



## **SMARTPLANT® ENTERPRISE FOR OWNER OPERATORS HANDOVER SOLUTION**

The handover of data and documentation occurs many times during the life of a facility. The costs, resources, and time required for handover are considerable. The increasing adoption of SmartPlant® Foundation (SPF)-based systems by contractors and owner operators has led to increasing demand for a solution to make the process of handover of data and documentation between these systems simpler.

Intergraph® meets this need with the SmartPlant Enterprise for Owner Operators (SPO) Handover Solution, enabling data and documentation to be quickly and easily moved between SPF-based systems. This includes standalone SPF systems, SmartPlant Enterprise-based systems with integrated SmartPlant design tools, SmartPlant Construction, and SPO.

The solution supports the handover of intelligent 3D models and schematics that have been published from SmartPlant design tools into SPF. The Handover Solution preserves the inherent intelligence so that intelligent navigation in the source SPF system is available on target SPF systems as if it had been published locally. The Handover Solution supports both data and documentation that has been published from SmartPlant design tools as well as non-published data that has been authored in SPF or loaded into SPF, such as vendor data and registers. The solution supports both incremental and final handover scenarios where data and documentation is scoped for handover, exported, then imported into the target system.

### **AUDITABLE TRACEABILITY**

Managing handover requires that records are maintained of what data and documentation has been handed over from SPF, to whom, and when. All these records are maintained as part of the Handover Solution, including support for handover to multiple parties. For example, a project management

contractor (PMC) may hand data and documentation over to fabrication yards, a completion contractor, and the owner operator.

### **HANDOVER THROUGHOUT THE FACILITY LIFE-CYCLE**

The Handover Solution can be applied to a variety of typical handover scenarios, including:

<b>From</b>	<b>To</b>
FEED contractor	Owner operator
Owner operator	Detail design and procurement contractors
Engineering contractor	Fabrication contractors
	Owner operator or PMC
	Completions contractor
Owner operator	Maintenance and modification contractor
Maintenance and modification contractor	Owner operator
Owner operator	Decommissioning contractor

In each case, handover may be incremental or a final handover.

### **INCREMENTAL HANDOVER**

There are many instances where information and documentation are not handed over at one final instance. Instead, handover may occur at several milestones during a project or as a

continual “drip feed” on a daily or weekly basis. For example, owner operators typically require information and documentation to be handed over incrementally to support a variety of activities, such as:

- Review of key deliverables
- Progress updates
- Familiarization
- Preparation of training materials
- Development of maintenance plans
- Spare parts planning

The Handover Solution supports incremental handover from SPF without disturbing data entered into the target SPF system. Even where handovers have omitted intermediate revisions of published documents, the Handover Solution will ensure that any tag deletions are rolled-up intelligently across revisions to preserve the consistency between source and target systems.

## HANDOVER OF SMARTPLANT DESIGN TOOLS

There is an increasing demand from owner operators to take over integrated SmartPlant design tool databases from contractors at the end of a project and maintain them during operations. The Handover Solution supports the re-registration of integrated SmartPlant design tool databases from a source system against the target SPF system so that tools can work together on the target SPF.

## PROTECTING INTELLECTUAL PROPERTY

The Handover Solution can be configured to filter the data to be handed over from the source SPF system. This enables the providing party to protect data that they do not wish to be included in the handover to the target system. For example, filtering could ensure only the latest signed-off version of documents is sent. This enhances the control of what SPF data

is handed over and ensures that intellectual property is not compromised by the handover process. Filtration of data in SmartPlant design tools is handled separately.

## MAPPING BETWEEN SPF IMPLEMENTATIONS

Data can be handed over between two SPF installations that are configured differently. For example, handover can occur between a custom SmartPlant Enterprise implementation at a contractor and SPO at an owner operator. Mappings using XSLT are required to map between the data models. Any commercially available tool can be used. The level of effort required for mapping is dependent on the extent of the difference between schemas. Intergraph advises to align on a common base schema between stakeholders as much as possible.

## HANDOVER AND VTL – COMPLEMENTARY TOOLS

The SPO Validation, Transformation, and Loading (VTL) Solution and the Handover Solution play important but different roles in managing the handover of data and documentation.

The Handover Solution is designed to move selected data and documentation “as-is” between two SPF-based systems with no validation but preserving intelligence in 2D and 3D published deliverables.

The VTL Solution is designed to manage the take-on of data from any source system (Intergraph or third party) by placing the data into a quarantine area for it to be validated against sets of business rules, after which data is exported and loaded into either Intergraph or third-party systems, such as Computerized Maintenance Management Systems, reliability systems, and inspection systems.

## ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geo-spatial 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 to make processes and infrastructure better, safer, and smarter. The company’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,

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