



CASE STUDY

Chiyoda establishes industry-standard materials management system for mega-projects

Intergraph Smart® Materials delivers an optimized, integrated materials management system for successful project completion

Key facts:

Company: Chiyoda Corporation

Website: www.chiyoda-corp.com

Industry: Energy

Country: Japan

Octave products used:

Loop Core (*Intergraph Smart Materials*), Forte 3D (*Intergraph Smart 3D*), Facets P&ID (*Intergraph Smart P&ID*), Facets Instrumentation (*Intergraph Smart Instrumentation*)

Since its founding in 1948, Chiyoda Corporation (Chiyoda) has successfully built several plants and executed many projects in more than 40 countries around the world in very diverse fields, including energy, petroleum and natural gas, chemical and petrochemical, pharmaceuticals, environmental conservation and general industries. Chiyoda is a front-runner in energy-related technology, and its purpose is to contribute to the society through engineering for sustainable progress by promoting balance and harmony between industrial progress and the global environment.

Identifying goals

Chiyoda Corporation, headquartered in Yokohama, Japan, is a world-leading engineering company with wide-ranging business interests in such fields as energy, chemicals and petrochemicals, pharmaceuticals, environmental technology, social infrastructure and industrial facilities.

Chiyoda had developed its own in-house materials management system but in 1998, it decided to replace the system. After an intensive evaluation of all the solution providers in the market, the company chose Octave and decided to replace its in-house materials management system with Intergraph Smart Materials as the global, enterprise-wide standard.

Most recently, Chiyoda took on three large LNG projects in Qatar, with each project requiring the construction of two trains with a capacity of 7,800,000 t/year each, which is the world's largest capacity record to date. It was highly critical that the company could execute the challenging engineering, procurement and construction (EPC) work for these three mega-projects, using Octave technology.

Overcoming challenges

- Establish an automated, transparent materials management system across all EPC processes, especially for mega-projects
- Ensure a seamless interface between the materials management system and multiple 3D CAD systems
- Optimize project workflows to execute multiple projects concurrently

Key benefits:

- Optimized, integrated materials management system
- Automated deliverables such as custom reports for ease of sharing
- Project monitoring for improved efficiency and enhanced risk management
- Successful project execution for concurrent projects



Realizing results

Chiyoda is an experienced Smart Materials user, and the Octave solution played a significant role in the Qatar mega-projects.

“Smart Materials is recognized as the industry standard, and its fundamental data structure is an excellent fit with our desire for an automated materials management system,” said Ichiro Ota, general manager of the engineering services and project IT department at Chiyoda. “With Smart Materials implemented, we were able to meet the requirements of the Qatar mega-projects.”

Smart Materials is the only solution available on the market that fully supports the unique materials management processes needed in the process, power and marine industries. It offers Chiyoda a total materials management and subcontract management solution for its plants and projects. Smart Materials is proven technology and has been adopted by industry-leading EPC companies around the world – users of Smart Materials report improved procurement efficiency with lower risks and costs through accurate and effective materials management.

Octave worked closely with Chiyoda to implement Smart Materials to its specific requirements, establishing project workflows, preparing material codes, and customizing reports.

Chiyoda also introduced custom functionality, such as reducing the importing spool BOM data volume as the company had requested subcontractors to send BOM data for all spools, and automatic execution of custom reports each night to share the generated intermediate file, which reduces report generation time for each user. In addition, Octave tuned several native programs in Smart Materials to meet the data volume of the mega-projects, which was critical for project execution.

Chiyoda also implemented other Octave solutions, such as Facets Instrumentation and Facets P&ID, which were integrated with Smart Materials for the sharing of instrumentation and line list data. It was also important that Smart Materials was integrated with Chiyoda’s other systems, including Forte 3D and its in-house ELE/INS MTO systems. Chiyoda established a seamless interface, enabling the company to manage all EPC data in a single database for a fully integrated materials management process. The company could monitor the project status regularly and manage any risks accordingly. At the peak of the Qatar projects, more than 300 users would be accessing the Smart Materials system.

“Smart Materials contributed significantly to project execution – without the Octave solution, we would not have been able to complete the 3LLNG Qatar mega-projects successfully.”

Ichiro Ota
General Manager
of Engineering Services
and Project IT
Department, Chiyoda



“Smart Materials helped tremendously in optimizing the entire materials management process, ensuring that the correct quantity of the required materials was delivered at the right time to the construction site,” said Ota. “Smart Materials contributed significantly to project execution – without the Octave solution, we would not have been able to complete the 3LLNG Qatar mega-projects successfully.”

Chiyoda is a longtime Octave customer and has been using Octave solutions, including Smart Materials, Facets Instrumentation, Facets P&ID and Forte 3D. The company is currently exploring other Octave solutions, such as SmartPlant Foundation and Facets Electrical (formerly Smart Electrical), which can be used in an integrated environment to enable Chiyoda to further enhance safety, quality and productivity of its projects.

Moving forward

As a leading EPC contractor, Chiyoda continues to enhance its materials management system with Smart Materials. Ota said, “Smart Materials is one of the best software solutions for EPC contractors, and it can handle even the most complex and challenging projects. We used it successfully for our mega-projects, and we highly recommend the solution for effective materials management.”

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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