HEXAGON

Intergraph Smart® P&ID

Efficiently Manage Your Process

Engineering & Scematics

Intergraph Smart P&ID

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

Intergraph Smart Electrical
SmartPlant® Explorer
Intergraph Smart Instrumentation
Intergraph Smart Isometrics
Intergraph Smart Engineering Integrity
Intergraph Smart P&ID
Intergraph Smart P&ID Engineer
Intergraph Smart Design Validation
SmartSketch®

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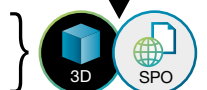
Smart P&ID Engineer focuses on your engineering tasks. The solution is focused on adding and modifying data in a spreadsheet-like environment. Plus, all the rules are active on the data entered. This facilitates the breaking down of silos, enabling engineers from other disciplines to also use this environment.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

The Engineering & Schematics Solution Suite Matrix

Solution	Complementary Applications				
Intergraph Smart P&ID*	Process Engineer	Engineer	Engineering Integrity	Design Validation	HxGN LiveView®
Intergraph Smart Electrical			Engineering Integrity		HxGN LiveView
Intergraph Smart Instrumentation	External Editor	Operational Excellence	Engineering Integrity		HxGN LiveView

*ISO 15926 Integrated Capability

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

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 Smart 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.

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.

Smart P&ID offers several options to facilitate communication with other disciplines. Smart 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, Smart P&ID is part of 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 "yellow off" functionality.

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

Deployment

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

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

Project execution, operation, and maintenance all focus on risk management. Plant owners are looking at CAPEX budgets, schedule, and plant uptimes. Smart 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.

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 Smart P&ID harmonizes the user experience across the different Hexagon Engineering & Schematics solutions.

Another aspect of user interaction can be seen in Smart 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!

Value Proposition

Gain value across the workflow. Smart 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. Smart P&ID is designed to support this real-world scenario.

Changes to the design basis can be quickly implemented in the project. Smart P&ID offers change control, giving you visual and report comparisons of different versions of a P&ID. With Smart 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 until the final P&ID is done.

Smart P&ID offers significant and measurable benefits.

Tasks	Labor Hours	
	Without Smart P&ID*	With Smart 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

About Hexagon

Hexagon is the global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Hexagon's Asset Lifecycle Intelligence division helps clients design, construct, and operate more profitable, safe, and sustainable industrial facilities. We empower customers to unlock data, accelerate industrial project modernization and digital maturity, increase productivity, and move the sustainability needle.

Our technologies help produce actionable insights that enable better decision-making and intelligence across the asset lifecycle of industrial projects, leading to improvements in safety, quality, efficiency, and productivity, which contribute to Economic and Environmental Sustainability.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 24,000 employees in 50 countries and net sales of approximately 5.5bn USD. Learn more at hexagon.com and follow us @HexagonAB.