



# ENGINEERING & SCHEMATICS

## SMARTPLANT® INSTRUMENTATION

Streamline your instrumentation engineering and design with SmartPlant Instrumentation, a proven, market-leading solution to help you improve your instrument design from FEED to operations.

SmartPlant Electrical

SmartPlant Electrical Detailed

SmartPlant Explorer

SmartPlant Import Assistant

**SmartPlant Instrumentation**

SmartPlant Isometrics

SmartPlant P&ID

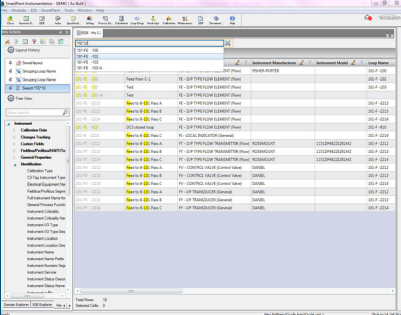
SmartPlant P&ID Design Validation

SmartPlant Process Safety

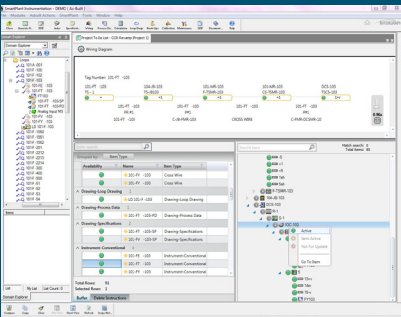
SmartSketch®

# USER INTERACTION

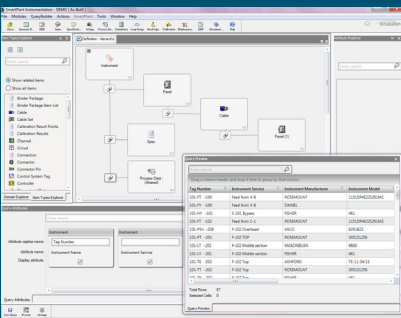
THE LATEST RELEASE OF SMARTPLANT INSTRUMENTATION PLACES A LARGE EMPHASIS ON THE USER INTERACTION EXPERIENCE.



Today's users expect a modern look and feel. But more importantly, an interactive solution must be easily understandable by the engineers and designers using the software. This helps users to work as efficiently as possible without the confusion of too many options or complicated, IT-type terminology.



In addition, the new version harmonizes the user experience across the different SmartPlant Engineering & Schematics solutions. For example, the Engineering Data Editor is the same in all solutions, which eases the learning curve.



# Engineering & Schematics

SOLUTION SUITE MATRIX



- SmartPlant Electrical
- SmartPlant Electrical Detailed
- SmartPlant Explorer
- SmartPlant Import Assistant
- SmartPlant Instrumentation**
- SmartPlant Isometrics
- SmartPlant P&ID
- SmartPlant P&ID Design Validation
- SmartPlant Process Safety
- SmartSketch

Solution	Complementary SmartPlant Applications			
● <b>SmartPlant P&amp;ID*</b>	● <b>Process Engineer</b>	● <b>Engineer</b>	● <b>Engineering Integrity</b>	● <b>Design Validation</b>
● <b>SmartPlant Electrical</b>				
● <b>SmartPlant Instrumentation</b>	● <b>External Editor</b>	● <b>Operational Excellence</b>		
● <b>SmartPlant Explorer</b>				
● <b>SmartSketch</b>				

\*ISO 15926 Export Capability

All can export to Intergraph Smart™ 3D and SmartPlant Enterprise for Owner Operators. An interface to PDMS is also available.



# TASK-BASED APPROACH

EXECUTING A PROJECT INVOLVES A LONG SERIES OF TASKS AND A LARGE NUMBER OF DISCIPLINES. Connecting these tasks in a smart way will result in better end deliverables that will support your facility's construction and operations.

SmartPlant Instrumentation is moving toward a task-based environment. This means that the interface focuses on the task at hand, for example:

**Process Task** – Retrieve process data from SmartPlant P&ID, edit, and add information to set the design basis for the instrument

**Instrument Index Task** – Retrieve and expand the instrument rule base from the P&ID into all physical instruments to perform the function

**Specification Task** – Create task-specific interfaces and user experiences using the EDE that can be configured for this specific task – for example, to create instrument specifications, which can include SmartPlant Instrumentation data as well as data coming from or related to vendors

**Wiring Task** – Set up the EDE to assign the cables, junction boxes, and wiring environment to auto-connect the instruments and loops and check for connectivity

This focus leads to increased productivity and data quality. Productivity gains of more than 40 percent have been reported.

# ENHANCEMENTS

The latest version offers a number of significant changes to boost data quality and productivity. The **query builder** enables the engineer or designer to find and format data

using engineering language rather than having to know database queries. The result of the query is displayed in a new environment, the **Engineering Data Editor (EDE)**, which enables quick data entry, modification, auto-filtering, comparison, and more. Significant enhancements to the **Project As-Built** functionality enable the engineer to scope projects in projects and merge them back together in a controlled manner. Finally, **integration** with the to-do list helps engineers to make better decisions using the data from other tasks and disciplines.



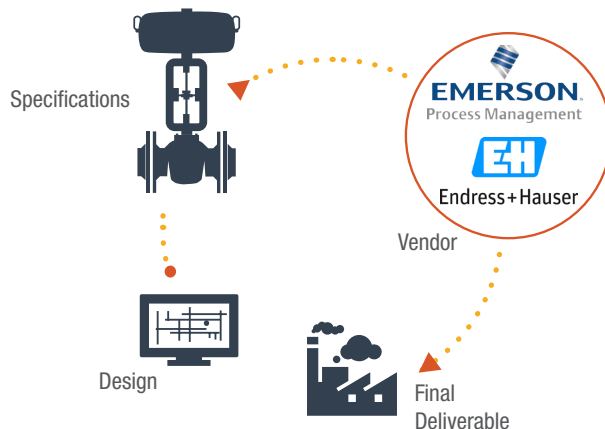
## BRIDGING THE GAPS

DATA SHARING IS THE CORNERSTONE OF PRODUCTIVITY AND DATA QUALITY DRIVERS.

SmartPlant Instrumentation is the receiving engine for several data sources, such as the P&ID team, process group, electrical team, and piping department. The solution then feeds data to the piping group for the inline instruments, electrical for interlocks, and more, in addition to interacting with third parties and vendor catalogs.

SmartPlant Instrumentation supports operational tasks, not only by generating new as-built data, but also through offering a seamless interface with Fluke for calibration and an interface with ERP providers such as SAP for maintenance scheduling.

Catalog or vendor data access is rapidly becoming more important in driving productivity and design quality. Rather than finding and re-typing in SmartPlant Instrumentation, you can directly access vendor data, such as I/O cards for DCS, instruments from vendors like E+H, or valves from Emerson. SmartPlant Instrumentation helps you get the right data quickly.



SmartPlant Instrumentation enables data accuracy throughout the life cycle

## DEPLOYMENT

Plant owners face a variety of challenges, including:

- Failure to meet schedule, cost, or quality standards
- Data handover to fit operational tasks
- Management of change
- Safety and regulatory compliance
- Compliance with project scope and requirements and the ability to validate them during the project phases

Most of these challenges can be addressed with SmartPlant Instrumentation. Many owners are choosing to also deploy SmartPlant Instrumentation and other tools using SmartPlant Cloud. This gives owners a central place for all of their project data, helping to enforce consistency, engineering standards and practices, and handover to the operational team.

Up to **40%**  
project  
savings on  
instrumentation.

## VALUE PROPOSITION

GAIN VALUE ACROSS THE WORKFLOW. SmartPlant Instrumentation addresses instrument-related work processes throughout the plant life cycle – from process cases through to design, construction, and operational tasks like calibration.

Take advantage of SmartPlant Instrumentation’s existing capabilities that have helped both EPCs and OOs to successfully execute their industry projects and operational tasks for years. Large projects such as US\$18 billion LNG facilities have been designed with SmartPlant Instrumentation, and the solution now supports the operations of these plants.

SmartPlant Instrumentation offers a single source of all instrumentation data and tasks, facilitating consistent creation of deliverables. The one constant in life is change. SmartPlant Instrumentation helps you ensure that changes are consistently reflected and flagged.

Take advantage of the solution’s rules to ensure you are making the right decision as early as possible.

Tasks	Labor Hours	
	Without SPI*	With SPI*
Instrument Index	200	150
Specification Sheet	200	100
Wiring	300	200
Associated Documentation and Change Management	200	50
Other	100	100
<b>Total Project</b>	<b>1000</b>	<b>600</b>

**40% Savings**

\*Rounded assumptions to indicate potential savings based on market inputs

**SmartPlant<sup>®</sup>**  
**instrumentation**  
**fits the smaller**  
**project all**  
**the way up**  
**to the large**  
**mega projects.**

**It covers the**  
**scope from**  
**FEED to**  
**Operations.**

## ABOUT INTERGRAPH

Intergraph helps the world work smarter. The company’s software and solutions improve the lives of millions of people through better facilities, safer communities, and more reliable operations.

Intergraph Process, Power & Marine (PP&M) is the world’s leading provider of enterprise engineering software enabling smarter design and operation of plants, ships, and offshore facilities. Intergraph Security, Government & Infrastructure (SG&I) is the leader in smart solutions for emergency response,

utilities, transportation, and other global challenges. For more information, visit [www.intergraph.com](http://www.intergraph.com).

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