



## SMARTPLANT® 3D MATERIALS HANDLING EDITION

### INTELLIGENT 3D DESIGN FOR THE BULK MATERIALS HANDLING INDUSTRY

The production and transportation of raw materials around the world continue to increase in line with global market expansion. The bulk materials handling industry is becoming more visible and integral than ever before.

SmartPlant® 3D Materials Handling Edition is the Intergraph®-specific solution targeted at this segment in a variety of global industries. Intergraph created this focused solution to address industry requirements for system design in 3D.

Intergraph developed the solution with direct feedback and engagement from some of the leading materials handling system design companies from around the world.

### INTELLIGENT 3D DESIGN

The forecast raw materials demand curve continues to outpace the market's ability to supply it. The industry must identify and pursue all available methods to close this gap.

Traditionally, materials handling system designs are 2D document-centric, and the industry has typically been conservative in adopting new technologies of intelligent 3D design systems.

SmartPlant 3D Materials Handling Edition introduces new technology to the industry, with enhancements in:

- Engineering data and design reuse.
- Automation of component placement.
- Improved management of change across disciplines.
- Component cataloging.

The solution takes advantage of Intergraph's proven technology adopted from other successes in parallel industries. This technology and track record of success will help shift the bulk materials

handling industry toward best practices seen throughout the plant design world.

### BUSINESS BENEFITS

#### Cost and Schedule Reduction

With SmartPlant 3D Materials Handling Edition, you can complete better and more accurate design reviews using 3D technology with comments and feedback at earlier stages in the project. You can consult all involved parties from the owners during initial design. This is when you can implement changes at a lower cost and with limited schedule impact compared to traditional 2D design systems.

#### System Improvements

You can make early and informed decisions about system design by reviewing the model with the owner at various design stages. Quickly and easily change the model and BOM based on a variety of scenarios across multiple disciplines. This ensures both the designer and the owner can make the best decisions.

#### Safety

Having an accurate and representative 3D model very early in design enables you to conduct safety and operator training much sooner. This is particularly important with the industry's aging workforce. Secondly, but equally important, is the ability to review constructability and modularity in design as they relate to project execution. This not only promotes cost control, but also enables safety reviews of the construction phase to be performed in advance. This gives you a safer, more secure project site.

#### Data Reuse

Intergraph's solution gives you the ability to design and model in 3D and save this information. This means your data can be reused on other projects – benefiting both the owner and the designer.

Not only does this impact future project costs, but it also greatly reduces project timelines through better engineering data management. The opportunity to “learn” from other projects and apply this knowledge in the future is a marked improvement over existing design systems.

## Process Changes

Improved technology enables improved business processes. Previously, the creation of drawings was the driver to create the 3D model, if one was actually ever created.

With the change in technology, the 3D model is the source for drawing creation. Drawings become an output from the model, specifically fabrication-level drawings for engineered objects, such as transfer chutes and truss sections, without the need to use third-party software for design. This is a significant improvement over existing work processes where drawings are created and modified prior to handing them to a detailer to create a 3D model.

Any changes must go through this process multiple times until an agreed-upon system is completed. SmartPlant 3D Materials Handling Edition allows you to make and review changes faster in the 3D model before you generate any drawings. This saves significant time, money, and effort throughout the design process.

## BUILT ON SMART 3D

SmartPlant 3D Materials Handling Edition is built on Intergraph’s next-generation Smart 3D technology to take advantage of its core characteristics, including:

- Data-centric technology.
- Rules- and relationship-based architecture.
- Automation and reuse approach.

SmartPlant 3D Materials Handling Edition provides the metals and mining industry with the opportunity to implement materials handling projects in an efficient Smart 3D framework. Both EPMCs and owners can enjoy significant benefits, such as:

- Access to Smart 3D technology.
  - Enable the front-end loading (FEL) of data to estimate preliminary equipment design, layout, and schedule.
- Drive standardization and modularization.
  - Reduce manufacturing costs.
  - Leverage each project for future projects by building an organizational catalog database.
  - Minimize on-site construction costs.
- Drawing generation.
  - Reduce drawing generation costs.

## 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 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, construction, operation and data management of plants, ships and offshore

facilities. Intergraph SG&I provides geospatially powered solutions, including ERDAS technologies, to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is a wholly owned subsidiary of Intergraph Corporation responsible for the SG&I U.S. federal business.

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