CASE STUDY

Hydrogenics Europe Improves Engineering Data Quality with Octave Facets P&ID

Key facts:

Company: Hydrogenics

Industry:
Power, Manufacturing

Country: Belgium

Octave products used:
Facets P&ID (Intergraph Smart P&ID)

Key benefits:

- Improved engineering data quality due to an automated, bidirectional interface between P&IDs and the ERP system
- Enhanced efficiency and time savings due to centralized access for engineering information
- Capturing basic engineering data in the early stages of process design
- Rule-based P&IDs to improve document consistency
- Automated tagging allows customized nomenclature of P&ID
- Automated generation of maintenance project structure in ERP for service department

Identifying Goals

Hydrogenics is a worldwide leader in designing, manufacturing, building and installing industrial and commercial hydrogen systems around the globe with over 60 years of experience. The company was searching for a solution to replace its existing in-house Piping and Instrumentation Diagram (P&ID) solution and to find a way to improve the quality of engineering information, whilst making it accessible in the Enterprise Resource Planning (ERP) system without unnecessary manual work. Hydrogenics was already using IFS as an in-house ERP system, and needed a solution that would be linked with IFS, database-driven, customizable and easy to use once implemented.

Overcoming Challenges

One of the main challenges Hydrogenics was looking to mitigate was the complexity and increasing scope expansion of its project deliveries and the effect of this on the quality of engineering information. The company needed a way to organize engineering information in a manner that would enable them to communicate with their customers in a standardized manner, making sure that all the necessary information was up-to-date and available for all the departments in the company.

After the initial decision to choose Facets P&ID as the replacement of Autodesk's AutoCAD®, the project scope was discussed. This was challenging, as it was the first time that an interface would be developed between IFS and Facets P&ID. Originally, it was decided that the information exchanged between the two systems would include only objects and properties, as well as pipe and functional relations. During the project execution, it became clear to both companies that also part relations would need to be added to the system.

Because of this, Hydrogenics was looking for a database driven engineering solution. In addition, the structure of the database needed to be similar to IFS so that the customization need would be minimal. The key idea was to have a solution that would both bring information together from different departments, and also make it available to all relevant parties.

Realizing Results

After the first introduction to Facets P&ID, Hydrogenics was convinced that the solution would easily mitigate its challenges and that the customization would be only a matter of mapping properties and basic data. After this, Hexagon built a customized interface between the ERP system and Facets P&ID, enabling Hydrogenics to capture all engineering data entered in Facets P&ID, such as process specifications and instrument data and to store it in the existing ERP system.

"We are pleased with our decision, and expect to improve the quality of our documentation with less effort than before with Facets P&ID and the customized interface with our ERP system. The implementation of Octave software allows us to keep all our information in one place and available to all departments, enabling us to focus on our customers rather than our documents."

Jan Vaes,
Director Technology,
Hydrogenics Europe

This made the information available to all departments and the bidirectional interface removed the need to manually touch data, eliminating human error. The centralized access and storage of engineering information enhanced efficiency, as the field service engineers have no trouble accessing the correct information and require less support from the engineering department to perform their daily tasks.

During implementation, Octave suggested Hydrogenics create its company standards, so that in the future it would have full freedom to customize the implementation and enable the standard to develop.

Ultimately, the project was finalized after a testing and debugging period where both companies worked together to share feedback and finalize the interface. Currently, the interface migrates process parameters, functional relations, pipe system relations, part relations of all items on the project P&IDs, which include 600-plus items and another 6000-plus properties on average.

Moving Forward

Six process design engineers are currently working with Facets P&ID benefitting of the bidirectional data exchange between Facets P&ID and the ERP system to keep the master data set sound. The solution is used in approximately 20 projects in a yearly basis.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property, and assets– for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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