INTERGRAPH SMART® ENGINEERING INTEGRITY
MAKING THE RIGHT DECISION EARLY

The next step in engineering leads to rule-based or knowledge-based designs. The majority of an engineer's time is spent looking for data and checking for correctness and consistency. ARC found in its market surveys that on average, engineers spend 40 to 60 percent of their day looking or checking for information.
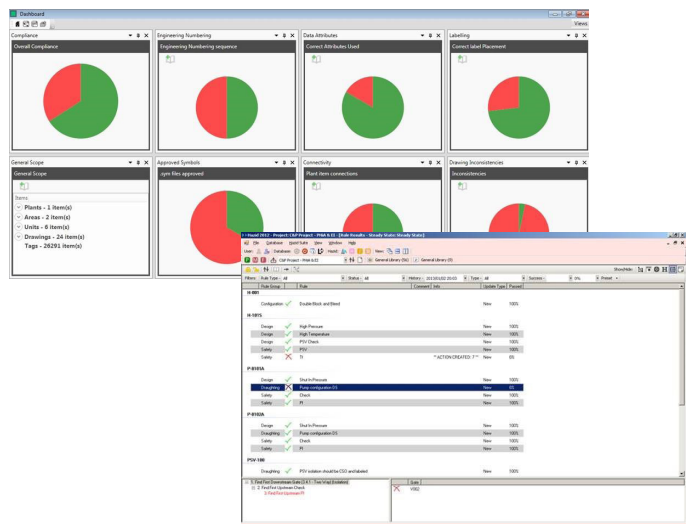
These tasks of finding and verifying can now be automated with Intergraph Smart® Engineering Integrity (SEI), which will check on Intergraph Smart P&ID (SPID), Smart Instrumentation (INS), and Intergraph Smart Electrical (SEL) designs.

SEI can validate the data quality/consistency against company engineering practices and standards plus check across the application. For example, this software can verify if a control valve on the P&ID is also in Intergraph Smart Instrumentation to be designed with the right process data and sizes.

This out-of-the-box solution delivers more than 1,500 rules based on API 14C and standard engineering, which can be plugged into Hexagon schematic solutions for safety design checks. No programming skills are needed to add or modify the rules. For comparison's sake, it would normally take an engineer about two weeks to create and implement these 1,500 rules into the system. Sample rules descriptions are available.

SEI will check the P&ID, instrument, and electrical design against these safety and engineering practices and project standards. The product then automatically reports any areas of inconsistency plus shows them on a dashboard view that also indicates the percentage of the design that has been checked and passed. Users can actually navigate through the dashboard to the actual inconsistencies. The rules engine can be extended with customers' rules on safety or any other engineering checks that are normally performed manually. The rules can be sophisticated with calculations such as 'checking if a vessel is protected by a pressure relieve valve and making sure the setting is 5 percent below max pressure of the equipment.' This powerful solution helps users make the right decisions early in the process, producing significant savings in late changes. Plus, the rules set can be used on multiple projects and can also be organized on project type or client.

Return on Investment

Performing manual checks at each project milestone is time consuming and prone to error. SEI delivers consistency. Faster releases mean faster project execution and catching inconsistencies earlier before they become more expensive to fix.

The solution offers an excellent return on investment in comparison to the manual approach. In addition to these cost savings, the solution delivers the significant benefit of leveraging intelligent P&ID/instrumentation and electrical capabilities beyond reports and integration. A design error can quickly ripple through construction and operation, creating high risk and cost.

Customizable Rules

A customizable rule set can be easily extended to automatically validate the P&ID/instrumentation and electrical for safety and engineering practices before it is released for client review or construction. Users can extend and/or customize the rules and check for any engineering practice – not just safety practices – to meet their own needs or those of the customer.

Part of Intergraph Smart Enterprise Solutions

SEI is a member of the Intergraph Smart Enterprise solutions family. Purchase the products that fit your workflow; each is available separately as part of the integrated solutions.