



## SMARTPLANT® MARKUP AND SMARTPLANT MARKUP PLUS

### VIEWING, NAVIGATION, AND PRECISION MARKUP

Intergraph® SmartPlant® Markup and SmartPlant Markup Plus are precision viewing and markup tools for a wide range of popular 2D and 3D CAD graphics, as well as mainstream document formats. The applications do not require the native application associated with the file type to reside on your workstation to operate.

SmartPlant Markup functions both as a standalone desktop application and in integrated information management environments such as those provided by SmartPlant Foundation, AIM, and Directa.

SmartPlant Markup Plus offers the same functionality as SmartPlant Markup, but it adds support for a wider range of file formats – more than 150 in all.

#### Viewing

In standalone mode, simply open the file from its storage location (such as a file system), which automatically renders it on-the-fly for viewing. You can then pan and zoom to areas of interest in the drawing or document using simple menus and commands. In integrated mode with an information management tool, such as SmartPlant Foundation, you do not need to know the file format, its location, or transport mechanism. The file is immediately delivered and opened on your desktop.

SmartPlant Markup also provides display enhancements such as mirroring along X and Y axes, magnifying window area, and bird's eye view. You can view multiple documents in separate windows in cascade or tile fashion, and also define the parameters within which documents are displayed. This includes swapping foreground and background colors, maintaining zoom level as you page, and providing a selection of TrueType fonts and font sizes.

Additional display features are available as well, such as panning and magnify window. A thumbnail control simplifies navigation of

file systems while supplying a preview of the file contents. The ability to set and reset file type association, combined with the thumbnail control, makes SmartPlant Markup indispensable in daily use.

#### Navigation

Engineering information is naturally highly interrelated and interdependent. Many users take advantage of these interrelationships and navigate from one document to another using graphical representations or hyperlinks as the key jumping-off points. Examples include the off-page-connectors on a P&ID or other symbolic representations on documents and drawings.

Previously, creating and maintaining these links would have been a tedious and error-prone task. Revisions to the drawings frequently broke manually created links. When using SmartPlant Markup or SmartPlant Markup Plus in an integrated mode, such as with SmartPlant Foundation, these links can be generated automatically by the SmartPlant Foundation SmartConverter. Simply select the graphic object of interest, whether it is a pipeline, pump symbol, tag number, instrument balloon, or other "smart" geometry, and you will automatically receive related information.

#### Precision Markup

A markup is a separate file you create to annotate or describe something about the document or drawing in view. This annotation is usually in the form of graphics, text, and symbols, but it could also be video or audio. In standalone mode, you can create markups and store them in a specified folder for later access and manipulation. The markups are actively managed within SmartPlant Markup without needing to load any other products. The original file is not altered or impacted in any way – SmartPlant Markup is totally non-destructive and does not rely on layer technology.

However, the true power of markups is unleashed when SmartPlant Markup is used in an integrated mode with an information

management product such as SmartPlant Foundation. SmartPlant Foundation automatically associates the markup files with the native file in its registry for use in review and auditing situations or as part of revising workflows.

A single native file can have multiple markups created by many different disciplines or authorities simultaneously. These can be selectively displayed during the review cycle. This is particularly important when the project is global and participants are not co-located. These threaded discussions form an important part of the project evolution.

No markup in SmartPlant Foundation is ever deleted. It remains as a permanent record with the revisions and versions of the native files. This is important for regulatory or contract reviews.

## Ease of Use

SmartPlant Markup has a user-friendly interface that is intuitive and easy to use. The application is highly context-sensitive. For example, when you request help, help appears for the item you have selected or in which you are working. When choosing options, the options applicable for the specific file type are displayed, rather than general options.

## Printing Capabilities

Printing capabilities include print to scale, watermarks, and stamps. When used in an integrated mode, such as with SmartPlant Foundation, these capabilities can be expanded to include print banners and watermarks from the database records, as well as batch printing.

## Associated and Related Files

File types do not need to be associated to SmartPlant Markup for them to be displayed by the application. However, SmartPlant Markup's ability to associate file types or reset them to their original settings is very valuable. SmartPlant Markup can be integrated seamlessly with your desktop when used in a standalone mode.

SmartPlant Markup also enables you to create DGN/DWG files from markups for use as reference files, including batch processing capability. The application also provides the capability to create raster file output from master files and any associated markups, including batch processing. SmartPlant Markup supports multiple browser windows to display multiple documents and multiple views – all fully synchronized.

Because the SmartPlant Markup tool is able to open and interrogate a wide variety of file formats, Intergraph's information management products exploit this capability to determine embedded content, such as:

- Reference files (including drawing borders and symbols) embedded within MicroStation and AutoCAD files
- OLE (Object Linking and Embedding) links in Microsoft® Office documents

By identifying, indexing, and retrieving these links, you can ensure you are capturing and maintaining all of the related content.

## SmartPlant Markup Plus

SmartPlant Markup and SmartPlant Markup Plus perform the same basic functions without the native application. The difference between the two is the number of formats handled. SmartPlant Markup provides viewing and markup of CAD and Intergraph raster formats. SmartPlant Markup Plus provides viewing and markup for more than 150 file formats, giving you even greater flexibility.

The two SmartPlant Markup offerings enable you to view files outside the Intergraph suite of engineering solutions.

## Companion to SmartPlant Explorer

SmartPlant Markup offers companion functionality to SmartPlant Explorer. SmartPlant Markup provides file-viewing and markup capabilities and is Web-enabled and navigable. SmartPlant Explorer is Web-based to promote data viewing.

## 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.

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