



SMARTPLANT® ELECTRICAL

DESIGN AND MAINTAIN A SAFE, RELIABLE POWER DISTRIBUTION SYSTEM FROM LOAD IDENTIFICATION TO PLANT STARTUP

Fast-track project execution for engineering companies and lower operational risk for plant owners are keys to business success, and Intergraph can help you achieve these goals. Intergraph® SmartPlant® Electrical is a task-specific, rule-driven, and data-centric solution that helps you gain a competitive edge in the industry.

SmartPlant Electrical is made up of two modules that offer complete life-cycle coverage for both engineering companies as well as plant owners. The two modules can be used separately or together as an integrated total electrical solution based on your project scope:

- SmartPlant Electrical Basic – Power distribution network engineering and design, including a bi-directional interface with ETAP for comprehensive electrical analysis and simulation
- SmartPlant Electrical Detailed (powered by SIGGRAPH.CAE®) – Detailed scope with three-line schematics, wiring, panel designs, and PLC configuration

SMARTPLANT ELECTRICAL BASIC

SmartPlant Electrical Basic helps you increase quality, reliability, and efficiency in electrical design, construction, operation, and maintenance. The module stands up to today’s rigorous demands of compressed schedules and operating budgets, fixed-price contracts, and concurrent engineering. It delivers clear benefits by:

- Saving time and cost through batch profile-based creation of electrical data, automation, batch load balancing, cable management, automatic drawings and diagrams, report generation, and change management
- Maintaining and enforcing standards, such as corporate rules and plant-specific dictates, to help you make the right decisions early with the rules enforcing engineering practices and best practices
- Integrating with the advanced analysis solution from ETAP to validate the design

The data generated from the combined knowledge of your engineers is one of your company’s greatest assets. SmartPlant Electrical

Basic helps define, maintain, and preserve the value of your corporate knowledge and data assets throughout the life cycle of a project and plant. You can apply industry, government regulatory, corporate, client, or plant-specific standards to your design to ensure compliance, consistency, accuracy, and efficiency, reducing the chance of errors and costly overruns. The module covers each stage of the workflow, from engineering with validation through the bi-directional ETAP interface, one-line diagrams, cable routing, drum management, and more.

Automatically generated deliverables as “view” of the design data

Automatic generation of diagrams and schematics provides engineers with new freedom to expand and optimize the electrical system using “what-if” scenarios, without worrying about the high cost of drawing generation or which CAD package the project uses. Plus, the automatically created deliverables are a true and consistent representation of the design data.

Standards and data reuse

The software helps you make the best use of data assets the company already possesses. The Basic module provides defaults that you can use to increase quality and efficiency during plant design, operations, and maintenance, using best practice solutions to support lower maintenance cost and risks.

Flexible operations

SmartPlant Electrical Basic can create, organize, and maintain large quantities of data or entities, or manipulate data on a “one-by-one” basis. A project with more than 1,000 loads, for example, was executed with the module. The Apply Options feature adds tremendous flexibility, such as dynamically associating and creating power cables and control stations and their control cables (implied components), along with their default data for selected electrical equipment.

Report generation

Both graphical and tabular reports are available. Graphical reports include schematic drawings, single-line diagrams, wiring diagrams, and cable block diagrams. Once the design is complete, you can generate these graphical reports and save them to any of the major commercial CAD formats (SmartSketch®, AutoCAD®, and MicroStation) or as a PDF. Tabular reports using the standard Microsoft® Excel® report mechanism link to the project database.

SMARTPLANT ELECTRICAL DETAILED

SmartPlant Electrical Detailed, powered by SIGGRAPH.CAE, helps you fast-track your electrical engineering with knowledge-based engineering and documentation from concept to detailed design for electrical engineering. The module supports the electrical engineer or designer in detailed design tasks. The common hand off or interface between the Basic and Detailed modules is the load list, load balancing report, cable schedule, and load tags.

Create all the design and deliverables required for the electrical system, such as three-line diagrams, schematics, PLC loading, and cabinet design. The software's workflow-based design helps the designer step through various tasks to ensure that all aspects are addressed.

The Detailed module's design tasks follow the same basic data-centric and relationship concepts as the Basic module, which enables consistent data creation, data modification, and deliverable creation.

Updated deliverables

The electrical discipline creates many deliverables, making it difficult to keep them all in-sync and updated. Checking deliverables manually is very time-consuming and prone to errors.

SmartPlant Electrical Detailed ensures consistency between deliverables. Take advantage of change management by identifying the changes made during the design cycle. This helps you save time and reduce risk. The solution offers up-to-date documentation

so you can reuse your design data, datasheets, and documentation to support various work processes. With the automatic creation of each electrical item, a relationship is created to ensure consistency, check for the optimal design solution, and enable fast navigation through the design and deliverables.

Consistency and productivity

Electrical equipment is often shown on many types of documents, so it is essential to drive consistency through the deliverables. Maintain all project data in one place. This helps you ensure that reports and drawings provide correct, consistent data, avoiding duplications and reflecting changes throughout the design. Easy navigation and cross references across multiple documents minimize downtime and increase productivity.

SmartPlant Electrical Detailed also enforces best practices. Many owners have company practices that reduce operational risks and OPEX. Designers can define best practices and reuse them on future projects. Take advantage of productivity tools such as mass data editing and spreadsheet-type interfaces that enable easy data querying, editing, and sorting.

Open flexibility

Project setup is simple. All data is contained in one place to make it easy to transport to the site or other offices. SmartPlant Electrical Detailed interfaces with various vendor datasets, and can import and export to a variety of file formats. The modular offering and various licensing options (concurrent or moving) makes possible a flexible deployment. You can support the complete workflow from basic to detailed engineering, integrating various disciplines, offices, and vendors.

The Detailed module is also a perfect fit for the plant engineering team to create and maintain all details for the electrical system and have easy access to all the data and documents using navigation capabilities through relationships which will facilitate fast and accurate decision-making, essential in an operating plant.

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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