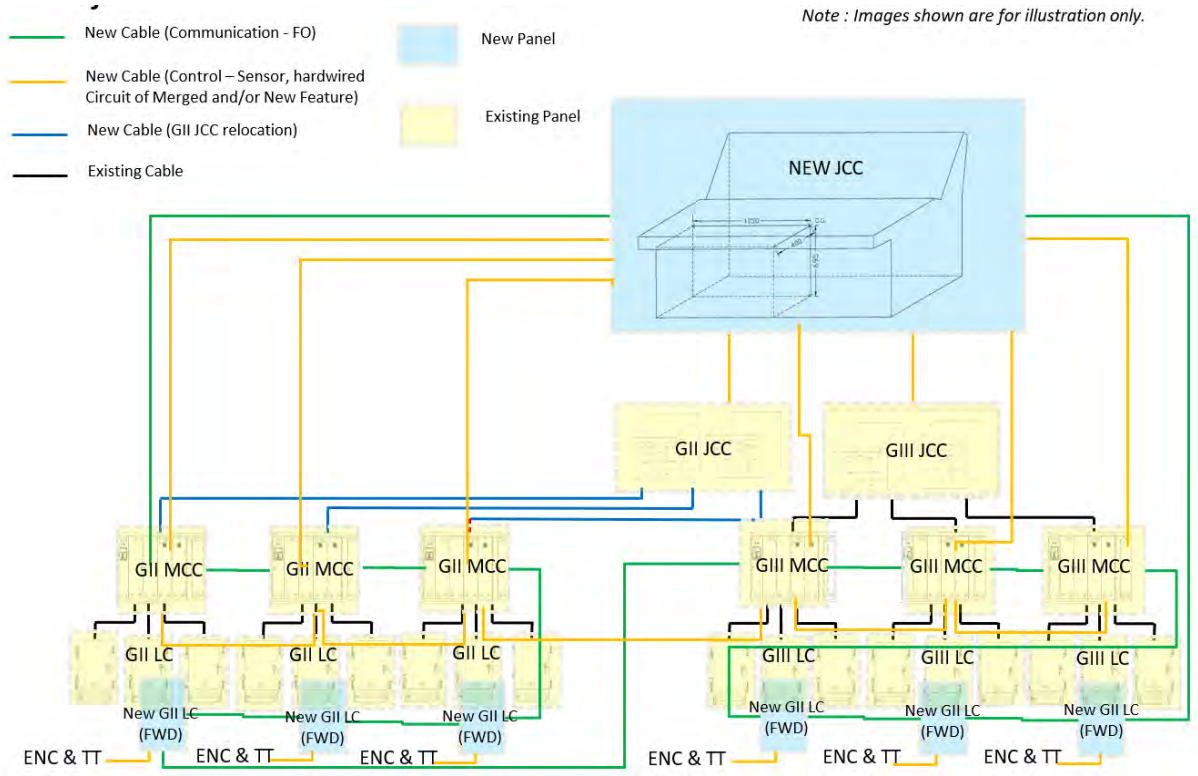


Figure 14 Hybrid Integration Model

3.2.2 Control System Architecture Development

The development of a new control system architecture was central to the integration effort. The goal was to unify the jacking operations of both rigs under a single, centralized control console onboard OBANA while minimizing disruption to existing infrastructure.

Early engagement with the American Bureau of Shipping (ABS) ensured that the proposed architecture met classification requirements. Discussions included redundancy and fail-safe design, alarm and event logging protocols, electrical segregation and fault isolation and documentation standards for inspection and audit readiness. Addressing key items early in the development process avoided possible delays later during implementation.

Coupled with the results of the onboard assessments, the hybrid architecture was developed. The final design retained key infrastructure such as MCCs, actuator interfaces, and power distribution panels. These were integrated with a new PLC-based control system, updated HMI (Human-Machine Interface) panels, modern communication protocols (e.g., Modbus TCP/IP, Ethernet/IP) and enhanced alarm and diagnostic capabilities. This architecture allowed for a technically sound and cost-effective integration, reducing the need for extensive rewiring or structural modifications.

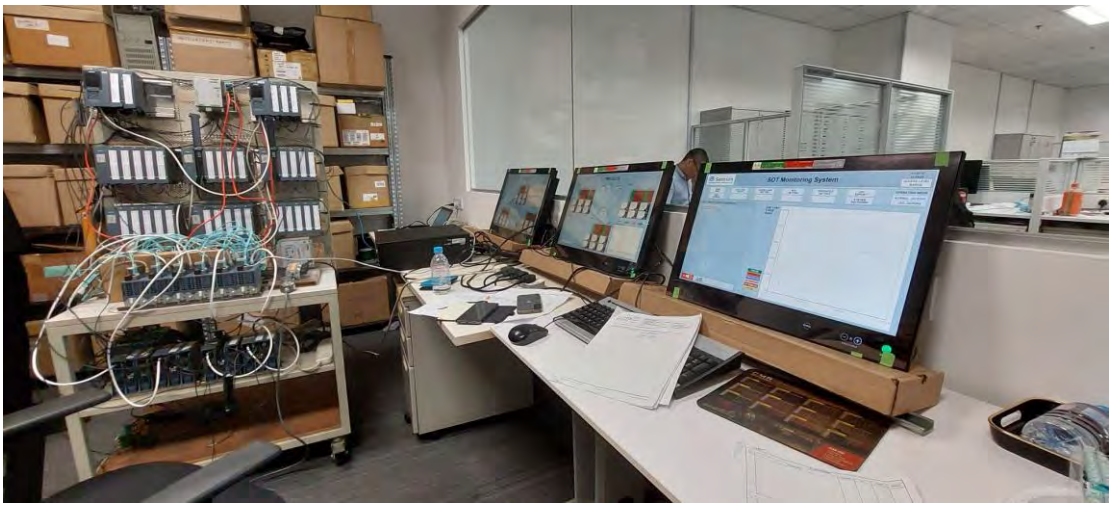


Figure 15 Development of new control system architecture

Figure 16 New control features such as RPD & leg load monitoring and emergency jacking controls

Figure 17a Jacking control system of Galaxy II and Galaxy III before the retrofit

Figure 17b Jacking control system of OBANA after the retrofit

3.2.3 Onsite Execution and Coordination

The onsite execution phase was a complex, multi-party operation involving retrofit, integration, and testing activities across various disciplines**.** Electrical and control system specialists from multiple vendors were mobilized to OBANA for coordinated execution. Detailed work packs were developed to define roles, responsibilities, and sequencing of tasks to avoid clashes and ensure safety.

Installation teams carried out the works sequentially, removing obsolete components, installing new control panels and cabling and integrating retained MCCs and actuator interfaces. Due to the absence of a complete factory-assembled system, a full FAT was not possible. Testing was conducted with motors coupled to gearboxes, requiring alternative validation methods. Functional tests, interlock checks, and alarm simulations were performed to verify system integrity.

Despite the complexity, the execution was completed on schedule, thanks to meticulous planning, real-time coordination, and proactive issue resolution with the dedicated support of the onboard crew.

3.2.4 Commissioning and Milestone Achievement

Following successful installation and SAT testing, the commissioning phase marked the final validation of the integrated system. Commissioning included full-cycle jacking operations to verify control logic, response times, and safety interlocks; training of onboard personnel on the new control interface, alarm handling procedures, and emergency protocols; final inspections and documentation reviews with ABS to confirm compliance and issue operational certification.

In July 2025, OBANA successfully performed its first complete jacking trial operation since the integration of the vessel. This milestone validated the engineering strategy and marked the vessel's readiness for offshore decommissioning campaigns.

Figure 11: Jacking Trial – July 2025

Conclusion

From first conception in 2021, OBANA has been made a reality. Working together, Petrodec as owner/operator and SOT as the basic designer/jacking OEM, were able to create OBANA from existing parts into a bespoke decommissioning solution. With unique knowledge of the existing assets, a clear functional requirement and a willingness to think big and solve new challenges, the team has achieved a first-of-its-kind solution. A unique combination of two existing jackup units, at 205.7 m long, 76.2 m wide and with an afloat lightship of 48,580 MT, OBANA has become the world's largest jackup unit.

More than this, OBANA has set a new example of what is possible; developing a cost-effective business solution and producing a highly capable asset at minimal cost while simultaneously achieving sustainability goals, with 85% of OBANA's total weight sourced from re-used components.

Decommissioning involves more than simply removing old production assets. Before dismantling can take place, installations must first be disconnected from their wells, as well as from incoming and export pipelines. The production process equipment and pipelines must then be cleaned and made hydrocarbon-safe.

Over the years, many large offshore assets have been expanded with additional process modules and accommodation blocks, making single-lift removal no longer feasible. With accommodation for 140 personnel, a spacious deck, and seven cranes, OBANA is capable of partial dismantling work directly on deck. This enables safe access to production facilities and supports the overall removal process.

OBANA has successfully started operating in August 2025, utilizing previously discarded assets that have been repurposed to assist in cleaning up other end-of-life installations in the North Sea.

Figure 18: First offshore decom campaign

Attachment: OBANA Specification

MAIN CRANE CAPACITY 2000 t / ACCOMMODATION 136 POB / MAX WATER DEPTH 65 m / DECK CAPACITY 20 t/m²

The 'OBANA' is an Petrodec/KeppelOTD designed non-propelled 6-legged self-elevating heavy lift jack up. The Unit is designed for year-round operations in the North Sea in water depths up to 65 meters. The Unit is designed for heavy lifting and skidding of offshore structures for both constructions as decommissioning projects. It can also support well intervention or as an accommodation jack up.
The Obana consists out of 2 jack up units that are twin identical. The original units were built by KeppelFels, Singapore, with construction being completed in 1999. In 2024 the structures of the 2 rigs shall be combined into one working jack up rig with the systems merged. The layout and mobility of the unit was originally designed as a drilling rig, Mobile Offshore Drilling Unit (MODU), before being converted to a construction/decommissioning support vessel. The 'OBANA' is classed and surveyed by the American Bureau of Shipping (ABS) and registered under the Flag of Sint Vincent and the Grenadines. The Obana shall be fully compliant with the UK HSEx/OSD Safety Case regulations 2015.
Crew accommodation for 136 persons is located as far away as reasonably practicable from the potential location of hydrocarbons and flight path of crane loads with a maximum number of two persons assigned to each cabin.

GENERAL		MAIN DIMENSIONS/ DRAFT/DISPLACEMENT	
Design:	Petrodec/Keppel Offshore Technology Department	**Length:**	675 ft (205.74 m)
Flag:	Sint Vincent and the Grenadines	**Breadth:**	250 ft (76.20 m))
Classification Society:	ABS, A1 Self Elevating unit	**Depth:**	35 ft (10.67 m)
Year Built	1998 / 1999	**Legs:**	560 ft (170.7 m) Triangular Truss, 6 legged
Upgrade/Conversion:	2024	**Spud cans:**	59.67 ft (18-19 m)
Builder:	KeppelFels/DDW	**Transit Draft:**	20.67 ft **(**6.3 m)
Accommodation:	136 Persons		

MACHINERY		OPERATING PARAMETERS	
Main Power:	8 x Wartsila 12V200, 1800kW/ 3000KVA	**Max Water Depth:**	65 m
		Air Gap:	20 m (SSA dependent)
		Transit Speed:	4 knots
Power Distribution:	600/480 V Main Switchboard	**Wind speed:**	18 m/s (crane) 35 m/s (survival)
		Max wave height:	19.2 m
Emergency Power:	1 x Caterpillar 3508-TA marine generator, 715 kW	**Variable Deck Load:**	12.031 Tonnes
Compressors:	3 x Atlas Copco MAS GA75VSDL		
Jacking System:	OTD rack and pinion system, 0.46 m/min, 453t per pinion normal jacking.		

INTEGRATED EQUIPMENT		CAPACITIES	
Deck extension:	180m2; 20t/m2	**Cement:**	900 m^3
Skid tracks:	Longitudinal & in the Width	**Sacks:**	5000 sacks
Deck Transfer system:	2000t Electric Trolly system	**Drillwater:**	10.456 m^3
		Potable water:	647 m^3
		Fuel oil:	1,110 m^3

DECK EQUIPMENT

1 x MTC 78000-2000 pedestal mounted electric crane
- 2000t SWL
- 200t SWL
- 50t SWL

2 x BOS 4200-60 pedestal mounted diesel hydraulic crane
- 60t SWL

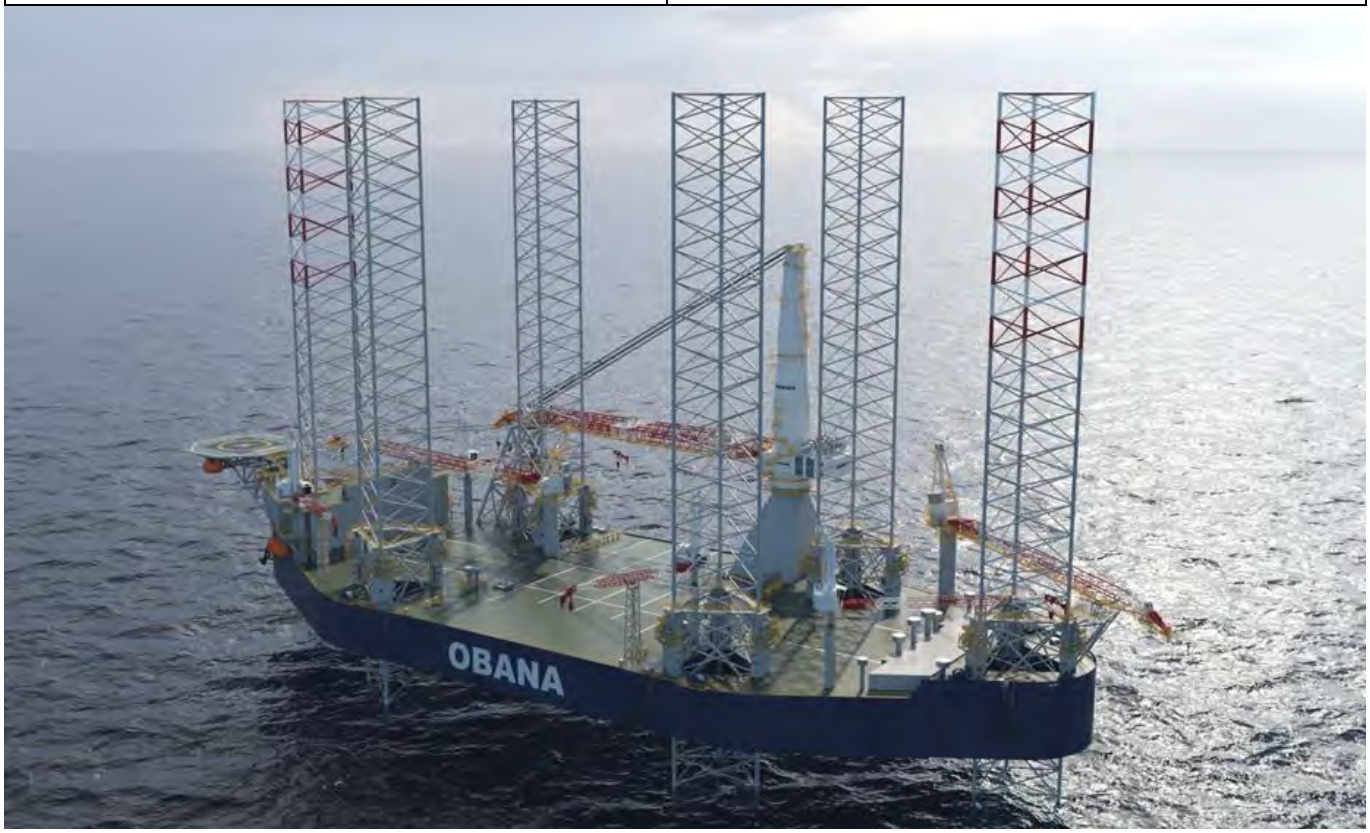
4 x Seatrax 6032 pedestal mounted electric crane
- 47.9t SWL

Helideck

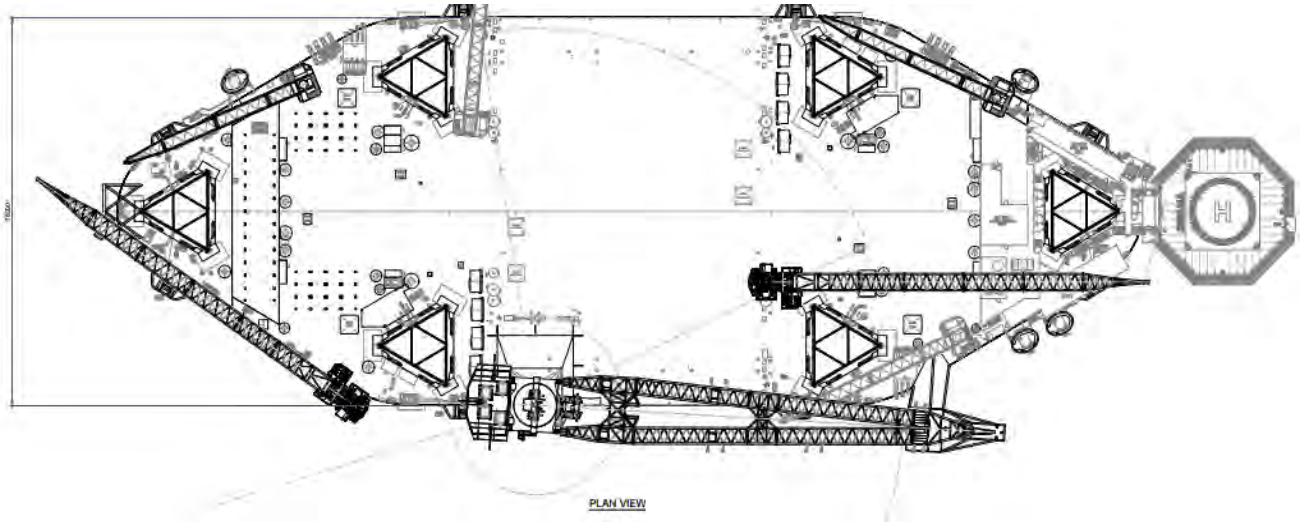
Polygon (25.91 m ID)
MTOW 9.25 tonnes

LIFE SAVING EQUIPMENT

2 x 55 P TEMPSC, SSI
2 x 81 P TEMPSC, Palfinger



TOP VIEW



SIDE VIEW