



## FACTS AT A GLANCE

**Company:** INPEX Corporation

**Website:** [www.inpex.com.au](http://www.inpex.com.au)

**Description:** INPEX Corporation is among the world's leading oil and gas exploration and production companies. Headquartered in Tokyo, INPEX has more than 70 projects in 26 countries. Listed on the Tokyo stock exchange, it is among the top industry players globally. INPEX boasts a well-balanced portfolio of exploration and production assets, with a growing focus on LNG. This includes interests in Tangguh LNG and Bontang LNG in Indonesia and Darwin LNG in Australia. Planning is also well advanced on two new LNG projects – Abadi in Indonesia and Ichthys off the coast of Western Australia. These projects will see INPEX emerge as a new global force in LNG by the middle of this decade.

**Industry:** Oil & Gas

**Country:** Australia

## PRODUCTS USED

- SmartPlant® Enterprise for Owner Operators
- SmartPlant 3D
- SmartMarine® 3D
- SmartPlant Instrumentation
- SmartPlant P&ID
- SmartPlant Electrical

## KEY BENEFITS

- Integrated information management system with a single point of access
- Smooth commissioning and start-up phase
- Reduced data handover costs

## INPEX USES SMARTPLANT® ENTERPRISE SOLUTIONS FOR ICHTHYS MEGA-PROJECT

Intergraph® technology enables INPEX to establish integrated information management system

### IDENTIFYING GOALS

With the energy and resources boom, Australia is seeing an increase in projects that are of a scale and complexity unlike anything seen before in this country. Ichthys is one such mega-project and INPEX is tackling the challenge head-on using Intergraph® software solutions.

The Ichthys LNG Project is a joint venture between INPEX and Total, Tokyo Gas, and other participants. Gas from the Ichthys field, in the Browse Basin approximately 200 kilometers offshore Western Australia, will undergo preliminary processing offshore to remove water and extract condensate. The condensate will be pumped to the floating production, storage, and offloading (FPSO) facility anchored nearby, from which it will be transferred to tankers for delivery to markets. The gas will be exported to onshore processing facilities in Darwin via an 889-kilometer subsea pipeline. The Ichthys LNG Project is expected to produce 8.4 million tons of LNG and 1.6 million tons of LPG per annum, along with approximately 100,000 barrels of condensate per day at peak. The operational life of the facilities will be up to 40 years, with the vessels staying on station continuously, making it a huge and complex project.

Traditional project development practices create disconnects between the various project phases, resulting in poor information sharing. For Ichthys, there are multiple engineering, procurement and construction (EPC) contracts, this adds another layer of complexity and potential disconnects. The conventional maxim is that the information handover costs are between 2-4% of the total installed cost (TIC), which for the \$34-billion Ichthys project would be measured in hundreds of millions of dollars. INPEX intends to eliminate the handover stage and its associated costs by better information management throughout the project development.

### OVERCOMING CHALLENGES

- Eliminate poor information sharing and associated costs
- Provide operations team with maximum access to design and operational data
- Ensure consistency and accuracy in design information across all engineering contractors

## REALIZING RESULTS

INPEX determined early in the project that the desired outcomes for the facilities would be achieved by providing its operations group with maximum access to design and operational data both during the project and into operations. The vision set by INPEX for information management on the operating facility was an environment like Google or Wikipedia, with all information access from a single portal using a “point-and-click” approach, allowing users to move seamlessly between data sources as diverse as the 3D model and the plant production records.

All data and documents will be cross-referenced and linked with easy access via a single portal. INPEX will be using a combination of SmartPlant® Enterprise for Owner Operators (built on SmartPlant Foundation) and SAP to meet this requirement. It has also committed to use Intergraph’s SmartPlant Enterprise suite of engineering solutions for project operations, including SmartPlant 3D and SmartMarine® 3D (collectively known as Smart 3D), SmartPlant Instrumentation, SmartPlant P&ID, and SmartPlant Electrical.

INPEX chose Intergraph because of its leadership in enterprise engineering software with the proven expertise and capabilities to tackle complex information management requirements for mega-projects. The ARC Advisory Group ranks Intergraph as the No. 1 overall worldwide provider of engineering design solutions for the industry. Intergraph software is widely used within the contractor community, allowing INPEX to carry the design tools into the operations and maintenance phase by specifying a delivery of design information from the EPC contractors mounted in Intergraph SmartPlant Enterprise databases.

INPEX has also taken a different approach to the way data is collected on the project. The traditional “handover” stage (at which tremendous amounts of data are delivered to the client) has

been replaced by a progressive delivery as the plant is designed and built. Documents are delivered as they are produced and the design tools (such as the 3D model) are delivered in monthly increments. This makes a big difference to the operational staff: they can have access to the data and own the design long before they have to take responsibility for the plant. This smooths the commissioning and start-up phase, making a big contribution to the reduction in the handover costs.

Such an approach has not been without its challenges. This is not a conventional method of data collection but INPEX has worked constantly with its EPC contractors to establish working procedures that achieve the desired results without increasing their costs. As part of this strategy, INPEX has employed its own team of experts in the design tools to assist the EPC contractors in using the Intergraph SmartPlant Enterprise tools and ensuring their correct usage as both design and operational tools. They have had to deal with differences in working practices between contractors and have developed new methods to ensure consistency between design tools, bridging the gap between design and operational usage.

“Intergraph technology combined with our drive towards consolidating our handover documentation in the Intergraph environment is fundamental to delivering our vision of an integrated information management system with a single point of access,” said Conor Walker, operations director of the Ichthys LNG Project.

## MOVING FORWARD

Walker said, “We anticipate an expanded role for Intergraph tools as the project progresses into the operating phase, leveraging from the increasing volume of data held in the engineering data warehouse, which has been built on the SmartPlant Enterprise for Owner Operators platform.”

## ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph’s industry-specific software to organize vast amounts of data to make processes and infrastructure better, safer, and smarter. The company’s software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation, and data management of plants, ships, and

offshore facilities. Intergraph SG&I provides geospatially powered solutions, including ERDAS technologies, to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is a wholly owned subsidiary of Intergraph Corporation for the SG&I U.S. federal business.

Intergraph is part of Hexagon (Nordic exchange: HEXA B; www.hexagon.com), a leading global provider of design, measurement, and visualization technologies that enable customers to design, measure, and position objects, and process and present data.

For more information, visit [www.intergraph.com](http://www.intergraph.com).

