CASE STUDY

Nynas digitalizes refinery asset lifecycle information management with Octave's tools

Key facts:

Company: Nynas

Industry: Oil & gas - downstream

Country: Sweden

Octave products used: Forte 3D *(Intergraph Smart 3D),* Facets P&ID *(Intergraph Smart P&ID),* Facets Instrumentation *(Intergraph Smart Instrumentation),* SmartPlant Foundation (SPF), SmartPlant Enterprise for Owner Operators (SPO), InConcert Core *(HxGN SDx)*

Key benefits:

- A single version of the truth for engineering information enables better version control and accuracy as well as faster, improved decision making
- Enhanced efficiency as time is not lost searching or physically validating documentation in the field

Identifying goals

Nynas specializes in naphthenic specialty products and bitumen, produced across four sites in Sweden, Germany and the United Kingdom. This case study focuses on the Nynäshamn refinery (Sweden), the largest bitumen supplier in the Nordics and one of the world's largest naphthenic specialty oil producers.

Previously, the refinery used a legacy document management system without any intelligence. Nynas recognized the need for a new data- centric solution that would digitalize document and asset lifecycle information management including robust tag management features.

Nynas' goal was to improve engineering and operations efficiencies and reduce risk through digitalizing asset lifecycle information management while enabling collaboration between the different disciplines.

Overcoming challenges

Previously, the refinery's document management system didn't have automated workflows in place. For the day-to-day work of the engineering and operations departments, version control was difficult, and documentation accuracy was uncertain. Tag management was also not available, so searching for required documentation could take a considerable amount of time. Once found, there was no way of knowing if the document was the latest version or whether the content could be trusted or was consistent between different disciplines and departments and with other information.

Also, the handover of documentation from the engineering department to operations and maintenance was challenging, as changes made by either party were not necessarily automatically nor consistently reflected in the documentation.

Realizing results

Nynas implemented Octave's engineering and asset lifecycle information management solutions to digitalize the engineering design basis and document management. The first significant benefit was controlling and aligning tag management and engineering design data across the different systems and disciplines. This work will continue in the future by implementing an interface to JD Edwards EnterpriseOne, which Nynas uses as an ERP system, including maintenance and warehouse management. The end goal is that Octave's management solution will be used as the engineering digital twin that provides data to all disciplines.

"Octave tools help us to improve overall efficiency. Revision control, tag management and handover from engineering to operations is faster and easier when everybody has access to the right information, at the right time."

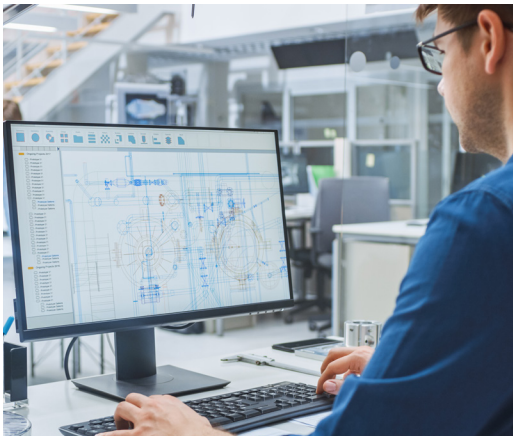
Phil Woodall
SmartPlant Enterprise Governor, Nynas

Nynas' engineering department uses Octave solutions both in its internal and outsourced brownfield projects. An example of an on-site project using Octave tools is the design and construction of a new sulfur recovery unit, which was executed by an external EPC. The EPC worked with a standalone database with over 1,200 documents and 1,300 tags. Once the project was completed, these could be seamlessly handed over into Nynas' engineering environment, as the EPC executed the work using Octave tools.

Nynas' engineering team on the Nynäshamn site uses Octave technology daily. Project versions of P&IDs are created with Facets P&ID, while all the instrumentation-related wiring, loops, instrument schedules and datasheet information is created in Facets Instrumentation. For daily work, the isometrics created in Octave solutions include the material take-off (MTO) information, which is available during installation and construction. Using these intelligent engineering and design tools has helped Nynas with management of change, as all the latest data and documents from projects and operations are available automatically when viewing documentation in SmartPlant Foundation.

SmartPlant Foundation acts as a data exchange hub and is used to store all design data and documentation, both from Octave design tools and third-party software, including vendor documentation. The system manages around 200,000 to 300,000 documents in different file formats and more than 69,000 tags and is accessed daily by the engineering, maintenance, HSE and operations departments.

Automated workflows are now set up for the management of change so that each change must be reviewed and approved by the team's relevant personnel. Nynas is also in the process of implementing document transmittal workflows in SmartPlant Foundation. In the future, the documentation shared with external parties will also be validated and controlled via the software prior to loading.



The use of Octave solutions in a collaborative environment has made data management more transparent and helped to make data available for tools and departments across the organization. It also enables data from the tools to be easily published and made readily available in SmartPlant Foundation. This has also improved the overall quality of documentation and data and the ability to trust that the entered data is correct and has been checked appropriately.

Nynas chose Octave solutions as they cover all the disciplines of the facility and enable secure, seamless information exchange. The company now has a connected, single version of the truth for all engineering and operations information. All the information is approved and checked, making the handover from engineering to operations faster and easier. Having a centralized document management in SmartPlant Foundation also enables more straightforward version control and improved efficiency across different departments.

For example, when the refinery's maintenance teams need information regarding specific equipment, they can search for the correct tags and be confident that all the relevant, latest and accurate information will be immediately available.

"One of the key focus areas for anyone who looks to digitalize engineering data and document management is to focus on having the right tools with the right setup. Ensure you have the right hardware for the software and invest in a tool that enables collaboration functionality across different departments."

Phil Woodall
SmartPlant Enterprise Governor, Nynas



The key benefits experienced by Nynas include:

- A single version of the truth for engineering information that enables better version control and accuracy
- Enhanced efficiency as time is not lost searching for or physically validating documentation in the field
- Improved handover from engineering to maintenance as all the documentation is complete, trustworthy and held in a single common repository
- Better operations and maintenance efficiencies as well as decision making as all the relevant equipment information is immediately available
- Reduced operational risk from fast access to relevant information in the appropriate context
- Workflow controlled management of change with auditable traceability for demonstrable compliance

Moving forward

Nynas is looking to standardize the use of Octave tools across all the refinery sites in the future. The company is also piloting the next-generation Octave asset lifecycle management solution, InConcert Core. The company is collaborating with Octave on the release of InConcert Core Integration, which will provide Nynas automated and object-based exchange of information and even better control of tags, documentation and associated data, leading to quicker generation of design documentation.

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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