

# A Better Approach for Offshore Oil and Gas

Reduce Costs and Speed Time to Production





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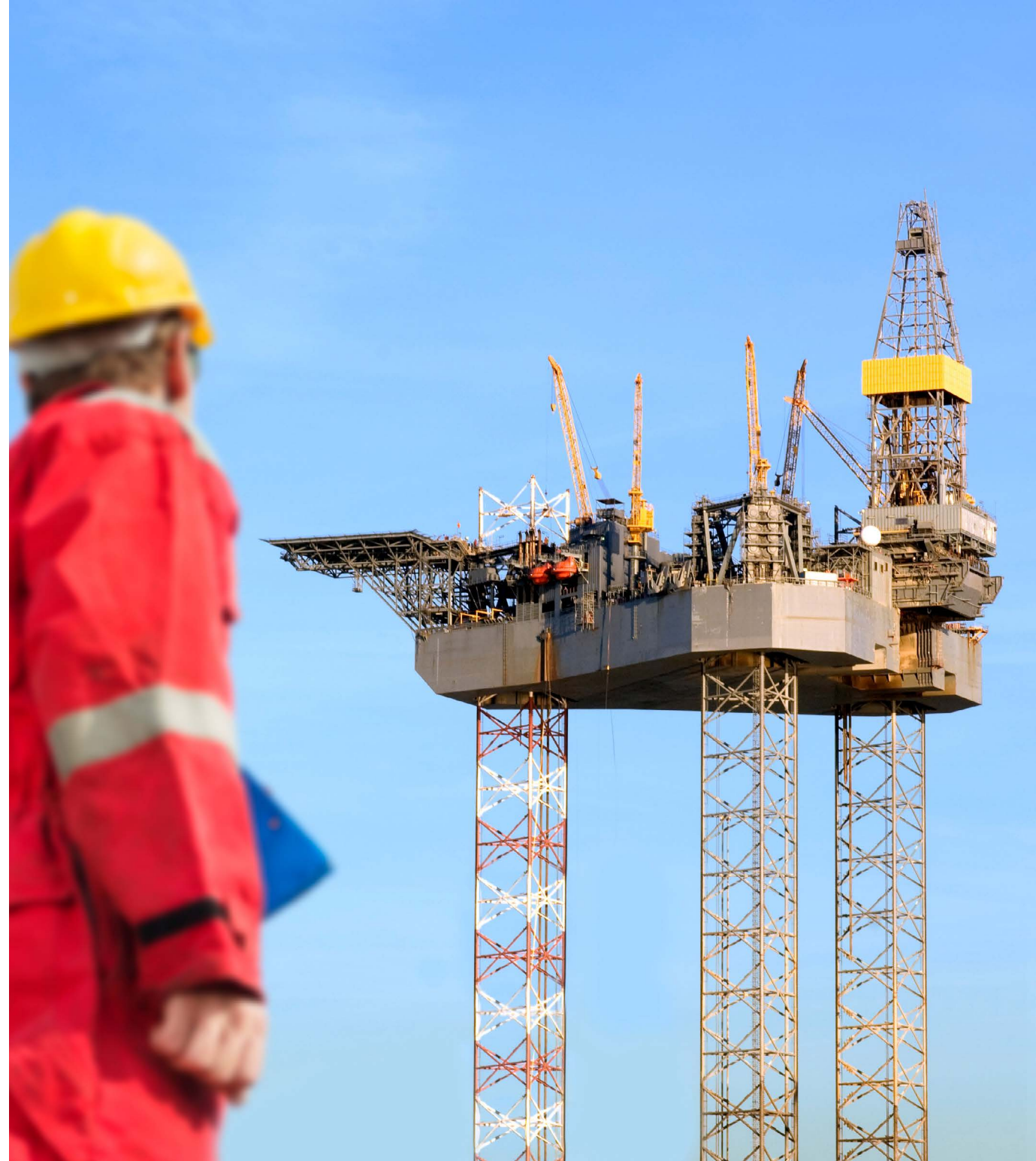
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# Challenges in Offshore Oil and Gas Projects

It can be difficult to deliver offshore oil and gas projects. Challenges can include:

1. Limited communication between disciplines due to working in silos.
2. Unconsolidated analysis and design processes.
3. Increasing project costs.
4. Poor project deliverables.
5. Difficulty dealing with change.





# Advances in **Offshore Oil and Gas Projects**

To deal with these challenges, many offshore oil and gas professionals from around the world have chosen Bentley offshore structural analysis and design software to:



1.

Integrate  
Multidiscipline  
Collaboration



2.

Streamline the  
Analysis and  
Design Process



3.

Reduce Project  
Costs



4.

Improve Project  
Deliverables



5.

Adapt to  
Change



# Software for **Offshore Oil and Gas Projects**

**SACS** is an integrated finite element structural analysis and design application for offshore structures, including oil and gas platforms.

**MOSES** is an advanced hydrostatic and hydrodynamic simulation application for offshore installation and platform design.





# Advances in **Offshore Oil and Gas Projects**



## 1. Integrate Multidiscipline Collaboration

SACS and MOSES work in conjunction with geotechnical, structural analysis, and design applications to minimize design and operation risk by automating data exchange workflows among disciplines.

SACS integrates with AutoPIPE so users can model and create a pipe stress analysis with an integrated structural model. Integrated analyses mean higher accuracy. Pipe

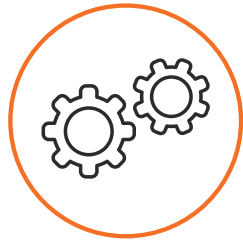
support reactions can be automatically transferred back to the structural model for pipe support design, reducing time-consuming and error-prone manual workflows.

For suction bucket jacket foundation design, SACS integrates with PLAXIS 3D to generate nonlinear and/or linearized soil reaction curves for the integrated analysis and design of the jacket and suction bucket structure.

A comprehensive interface with the Bentley ProjectWise data management application enables users to collaborate on projects from multiple locations.



# Advances in Offshore Oil and Gas Projects



## 2. Streamline the Analysis and Design Process

SACS and MOSES offer intuitive modeling and analysis workflows optimized for offshore structures, offshore-specific analysis methods, and comprehensive design codes.

With SACS, you can take advantage of full lifecycle applications for offshore structures, structural workflows, and design code compliance. MOSES provides automated performance analysis, modeling for offshore vessels and platforms, and the ability to simulate marine operations.

Integration with the Bentley iTwin platform enables organizations to create, visualize, and analyze digital twins of infrastructure projects and assets. Users can envision and collaborate on the 3D analysis model, check design status, perform analysis and risk mitigation, and generate insights.





# Advances in **Offshore Oil and Gas Projects**



## 3. Reduce Project Costs

SACS and MOSES can help you quickly optimize designs using parallel processing, streamline workflows, and evaluate multiple scenarios simultaneously for substantial time and money savings. Imagine trimming design time by 50% and reducing project costs by 40% or more.

The two applications enable you to evaluate multiple scenarios simultaneously. They are proven to save

time and money by optimizing designs quickly and streamlining workflows.

In some cases, by leveraging the powerful modeling and analysis features in SACS and MOSES, users benefitted from construction periods six months ahead of schedule and iterative design periods reduced by up to 50%.

For decades, SACS and MOSES have been used on the world's largest offshore oil and gas projects. Our users trust the applications to shorten the overall design cycle and reduce costs through efficient designs.





# Advances in Offshore Oil and Gas Projects



## 4. Improve Project Deliverables

Stop worrying about design oversights with automatic code compliance offered by SACS and MOSES, and produce optimized models and other data needed for today's requirements.

SACS improves project deliverables for fixed-leg jacket structures by efficiently producing multiple optimized design options. Predict the behavior of structures with comprehensive analyses, including full nonlinear dynamic ship impact analysis. Use integrated modules to model pile-soil interaction

and apply wind, wave, seismic, ship impact, dropped object, and blast loads.

MOSES advances project deliverables for floating systems across a range of operating conditions using a comprehensive simulation language. You can analyze and design structures for motions, stability, launch, and more in an integrated environment. Generate output reports at critical conditions for either time-domain or frequency-domain solutions.

Optimize design and configuration for compliance to numerous current and past international codes, including API, AISC, EC, ISO, DNV, and Norsok. You can also easily deliver compliance documentation.



# Advances in Offshore Oil and Gas Projects



## 5. Adapt to Change

SACS and MOSES can dynamically update edits throughout your project workflow.

Using a model-centric approach, designs are dynamically updated throughout the model, guaranteeing that the current design is up-to-date and readily available for all team members. This approach removes the frustrating and tedious work for the designer and positively impacts your organization's return on investment.

Easily, effectively, and dynamically manage design changes without project delays and the risk of mistakes. Eliminate error-prone manual changes and remove the risk of oversights.





# Choose **SACS and MOSES**

Bentley software helps you address your critical business issues. Collaborate across disciplines, ensure safe and reliable designs, and optimize the designs and deliverables required for each project.

SACS and MOSES have been used on the world's largest offshore oil and gas projects. Check out these [user stories](#) to learn how our users are getting the most out of our software.

See for yourself how you can deliver compliant, reliable designs on time while overcoming the unique challenges of offshore structural analysis and design.



To learn more or to chat  
with an offshore expert,

[Click here >](#)

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