GLO Marine

CONVERSIONS

Engineering a PSV Conversion for Methanol Carriage

CLIENT BOURBON OFFSHORE ASIA

YEAR 2026

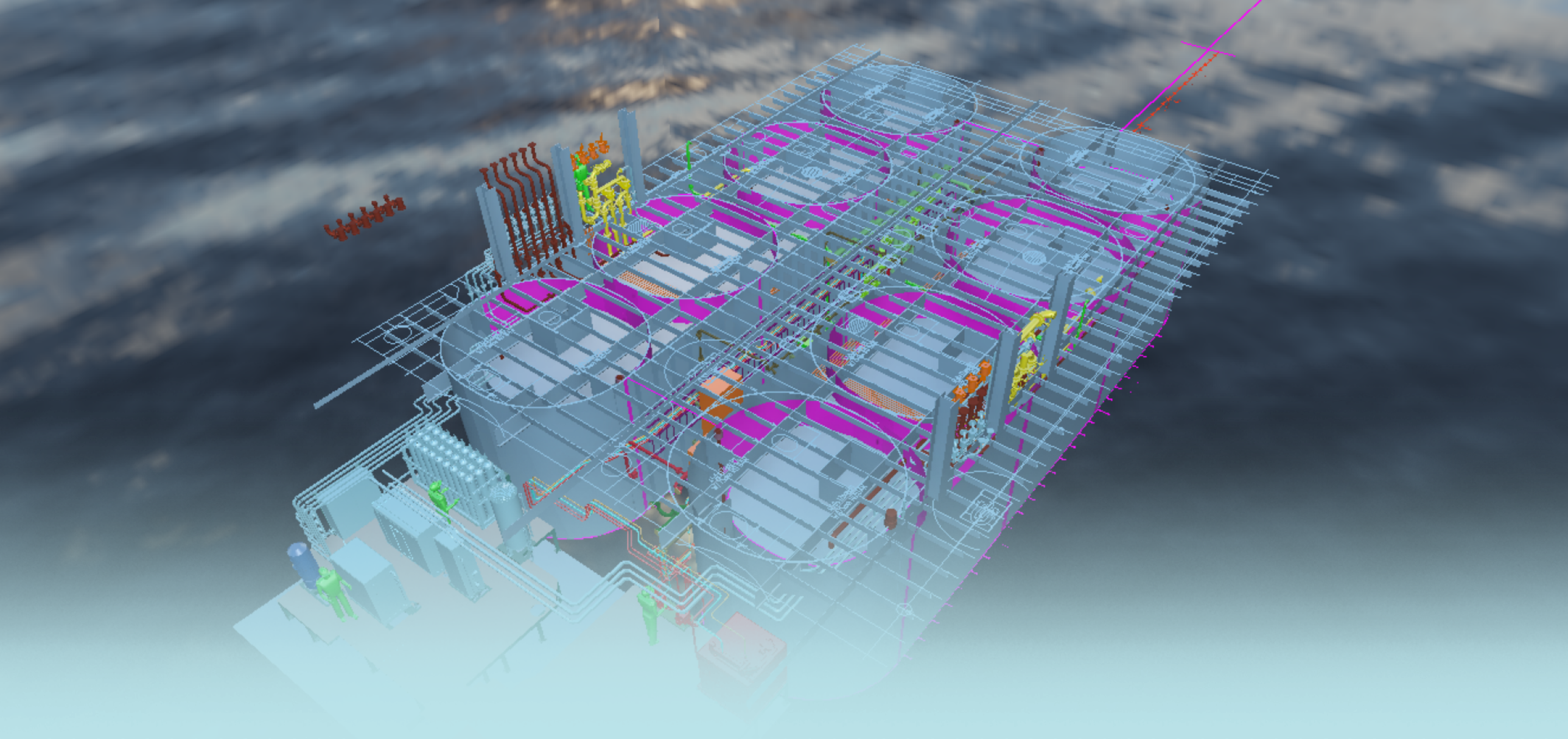
PLATFORM TYPE

Platform Supply Vessel

CLASS

SOW

Onboard survey, 3D scanning and feasibility assessment for replacing eight liquid mud tanks with four methanol tanks, including equipment arrangement and systems



CLIENT CONTEXT

Adapting an existing vessel for methanol carriage

Bourbon Offshore Asia planned a vessel conversion on the Bourbon Liberty 237, adapting its liquid mud tank area for methanol carriage by replacing eight tanks with four methanol tanks and introducing nitrogen equipment and a hydraulic power unit for the methanol pumps.

GLO Marine combined an onboard survey, 3D scan data, and preliminary modelling to assess the arrangement and identify affected equipment, structures, and systems.

THE WORK TO BE DONE

Project phases

The survey and feasibility scope covered:

- Verification of the existing arrangement and identification of equipment to remain, relocate or remove.
- Assessment of tanks, pumps, piping, foundations and platform removals.
- Preliminary arrangement of nitrogen equipment and the methanol pump hydraulic power unit.
- Identification of modifications to existing pumps, piping, electrical panels and cable routes.
- Review of access, maintenance clearances, escape routes and safety interfaces.
- Preparation of a preliminary 3D model and requirements for subsequent design stages.

THE CHALLENGE

Integrating new cargo systems in a constrained space

New longitudinal bulkheads forming void spaces around the methanol tanks affected existing pumps, foundations, piping and cable routes. Relocations had to account for surrounding systems, maintenance access and escape routes.

The arrangement also depended on hazardous area classification, ventilation, gas detection and shutdown requirements. These interfaces required early identification because they could affect equipment selection, positioning and routing during detailed design.

Implementation steps

01. Initial survey and 3D laser scan

GLO Marine surveyed the retrofit area against available drawings and recorded affected equipment, piping, and electrical installations. The survey and scan data supported preliminary 3D modelling and the feasibility review.

02. Tank arrangement and removal strategy

The assessment defined removals required for the four methanol tanks, including existing liquid mud tanks, pumps, piping, valves, instrumentation, foundations and raised floors. It distinguished these from systems to remain operational or require temporary protection during work.

03. Equipment arrangement and systems rerouting

The preliminary arrangement placed nitrogen equipment in the former BHS No.4 tank area and the methanol pump hydraulic power unit in the former BHS No.3 tank area. It retained the aft bulkhead cabinets, fuel oil pump beneath the BHS tank and freshwater cooling expansion tanks in their existing positions.

Proposed relocations covered the ballast pump, deck HPU cooling pump, fuel oil transfer and purifier feed pumps, fuel oil cargo pump, and BHS compressor and associated tank. The model checked positions against available space, piping, maintenance clearances and escape routes.

04. Electrical and safety integration requirements

The assessment identified cable routes affected by the new bulkheads and obsolete liquid mud control equipment for removal. It also recorded a proposal to replace agitator control racks with smaller panels retaining the Z-drive room controls. Cable lengths, segregation, protection, supports and penetrations required verification during detailed design.

The report identified safety inputs required from Alliance Marine Solutions: hazardous area classification, ventilation, gas detection, emergency shutdown, bonding and earthing, and spill containment. These would govern final equipment selection and layout.

05. Feasibility assessment and design handover

The preliminary 3D model combined equipment positions and routing philosophy. The report confirmed spatial feasibility at this stage and defined further work on routing, foundations, ventilation, electrical integration, and fire and safety arrangements, subject to third-party inputs and approvals.

The outcome

Final results

- The survey and preliminary model supported the spatial feasibility of the conversion within the existing vessel.
- No major constraints preventing the proposed scope were identified at the feasibility stage.
- The arrangement defined equipment to remain, removals, relocations and routing changes.
- The report established a reference for the general arrangement and routing philosophy, identifying outstanding design and safety interfaces.

GLO Marine translated the tank replacement proposal into a coordinated preliminary arrangement, accommodating new methanol equipment alongside existing systems while preserving access and maintenance space.

Final positioning, integration and validation remained subject to detailed design, hazardous area and safety inputs, and relevant third-party approvals.

GLO Marine

Your vessel upgrade partner

Bucharest RO

Biharia 26, First Floor
+40 (0) 336 401 047

Galați RO

Aleea Școlii 3
+40 (0) 336 401 047

Mangalia RO

I.C Brătianu 2, Delphine Comar Building
+40 (0) 757 065 058

Woking UK

3 Radstone Court, Hillview Road, GU22 7NB
+44 (0) 7795 322 207
+44 (0) 7786 392 636

www.glo-marine.com

contact@glo-marine.com

Work with us

Contact our retrofit specialist for details

inquiries@glo-marine.com

+40790870949