# HEXAGON

# Intergraph Smart® Instrumentation

## Streamline Your Instrumentation Engineering and Design

# Engineering & Scematics

**Intergraph Smart®
Instrumentation**

A proven, market-leading solution to
help improve your instrument design
from FEED to operations.

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®

## User Interaction

The latest version of Intergraph Smart® Instrumentation places a great emphasis on the user experience. Today's users
expect a modern look and feel. But more importantly they need an interactive solution that is 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 all Hexagon Engineering & Schematics solutions. For
example, the Engineering Data Editor (EDE) is the same in all solutions, which covers the learning curve.

**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.

## Task-based Approach

Executing a project involves many tasks and disciplines. Connecting these tasks in a smart way will result in better end deliverables that will support your facility's construction and operations.

Smart Instrumentation is offering a task-based environment. This means the interface focuses on the task at hand, for example:

- **Process Task –** Retrieve process data from Smart 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 using the fit for task EDE
- **Specification Task –** Use the EDE to create instrument specifications, which can include Smart 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 junction box and check for connectivity. This focus leads to increased productivity and data quality. Productivity gains of more than 40 percent have been reported.
- **Calibration Task –** Support the interface between Fluke calibration and SPI to manage the accuracy of the measurements.

## Enhancements

The latest version offers several significant changes to boost user experience, data quality and productivity. The query builder enables the engineer or designer to find and create a data view 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, which enables quick data entry, modification, auto-filtering, comparison and more. Significant enhancements to the Project Management functionality enable the engineer to scope projects and merge them back together in a controlled manner. Finally, integration with the to-do list helps engineers make better decisions using the data from other tasks and disciplines using color coding and document access.

## Bridging the Gaps

Data sharing is the cornerstone of productivity and data quality drivers. Smart Instrumentation receives data from several sources, such as the P&ID team, process group, electrical team and piping department. After creating the design, Smart Instrumentation then feeds data back to the piping group for the inline instruments, electrical for interlocks and more. In addition, Smart Instrumentation interacts with third parties and vendor catalogs, proving that data management is a key factor for success.

Smart Instrumentation supports operational tasks, not only by generating as-built design 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 Smart Instrumentation, users can directly access vendor data, such as I/O cards for DCS, instruments from vendors like E+H, or valves from Emerson. Smart Instrumentation delivers the right data quickly.

## Deployment

Plant owners face a variety of challenges, including: Meeting schedule, cost and 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 Smart Instrumentation. Many owners are choosing to also deploy Smart Instrumentation and other tools using Intergraph Smart Cloud. This gives owners a central place for all their project data, helping to enforce consistency, engineering standards and practices and handover to the operational team.

## Value Proposition

Gain value across the workflow. Smart Instrumentation addresses instrument engineering and design processes throughout the plant lifecycle – from process cases through to concepts, design, construction and operational tasks like calibration.

Take advantage of Smart Instrumentation's existing capabilities that have helped both EPCs and owner operators to successfully execute their industry projects and operational tasks for years. Large projects such as US$18 billion LNG facilities have been designed with Smart Instrumentation, and the solution now supports the operations of these plants. Smart Instrumentation has a proven cloud deployment record.

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

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

| Tasks | Labor Hours | |
|---|---|---|
| | Without Smart Instrumentation* | With Smart Instrumentation* |
| Instrument Index | 200 | 150 |
| Specification Sheet | 200 | 100 |
| Wiring | 300 | 200 |
| Associated Documentation and Change Management | 200 | 50 |
| Other | 100 | 100 |
| Total Project | 1000 | 600 |

**40% 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.