



## CUSTOMER CASE STUDY

# PBS achieves full ROI after single planned shutdown using cloud-based AVEVA engineering solutions

PBS Offshore - [www.pbs-offshore.com](http://www.pbs-offshore.com)

Industry - Oil and gas

## Goals

- Deliver on maintenance and operations contract with supermajor client
- Produce accurate, efficient engineering and design work
- Maintain digital 3D models of client's assets
- Plan and deliver safe, accurate platform shutdowns

## Challenges

- The pandemic forced immediate remote working
- The team had to learn how to use new solutions remotely
- Varying numbers of software users and contractors could make licensing complex and costly

## Solutions

- AVEVA™ E3D Design
- AVEVA™ Connect
- AVEVA™ Point Cloud Manager
- AVEVA™ Flex

## Results

- Enabled PBS to meet its contractual obligations on time by delivering the capability to work remotely in the cloud
- Delivered savings by eliminating the need for additional IT resources or security
- Provided the assurance of the most cost-effective licensing in line with fluctuating project software needs
- Enabled the team to produce accurate engineering and design templates, slashing rework to less than 2%
- Reduced safety risks during maintenance work through the use of 3D planning that enabled resource requirements to be minimized
- Reduced costs through the need for less manpower
- Delivered three successful platform shutdowns in first year, with full ROI being reached with the first shutdown

**AVEVA**

Based in Aberdeen, Scotland – often referred to as the oil capital of Europe – PBS is a specialist engineering consortium that provides offshore services and maintenance of oil and gas assets in the North Sea. Having won the general maintenance and operations contract (GMOC) to service offshore oil and gas platforms for a supermajor energy company in the region, PBS used AVEVA's cloud-based engineering and design solutions to deliver an unprecedented number of successful maintenance shutdowns for its client.

## Maintenance contract for North Sea gas platforms

PBS is a newly formed consortium comprising Ponticelli, Brand Energy & Infrastructure Services, and Semco Maritime. It won its first major support and maintenance contract in early 2020 to ensure that a leading energy firm's North Sea assets were safe, functioning efficiently, and meeting agreed KPIs for business continuity.

The supermajor mandated that PBS was to use AVEVA solutions for engineering and design. The day after the contract was signed, the UK went into lockdown because of the global pandemic. This forced PBS to reconsider how best to get up to speed with the new solution and provide the support that its new client expected.

## Cloud-based solutions for remote working and continuity during the pandemic

With AVEVA's help, PBS immediately changed its approach, using cloud-based software-as-a-service (SaaS) solutions to support remote working. The team now uses AVEVA engineering and design solutions delivered by AVEVA™ Connect in the cloud, ensuring team members could collaborate and access the solutions and shared data models wherever they were.

AVEVA™ Point Cloud Manager enabled PBS to visualize assets via laser scanning to ensure digital models in the cloud perfectly align with live assets. The team can then sync the models with AVEVA™ E3D Design to rapidly generate new maintenance design elements in a clash-free environment.

## Speaking the same language with a single source of data

AVEVA's cloud-based solution enables all PBS teams to work on the same 3D models at the same time. This has improved communications and broken down language barriers because the teams are looking at the same thing and effectively speaking the same language. "AVEVA's 3D models enable the engineers to easily communicate and all speak in 'pipe,'" said Mike Talbot, piping designer at PBS.

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"Some of us have previously used a non-cloud-based solution for engineering and design, and this required a scheduled data transfer once or twice a day to ensure our work was updated across all sites. With our AVEVA solutions in the cloud, our changes are instant – there's no waiting for updates from satellite or hub sites. Working in the cloud is hassle-free, saves us time, and interoffice working is far more collaborative, as we're all working on the same model. There's a single source of truth."

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**Mike Talbot**  
Piping Designer, PBS

## Agility to proceed with limited IT needs

AVEVA's cloud-based solutions gave PBS the agility to deliver without additional high-spec laptops, servers, or additional IT security since processing and security are safely handled within AVEVA Connect. And because the solutions were delivered through SaaS, there was no additional IT burden for software maintenance, upgrades, or availability.

As a new company, PBS was mindful of its growth rate and recruited new people in line with contractual requirements. AVEVA consultants were able to support this by stepping up as a stop-gap until new recruits were up to speed with the solutions, ensuring that PBS's people were working efficiently. The AVEVA Flex subscription program offers licensing flexibility and scalability that ensures PBS benefits commercially as their software usage fluctuates with variable numbers of users and contractors.

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“The AVEVA solution being cloud-based was critical for us. Without this, we wouldn’t have been able to support our client. Not only did it enable us all to work from home at the start of the pandemic, but it’s also allowed us to easily embrace a flexible hybrid model for work moving forward. Importantly, we haven’t had to consider any additional IT or security, as that’s part of the AVEVA Connect package, along with automatic software upgrades. And the Flex licensing option means we’re only paying for the software that we’re actually using.”

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**Karen Robertson**  
Piping Engineering Lead, PBS

## Challenging platform shutdowns required thorough planning

The GMOC for the supermajor required PBS to operate to a set of SLAs designed to ensure business continuity without production downtime, including the management of shutdowns. Offshore platforms typically need a planned shutdown to undertake specific routine maintenance tasks for a number of weeks every three or four years. It was PBS’s responsibility to bring in specialist teams and ensure successful and on-time completion, as the cost of over-running can be in excess of £1M per day.

## Shutdown planning was fast, accurate, and ensured safety

The team had to make detailed upfront plans to ensure their contractors could safely and effectively complete all the required maintenance work within the shutdown window. The engineering of new elements needed to factor in the context of the existing asset. This would allow for the fabrication of large components to occur on land to optimize transportation to the platform and provide accurate assembly to fit seamlessly with the existing asset onsite.

PBS used its AVEVA solutions to design, build, and schedule the work required for the entire shutdown period. For instance, for piping replacements, the team used AVEVA E3D Design to produce detailed P&ID drawings required for the pipework fabricator. AVEVA’s solution enabled the team to ensure their design was accurate and avoid rework. The 3D-design approach enabled PBS to confidently plan for the space and manpower needed to maneuver and replace the piping.

To meet the design requirements, PBS laser-captured the detailed, as-is 3D models using AVEVA Point Cloud Manager and swiftly compared them with the 3D models provided by its client to gather a view of the latest model. They leveraged tight integration between the laser model and AVEVA E3D Design in the cloud to efficiently execute the new engineering work required for the entire maintenance project. This limited the environmental, cost, and safety impacts of regular travel to the offshore site to verify tie-in accuracy. It also enabled PBS to reduce costly errors and rework, and confidently plan all the necessary resources to get the job done right the first time.

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“For our first platform shutdown, we were expecting quite a few pieces of rework, but only one of 60 spools failed to fit when everything came together onsite. Thanks to the accuracy we were able to achieve using our AVEVA solutions, everything ran smoothly – this shutdown was one of the quietest and most stress-free shutdowns in my entire career. It was critical for PBS that our first shutdown was a success, and this has helped us to build a solid reputation in the industry.”

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**Karen Robertson**  
Piping Engineering Lead, PBS



## Streamlined, stress-free platform shutdowns

When PBS was pitching for the support and maintenance contract with the supermajor, the expectation was for an average of one offshore platform shutdown per year. However, the COVID-19 pandemic caused delays, resulting in the need for three shutdowns in 2021 due to asset alignment requirements. This would have been incredibly challenging for any organization to undertake. However, all shutdowns ran successfully with minimal problems, further strengthening PBS's reputation.

AVEVA's cloud-based engineering and design tools gave PBS the agility and flexibility it needed and enabled PBS to build its reputation for excellence. AVEVA and PBS look forward to their continued partnership as PBS grows its business and cements itself as a market leader in delivering sustainable engineering solutions as the energy sector transitions toward net-zero emissions.

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“We've had a phenomenal first couple of years since winning this contract – three shutdowns with no problems! There's no doubt about how much executing our work using AVEVA engineering and design software has contributed to this, having more than paid for itself after the first shutdown. Our cloud-based AVEVA solutions have reduced risks to safety, reduced costs – to us and our clients – and continue to add value, which is further driving up the return on our investment.”

- **Karen Robertson**

Piping Engineering Lead, PBS Offshore

For more information about AVEVA,  
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