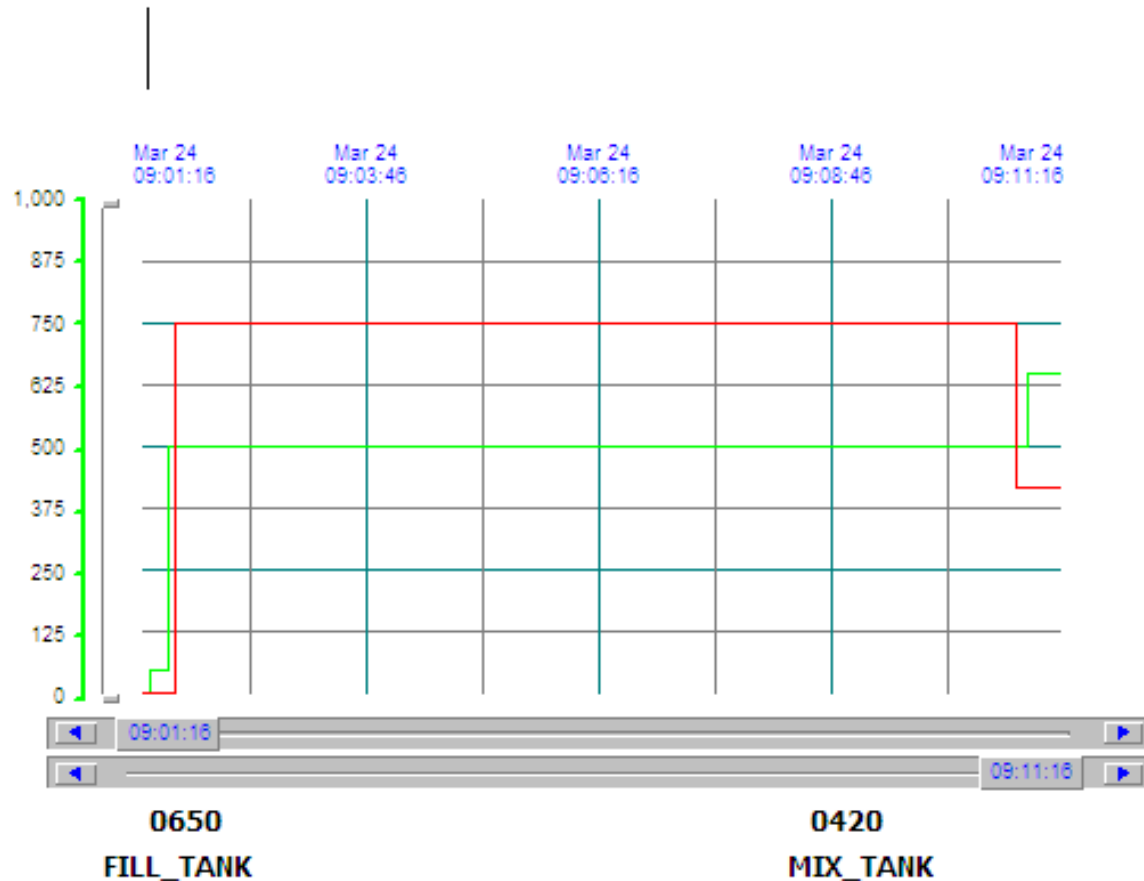
# HISTORICAL TREND

The screenshot displays the InTouch software interface. The main window shows a trend chart with multiple data series and a time axis. A context menu is open over the 'Scripts' folder in the 'Windows & Scripts' tree, with 'New Script' selected. The 'Application Script' dialog box is open, showing the script content: `HTUpdateToCurrentTime("HistTrend");`, `HTUpdateToCurrentTime("MIX_TANK");`, and `HTUpdateToCurrentTime("FILL_TANK");`. The dialog also shows the condition type set to 'While Running' and a frequency of 'Every 10 Msec'. A black arrow points from the 'Misc...' button in the 'Functions' list to the script text area.

Sử dụng Script để cập nhật dữ liệu cho Trend, chọn hàm tương ứng để cập nhật dữ liệu

# HISTORICAL TREND

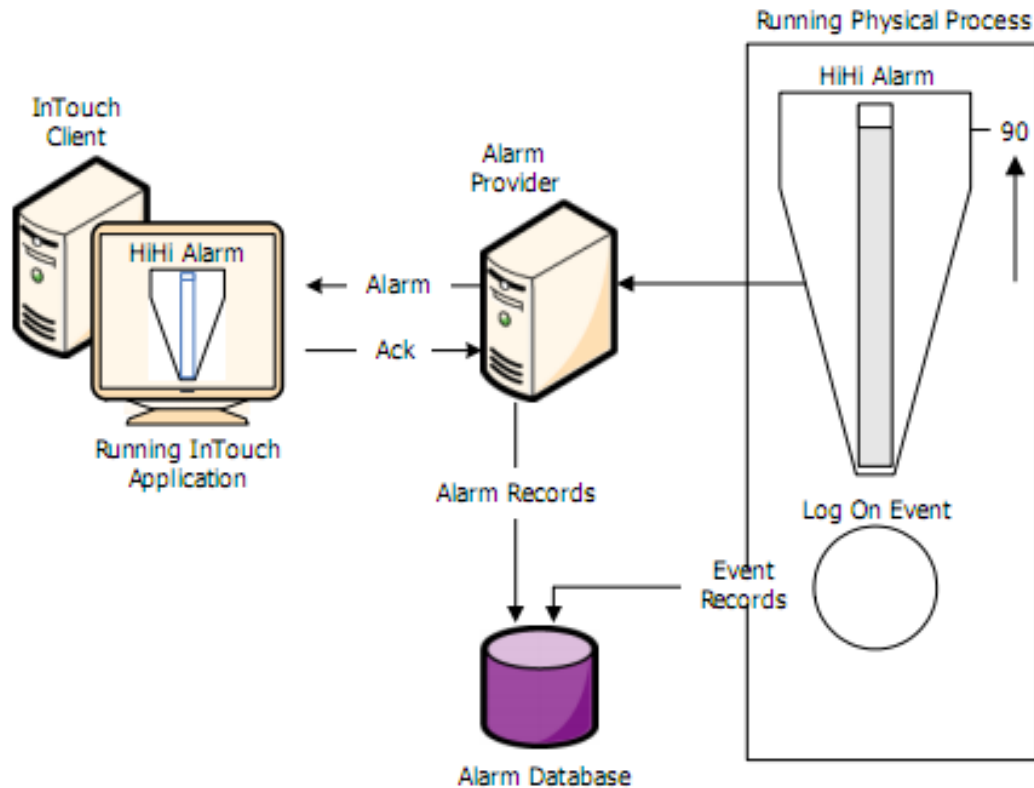
TREND\_DISPLAY



Chạy Runtime, nhập dữ liệu cho Tag để kiểm tra kết quả



# ALARM



**Cảnh báo khi các điều kiện xử lý của hệ thống vượt ra ngoài các thông số được cấu hình, có hai loại Alarm**

**Alarm số:** Cảnh báo khi trạng thái thay đổi từ 0 sang 1 hay ngược lại

**Alarm analog:** Cảnh báo khi giá trị xử lý vượt ra ngoài giới hạn được cài đặt.

# ALARM

## Khai báo Tag để phục vụ cho Alarm

Tagname Dictionary

Main Details Alarms **Details & Alarms** Members

New Restore Delete Save << Select... >> Cancel Close

Tagname: POWER\_SUPPLY Type: Memory Discrete

Group: \$System Read only Read Write

Comment:

Log Data Log Events Retentive Value

Initial Value On Off On Msg: Off

ACK Model Condition Event Oriented Expanded Summary

Alarm Comment: 24 VOLT POWER SUPPLY IS LOSS Alarm State: On Off

Tagname Dictionary

Main Details Alarms **Details & Alarms** Members

New Restore Delete Save << Select... >> Cancel Close

Tagname: Mix\_Tank1 Type: Memory Integer

Group: \$System Read only Read Write

Comment:

Log Data Log Events Retentive Value Retentive Parameters

Initial Value: 0 Min Value: 0 Deadband: 0

Eng Units: Max Value: 1000 Log Deadband: 0

ACK Model: Condition Event Oriented Expanded Summary Alarm Comment: Mix\_Tank is out of Range

	Alarm Value	Priority	Alarm Inhibitor		Alarm Value	Priority	Alarm Inhibitor	Value Deadband
<input checked="" type="checkbox"/> LoLo	200	1		<input type="checkbox"/> High	0	1		0
<input type="checkbox"/> Low	0	1		<input checked="" type="checkbox"/> HiHi	800	1		

	% Deviation	Target	Priority	Alarm Inhibitor	Deviation Deadband %
<input type="checkbox"/> Minor Deviation	0	0	1		0
<input type="checkbox"/> Major Deviation	0		1		

Rate of Change 0 % per: Sec Min Hr Priority: 1 Alarm Inhibitor

Tag sử dụng cho Alarm số

Tag sử dụng cho Alarm Analog

# ALARM

## Sử dụng Alarm từ thư viện Wizard

InTouch - WindowMaker - D:\PRESENTATION\_VNM\TREND

File Edit View Arrange Text Line Special Windows Help

Project ...

Windows & Scripts

- Unassigned
  - Windows
    - ALAR
    - TREN
  - Scripts

Time	State	Class	Type	Name	Value
03/24/2014 10:37:55 AM	UNACK	Value	HIHI	Alarm1	15
03/24/2014 10:37:55 AM	UNACK	Value	HI	Alarm2	15
03/24/2014 10:37:55 AM	UNACK	Value	LO	Alarm3	15
03/24/2014 10:37:55 AM	UNACK	Value	LOLO	Alarm4	15
03/24/2014 10:37:55 AM	ACK	Dev	Minor	Alarm5	15
03/24/2014 10:37:55 AM	ACK	Dev	Major	Alarm6	15
03/24/2014 10:37:55 AM	ACK	ROC	1	Alarm7	15
03/24/2014 10:37:55 AM	ACK	Custom	1	Alarm8	15

Wizard Selection

- ActiveX Controls
- Alarm Displays
- Buttons
- Clocks
- Frames
- Lights
- Meters
- Panels
- Runtime Tools
- Sliders
- SmartSymbol
- Switches
- Text Displays
- Trends
- Value Displays
- Windows Controls

AlarmViewerCtrl

AlmDbViewCtrl

AlarmTreeViewerCtrl

POWER\_LOSS

SENSOR\_FAIL

Tools

- Configure
- Tagname Dict
- Cross Referer
- TemplateMake
- OPC
- Allen-Bradley
- Applications

# ALARM

## Thiết lập thuộc tính cho Alarm

The image shows three overlapping dialog boxes for configuring an alarm viewer control. The background dialog is the 'AlarmViewerCtrl1 Properties' window with the 'General' tab selected. The middle dialog is also 'AlarmViewerCtrl1 Properties' but with the 'Events' tab selected, showing various display options. The foreground dialog is 'Column Details', which allows configuring the columns of the alarm list.

**AlarmViewerCtrl1 Properties (General Tab)**

Control Name: AlarmViewerCtrl1

Extended Properties

Left: 0      Top: 50  
Width: 671      Height: 241

Visible:

GUID: {2F19F8AD-75E6-4828-B1C1-2857E4FAF9CE}

**AlarmViewerCtrl1 Properties (Events Tab)**

Perform Query on Startup

Show Context Sensitive Menu      [Configure Context Menus...](#)

Use Default Ack Comment

Retain Suppression

Show Status Bar       Show Heading       Resize Column

Row Selection       Use Extended Selection       Show Grid

Silent Mode       Flash Unack Alarms

Show Message      System is Normal

[Font...](#)      [Column Details...](#)

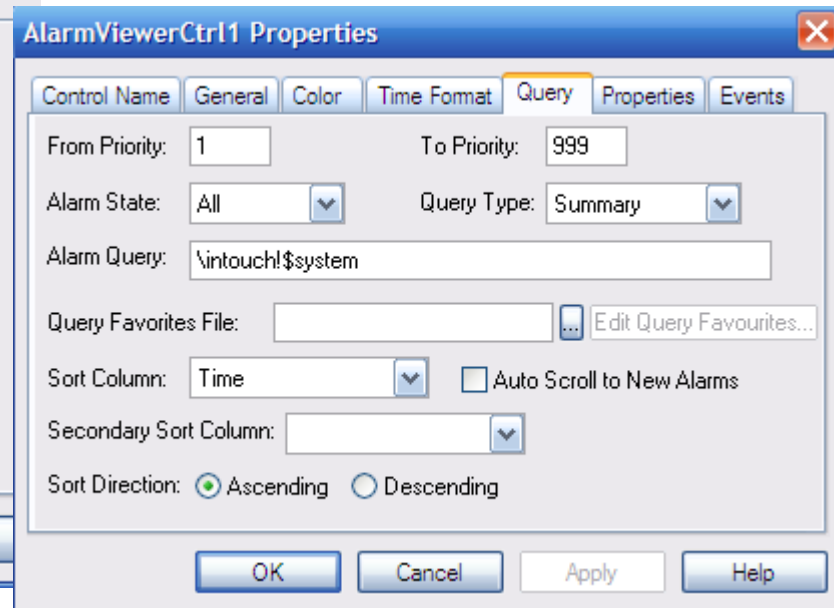
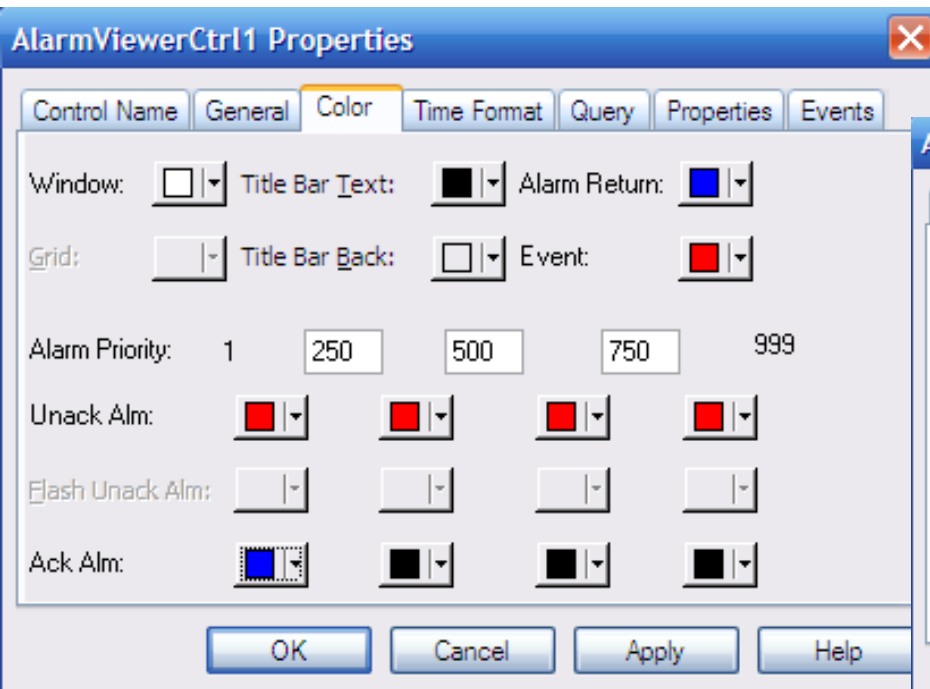
**Column Details**

Name	Width	Original ...
<input checked="" type="checkbox"/> Time	160	Time
<input checked="" type="checkbox"/> State	100	State
<input checked="" type="checkbox"/> Class	100	Class
<input checked="" type="checkbox"/> Type	100	Type
<input type="checkbox"/> Priority	100	Priority
<input checked="" type="checkbox"/> Name	100	Name
<input type="checkbox"/> Group	100	Group
<input type="checkbox"/> Provider	100	Provider
<input checked="" type="checkbox"/> Value	100	Value
<input checked="" type="checkbox"/> Limit	100	Limit
<input type="checkbox"/> Operator	100	Operator

Buttons: OK, Cancel, Edit..., Reset to Default

# ALARM

## Thiết lập thuộc tính cho Alarm



# ALARM

## Kết quả Alarm sau khi thiết lập thuộc tính

The screenshot shows the InTouch - WindowMaker interface. The main window displays a table of alarm events. The table has columns for Time, State, Type, Name, Value, Limit, and Alarm Comment. The data rows show various alarm states like UNAVAILABLE (UNAI...), High (HI), Low (LO), and Low-Low (LOLO), along with Acknowledged (ACK) states. The alarm names include Alarm1 through Alarm8. The value and limit for all alarms are 15 and 14, respectively. The comments range from Comment1 to Comment8.

Time	State	Type	Name	Value	Limit	Alarm Comment
03/24/2014 11:0...	UNA...	HIHI	Alarm1	15	14	Comment1
03/24/2014 11:0...	UNA...	HI	Alarm2	15	14	Comment2
03/24/2014 11:0...	UNA...	LO	Alarm3	15	14	Comment3
03/24/2014 11:0...	UNA...	LOLO	Alarm4	15	14	Comment4
03/24/2014 11:0...	ACK	Minor	Alarm5	15	14	Comment5
03/24/2014 11:0...	ACK	Major	Alarm6	15	14	Comment6
03/24/2014 11:0...	ACK	1	Alarm7	15	14	Comment7
03/24/2014 11:0...	ACK	1	Alarm8	15	14	Comment8

Below the table, there is a tag editor window showing a tag named 'POWER\_LOSS' with a value of '0'. The tag is associated with the comment 'Mix\_Tank1'.

# ALARM

## Alarm ở chế độ RunTime

ALARM

Time /	State	Type	Name	Value	Limit	Alarm Comment
System is Normal						

## Điều kiện Alarm chưa xuất hiện

On On 0300  
POWER\_LOSS SENSOR\_FAIL Mix\_Tank1

ALARM

Time ^	State	Type	Name	Value	Limit	Alarm Comment
03/24/2014 11:0...	UNA...	HIHI	Mix_Tank1	900	800	Mix_Tank is out of Range
03/24/2014 11:0...	UNA...	DSC	SENSOR_FAIL	OFF	OFF	TANK1_UPPER_SENSOR IS FAIL
03/24/2014 11:0...	UNA...	DSC	POWER_SUPPLY	OFF	OFF	24 VOLT POWER SUPPLY IS LOSS

## Điều kiện Alarm xuất hiện



Displaying 1 to 3 of 3 alarms.

Default Query

100 % Complete

Off Off 0900  
POWER\_LOSS SENSOR\_FAIL Mix\_Tank1