



SOFTWARE - SESAM™

PIONEERING DESIGNS USE SESAM

Customer story - Frigstad

Frigstad Engineering's well-known semi-submersibles Frigstad T70™, D80™ and D90™ are designed and engineered using DNV GL's Sesam software. Frigstad has also pioneered the use of the Sesam package to its full capabilities with the T70™ deepwater tender rig.

Frigstad Engineering provides comprehensive consulting and design expertise in developing new offshore drilling rigs and offshore floating production systems and has extensive experience using DNV GL's Sesam for fixed structures.

"Global model analysis has always been time consuming. With the concept modelling capability in Sesam, the team can multi-task with the same concept model," says Frigstad Engineering Manager Sasha Mandic on behalf of his team of engineers. "Our workflow has improved," he says, noting that the ability to re-use previous project models in the software saves a lot of time and effort.

Sesam helps to maintain the knowledge level of the engineering team, both in terms of theory and experience, which strengthens Frigstad in its role as conceptual design advisors and consultants. By carefully choosing software tools with reliable calculations and excellent technical support, Frigstad can focus on the project itself, instead of on software issues.

"Using the software itself is not the goal," says Mr Mandic. "The goal is to understand the behaviour of floating structures. The

software creates realistic models and statistics on which we can base qualified decisions. Sesam is reliable and verified as a leading tool," he says.

"Basically, companies such as ours are in the business of selling knowledge, nothing else. We have to improve our knowledge continuously to deliver successful projects and using Sesam helps us to achieve this" he says.

Frigstad has been using Sesam for more than 10 years, and in this time the company has grown to become a global leader in its field. The well-known semi-submersible models of Frigstad, namely the T70™, D80™ and D90™, are designed and engineered using Sesam.

The current flagship Frigstad D90™ rig is developed for ultra deepwater exploration and development. It is the world's largest semi-submersible deepwater exploration and development drilling unit based on combined power and capacities.

Frigstad Engineering is an advanced user of Sesam. DNV GL relies on feedback from Frigstad for its product

“We have to improve our knowledge continuously to deliver successful projects, and using Sesam helps us achieve this.”

Sasha Mandic, Engineering Manager at Frigstad Engineering

development. The Frigstad Engineering team is working to fully utilize the Sesam capabilities to increase both efficiency and knowledge in conceptual design, thus maintaining the leading position in offshore design and services.

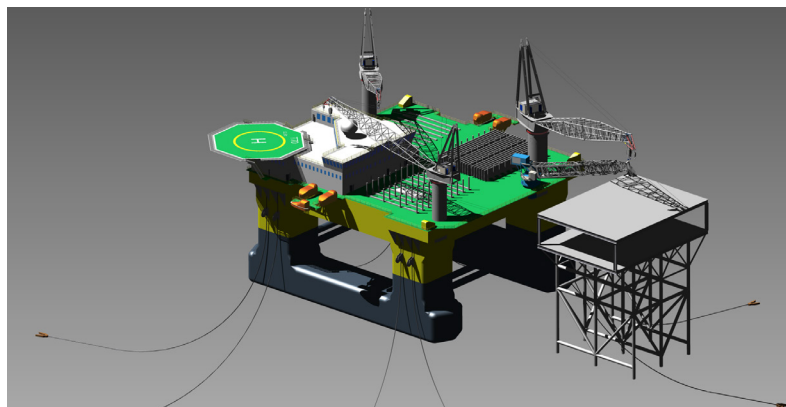
Frigstad Engineering has always been at the forefront of the industry. The Frigstad T60™ was the first completely purpose-designed semi-submersible self-erecting tender assisted drilling unit in the world in the early 1990s. The Frigstad T70™ rig was recently chosen by a large international oil service company as their preferred design for their next generation tender assisted drilling rigs. Delivery of the state-of-the-art rig is scheduled for 2015 and will be the largest rig of its kind when delivered. The design was chosen for its superb motion characteristics, size and undisputed operational weather window.

One of the previous time-consuming aspects of offshore structural engineering has been the splitting up of a model into separate entities, using different programs. Frigstad T70™ purpose-designed tender assisted drilling rig for shallow to deepwater operations was the first rig the company designed using the Sesam package exclusively.

“This is a new phase, and we’re doing groundbreaking work. We chose to model everything in one package with Sesam. Now the pre-processing is integrated. This makes the technical aspects of the design more consistent, and it saves time,” says Mr Mandic.

The excellent technical support also extends to issues concerning the theories that are the foundation of the software. In that way, the expertise of both parties is constantly evolving when engineers and technical support staff are engaged in discussions.

“The software is ultimately just a tool to help us. In order for it to work, you have to understand what’s behind it,” he says.



FRIGSTAD IN BRIEF

Established in 1981 and based in Singapore, Frigstad Engineering is a multi-disciplinary offshore company providing engineering services to the offshore oil & gas industry. Backed by a wide network of affiliated companies in Norway, Singapore, Brazil and Cyprus, Frigstad Engineering provides international service at a world-class standard.

Frigstad Engineering operates with a deeply embedded philosophy of continuous improvement via innovation and employee engagement to safeguard and maintain its reputation for efficiency, practicality, credibility and trustworthiness.

PROFILE

- Customer name: Frigstad Engineering
- Web address: www.frigstad.com
- Market: Rig design, petroleum and offshore engineering
- Employees: About 35
- Users: 7
- Solution/product: Sesam

BRIEF ACCOUNT

Why we chose DNV GL:

- Most efficient software solution with proven results
- DNV GL puts best practice engineering into software development
- DNV GL is a company with global reach

This is what we gained:

- Delivery of successful projects over many year
 - Increase in knowledge and expertise
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