Engineering data and documentation are essential for effective project delivery and safe, efficient operations. Every person involved in designing, constructing, operating, and maintaining a facility needs ready access to trustworthy information to perform their job effectively.

But the truth is, EPCs and owner operators alike struggle to manage large volumes of unstructured, unintelligent information – documents, drawings, models, lists, and data sheets – which are often duplicated in various folders and databases throughout the organization. Even companies that have implemented a central document management system continually battle against unofficial storage locations that spring up over time. This lack of control leads to duplication, fragmentation, and degradation of information integrity, and sometimes, its outright loss.

**TAKE CONTROL WITH SMARTPLANT® FUSION**

Intergraph® SmartPlant Fusion is a breakthrough solution to help you rapidly find, capture, organize, link, and visualize large volumes of information through a simple Web portal. SmartPlant Fusion is the fastest way to establish links, extract intelligence, and apply structure to your unstructured documents and drawings.

With SmartPlant Fusion, you can:

- Rapidly capture, automatically organize, and link documents and information.
- Compare data and documents with the “as-exists” operational asset using high-definition laser scans.
- Validate the facility’s “as-built” configuration at your desktop prior to field verification.
- Visualize and navigate all facility information through an intuitive Web portal. Find what you need from what you know.

**HOW IT WORKS**

**Document Discovery**

First, you “teach” SmartPlant Fusion where to look for documents, and how to extract available information about the document type and classifications from folder and file naming conventions. SmartPlant Fusion then repeatedly crawls these file locations, searching for new or updated files. It uses document discovery patterns to select and extract documents into predefined folder structures in SmartPlant Fusion. It also creates a document index, allowing the documents to be searched by name or tag/equipment number.

**Master Identification**

When information comes from multiple sources, or when it isn’t clear from naming conventions which is the master version, it requires engineering judgment to determine which document best represents the “as-is” state of the facility. SmartPlant Fusion provides tools for side-by-side or overlay comparison of documents to help you identify the master document or drawing.

**Content Discovery**

Next, SmartPlant Fusion uses various Readers to examine and interpret the content of the documents. Dedicated readers are used for each document type: drawings, documents, 3D models, and laser scans. There’s even an image reader for bitmap images (like PDFs), which employs optical character recognition (OCR) technology to produce searchable text.

Document content is used to create hot-spots, links, and cross-references between related documents. For example, SmartPlant Fusion enables you to set up tag discovery patterns to identify tag formats and then automatically creates links between documents. This process supports multiple tag formats (such as formats used by different contractors).
**EPC CHALLENGES**

EPCs have the challenge of dealing with a continuous flow of unstructured information arriving from suppliers and engineering partners. This information takes many forms – PDFs, images, scans, Microsoft® Word and Excel® files, and unintelligent drawing files. The valuable data inside these files are largely invisible unless each and every file is read and evaluated. Even with this burdensome manual effort, there are invariably inconsistencies in the naming, numbering, and tagging of information. This makes it very difficult to provide a structured handover with accurate tag-to-document reports that most owners demand.

**OWNER OPERATOR CHALLENGES**

Brownfield operators face an even greater challenge with legacy information. Data and documents may have been created over decades of the facility’s life cycle, being sourced from various contractors using different design and data management tools. Some of the documents may only exist in hardcopy. And there may be dozens of versions (or even multiple copies of the same version) of any given document, making it unclear which version accurately represents the current configuration. With limited engineering, administrative, and IT personnel on a brownfield site, organizing and keeping track of this legacy information is a significant challenge, especially when the operational asset is subject to continual updates, revamps, shutdowns, and maintenance changes.

As a result, information is difficult to find when it is needed most – like for shutdown planning, project evaluation, incident investigation, modifications, revamps, compliance audits, and facility start-up. Thus, unstructured, unreliable information exposes the owner operator to significant operational, financial, and safety risks.

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**Web Portal**

With SmartPlant Fusion’s Web portal, local and remote users can quickly find the documents they’re looking for, even if they are not sure where to look for it.

You can use the Web portal to:

- Quickly find a certain equipment item (for example, pump P-7701A) everywhere it appears – specification sheets, service manuals, drawings, data sheets, P&IDs, purchase orders, invoices, construction plans, etc.
- Navigate using a 3D model (PDMS, PDS®, or Intergraph Smart™ 3D), allowing you to compare the as-designed 3D model with the as-exists engineering information.
- Navigate using Leica TruView HDS information, enabling you to compare the as-is laser scan model with the as-exists engineering information.

In this way, you quickly go beyond just knowing what documents are available to understanding the content and how it’s related to all other facility information.
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 & Infrastructure (SG&I) is the leader in smart solutions for emergency response, utilities, transportation, and other global challenges. For more information, visit www.intergraph.com.

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