

CASE STUDY: THE NEXT GENERATION OF AMERICAN SHIPBUILDING



About the Customer

The customer has been the primary builder of submarines for the United States Navy for more than 100 years. The customer is also the manufacturer of the world's best nuclear power submarine for missile use. In 2017, they won a massive contract with the U.S. government to produce the next generation of war subs.

Project Summary

Released in 2018, Next Generation Planning (NGP) from Siemens is the latest Industry 4.0 technology designed to revolutionize the planning of large, complex structures within a simple web interface. Engineering Industries eXcellence joined the submarine manufacturer in the first implementation of NGP in North America, enabling the customer to transform engineering data created in 4th Generation Design (4GD) into a detailed manufacturing plan.

Project Activities

- » Improving and defining manufacturing data management and processes to prepare for the new production rollout
- » Designing, validating, deploying and integrating the new production planning and execution solution based on Siemens NGP at each of the customer's fabrication facilities
- » Acting as the technical expert and interface with Siemens development to communicate requirements and provide support throughout the implementation

Business Drivers

- » To maximize performance and scalability in order to support the assembly of massive, complex structures
- » To reduce rework and duplication of work
- » To improve traceability of the planning process
- » To increase collaboration in change management
- » To simplify tasking within a concurrent working environment
- » To extend lead time for production
- » To enhance end user experience and training

More About The Project

Planning to build large structures, comprised of millions of components and features, requires great attention to detail and forecasted organization. Nowhere is this more true than in the shipbuilding industry. Countless scalability challenges arise when producing ships comprised of several millions of parts, including duplication of work, excessive rework and lost traceability of the planning process. Next generation technologies offer a solution for industries looking to facilitate engineering design and manufacturing planning in order to increase productivity and provide a centralized location for collaborative efforts. Siemens Next Generation Planning (NGP) is the latest Industry 4.0 technology designed for the planning of large, complex structures within a simple web interface.

Last year, Engineering Industries eXcellence joined Siemens in the ambitious first implementation of NGP in North America. The goal of the project was to enable the customer to transform engineering data created in 4th Generation Design (4GD) into a detailed manufacturing plan. The customer was an Aerospace, Marine & Defense leader and the primary builder of submarines for the United States Navy for more than 100 years.

Designed to focus on large, complex structures, 4GD had become the customer's primary system for engineering data management when this initiative began. Taking this data to the next step in the manufacturing world, the plan was to implement NGP to enable the customer to then utilize that engineering data to create, structure and manage planning objects such as processes and operations.

NGP uses a twin structure that includes both a manufacturing Bill of Materials and a Bill of Process to define a multi-level planning structure. Planning processes and operations can be further refined with model views taken directly from design or created specifically by manufacturing planning based on consumed parts. NGP's greatest benefit – change management – illustrates the unique capabilities of showing the impact of changes initiated from both engineering and manufacturing.

Engineering's Advantage

Throughout the enterprise-level deployment, the solution was tailored to meet each of the customer's requirements. Our leading Manufacturing Engineering and Product Lifecycle Management (PLM) teams provided their expertise to help the customer completely transform their manufacturing planning process. The customer will continue to reap the benefits of this revolutionary product that extends and enhances its capabilities with each new release targeted to suit the industry's evolving needs.

Would you like to learn more about this customer case study? Contact us at info@engusa.com.

ENGINEERING

Industries eXcellence Global

Industries eXcellence is a division of the Engineering Group, a global software maker, system integrator and provider of innovative technology solutions and services. Our division specializes in the digital transformation of the manufacturing and transportation sectors. We design, build and implement solutions that drive process automation, operational efficiency, supply chain optimization and intelligent data analytics for leading industrial enterprises worldwide.

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