A safe and reliable power distribution system is fundamental. SmartPlant Electrical has helped design many projects of all sizes, from small to mega projects, successfully addressing the demands of design and operations.
TASK-BASED APPROACH

IT REALLY DOES NOT MATTER WHICH TASK IS PERFORMED. In all cases, focus is the key to best results. Connecting these tasks in a smart way will result in better deliverables that will support your facility’s engineering, construction, and operations.

SmartPlant Electrical is moving toward a task-based environment just as the other SmartPlant Engineering and Schematics products. This means that the interface focuses on the task at hand, for example:

Create the one-line diagram – Generate the loads, panels, and connections in the Electrical Engineer and automatically create the one-line diagram.

Perform system analysis – With a bi-directional interface to ETAP, you can seamlessly send data to ETAP for analysis. Retrieve the data with changes and then update the design in SmartPlant Electrical for a consistent and validated design.

Balance loads – See a quick overview on the loads per bus. You can move loads around to meet project requirements.

Make connections – Use the reference data catalog with the cables to drag and drop to make the connections. With changes to the reference cable, automatically update the project cables.

Create schematics – Take advantage of your best practice and/or project standards to create schematics and interface with SmartPlant Instrumentation for any I/O interfaces.

SmartPlant Electrical offers a variety of capabilities depending on the type of project and scope of work. The solution is flexible and fits the project at hand in the most efficient way.

This task-based focus will increase your productivity and data quality. Productivity gains of more than 40 percent have been reported.
ENHANCEMENTS

The latest version offers a number of significant changes to boost data quality, productivity, reliability, and safety.

One of the key enhancements is the ability to make complex graphical deliverables to meet project requirements and standards.

- **Deliverables** – Drawings and documents
  - Create smart complex graphical drawings of any type and content
  - Import external CAD and add smart electrical components and connections
  - Define an individual revision to an item in a registered report

- **Cable Management**
  - Create and edit parallel cables faster
  - Support NEC 2011 regulations in tray fill validations
  - Cable route within SmartPlant Electrical and with the Smart 3D interface

- **Electrical Engineering**
  - Support electrical loading cases, including multi-case load summary reports, to enable design for all operational cases

Integration
  - Retrieve electrical equipment from Smart 3D

SmartPlant Electrical offers many productivity-boosting capabilities, such as batch operations for the creation of electrical items, cable sizing, and more, to take the manual and time-consuming tasks out of the equation.

- **Design Re-use**
  - Bring existing designs created in traditional CAD systems into new SmartPlant Electrical projects
  - Leverage best practices to save time, lower risk, and lower OPEX costs

DEPLOYMENT

SmartPlant Electrical is designed for the process, power, and marine industries and by the engineers and designers in those industries. The one thing that is sure in engineering is change, and so Intergraph provides capabilities to manage and document these changes through the design process.

As projects grow larger, project execution must change to meet the needs of joint ventures, cloud deployment, and modular design. SmartPlant Electrical is up to the task for these emerging trends.

Plant and ship owners are looking at the cost of design and construction in addition to the cost of operations. All of these can be impacted by the design. SmartPlant Electrical facilitates best practices and rules to check against the project or company standards to meet these budget goals.

BRIDGING THE GAPS

DATA SHARING IS THE CORNERSTONE OF PRODUCTIVITY AND DATA QUALITY DRIVERS.

The latest version of SmartPlant Electrical offers an Application Programming Interface (API). This offers great flexibility to tie in complementary tools, either third-party or in-house.
SmartPlant Electrical is part of the SmartPlant Enterprise, which means it is integrated with other solutions like SmartPlant P&ID for loads, SmartPlant Instrumentation for I/Os, and Intergraph Smart 3D for cable routing.

**VALUE PROPOSITION**

GAIN VALUE ACROSS THE WORKFLOW. SmartPlant Electrical addresses electrical-related work processes throughout the plant life cycle – from initial load lists to one-lines, to schematics, cable routing, and construction, to commissioning and operations.

SmartPlant Electrical enables you to execute projects in a consistent manner, yielding measurable business benefits.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Labor Hours Without SPEL*</th>
<th>Labor Hours With SPEL*</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-line Diagram</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Validation</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Loading Balance</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Connections (Wiring/Cable Routing)</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Schematics (1)</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Deliverables (Reports/Drawings)</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Project</strong></td>
<td><strong>86</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

*Rounded assumptions to indicate potential savings based on market inputs

SmartPlant Electrical offers the flexibility to make changes to the design and propagate those changes consistently, updating the associated deliverables.

Take advantage of best practices through design reuse to boost productivity and reduce the cost of engineering and operations.

**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.

Intergraph is part of Hexagon (Nasdaq Stockholm: HEXA B; www.hexagon.com), a leading global provider of information technologies that drive productivity and quality across industrial and geospatial applications.