ENGINEERING & SCHEMATICS

SMARTPLANT® P&ID

Develop and manage your P&IDs with SmartPlant P&ID. Take advantage of a rules engine for data consistency, data reuse, change management, deliverables to support downstream tasks, and integration.

SmartPlant Electrical

SmartPlant Electrical Detailed

SmartPlant Explorer

SmartPlant Import Assistant

SmartPlant Instrumentation

SmartPlant Isometrics
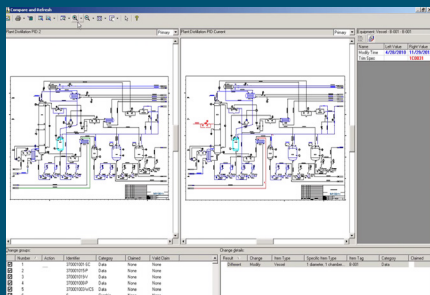
SmartPlant P&ID

SmartPlant P&ID Design Validation
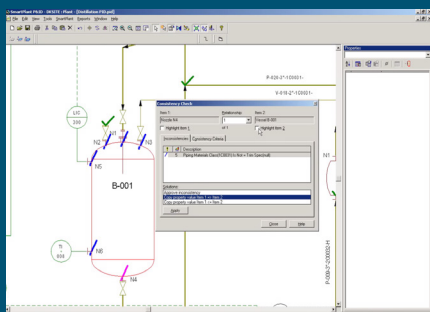
SmartPlant Process Safety

SmartSketch®

PART OF
HEXAGON

USER INTERACTION

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.

The latest version of SmartPlant® P&ID harmonizes the user experience across the different SmartPlant Engineering & Schematics solutions.

Another aspect of user interaction can be seen in SmartPlant P&ID Automation. This powerful tool enables you to automatically create designs based on numerical inputs. For example, this has been done with power plant designs which were based on standard design components. The complete P&ID set was created overnight!

Engineering & Schematics
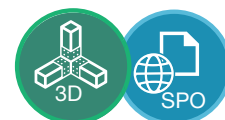### SOLUTION SUITE MATRIX

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Solution	Complementary SmartPlant Applications			
SmartPlant P&ID*	● Process Engineer	● Engineer	● Engineering Integrity	● Design Validation
SmartPlant Electrical				
SmartPlant Instrumentation	● External Editor	● Operational Excellence		
SmartPlant Explorer				
SmartSketch				

*ISO 15926 Integrated Capability

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

3D   SPO

TASK-BASED APPROACH

IT REALLY DOES NOT MATTER WHICH TASK IS PERFORMED. In all cases, focus is the key to best results. Connecting these tasks in a smart way will result in better deliverables that will support your facility's engineering, construction, and operations.

All SmartPlant Engineering and Schematics products are moving to a task-based approach, and so is SmartPlant P&ID. The solution offers tools like the **Engineering Data Editor**, system editing, and more.

Display sets also facilitate the **task-based approach.** Based on any criteria, you can filter the P&ID view for tasks such as commissioning, inspection, and checking certain systems. SmartPlant P&ID also offers the **as-built mode** so that owners and EPCs can carve out a part of the plant on which to perform work, and later merge that back to create the as-built of the new situation for the operational team.

SmartPlant P&ID Engineer focuses on your engineering tasks. The solution is focused on adding and modifying data in a spreadsheet-like environment. Plus, all of the rules are active on the data entered. This facilitates the breaking down of silos, enabling engineers from other disciplines to also use this environment. For example, the control system engineer can add instrument tags in a single source, with all of the rule checks, making it directly available for others.

ENHANCEMENTS

The latest version offers significant changes to boost data quality and productivity.

- **Engineering Data Editor** reports honor display-applied auto filters to manage the desired display of the resulting reports.
- **Automated validation** when a user replaces symbols in the drawing.
- AutoCAD® and MicroStation export-related improvements.
- Selected assembly from a drawing can be saved to AutoCAD or MicroStation.
- **Save As from within SmartPlant P&ID** translates using Display Set symbology. Color filters are defined to AutoCAD.
- **Save As from Drawing Manager** enables use of Display Set layers and symbology from last session
- The relationships between Plant Group and pipe run is published to SmartPlant Foundation, allowing them to be utilized in other applications.

Validate the design with the real world

BRIDGING THE GAPS

DATA SHARING IS THE CORNERSTONE OF PRODUCTIVITY AND DATA QUALITY DRIVERS. Engineering is a team sport and communication is essential for a winning game.

SmartPlant P&ID offers several options to facilitate communication with other disciplines. SmartPlant P&ID is the baseline for the facility, so many look for data from the P&ID to drive their tasks and decision-making.

The application programming interface (API) enables you to link to any third-party tool, such as hydraulic analysis or pipe sizing. The P&ID is exported in the ISO 15926 format, and with that can communicate with other tools that can read that format.

Of course, SmartPlant P&ID is part of the SmartPlant Enterprise, and as such, it is integrated with the other SmartPlant Enterprise solutions like Intergraph Smart 3D for full flow sheet transposition on data and topology, as well as "yelllow off" functionality.

Final data can be shared with JV partners on a project using connected or disconnected worksharing to protect process IP.

DEPLOYMENT

SmartPlant P&ID is designed for the process, power, and marine industries and by the engineers and designers in those industries.

SP P&ID has a proven track record over many years, successfully supporting projects from small to mega-size. SmartPlant P&ID offers flexibility in deployment including options for a single office environment, worksharing, and the SmartPlant Cloud environment.

Project execution, operation, and maintenance all focus on risk management. Plant owners are looking at CAPEX budgets, schedule, and plant uptimes. SmartPlant P&ID fits well in this scenario to manage and reduce risks. Making sure the data is accurate early and available to stakeholders at any time will yield the measurable business benefits that engineering and operations need.

VALUE PROPOSITION

GAIN VALUE ACROSS THE WORKFLOW. SmartPlant P&ID fits your workflow from front-end design all the way to operations and maintenance. Engineering is normally a process beginning with assumptions and ideas and ending in final and as-built design. SmartPlant P&ID is designed to support this real world scenario.

Changes to the design basis can be quickly implemented in the project. SmartPlant P&ID offers change control, giving you visual and report comparisons of different versions of a P&ID. With SmartPlant P&ID, changes can also be compared to the Smart 3D model at any point in the project schedule. There is no need to wait till the final P&ID is done.

SmartPlant P&ID offers significant and measurable benefits.

| | Labor Hours | |
Tasks	Without SmartPlant P&ID*	With SmartPlant P&ID*
Component take-off (1x)	40	1
Validation/checking (1x)	80	2
Making updates/changes	35	15
Design reuse (automate)	100	20
Change management	50	5
Design Reviews	30	20
Total Project	335	63

80% Savings

*Rounded assumptions to indicate potential savings based on market inputs

Achieve your business objectives with rule-driven design.

Make the right decision early with project as-built, system editing, and other capabilities that are unique in the market.

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 &

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