

SmartPlant[®] *Instrumentation*

TRAINING

FLUOR

SmartPlant[®]

Implementation Team

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FLUOR[®]

INTERGRAPH

SmartPlant Instrumentation Training



- ◆ The single most important factors in using SmartPlant Instrumentation effectively are Well Trained Users!
- ◆ With the enhancements to SmartPlant Instrumentation 2016 the need to re-address our training requirements for users to use the new features and take advantage of some of the older functionality that will enhance the user experience
- ◆ This presentation will introduce you to some of the elements and procedures to consider when setting up your SmartPlant Instrumentation 2016 training program



Reasons for SPI 2016 Training



- ◆ **Consider your reasons for having a SPI 2016 training program**
 - Update training for new features and functionality in SPI 2016
 - Consistency in the use of SPI for Projects or Operations
 - Optimizing existing functionality of SPI by the users
 - Expanding the work processes to better use SPI
 - Maintain the quality of your SPI Implementation
- ◆ **This presentation will introduce you to some of the elements and procedures to consider when setting up your SmartPlant Instrumentation 2016 training program**



SPI Training Requirements



- ◆ **Target Your SPI training audience**
 - **Introductory Training for New SPI users**
 - **Update Training for existing SPI users**
 - **Module Training for specific users**
 - **SPI Administration Training**

- **Supplemental or Focused Training**
 - Instrumentation Training
 - CS Engineers
 - CS Designers
 - Process Engineers
 - Process Tech
 - Maintenance
 - Operations
 - Management



SPI Training Formats



- ◆ **Consider the most viable formats for your training program**
 - **Presentation type Instructor Led Classroom training**
 - **Hands on Instructor Led Classroom training**
 - **Self Paced Online Based user training**
 - **Lunch and Learn short sessions**
 - **Just in Time user training**
 - **One on One user training**
 - **On the Job user training**
 - **Guest instructors**
 - **Outside classes**
 - **Combination...**



SPI Training Costs



- ◆ **Establish and Maintain an SPI Training Budget**
 - Based on Onsite or Offsite training
 - Is SPI Training Project Billable?
 - Included costs for SPI training
 - Preparation of materials
 - Software Licensing
 - Accommodations
 - Hardware costs
 - Trainers Time
 - Student Time
 - Travel Time

***Training is not a cost.
It's an investment!***



SPI Training Instructors



- ◆ **When Developing or Hiring SPI Training Instructors**
 - Consider the Trainers knowledge Base
 - Look for Outside Training resources
 - Develop Super Users as Trainers
 - Develop Specialty Trainers
 - Train the Trainers

- ◆ **What Instructors Should Know**
 - Instrumentation
 - The SPI Software
 - They are also Learning
 - Practice makes Perfect
 - Be passionate about SPI





Intergraph Training Programs

◆ Instructor Led Training

- ◆ Huntsville, Alabama
- ◆ Norcross, Georgia
- ◆ Houston, Texas

◆ Conference Workshops

◆ Virtual Online Training

◆ GetSmart! Webinars

◆ TestDrive Center

- ◆ SPI 2016 Pending

Intergraph Training Solutions

Get up to speed with your Intergraph solutions. Intergraph offers superior training services with options to meet your needs.

Instructor-led training

Courses are held in the following locations:

- Huntsville, Alabama.
- Norcross, Georgia.
- Houston, Texas.

Take advantage of classes for the following solutions:

CAESAR II®	SmartPlant Electrical	SmartPlant P&ID
DT STRUCLS®	SmartPlant Foundation	SmartPlant Review
Intergraph Smart™ 3D	SmartPlant Fusion Solutionware	SmartPlant Spoolgen®
POSB®	SmartPlant Instrumentation	SmartSketch®
PV Elite®	SmartPlant Interop Publisher	Validation, Transformation, and Loading
SmartPlant® Construction	SmartPlant Isometrics	

Virtual training

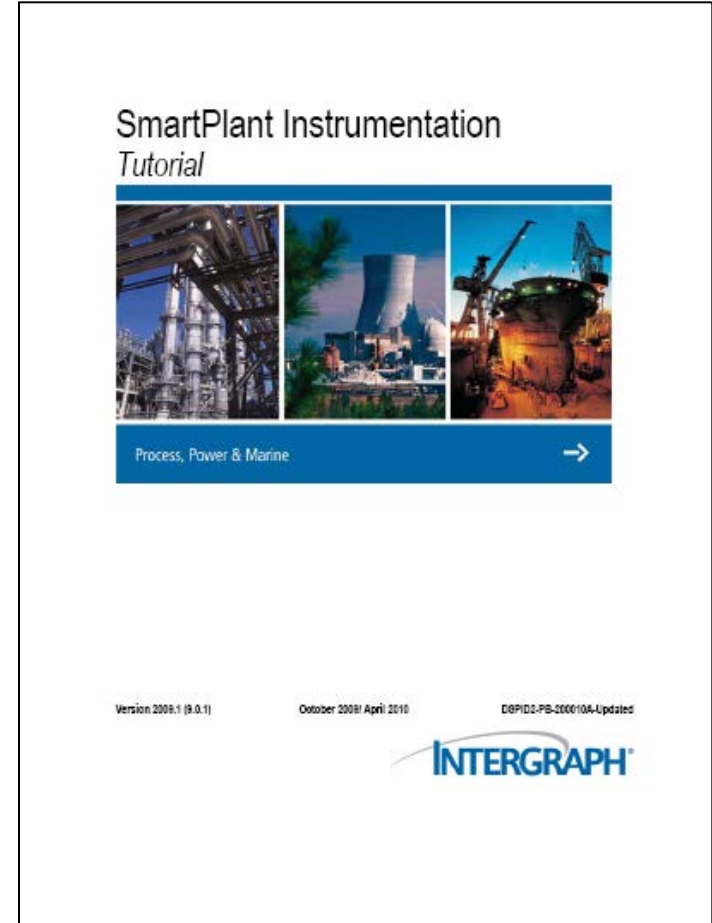
Enjoy in-depth training from the convenience of your desktop for the following solutions:

- CAESAR II.
- Smart 3D.
- SmartPlant P&ID.



Intergraph Instructor-led Training

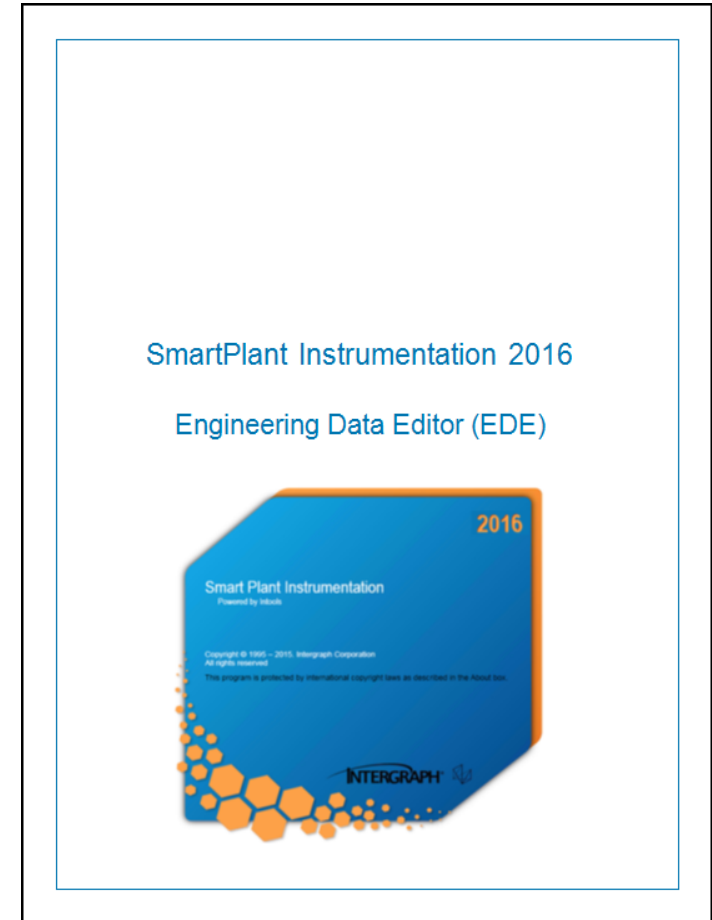
- ◆ SPI 2016 Update Class (TINT1005) (Pending)
- ◆ SPI for Users (TINT1001)
- ◆ SPI Installation and Administration (TINT1003)
- ◆ SPI Customization & Management (TINT1004)
- ◆ SPI Advanced Wiring & Reporting (TINT1006)
- ◆ SPI As-Built/Operating Owner (TINT1007)
- ◆ SPF Authoring and Administration (TSPE4500)
- ◆ Smart 3D Virtual Training 2014 (SDVT073AE)
- ◆ SPEL Basic User (TELE1001)
- ◆ SPEL Advanced User (TELE1002)



Intergraph Conference & Workshops



- ◆ **Intergraph can do custom training and hands on workshops for clients and at events such as HxGN and User Conferences**
- ◆ **HxGN LIVE 2016 Hands-on Training**
 - ◆ 2254 - Minimize Downtime When Upgrading to the New SmartPlant Instrumentation 2016
 - ◆ 2253 - Reduce Risk and Cost with Vendor Interfaces in SmartPlant Instrumentation
- ◆ **SPI 2016 Beta Test Workshops**
 - ◆ SmartPlant Instrumentation 2016 Query Builder
 - ◆ SmartPlant Instrumentation 2016 Engineering Data Editor (EDE)
 - ◆ SmartPlant Instrumentation 2016 Projects As-Built





Intergraph Online Training Programs

◆ Intergraph Virtual Training

- ◆ Intergraph Smart™ 3D Virtual Training
- ◆ SmartPlant® P&ID Virtual Training
- ◆ SmartPlant Electrical Virtual Training (Coming Soon)
- ◆ SmartPlant Instrumentation Virtual Training (Pending)

◆ Intergraph Webinars

- ◆ Efficiently Manage Projects with SmartPlant Instrumentation
- ◆ Enhancing Your Loop Diagrams with SmartPlant Enhanced Smart Loops
- ◆ SmartPlant Instrumentation Technical Update
- ◆ Much More...

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Intergraph GetSmart! Webinar Series

Below are Intergraph P&EM webinar listings for upcoming webinars or for recorded webinars that have occurred in the past.

To see upcoming webinars in your local time zone, you may use the [Time Zone Converter](#).

Filter:

Category:

Found 0 upcoming and 47 recorded Engineering & Schematics webinars.

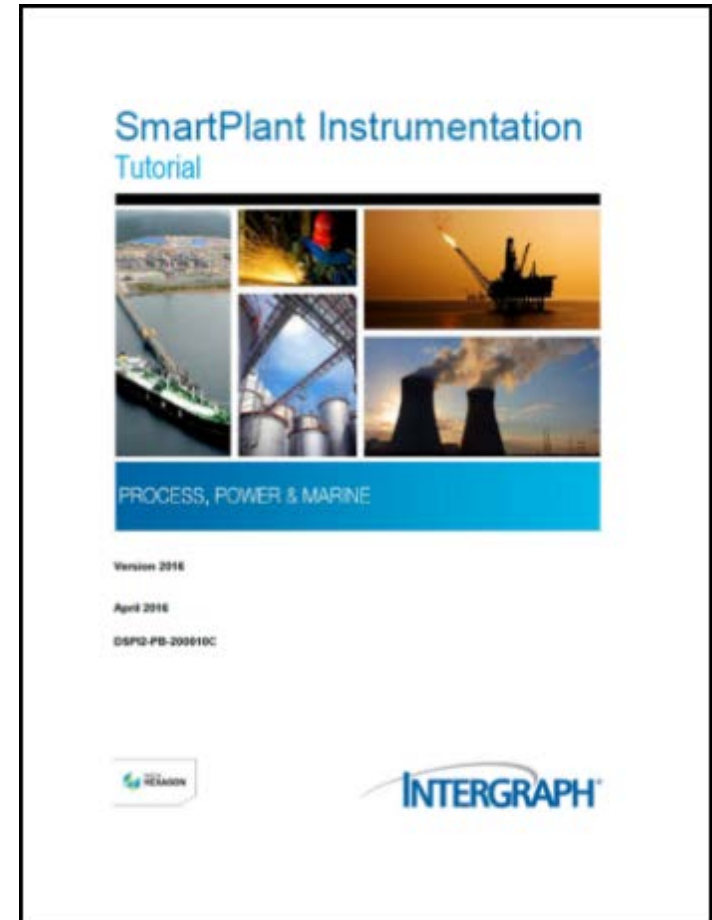
Upcoming Webinars (0) Recorded Webinars (47)

Title	Original Webinar Date
SmartPlant P&ID for Commissioning and Startup Drawings	8/26/2015
Efficiently Manage Projects with SmartPlant Instrumentation	4/15/2015
Step Up to Smart Electrical Engineering	2/26/2015
What's New in SmartPlant Construction 2015	12/8/2014
Enhancing Your Loop Diagrams with SmartPlant Enhanced Smart Loops	12/4/2014
From Logical to Physical	10/28/2014
Streamlining the S&I Design	10/22/2014
Better Specify, Select, and Order Your Instruments	10/14/2014
CAESAR II: Algal Norway pipe stress analysis on board FPSOs Webinar	9/16/2014
A User Experience Fit for the Task	8/27/2014
Validating the Physical Against the Logical Design	4/16/2014
Design-Analyze-Operate with SmartPlant Electrical and RTAP	1/15/2014
Managing Your Control System Assets with SmartPlant Instrumentation	12/4/2013
Automating Your Process Design	10/30/2013
Configuring Mapping for SmartPlant P&ID to Smart 3D Integration	10/10/2013

Using the SPI Internal Tutorial



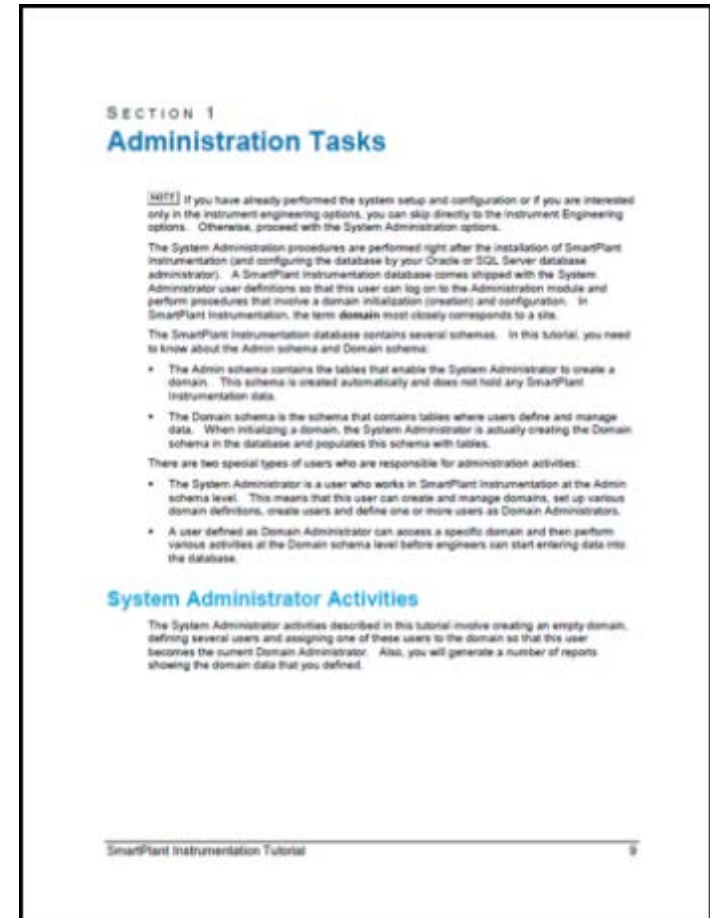
- ◆ The SPI 2016 Documentation comes with a complete and comprehensive tutorial
- ◆ The SPI Tutorial is based on the In_demo.db database installed as a stand alone Sybase or an Oracle or SQL Server
- ◆ Recommended supplemental material includes:
 - *SmartPlant Instrumentation User's Guides*
 - *SmartPlant Instrumentation Online Help*



SPI Internal Tutorial Content



1. Administration Tasks
2. Getting Started with SmartPlant Instrumentation
3. Creating Instruments and Control Loops
4. Query Builder and the Engineering Data Editor (2016 Update)
5. Defining Process Data
6. Performing Calculations and Sizing
7. Working with Specifications
8. Managing Documents
9. Performing Wiring Operations
10. Generating Loop Drawings
11. Working with Hook-Ups



SPI 2016 Update Training



- ◆ **Query Builder and the Engineering Data Editor**
- ◆ **Query Builder**
 - Create a basic query, save the query to the Reference Explorer, and preview the query
 - Generate an EDE View from a Query, save the EDE View to the EDE Explorer
- ◆ **Engineering Data Editor**
 - Manipulate the data in the EDE View
 - Sorting Data
 - Applying Filters
 - Grouping Columns
 - Copy and Paste Functions
 - Search Functions
 - Working with the Complex Filter

Query Builder and the Engineering Data Editor

SECTION 4

Query Builder and the Engineering Data Editor

The Query Builder allows you to create queries using a graphic user interface (GUI) with no knowledge of SQL whatsoever. You can use these queries to create and display data in different types of views and reports in the Engineering Data Editor (EDE) and to create custom Fast queries.

Using an intuitive graphic user interface you can create definitions of reports and customized views that can be saved and displayed in the Engineering Data Editor (EDE) without any prior knowledge of the database structure or SQL statements. The Query Builder's graphic user interface uses the engineering data from the software based on **Item Types**, their **Attributes**, and **Relationships**. After selecting the required item types, attributes, and relationships the Query Builder saves this information in the **Reference Explorer** until you open the query using the EDE where it displays the results.

In this section you will perform the following tasks:

1. Create a basic query, save the query to the **Reference Explorer**, and preview the query.
2. Generate an **EDE View** from a Query, save the EDE View to the **EDE Explorer**.
3. Manipulate the data in the EDE View.

Task 1 - Creating a Query

A typical workflow for creating a query involves:

- Creating or opening an existing query from the **Reference Explorer**.
- Selecting item types from the item type explorer and adding them to the **Definitions Window**.
- Defining the relationships between the selected item types.
- Selecting attributes.
- Previewing the query.
- Saving the query to the **Reference Explorer**.

Open a New Query

In this task you will create a query with four **Item Types** showing the relationships between the parent (**Instrument**) and its siblings (**Loop**, **Line**, and **Document**).

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Query Builder (QB) Tutorial



- ◆ **Query Builder (QB)**
 - Using a query from the Reference Explorer
 - **Item Types Explorer**
 - Selecting Item types
 - **Definitions Window**
 - Defining relationships
 - **Using the Attribute Explorer**
 - Selecting Attributes
 - Adding Attributes
 - **Previewing the query**
 - Working with Filters
 - **Saving the query to the Reference Explorer**

Query Builder and the Engineering Data Editor

4. Click OK, the Query Builder opens.



Adding Item Types

You are now ready to start building your query by adding Item Types to the Definition window and creating their relationships.

1. From the Item Types Explorer, do one of the following:
 - Drag and drop the Instrument Item Type to the Definition window.

Engineering Data Editor (EDE) Tutorial




- ◆ **EDE Module Introduction**
 - Using the EDE Explorer
 - Creating a New EDE
 - Edit the EDE Layout
 - Edit Data in the EDE
 - Using View Actions Tab
 - Using the Compare Option

- ◆ **Manipulating the Data in the EDE View**
 - Sort data in their columns
 - Applying filters to columns
 - Grouping columns
 - Copy/Paste from column to column
 - Search functionality

Query Builder and the Engineering Data Editor

Task 3 - Manipulating the Data in the EDE View


To open an EDE View, you need to open the Engineering Data Editor. Click on the  from the main toolbar.

All your EDE Views are listed in the EDE Explorer. The EDE View is displayed in a grid format, and the data is presented in a column layout. You can edit, sort, and filter the data in the columns. On the left side, a View Actions tab opens with each EDE View, containing the properties of the data currently displayed in the main page. The tab is divided into three sections: Layout History, Tree View, and a Search Box.

In this task you will learn to perform a number of actions on the grid. For example:

- Sort data in their columns
- Applying filters to columns
- Grouping columns
- Copy/Paste data from column to column
- Search functionality for specific data

The EDE Window with the Instrument Relations EDE View and the View Actions tab.

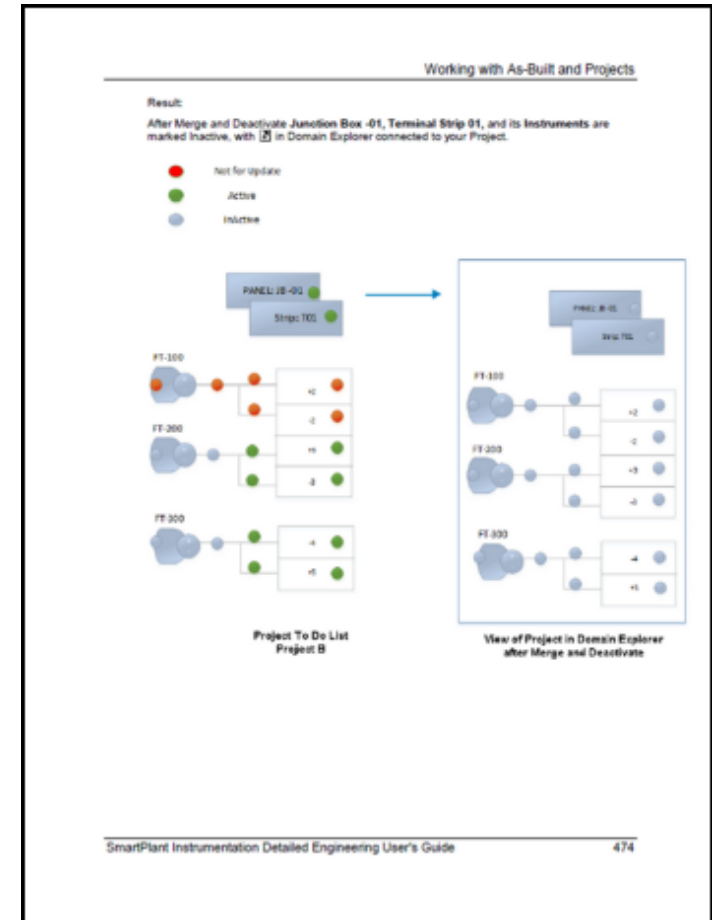


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Projects As-Built (PAB) Tutorial



- ◆ The other Major change in SPI 2016 is the Projects As-Built To-Do List
- ◆ The Users Guide for PAB is in the “*SmartPlant Instrumentation Detailed Engineering User's Guide*”
 - Working with As-Built and Projects
 - As-Built Workflow
 - Claiming from As-Built
 - Releasing Claimed Items
 - Deleting Items from As-Built or Project
 - Merging Items with As-Built
 - Comparing Project To Do List with Target Data
 - Correlating Items in the As-Built





Customizing Your Training Program

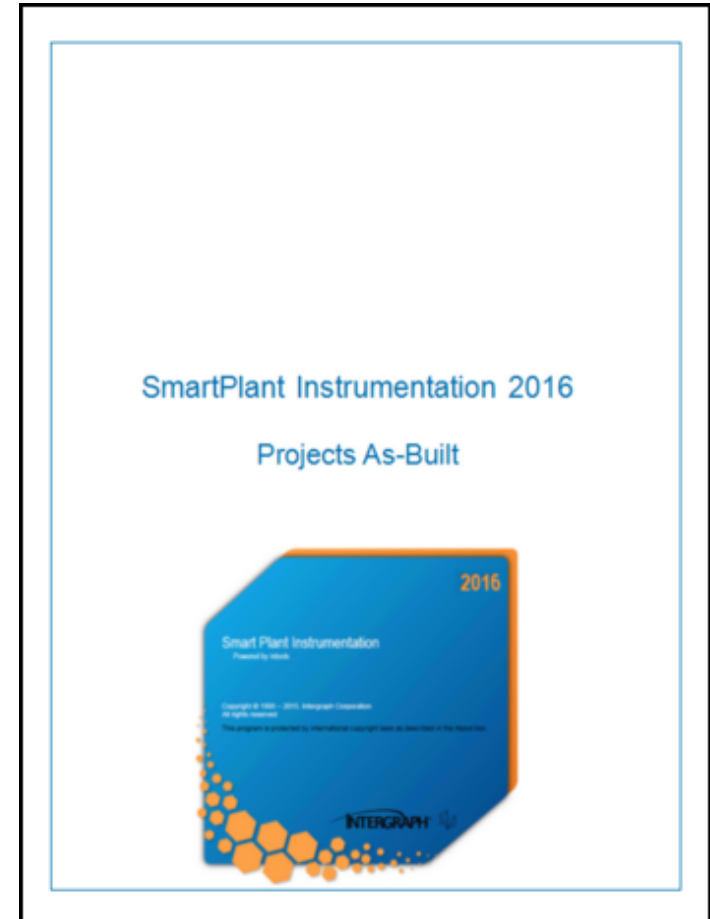
- ◆ **The SPI Tutorial is limited and will probably need to be supplemented with additional modules Courses as required**
 - Special classes based on upgrades: Update training, New feature training etc...
 - Special classes for specific users: Process, Design, Maintenance etc...
 - Special classes for specific tasks: Fieldbus, Spec Sheets, Process data etc...
 - Special classes scaled to purpose: Lunch & Learn, Manager training etc...
 - Special classes for consistency: Seed and Standard practices training etc...
 - Special classes for additional modules: External Editor, Import Module etc...
- ◆ **By customizing your training program with a combination of outside instructor led training and internally developed user training, you can make your SmartPlant Instrumentation implementation more effective**



Intergraph SPI 2016 Training



- ◆ Intergraph will hold SPI 2016 Update training classes in Houston in the near future
- ◆ The courses will be more comprehensive than the SPI Tutorial in the Documentation
- ◆ Major Topics Covered will be:
 - ◆ Updating to SPI 2016
 - ◆ Query Builder
 - ◆ Engineering Data Editor
 - ◆ Projects As-Built
 - ◆ Integration To-Do-List
 - ◆ Additional Functionality



Intergraph SPI 2016 Training



“To register for training on all Intergraph Process, Power & Marine products, call Training Registration at (800) 766-7701 in the U.S. Outside the U.S., call (256) 730-5400 or contact your local Intergraph office”

***“For current information on training, use a Web browser to connect to:
<http://www.intergraph.com/ppm/training/>”***





“It's all about training smart”
~Tyson Gay



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