

# SmartPlant Instrumentation Tips Tricks and Guides

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Company: Fluor

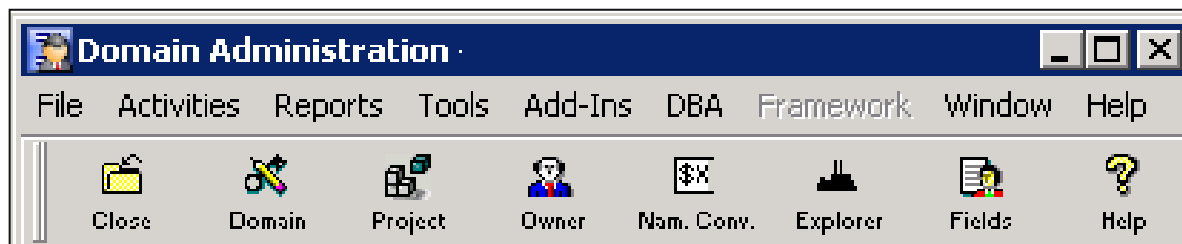
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**FLUOR**

 **INTERGRAPH 2008**  
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- Never Delete the “DEFAULT” Plant Area and Unit. You can hide the “DEFAULT” Plant by un-checking the “Default plant use” checkbox in the Domain Definition.
- Keep the Administrator “DBA” Username and Password so different users may share administrator responsibilities. This will also assure user and administration connectivity when you deliver Sybase versions of the SmartPlant Instrumentation database later on a project.
- If you are currently logged on as the System Administrator, you can switch to the Domain Administrator level without the need to log on again. You can do this only if the Domain Administrator user name and password are the same as the System Administrator's.



- It is important that IT initializes the Oracle server properly. Provide IT with: “*SmartPlant Instrumentation Installation Guide, Installing SmartPlant Instrumentation on Oracle, Running Oracle Database Setup, Oracle Database Server Table spaces*” Documentation. You should also be specific about the proper character set to use in the Oracle instance.
- If you are initializing an Oracle instance from a MS-SQL source, you must run some special script files against the original file before initialization. When in doubt, run the scripts against the Watcom before initializing.

**Note: The Overload Services Inc. Seed file is a MS-SQL source file and should have the scripts run against it before initializing to a Oracle database.**



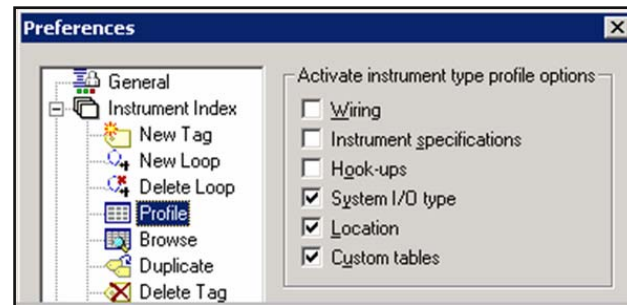
- When defining Instrument Tagging Convention include the Plant Area and Unit in the prefix definition but give them a “0” length. This will allow you to change the Tagging Convention after tags are populated in the database and also allow duplicate tags in different units.
- If two Units have the same number it is possible to maintain separation by numbering the units with an offset (Units 12 for example might be numbered 12 and 012) then use the substring “Start” and “Length” to reference the proper characters in the naming conventions.

Description		Start	Length
UNIT NUMBER	▼		22
INSTRUMENT TYPE	▼		15
COMPONENT NUMBER	▼		16
COMPONENT SUFFIX	▼		13

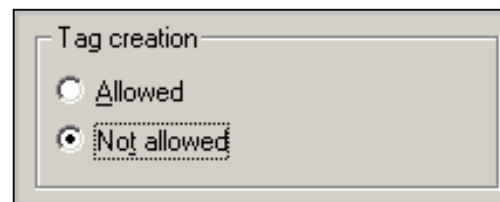
- When working with the Line data table; enter only the Size and Spec instead of the entire line number. This saves time, shortens line table selection and users still have all required line information to do sizing calculations

**4"-11H instead of 4"-P-1501-11H**

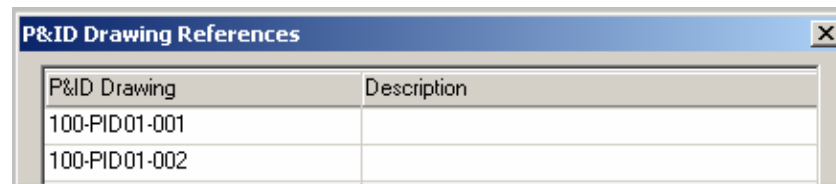
- If the Instrument Type profiles are not set properly before you start adding tags to the database, De-activate the Profile options in the “Preferences / Instrument Index / Profile”. Then launch each option as needed from the “Browse / Action” menu



- Do not allow tag creation in the Spec, Process or Calculation Modules. Adding Tags from Modules other than the Instrument Index will allow tags to be created without complete data



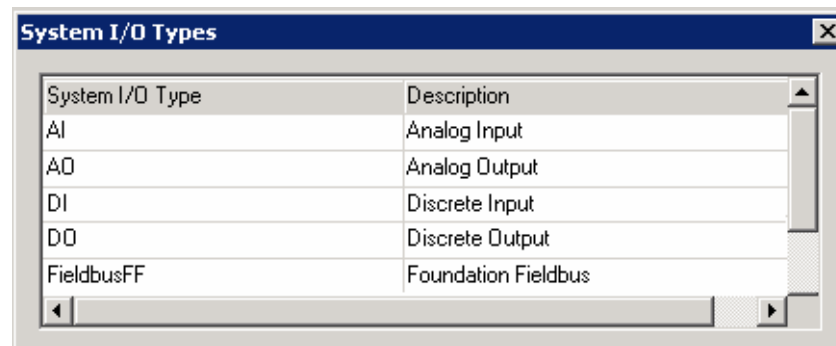
- The Instrument Tag Class is used as a wiring method identifier. Once a Tag is assigned to any Tag Class other than conventional it cannot be changed. When in doubt set instruments to Conventional so they can be changed later
- In P&ID Table, do not use the description callout unless P&ID reference is shown on Loop Diagrams.



A screenshot of a dialog box titled "P&ID Drawing References". It contains a table with two columns: "P&ID Drawing" and "Description".

P&ID Drawing	Description
100-PID01-001	
100-PID01-002	

- In the System I/O Type table – Do Not change the standard “AI”, “AO”, “DI”, “DO” or “FieldbusFF” I/O Types if you are using an External Interface



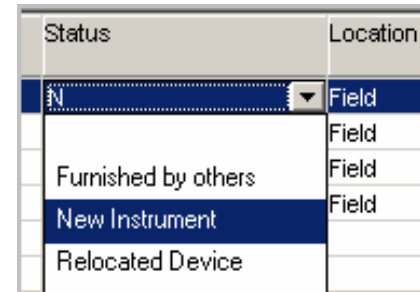
A screenshot of a dialog box titled "System I/O Types". It contains a table with two columns: "System I/O Type" and "Description".

System I/O Type	Description
AI	Analog Input
AO	Analog Output
DI	Discrete Input
DO	Discrete Output
FieldbusFF	Foundation Fieldbus

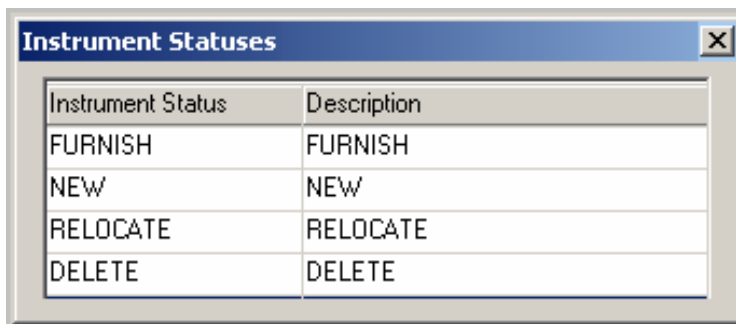
- In the Status Table the “Status” column and the “Description Field” should match to prevent the pick list from being different than the data column.



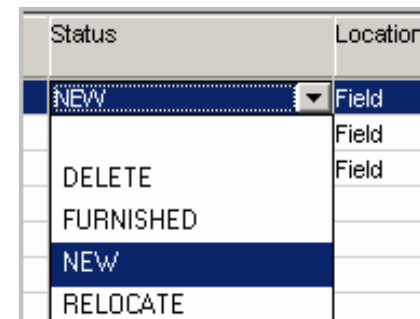
Instrument Status	Description
FN	Furnished by others
N	New Instrument
REL	Relocated Device



Status	Location
N	Field
Furnished by others	Field
New Instrument	Field
Relocated Device	



Instrument Status	Description
FURNISH	FURNISH
NEW	NEW
RELOCATE	RELOCATE
DELETE	DELETE



Status	Location
NEW	Field
DELETE	Field
FURNISHED	
NEW	
RELOCATE	

- When you set a browser view to be your default view, also set it to be personal so others cannot change it. Do not check “Set as default view”. The profile will turn on the default view when you save.

View profile

View name:  
My View

View description:

Data level:  
Unit

Set as default view ← DO NOT CHECK!  
 Count per group  
 Personal view  
 Set as Instrument Index browse view (per user)

Save  
Cancel  
Help

- The most common error when working with Browser Views is to allow users to work at the **Plant** or **Area** Data Levels. These levels should only be used for reporting purposes. All adding and editing of Tag Numbers should be done at the **Unit** Data Level

- Do not use single quotes in view names ( JOHN'S INDEX ) this will cause problems in the View list. Note: The View Name is also the Report Name in the Header of an Index Browse Report.
- Number your browser view names by placing a number before the name. Reserve 01 to 09 for your most frequently used queries.
- When there are multiple users, ask users to put there initials in their browser View names – this will allow views to be cleaned up later
- The Revision Description will not show in the header of the Standard Browse Index report. Use the “Approved” field, it will take up to 20 Characters

<b>DEMO</b>		<b>My View</b>		
<b>Plant:</b>	New Refinery	<b>Sort name:</b>	P&ID+LOOP	<b>Filter name:</b> LOCATION
<b>Area:</b>	Crude Area			
<b>Unit:</b>	Crude unit 1			
<b>Document No.:</b>	12345E7890	<b>Revision No.:</b>	1	
<b>By:</b>	JED	<b>Checked:</b>	HIM	
<b>Approved:</b>	<u>For Contruction</u>	<b>Signed by:</b>	BOS	
<b>NO DESCRIPTION - USE Approved</b>				
Tag Number	Service	Instrument Type	Process Function Type	IO Type Name

- When opening a browser view, right click the vertical scroll bar and click “Bottom” to load the entire query into memory. This will make navigation easier.
- When using the “Find”, click the “As Typed” radio button to assure that the find is working as you enter the search string.
- When executing a series of commands – Look for Hot Key combinations to assist you. A key sequence like “Ctrl-a, Alt-o, F, Enter” could be used to reset the location field without touching the mouse.
- The Instrument Type column contains the instrument type name, the instrument type description and the Process Function. To isolate this data - Create a custom view and use the columns CMPNT\_FUNC\_TYPE\_NAME, CMPNT\_FUNC\_TYPE\_DESC and PROC\_FUNC\_ID fields to show the names and descriptions separately.

Instrument Type		
FO	Flow Orifice, Restriction	Flow
FO	Flow Orifice, Restriction	Flow

- Always open InfoMaker with the Export icon in SPI to allow InfoMaker to open and link to the project database
- A modified title box will not show up on the second notes page. An overlaid title box will show on the second sheet. If you modify a title box, create an overlay title box and associate it to sheets that use a second notes page.
- To provide a margin at the top of datasheet reports, set a parameter “TOPMARGIN = 250” in the INTOOLS.INI file [PRINTER] section.
- When adding a column to a spec page, Use the Page Editor in SPI to select an unused column. InfoMaker allows selection of columns that are already on the Spec.
- Enter the Form Numbers in the Description field of the Page Editor so you know what forms a page is used on.
- When saving Spec Sheet pages to PDF files, Include the Form number in the filename. This makes them easier to recognize when searching for a particular type of Spec.

- The Spec Data Dictionary will create Browser Views of Spec Forms
- In the Spec data dictionary select the following for best performance:
  - Select only the **spec\_sheet\_data** for Templates
  - Select **All** tables for Browser Fields
  - Select **All** but **component** for INtools External Editor

Table Name	Template Fields		Browser Fields		Editable in IEE	
component	<input type="radio"/> All	<input checked="" type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None	<input type="radio"/> All	<input checked="" type="radio"/> None
flow	<input type="radio"/> All	<input checked="" type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None
pd_general	<input type="radio"/> All	<input checked="" type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None
spec_sheet_data	<input checked="" type="radio"/> All	<input type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None
view_line	<input type="radio"/> All	<input checked="" type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None	<input checked="" type="radio"/> All	<input type="radio"/> None

- Edit the headers in the Spec Data Dictionary to make more sense and shorten to fit the browser area
- Watch for repeated headers such as “Manufacturer” and prefix them to give each unique name tied to the component (Positioner Manufacturer)
- For blank lines on a spec, Name the headers with the line number instead of Spec\_udf numbers. This will make more sense in the browser

5	Line I.D.					line_i_d	
6	spec_udf_c23					spec_udf_c22	
7	Fluid	State				pd_fluid_name	pd_fluid_phase

Column Header	Template	Browser	Editable in IEE
L6 data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
L6 Header	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Flow Full Scale	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## ▪ **TRAIN YOUR USERS!**

- The investment you have made in SPI can only be realized with users who are trained to use the tools well and get the most out of it

## ▪ **KEEP IT SIMPLE!**

- Use the minimum amount of data in SPI to support the deliverables you are creating. Remember that the data in SPI will need to be maintained for the life of the Project and/or Plant in an As-built configuration

## ▪ **PLAN AHEAD!**

- SPI depends on Instrument Types, Profiles and Support Tables being configured correctly. Every minute you spend properly configuring SPI at the beginning of a Job or Project, will save hours in rework throughout the life cycle of the database

## ▪ **USE SPI!**

- Use the tool as it is designed to be used. Don't try to make the software fit your work processes, change your work processes to fit the software. Don't take shortcuts. Work Through SmartPlant Instrumentation, not around it.