INTERGRAPH®

SmartPlant® Foundation

The Intergraph® information management solution, SmartPlant® Foundation, is the "e-Engineering integration hub" for the SmartPlant Enterprise. This collaborative conduit ensures that valid, consistent, and high-quality engineering data is shared between applications and users when and where they need it. This engineering design basis is consistent and highly accurate on three fronts: 1) the physical asset information (what is there); 2) logical and functional information (what was designed to be there); and 3) regulatory and safety imperatives (what is required to be there). These are the pivotal tenets of engineering integrity.

SmartPlant Foundation is multi-dimensional in its usage and deployment capabilities. These include:

- Application integration to manage inconsistencies and reduce errors

- Engineering and technical data handover from execution into operations

- "Engineering companion" between operations, maintenance, and ERP systems for rapid decision support in time-critical situations

- Client and Regulator remote review portal to minimize plant startup and ensure continued operations

- Engineering Content Management (EngCM) including document and drawing management and control, list and sheet development, and exchange with suppliers and contractors

- Plant configuration control and concurrent engineering to manage the evolving engineering design basis

The solution supports global collaboration between clients, contractors, and suppliers. It streamlines business processes that share common information. These overarching and collaborative workflows through the internal and external value-chains deliver quality information to the desktop regardless of the source application; audit activities and signatories to ensure completion and support regulatory review; and enhance decisions with cross-discipline, cross-referenced data and indices.

It reduces the cost and errors associated with multiple tools by eliminating the boundaries between them. SmartPlant Foundation is the single source of access to the engineering truth about a plant – its structure, tags, equipment, data, and documents. No other product on the market today supports such a wide scope and yet is deployable in a modular, incremental fashion.

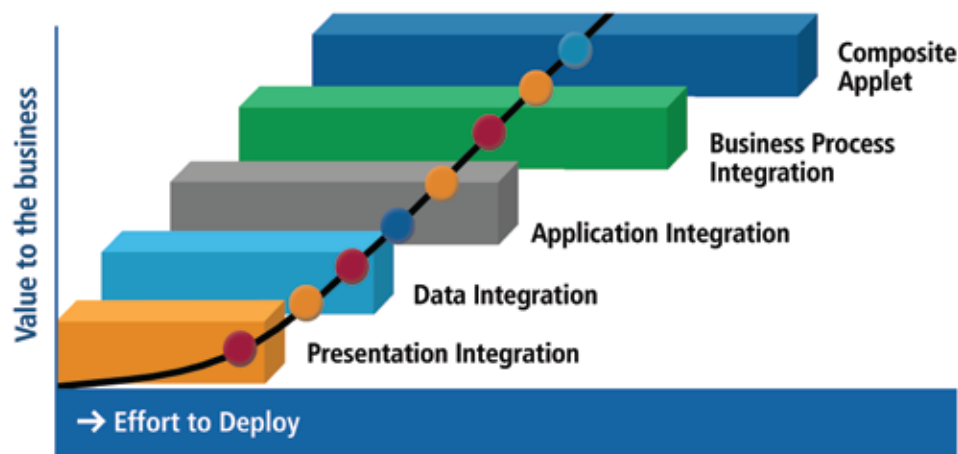## THE GOAL: ENGINEERING INFORMATION INTEGRITY

Information is the basis upon which real-time decisions are made. Engineering information is abundant, dynamic, and complex. Keeping this information current, synchronized, and readily accessible is the challenge – whether it is used concurrently by multiple companies during plant design, by engineers during plant construction and commissioning, or by maintenance workers on the plant floor.

SmartPlant Foundation – Intergraph's total solution for plant information management – ensures secure access to plant information whenever and wherever it is needed. It is a complementary offering to Intergraph's industry-leading design tools – SmartPlant 3D, SmartPlant P&ID, SmartPlant Instrumentation, SmartPlant Electrical, SmartPlant Materials, and PDS®. SmartPlant Foundation provides:

- **Common integration architecture** – Features all five tiers of integration:

  - **Presentation integration**: Unified interface and information presentation ensure rapid assimilation and understanding to provide a portal – a "single point of access to the truth"

  - **Data integration**: Consolidation and aggregation of data from multiple heterogeneous sources provide the single reliable source of truth – the data repository

  - **Application integration**: Adaptors move the consolidated information between applications

  - **Business process integration**: Overarching delivery, collaboration, and execution enhance the workflow

  - **Extensible composite applications (applets)**: New applications make use of the high integrity repository

- **Plant/project configuration** – Models and audits the evolving plant configuration, including all plant components (i.e., structure, tags, and assets) and associated characteristics, logical function, physical location, and inter-relationships. Houses all plant information – tag/asset data and associated plant documentation – against the familiar plant structure, delivering relevant, timely, and accurate information to authorized personnel. The data-centricity of the solution enables management of data to a granular level. The system tracks revisions and changes, assuring data accuracy and integrity.

- **Change management** – Enables effective management of change by providing an overview of engineering changes, tracking the details and status of each change, and highlighting plant items subject to change. It enables early visibility of changes, including "what's in the pipeline," manages the electronic delivery of work items to pre-defined workflows, and manages the revisions of both plant objects and documents, while keeping an audit history of activities.

- **Information access** – Enables flexible search and retrieval of information. Engineers can access information via familiar plant terminology.

- **e-Engineering access** – A user-configurable view of engineering information delivered remotely over the Internet via a single, consistent browser interface – secure, intuitive access to information eliminates the need for the authoring application at the remote desktop, thereby reducing cost and training requirements.

- **Streamlined work processes** – Provides electronic definition of processes, enforcing mandatory procedures such as required approvals and sign-offs, while remaining flexible for ad-hoc work-flows. Delivers tasks to authorized personnel, recording the tasks and resulting actions performed.

- **Collaborative engineering** – Supports collaborative engineering between companies and supply chains, controlling shared information access and updates, notifying interested parties of changes, and retaining a complete history of all actions taken. SmartPlant Foundation builds a comprehensive repository of information about a plant, including its structure, tags, equipment, and documents.

Tiers of Integration

ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data into understandable visual representations and actionable intelligence. Intergraph's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, and operation of plants, ships, and offshore facilities. Intergraph SG&I provides geospatially powered solutions to the defense and intelligence, public safety and security, government, transportation, photogrammetry, utilities, and communications industries.

For more information, visit www.intergraph.com.