



Slide Show 14:

**Bulk Configuration with
the Group Object**



**INSIGHT
AND
OVERVIEW**

The Group object - defined



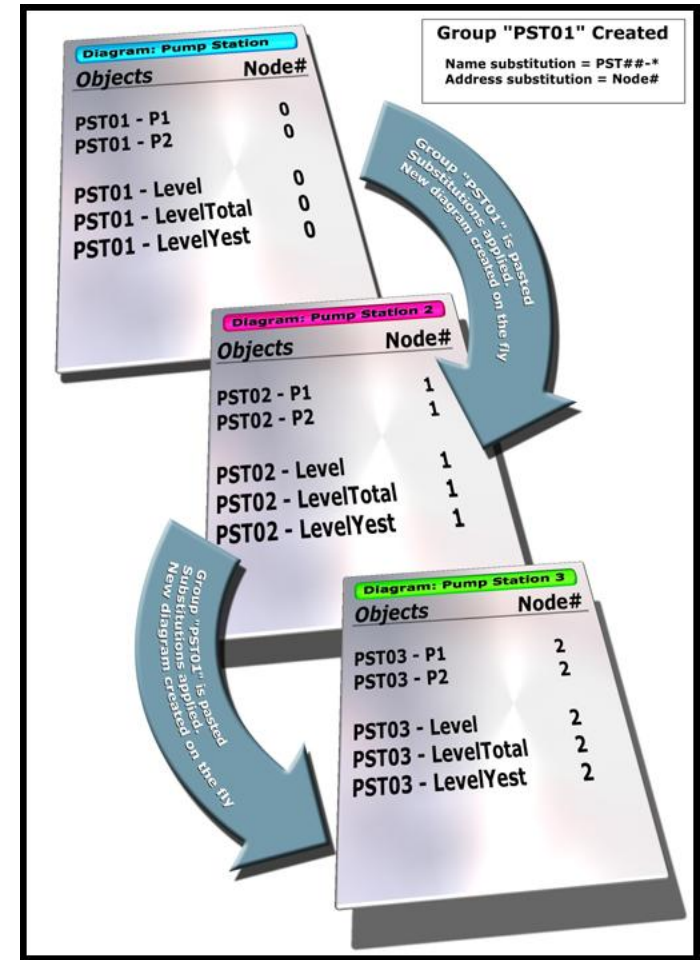
What is a Group ?

- A collection of related objects and descriptors to be reused as one entity
- Implicitly collects all dependants
 - Templates, alarm numbers, report formats, VBA code, etc.
- Name substitution and PLC address substitution rules are first defined and enforced on the fly
- Typically a mimic of a physical unit, f.ex. a pump station

Use cases – Scenario 1



Typical use cases - Replication of similar diagrams



Use cases – Scenario 2

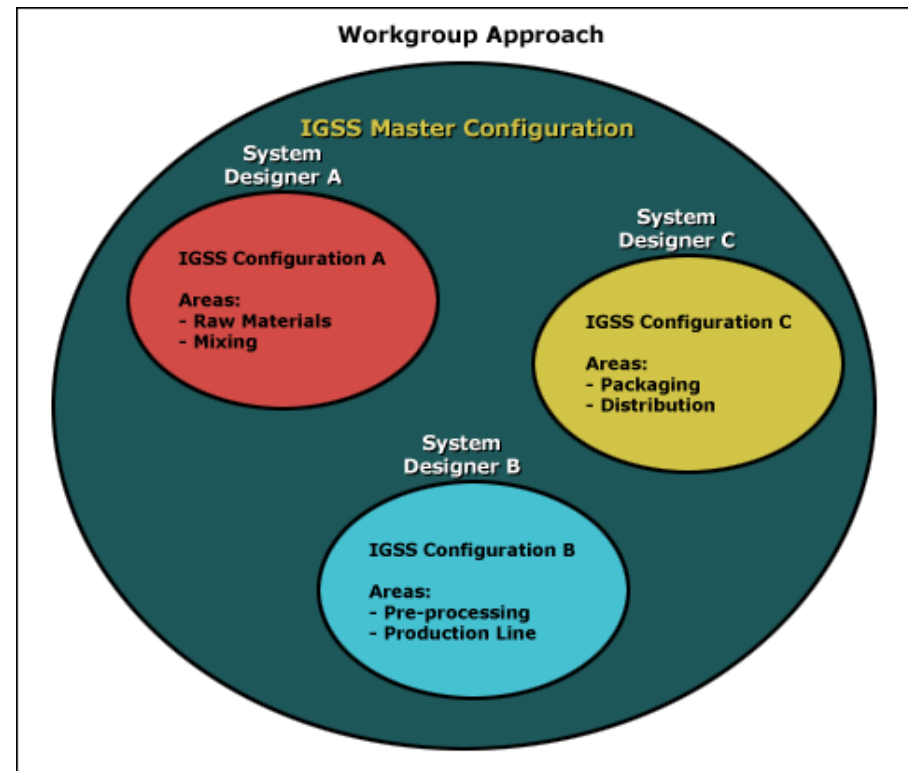
Typical use cases - Workgroup approach

Three system designers

Three configurations collected in one master configuration

Master built from Group export files (.cgf)

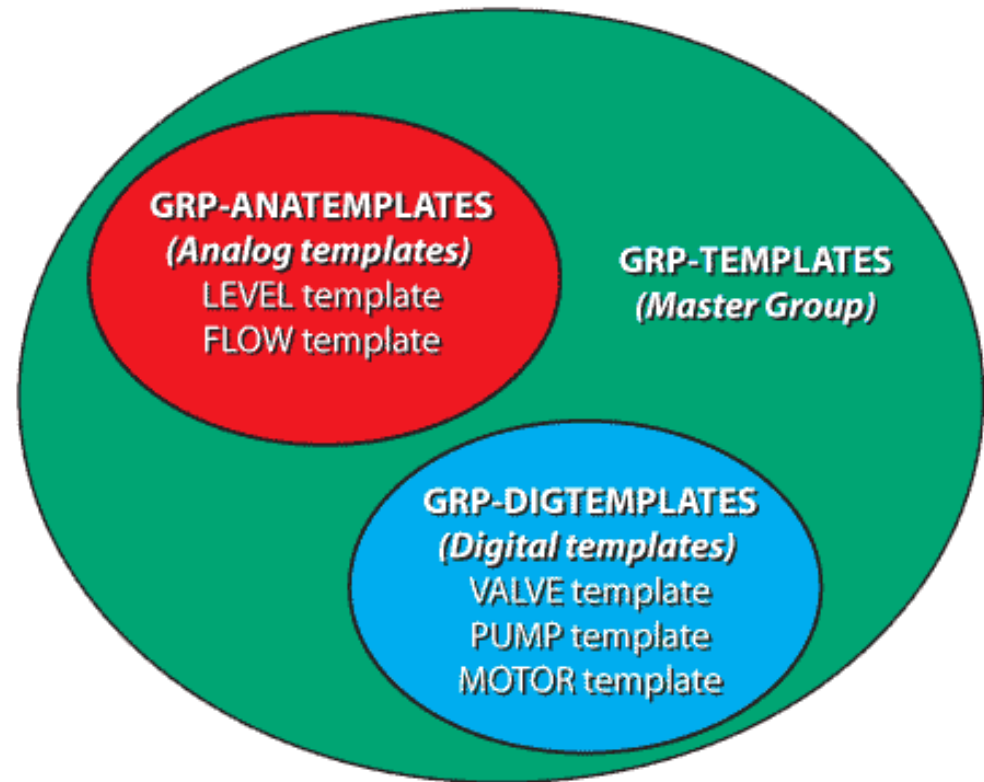
An area in IGSS can be exported to a .cgf file.



Use cases – Scenario 3

Typical use cases - Library of templates

Two template Groups are created separately and are put into the master Group



Characteristics of a Group



- Cannot be represented by one unique descriptor. Instead the Group typically contains a set of descriptors with underlying objects.
- Will always be created in the Global area
- A set of name and PLC addressing substitution rules can be set up for a Group allowing you to reuse the Group members again and again.

Reusable Diagrams (1)



Definition

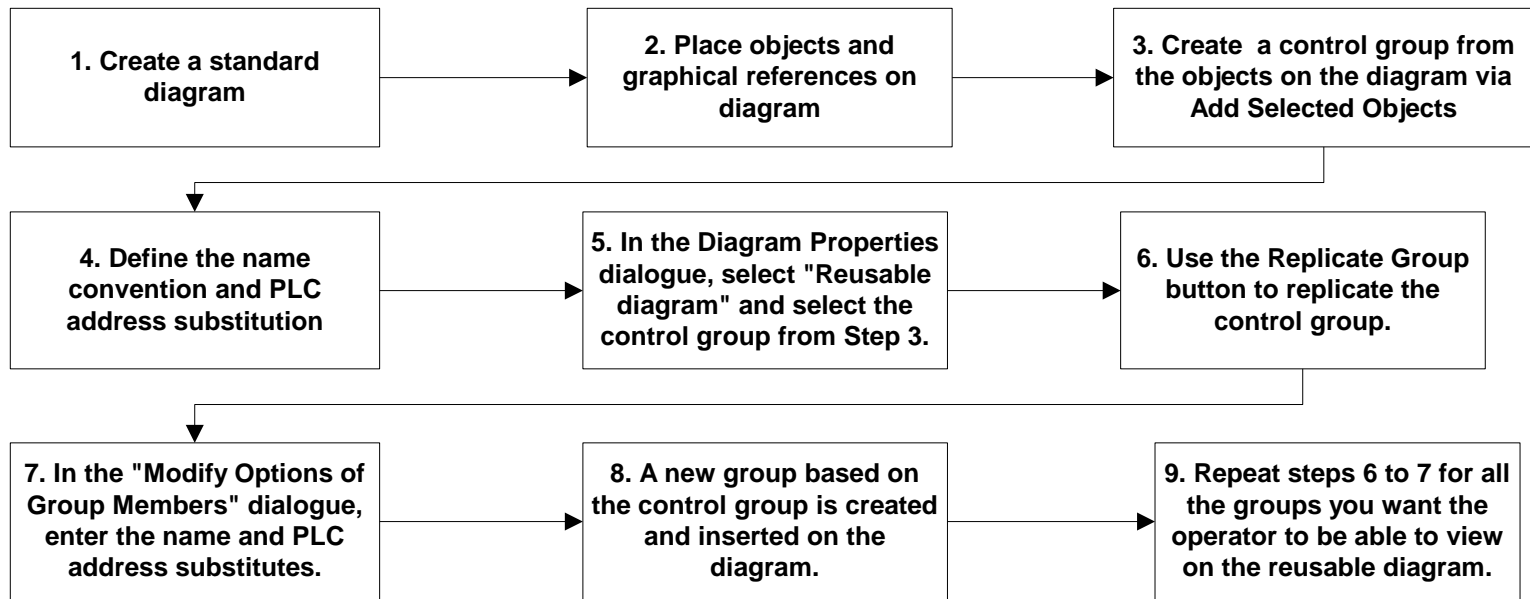
A diagram which can show multiple sets of objects (defined as Group objects) bound to one set of graphical references (descriptors)

Use

When you need to create multiple diagrams that are identical with the exception of the underlying objects.

Instead of making many diagrams, you show multiple sets of objects on the same diagram.

Workflow in Definition



Reusable diagram

New option in Diagram Properties

Control Group

Parent Group bound to diagram

Replicate Group

New button in Diagram Properties

Scenario: Three pump stations



STEP 1:
Select all objects on the
basis diagram

Example of Pump Station:

Pump 1: Release, Force start, Release, Force stop, Reset

Pump 2: Release, Force start, Release, Force stop, Reset

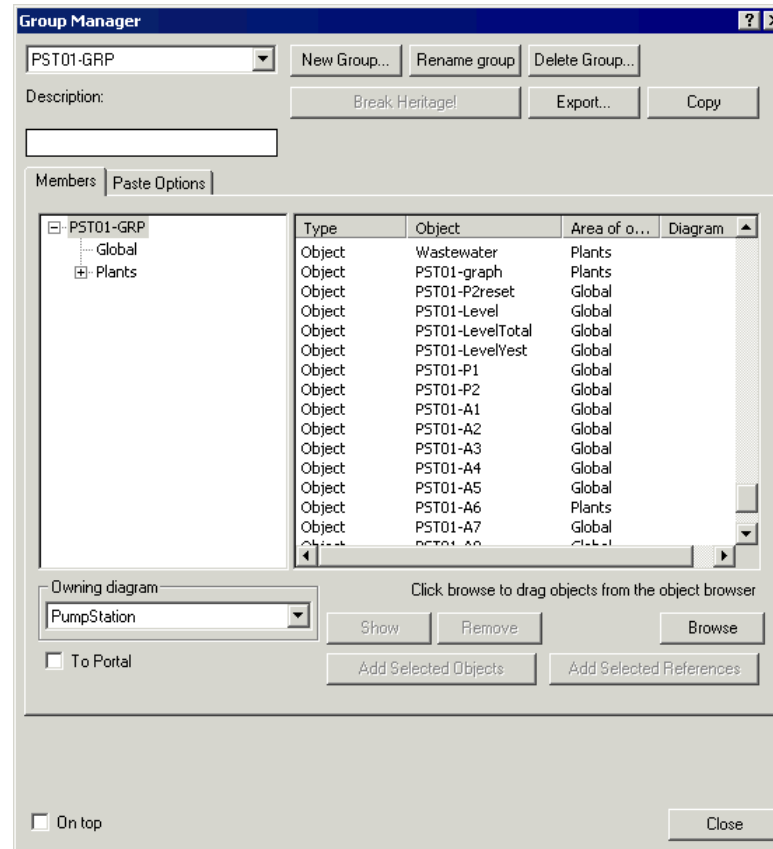
Level gauges: actual, Max total, Max yesterday

Start/operation time	Pump 1	Pump 2	Pump 3	Total
Total number of starts	0	0	0	0
Number of starts today	0	0	0	0
Number of starts yesterday	0	0	0	0
Total op. time	0	0	0	0
Total op. time today	0	0	0	0
Total op. time yesterday	0	0	0	0
Output				
Actual current	0.0 A	0.0 A	0.0 A	0.0 A
Max. current	0.0 A	0.0 A	0.0 A	0.0 A
Max. current today	0.0 A	0.0 A	0.0 A	0.0 A
Max. current yesterday	0.0 A	0.0 A	0.0 A	0.0 A
Capacity	0.0 m ³ /h	0.0 m ³ /h	0.0 m ³ /h	0.0 m ³ /h
Quantities				
Discharged total	2157 m ³	1124 m ³	0 m ³	3281 m ³
Discharged today	0 m ³	0 m ³	0 m ³	0 m ³
Discharged yesterday	0 m ³	0 m ³	0 m ³	0 m ³
Start/stop levels				
Start level	1.40	1.30	1.20	1.30
Stop level	1.10	1.10	1.10	1.10
High level limit	1.40	1.40	1.40	1.40
Reset high level limit	1.30	1.30	1.30	1.30
Overflow	Number	Duration	Quantity	m ³ /h
Overflow total	0	0	0 m ³	0 m ³ /h
Overflow today	0	0	0 m ³	0 m ³ /h
Overflow yesterday	0	0	0 m ³	0 m ³ /h
Overflow actual			0 m ³	0 m ³ /h
Alarms				
Overflow sensor	HPFI_error			
High level alarm	Loss of communication to pump station			
Voltage fluctuation	Thermostat error P1+high level alarm			
Sensor / system error	Thermostat error P2+high level alarm			

Interval graph: 30 sec
Latest call: 6/ 4/ 1 kl. 16:24:12
Off-line

Scenario: Three pump stations

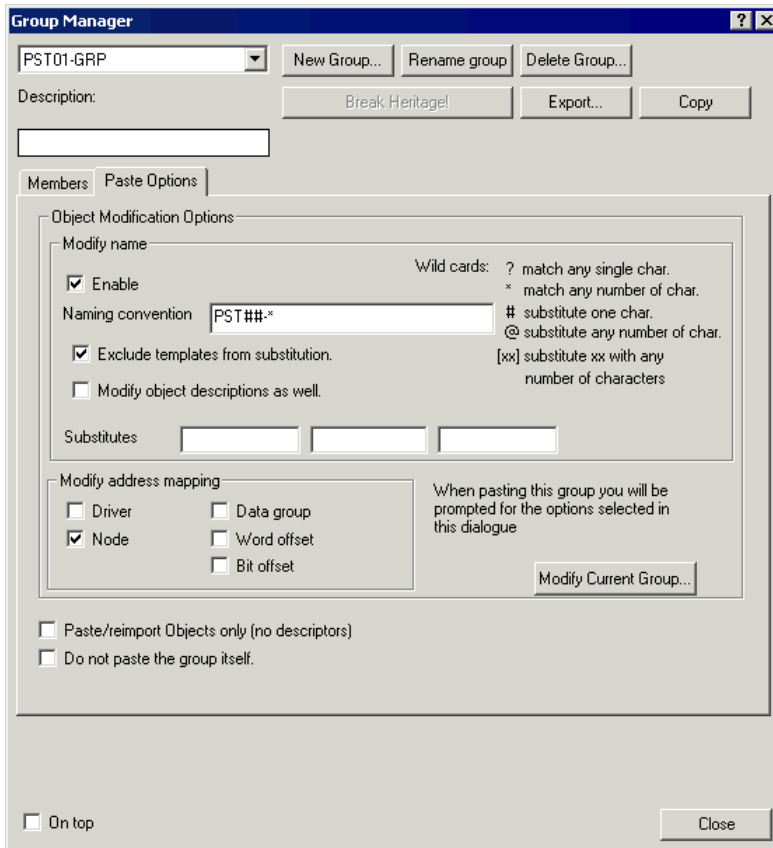
STEP 2:
Click "Add Selected Objects"



Scenario: Three pump stations

STEP 3:

Define object name
and PLC addressing substitutes



The screenshot shows the 'Group Manager' dialog box with the following settings:

- Group Name: PST01-GRP
- Description: (empty)
- Members tab selected
- Object Modification Options:
 - Modify name:
 - Enable
 - Naming convention: PST##.*
 - Exclude templates from substitution.
 - Modify object descriptions as well.
 - Substitutes: (three empty text boxes)
- Modify address mapping:
 - Driver
 - Node
 - Data group
 - Word offset
 - Bit offset
- When pasting this group you will be prompted for the options selected in this dialogue:
 - Paste/reimport Objects only (no descriptors)
 - Do not paste the group itself.

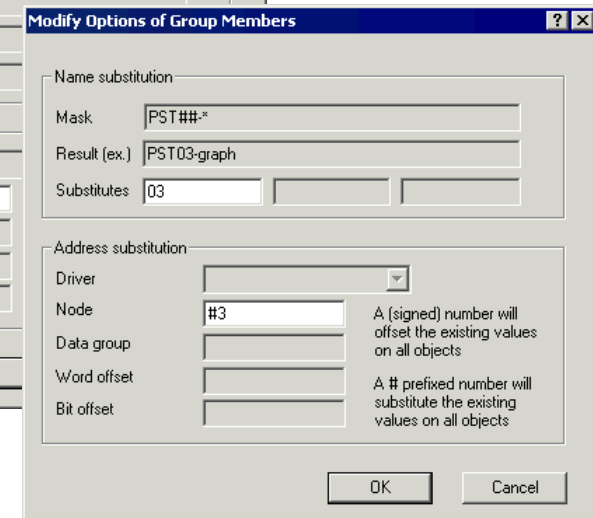
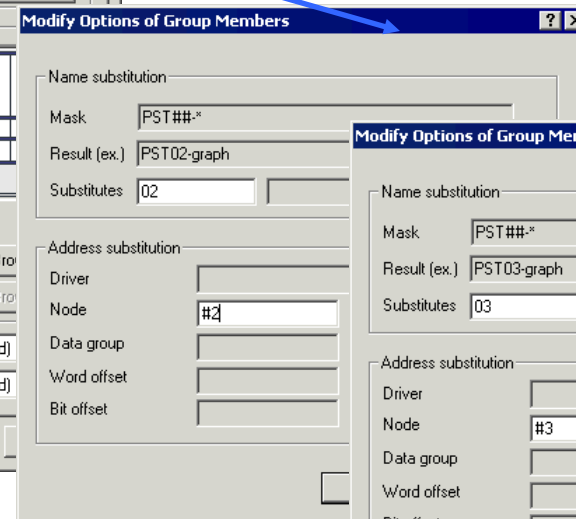
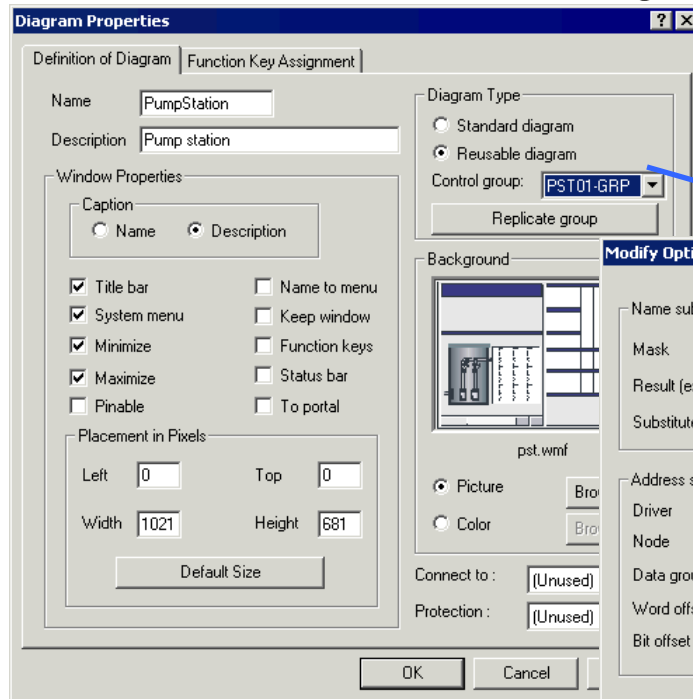
New options

- ”Exclude templates from substitution”
- ”Modify object descriptions as well”
- ”Paste/reimport objects only”
- ”Do not paste the group itself”

Scenario: Three pump stations

STEP 4:
Choose "Reusable diagram" and
"PST01-GRP" as control group

STEP 5:
Click "Replicate
Group" for
the required number
of groups to display



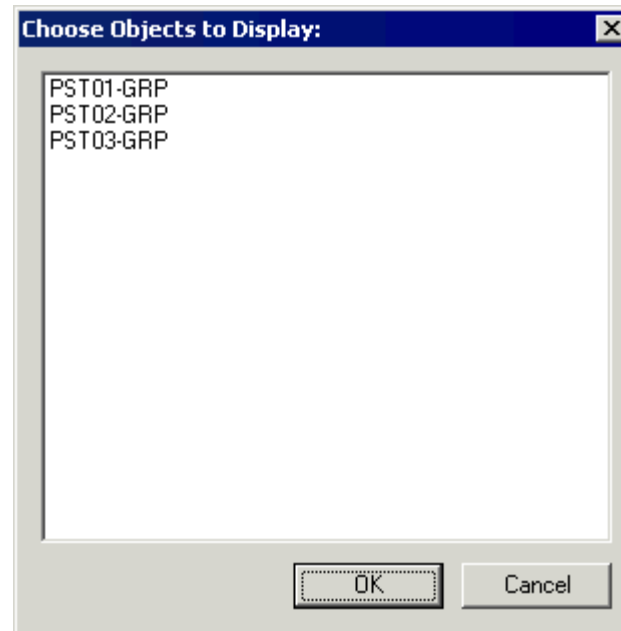
Scenario: Three pump stations

STEP 6:

Press F5 to refresh the diagram.

Choose the relevant set of objects.

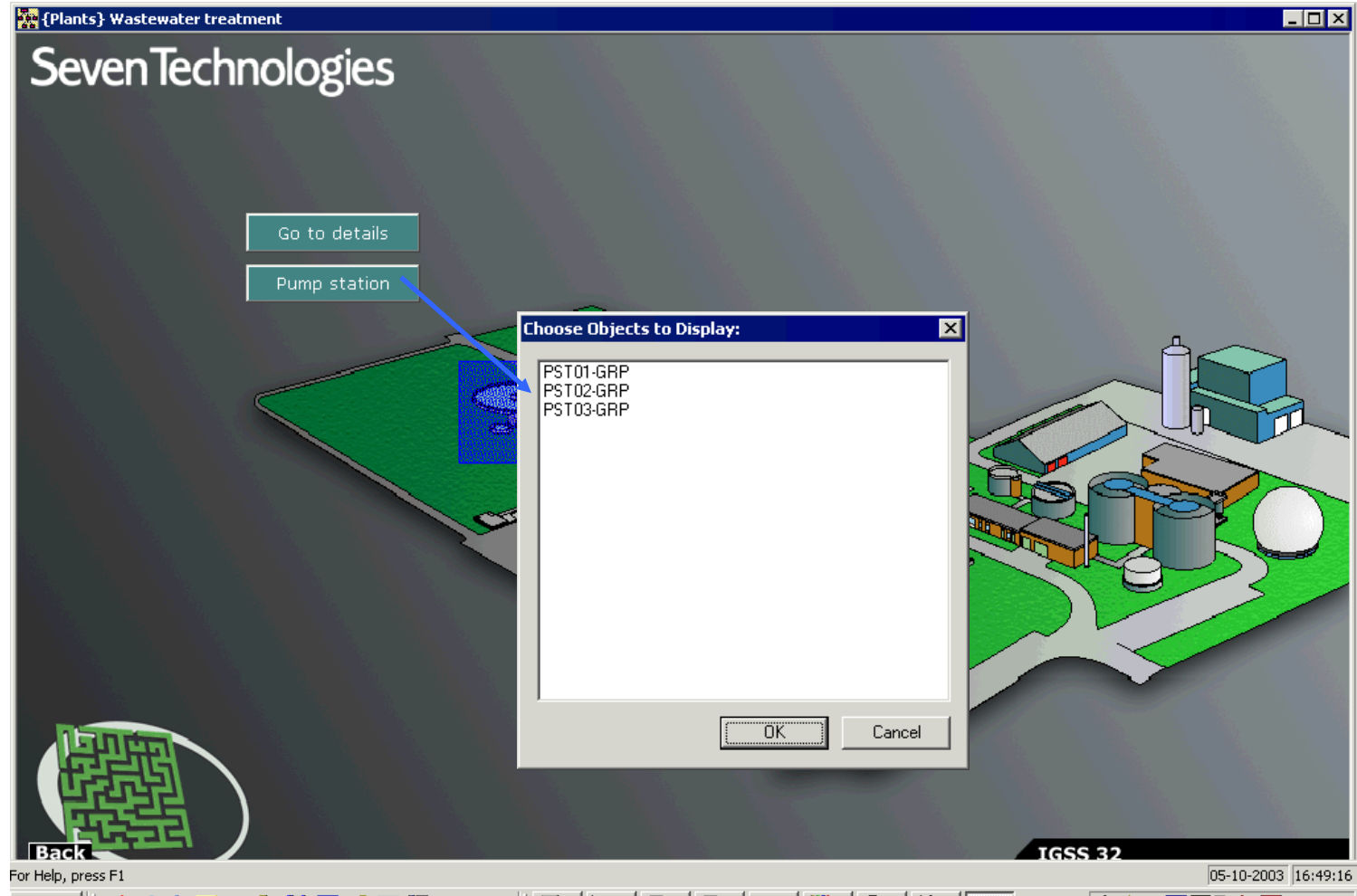
Same dialogue in Definition and Supervise



Workflow in Supervise

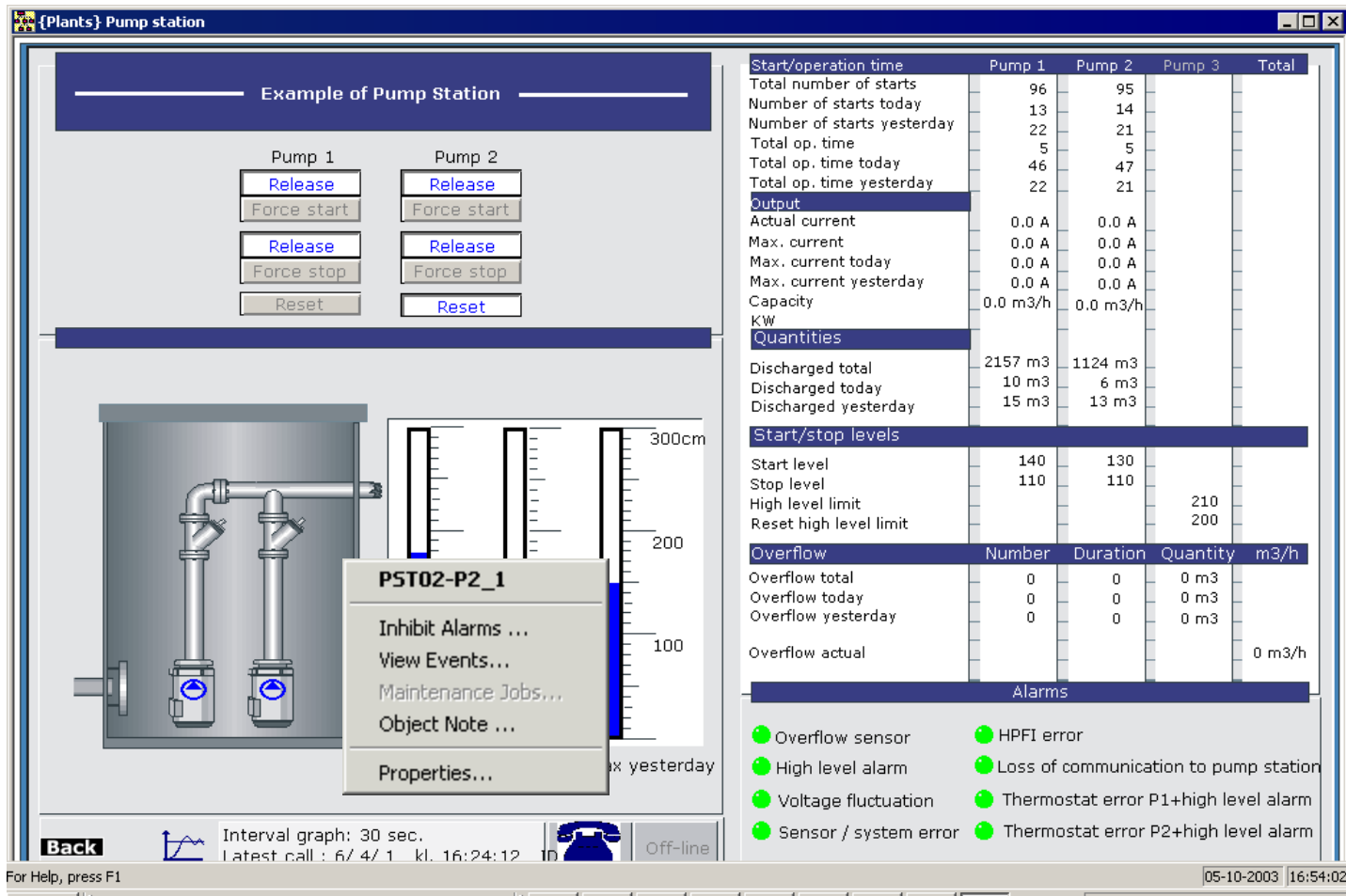
STEP 1:
Select the diagram
(menu or button)

Press F5 to choose a
new set of objects



Workflow in Supervise

The members from PST02-GRP are shown on the diagram.



Example of Pump Station

Pump 1: Release, Force start, Force stop, Reset
 Pump 2: Release, Force start, Force stop, Reset

PST02-P2_1
 Inhibit Alarms ...
 View Events...
 Maintenance Jobs...
 Object Note ...
 Properties...

Start/operation time	Pump 1	Pump 2	Pump 3	Total
Total number of starts	96	95		
Number of starts today	13	14		
Number of starts yesterday	22	21		
Total op. time	5	5		
Total op. time today	46	47		
Total op. time yesterday	22	21		

Output	Pump 1	Pump 2	Pump 3	Total
Actual current	0.0 A	0.0 A		
Max. current	0.0 A	0.0 A		
Max. current today	0.0 A	0.0 A		
Max. current yesterday	0.0 A	0.0 A		
Capacity	0.0 m3/h	0.0 m3/h		

Quantities	Pump 1	Pump 2	Pump 3	Total
Discharged total	2157 m3	1124 m3		
Discharged today	10 m3	6 m3		
Discharged yesterday	15 m3	13 m3		

Start/stop levels	Pump 1	Pump 2	Pump 3	Total
Start level	140	130		
Stop level	110	110		
High level limit			210	
Reset high level limit			200	

Overflow	Number	Duration	Quantity	m3/h
Overflow total	0	0	0 m3	
Overflow today	0	0	0 m3	
Overflow yesterday	0	0	0 m3	
Overflow actual				0 m3/h

Alarms	
● Overflow sensor	● HPFI error
● High level alarm	● Loss of communication to pump station
● Voltage fluctuation	● Thermostat error P1+high level alarm
● Sensor / system error	● Thermostat error P2+high level alarm

Interval graph: 30 sec.
 Latest call: 6/ 4/ 1 kl. 16:24:12
 Back Off-line
 For Help, press F1
 05-10-2003 16:54:02

Linked Group Objects



Definition

A linked Group object is a member of a family of linked Group objects. The family consists of any number of Group objects which you can update simultaneously and dynamically.

The functionality allows you to update the properties of existing objects and to add new objects to the Groups in the family.

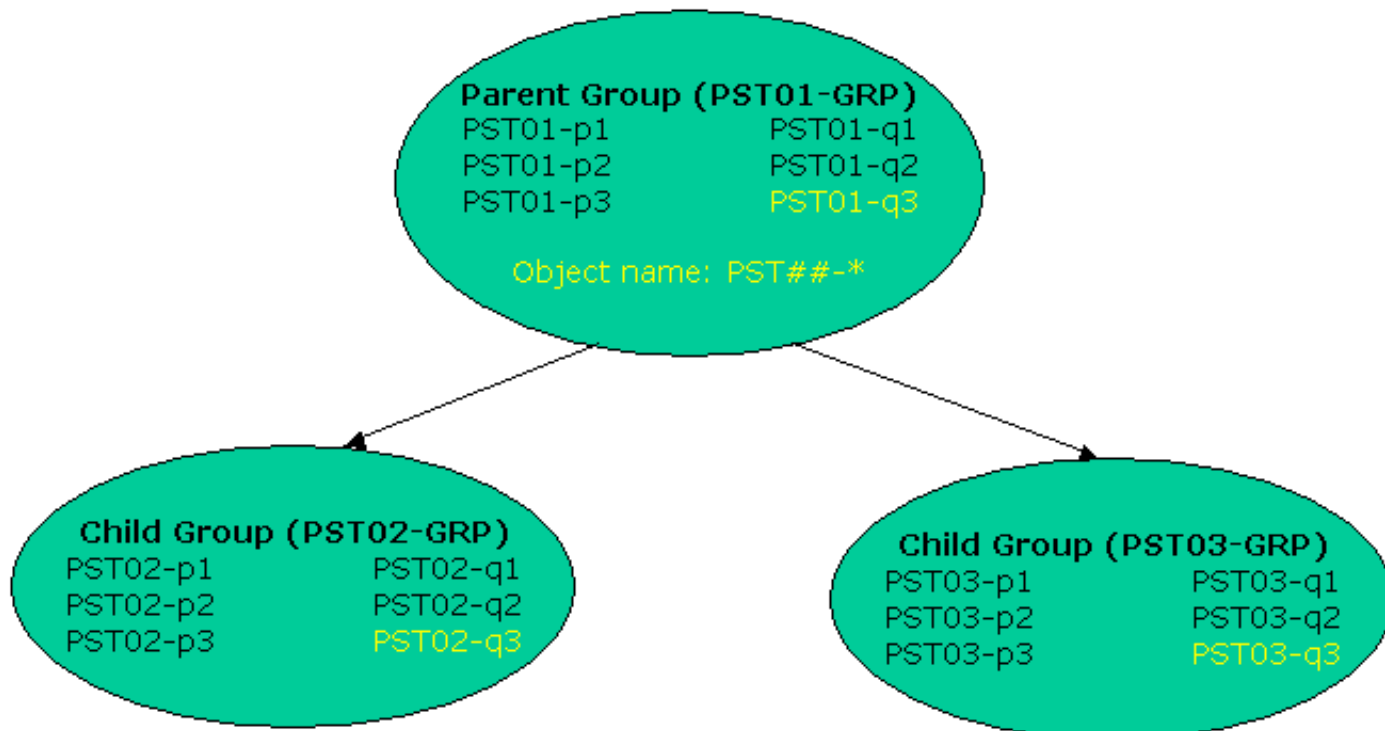
The family consists of a parent Group from which any number of child Groups can be created. When you make a change in one of the Groups, the change can be distributed to all the other Groups in the family.

Parent and Child Groups

Scenario

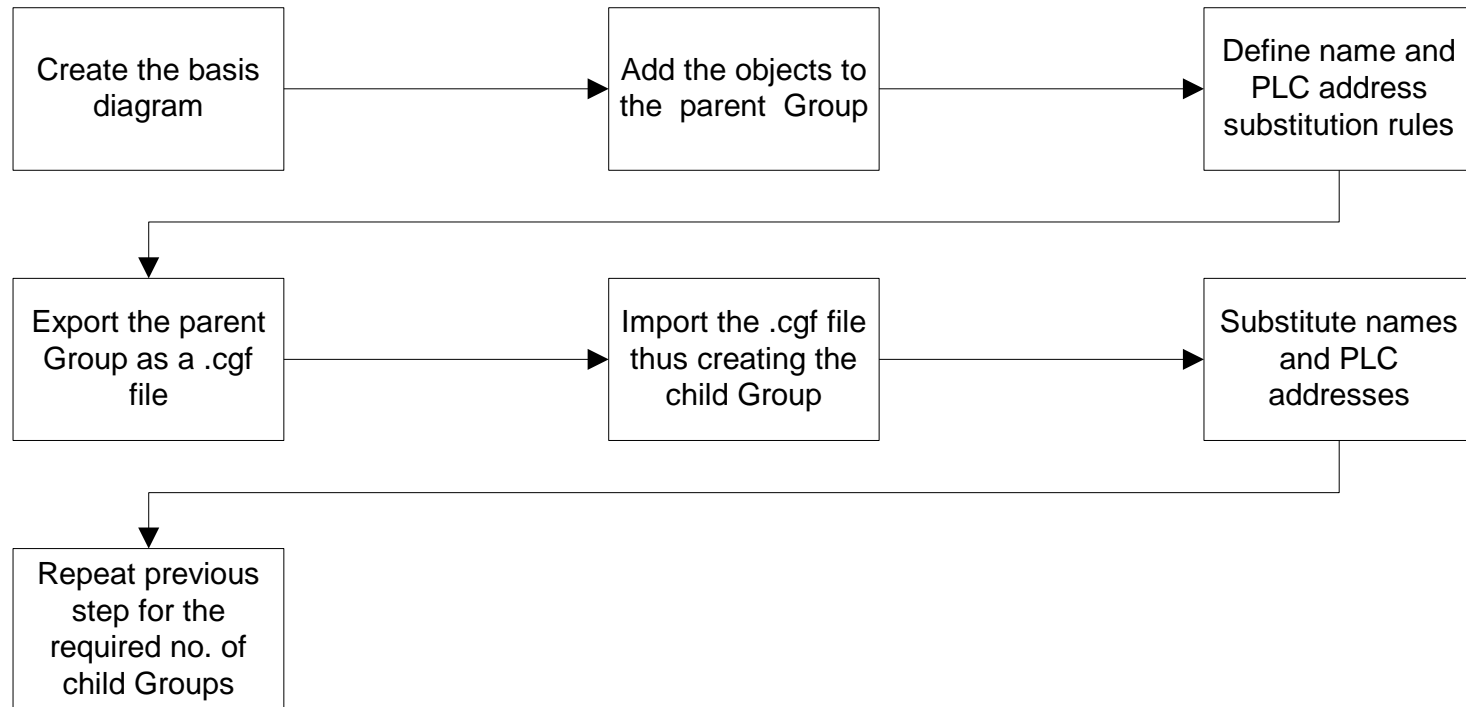
PST01-q3 is added to parent Group and reimported to child Groups.

Original members in black
New/reimported objects in yellow



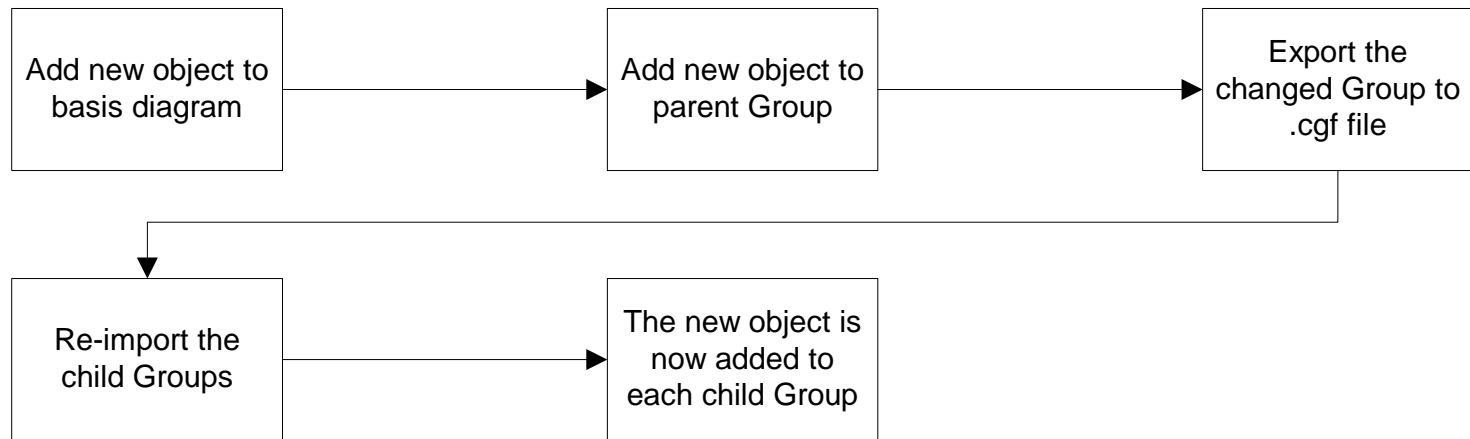
Workflow (1)

Create Parent – Import Child



Workflow (2)

Add Object – Reimport Child



Scenario: Updating a family of linked Group objects



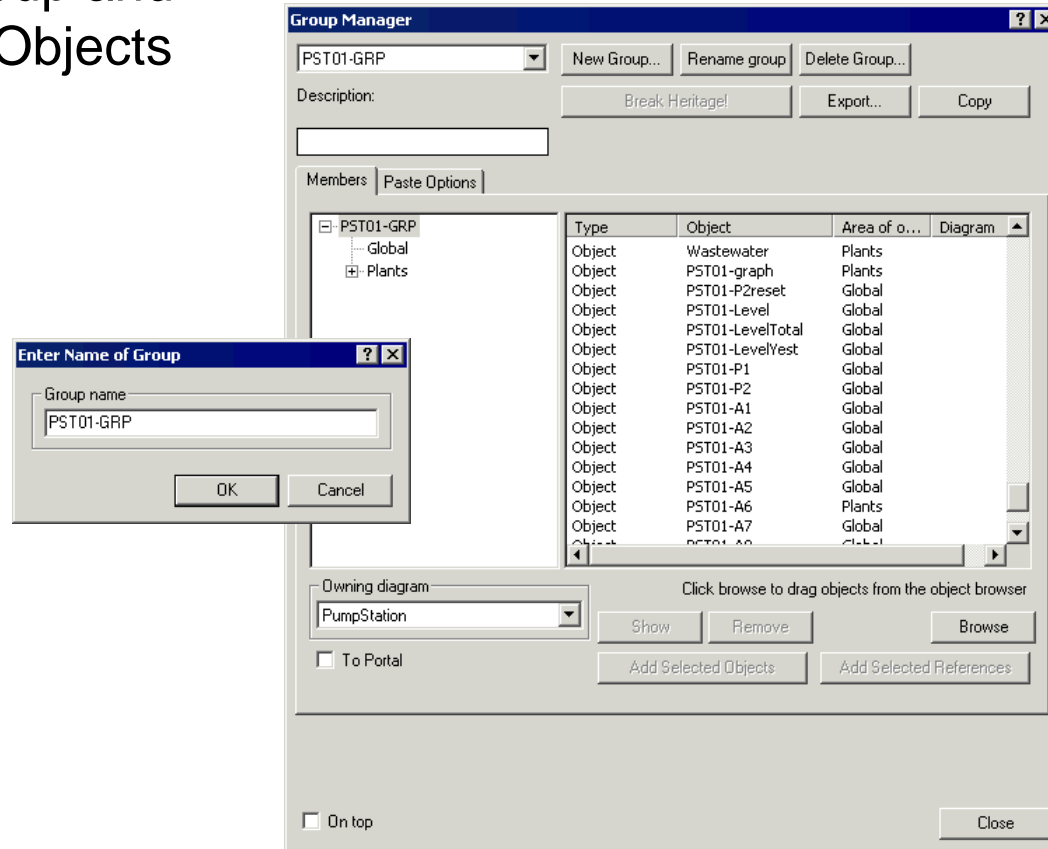
STEP 1:
Select all objects on
basis diagram

	Pump 1	Pump 2	Pump 3	Total
Start/operation time				
Total number of starts	292	292	292	876
Number of starts today	13	14	13	40
Number of starts yesterday	13	14	13	40
Total op. time	292	292	292	876
Total op. time today	13	14	13	40
Total op. time yesterday	13	14	13	40
Output				
Actual current	0.0 A	0.0 A	0.0 A	0.0 A
Max. current	0.0 A	0.0 A	0.0 A	0.0 A
Max. current today	0.0 A	0.0 A	0.0 A	0.0 A
Max. current yesterday	0.0 A	0.0 A	0.0 A	0.0 A
Capacity	0.0 m3/h	0.0 m3/h	0.0 m3/h	0.0 m3/h
Quantities				
Discharged total	2157 m3	2124 m3	2124 m3	6405 m3
Discharged today	10 m3	56 m3	10 m3	76 m3
Discharged yesterday	15 m3	13 m3	10 m3	38 m3
Start/stop levels				
Start level	21.40	21.30	21.30	21.30
Stop level	21.10	21.10	21.10	21.10
High level limit			22.10	22.10
Reset high level limit			22.00	22.00
Overflow	Number	Duration	Quantity	m3/h
Overflow total	50	20	80	80
Overflow today	50	20	80	80
Overflow yesterday	50	20	80	80
Overflow actual				80 m3/h
Alarms				
Overflow sensors				
High level alarm				
Voltage fluctuation				
Sensor / system error				
HPFI error				
Loss of communication to pump station				
Thermostat error P1+high level alarm				
Thermostat error P2+high level alarm				

Scenario: Updating a family of linked Group objects



STEP 2:
Create the Group and
Add Selected Objects



Scenario: Updating a family of linked Group objects



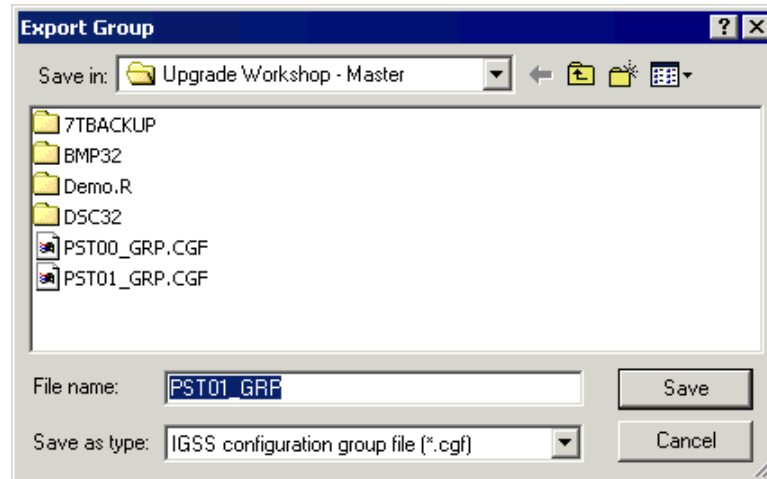
STEP 3:
Define object
name and
PLC addressing
substitutes

A screenshot of the 'Group Manager' dialog box. The title bar reads 'Group Manager'. At the top, there is a dropdown menu showing 'PST01-GRP' and three buttons: 'New Group...', 'Rename group', and 'Delete Group...'. Below this is a 'Description:' label followed by a text input field and three buttons: 'Break Heritage!', 'Export...', and 'Copy'. There are two tabs: 'Members' and 'Paste Options', with 'Paste Options' being the active tab. The main area is titled 'Object Modification Options' and contains two sub-sections. The first, 'Modify name', has a checked 'Enable' checkbox, a 'Naming convention' field with 'PST##.*', and a 'Substitutes' field with three empty input boxes. To the right is a 'Wild cards:' legend. The second sub-section, 'Modify address mapping', has four checkboxes: 'Driver' (unchecked), 'Node' (checked), 'Data group' (unchecked), and 'Word offset' (unchecked). There is also a 'Bit offset' checkbox (unchecked). A note on the right says 'When pasting this group you will be prompted for the options selected in this dialogue'. At the bottom of the dialog are two checkboxes: 'Paste/reimport Objects only (no descriptors)' (unchecked) and 'Do not paste the group itself.' (unchecked). A 'Close' button is at the bottom right, and an 'On top' checkbox is at the bottom left.

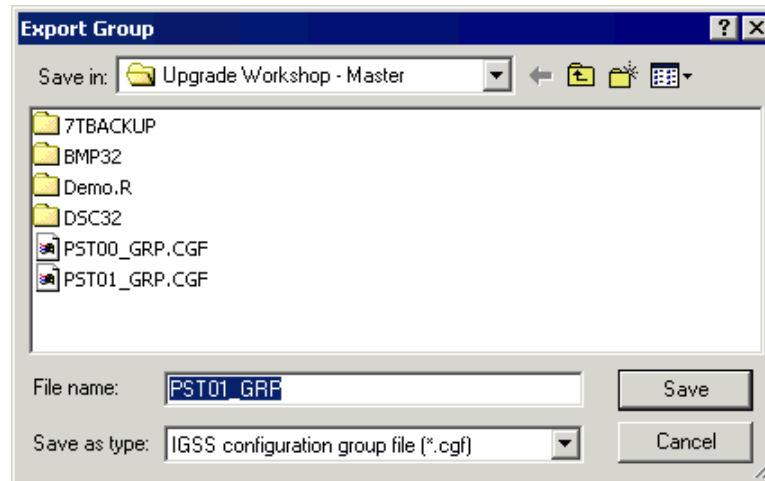
Scenario: Updating a family of linked Group objects



STEP 4:
Export the parent
Group (PST01-
GRP)



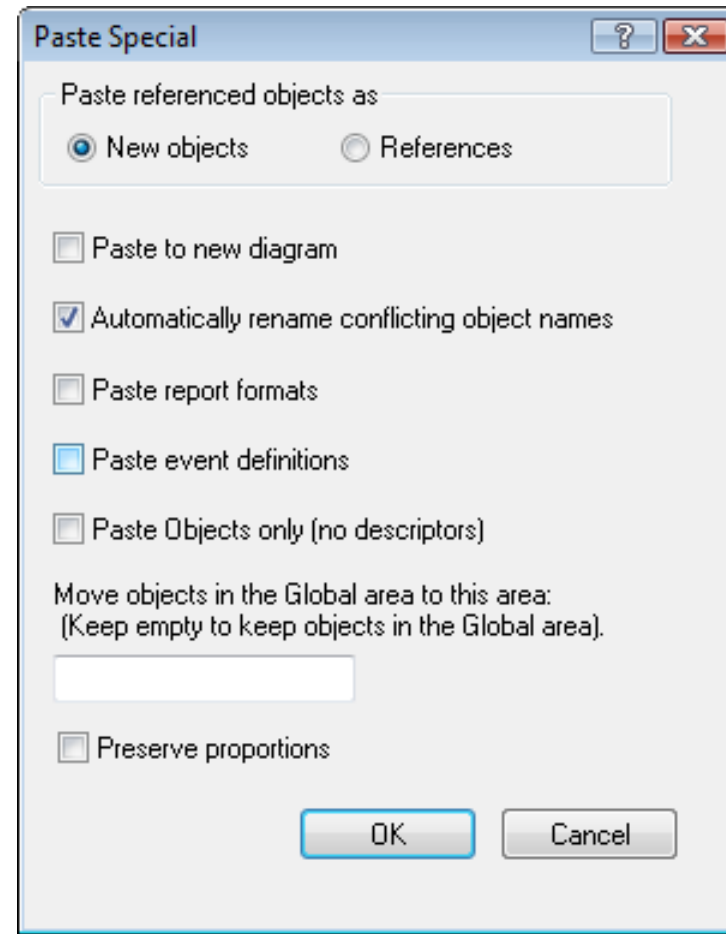
STEP 5:
Import PST01-GRP.cgf
to create the child
Groups
PST02-GRP and
PST03-GRP,
respectively



Scenario: Updating a family of linked Group objects



STEP 6:
Define the paste options for the child Groups (Paste objects only)



Scenario: Updating a family of linked Group objects



STEP 7:
Define substitutes
for object names
and PLC
addresses

The screenshot shows a dialog box titled "Modify Options of Group Members" with a blue title bar and standard window controls (minimize, maximize, close). The dialog is divided into two main sections: "Name substitution" and "Address substitution".

Name substitution section:

- Name substitution:** A label above a large text input field.
- Mask:** A text input field containing "PST##.*".
- Result (ex.):** A text input field containing "PST02-graph".
- Substitutes:** Three text input fields. The first contains "02", and the other two are empty.

Address substitution section:

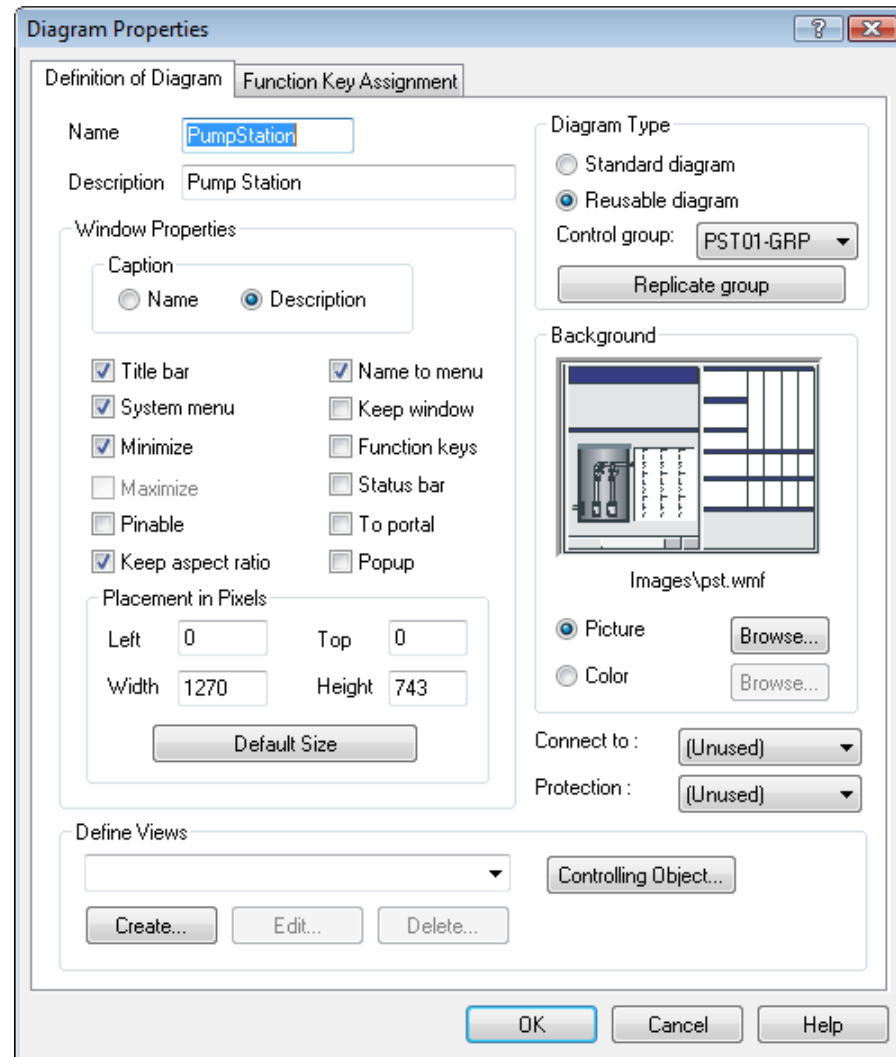
- Address substitution:** A label above a group of fields.
- Driver:** A dropdown menu.
- Node:** A text input field containing "#2".
- Data group:** An empty text input field.
- Word offset:** An empty text input field.
- Bit offset:** An empty text input field.
- Help text:** Two lines of text on the right side of the section: "A (signed) number will offset the existing values on all objects" and "A # prefixed number will substitute the existing values on all objects".

Buttons: "OK" and "Cancel" buttons are located at the bottom right of the dialog.

Scenario: Updating a family of linked Group objects



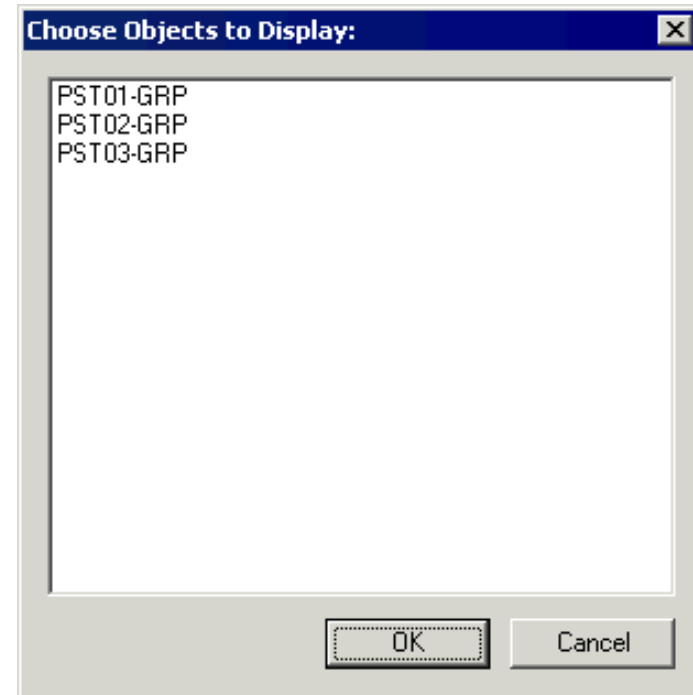
STEP 8:
Make diagram
reusable and select
control group
(PST01-GRP)



Scenario: Updating a family of linked Group objects



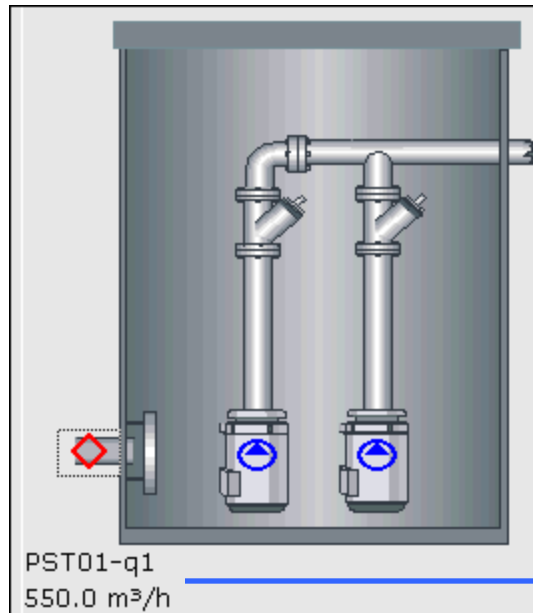
STEP 9:
Test that all
three Groups
are displayed



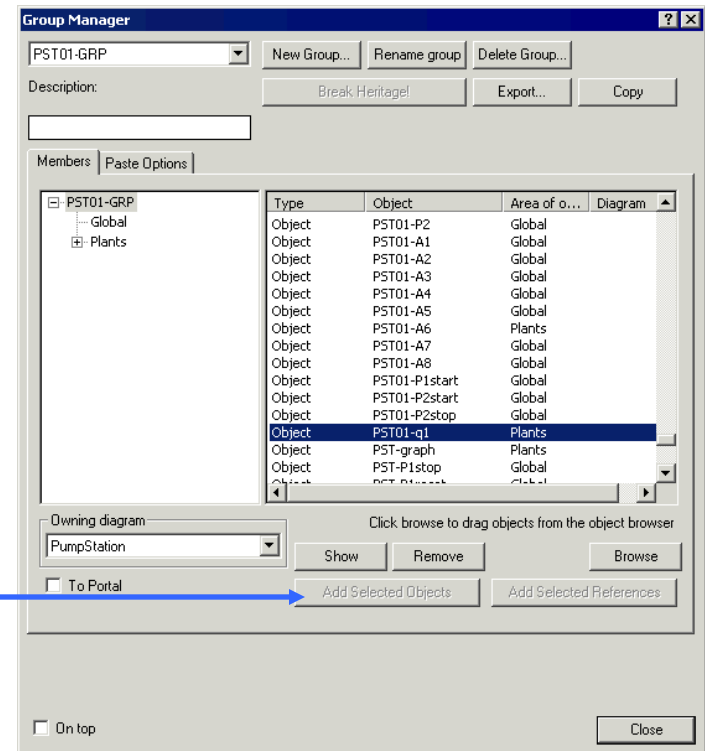
Scenario: Updating a family of linked Group objects



STEP 10:
Create new object on
basis diagram
(PST01-q1)



STEP 11:
Add new object to parent
Group
(Add Selected Objects)

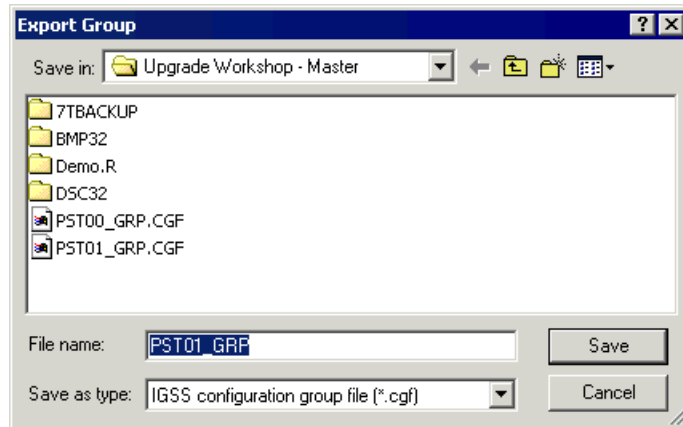


Scenario: Updating a family of linked Group objects



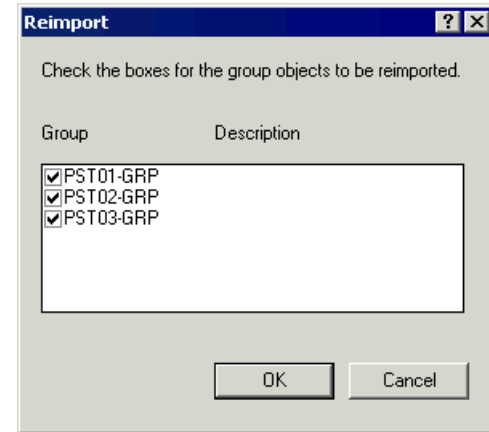
STEP 12:

Export the updated Group and overwrite the existing PST01-GRP.cgf



STEP 13:

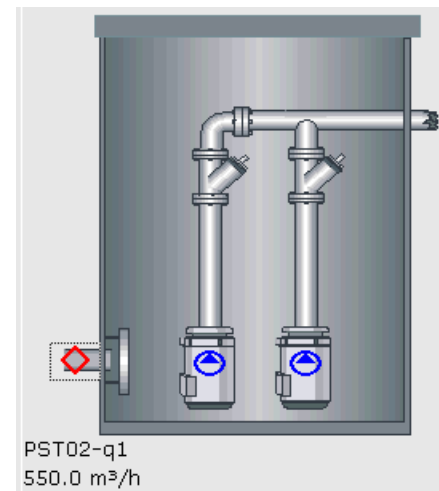
Reimport new object into the other Groups in the family.



STEP 14:

Press F5 to refresh the diagram and select "PST02-GRP".

New object PST02-q1 appears.



Instructor demo



Create and update a family of linked group objects
(Based on "Pump Station" diagram in the IGSS demo
project)

Do Exercise 10 in the Exercises booklet