



1 INTRODUCTION

1.1 General Description

This document summarizes the Vessel including her subsea construction equipment and any other equipment fitted.

The Vessel, an SX 121 designed Flex Lay and future Cable Laying Vessel, was built in Ulstein (Norway) and is equipped with a 250MT heave compensated crane, two Schilling HD Work Class ROVs with LARS and umbilical winches fitted in a dedicated ROV hangar and a DP3 positioning system. She is designed for harsh weather with a high degree of comfort.

The Vessel can be outfitted for the following activities:

- Accommodation/Walk to Work
- Subsea Operations
- Remotely Operated Vehicle (ROV) Support
- Trenching Support
- Subsea Survey
- Geotechnical
- Cable and Flex Lay

1.2 Main Particulars

Length Overall	130 meters
Length Between Perpendiculars	124.26 meters
Breadth	25 meters
Depth Moulded	10 meters
Max Draft	7.6 meters
Min Draft	5.0 meters
Retractable Thruster Height	3.127 meters
Block Coefficient	0.691 @7.6 meters draft
Max Displacement	16,494 MT
Max Deck Load	5,800 MT with Crane Stowed
Deadweight	8,207 MT (VLS removed) 7,200 MT (VLS fitted)
Gross Tonnage	11,803
Net Tonnage	3,541



Top view of the Vessel

1.3 Identification

Name	TBD
Port/Flag of Registry	TBD
Call Sign	TBD
IMO Number	TBD
MMSI Number	TBD
Class (DNV)	1A1 BIS Clean(Design) COMF(C-3, V-3) Crane DK(+) DYNPOS(AUTRO) E0 HELDK(S, H) NAUT(OSV(A)) SF SPS VIBR
Class (CR)	CR100 ⊗ E OSV, HLA, IWS, DPS-III, Helideck-I CMS(CAU) ⊗ NAVO

2 VESSEL DETAILS

2.1 Propulsion

The Vessel is fitted with 3 stern fixed pitch, contra-rotating azimuth thrusters, two forward changeable pitch tunnel thrusters and one forward fixed pitch drop down azimuth thruster. All thrusters are equipped with Variable Frequency Drives.

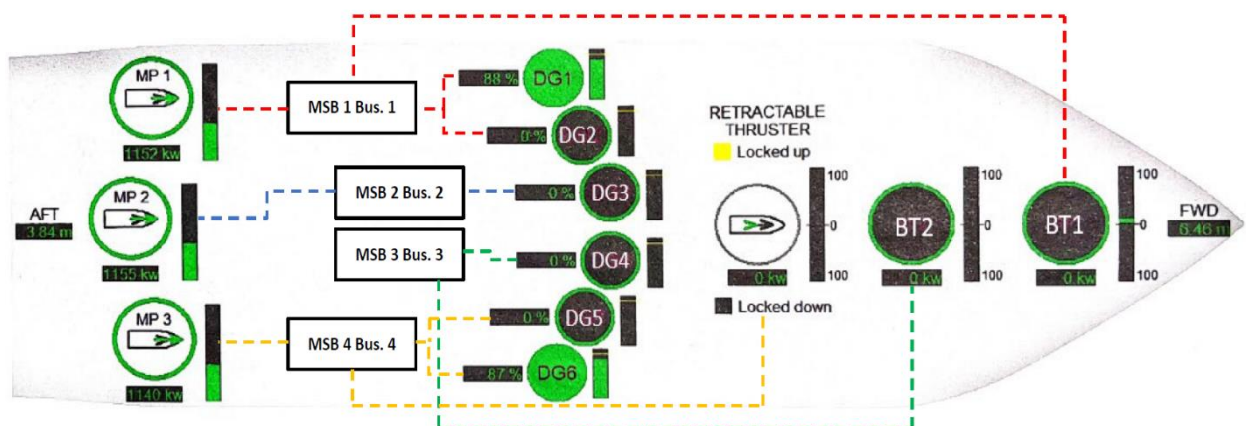
Unit	Make	Model	Power
3 x Main Stern Azimuth	Rolls Royce	US305FP P40	3,000 kW
2 x Bow Tunnel Thrusters	Rolls Royce	TT2800 DPN CP	2,140 kW
1 x Retractable Azimuth Thruster	Rolls Royce	TCNS 92/62-220	2,000 kW

2.2 Power Generation

The Vessel generates power from 6 primary diesel generators in the main engine room. The Vessel is also fitted with an emergency generator located on the port side of E deck.

Unit	Make	Model	Power
6 x Main Generators	Rolls Royce	C25:33 L9A 2.CD	2,880 KW @ 900 rpm
1 x Emergency Generator	Volvo Penta	D13B-FMG RC360	300 KW @ 1800 rpm

2.3 Propulsion Configuration



2.4 Power Management

A Hoglund power management system is fitted, with multiple workstations in the ECR and on the bridge and switchboard room and main propulsion.

2.5 Switchboard Configuration

The Vessel is a low voltage ship and operates exclusively on 60 Hz. The Main Switchboard (MSB) has 4 buses for each different type of voltage from 690 V to 230 V. There is a separate Emergency Switchboard, and an Offshore Switchboard with 440 V to 110 V available.

2.5.1 Main and Emergency Switchboard Configuration

The primarily generating voltage is 690 V. Other voltages are available through step-down transformers.

Designation	Voltage	Primary Supply/Consumers
Bus No. 1	690 V	DG1, DG2 Thruster 1 (Bow Tunnel), Thruster 1 (Main Propulsion PS)
Bus No. 2	690 V	DG3 Thruster 2 (Main Propulsion Center), Forward Azimuth
Bus No. 3	690 V	DG4 Thruster 2 (Bow Tunnel)
Bus No. 4	690 V	DG5, DG6 Thruster 3 (Main Propulsion SB), Forward Azimuth
Bus No. 1	440 V	UPS10, P10, P11, P12, and Emergency switchboard Consumers
Bus No. 2	440 V	UPS20, P20, P21 Consumers
Bus No. 3	440 V	UPS30, P30, P31 Consumers
Bus No. 4	440 V	UPS40, P40, P41, P42 Consumers
Bus No. 1	230 V	L10 – L15(Engine Room) Consumers
Bus No. 2	230 V	L20 – L25 Consumers
Bus No. 3	230 V	L30 – L36 Consumers
Bus No. 4	230 V	L40 – L46(Bridge) Consumers
ESB	230 V	

2.5.2 Offshore Switchboard Configuration

The Offshore Switchboard is configured in a split configuration. For further information on the Offshore switchboard configuration, please contact DFO.

Designation	Voltage	Primary Supply/Consumers
Offshore Equipment Switchboard	690 V	Supplied from Bus No. 1 690 V ROV + LARS, ROV MOON POOL, VLS, OSB 440V, etc.
Offshore Equipment Switchboard	690 V	Supplied from Bus No. 4 690 V ROV + LARS, VLS, OSB 440V, etc.
Offshore Switchboard	440 V	Transfer 110 V and 440 V sockets to the main deck

2.6 Fluid Capacity

The Vessel is fitted with capacity for Fuel (MGO), Fresh Water, Lubricants, Base Oil and Ballast Water. The vessel does not currently hold the NLS notation so is not able to carry noxious liquids or MEG, however both these notations can be reinstated upon request.

Unit	90 %
Fuel Oil	1,497 m3
Fresh Water	1,087 m3
Lubricating Oil	32 m3
Ballast	6,303 m3
MEG	286.4 m3

2.7 Fresh Water Maker

The Vessel is fitted with three Fresh Water Makers with a total production capacity of 55 m³/day.

The Vessel can make water while underway in the open ocean.

2.8 Sewage System

The Vessel is fitted with a MARPOL compliant Sewage management system.

Model	Gand O Bioreactor 27750 BG-V
Capacity	157 m ³

2.9 Roll Reduction

The Vessel is fitted with a passive roll reduction system utilizing three tanks – # 53, #54 and #55. Tanks are not advised to be used during heavy lift operations.

2.10 Anti-Heeling System

The Vessel is fitted with an automated anti-heeling system utilising six tanks as dynamic counter ballast for use during lifting operations (Tanks #16, #17, #20, #21, #24, #25). The total capacity of the tanks is 792 MT.

Model	Hoppe / H300
Capacity	800 m ³ / hour, reversible propellor pump

2.11 Helideck

A helideck is fitted to the forward part of the Vessel, able to handle large helicopters including the Sikorsky S92.

Certifications	CAA CAP 437 / DNV
D Value	26.1
T Value	12.8 MT
Lighting	Perimeter and Circle/H lighting fitted
Helideck Monitoring	Fitted as per CAP 437 with MRU, Wind Speed/Direction SecRec HMS Traffic Light system with Shore Connection
VHF (Fixed)	Jotron TR-810, 2 on bridge, 1 in helideck lounge
VHF (Portable)	3 x ICOM Air-band VHF IC-A6E
NDB	1 fitted JTM-30R
Fuelling & Starting	None fitted

2.12 Incinerator

An incinerator is fitted capable of burning both sludge and plastic.

Model	TeamTec
Capacity	GS500C

2.13 Navigation Equipment

Equipment	Make	Model	Quantity
GPS	JRC	1 x JRL-21 1 x JLR-7800	2
Radar	L-3	Multipilot 2 x X-Band 1 x S-Band	3
ECDIS	L-3	Multipilot	2
Gyro Compasses	Anschutz	2 x Standard 22 1 x Standard 22 Compact	3
Speed Log	Furuno	DS-80	1
Autopilot	L-3		1
AIS	L-3	3410	1
VDR	L-3	4350	1
Depth Finder	Furuno	FE-700	1
LRIT	Sailor	3027	1
BNWAS	Ulstein	UBAS	1

2.14 Communication and CCTV Equipment

Primary VSAT Configuration	Port side Dome for VSAT (Newtec, Marlink)
Secondary VSAT Configuration	Starboard side Dome for VSAT (Newtec, Marlink)
Internal Telephone	Alcatel Lucent System available in all cabins Handheld wireless phone system available
LAN and Wi-Fi	Wi-Fi available on all decks LAN system fitted working station/office
Television	VOD Infotainment system available in all cabins
Clearcom	Clearcom units fitted on bridge, ROV control, client office and survey pit on the bridge
CCTV	CCTV fitted across vessel, with displays on bridge, ROV control, client office and survey pit on the bridge
Doors	VingCard system is fitted
GMDSS Equipment	Sailor A3 (Thrane and Thrane) GMDSS system NAVTEX FURUNO NX-700
Inmarsat C	2 x Sailor 6006
MF / HF	1 x Sailor 6301
VHF Fixed	2 x Sailor 6222
VHF portable	3 x Thrane & Thrane SP3520
NAVTEX	1 x Furuno NX-700B
Satellite EPIRB	3 x Jotron Tron 60S
Public Address	2 x ULSTEIN COM
SART	2 x Jotron AIS-SART

2.15 Compressors and Pumps

Working Air Compressor	1 x Working Air Compressor Atlas Copco MAS GA22 4 x Working Air Dryer Atlas Copco FX3 (A2) AUL
Bilge Pump	4 x ALLWEILER AEB 1E 1450-IE, 107 m ³ /hr
Ballast Pump	2 x ALLWEILER NB 100-250, 200 m ³ /hr
Fire Pump	2 x ALLWEILER NB 050-250, 100 m ³ /hr
Emergency Fire Pump	1 x ALLWEILER A25, 70 m ³ /hr
Fresh Water Pump	2 x ALLWEILER NB 050-125, 50 – 60 m ³ /hr
Fuel Oil Transfer Pump	1 x ALLWEILER 105/1048, 117 m ³ /hr
Fuel Oil Service/Booster Pump	Include with each Engine
Sea Water Cooling Pump	2 x ALLWEILER NB 50-250, 70 m ³ /hr
MDO Purifier	4 x GEA WESTFALIA OSE 5-91-03714, 1.66 m ³ /hr
Sludge Pump	1 x ALLWEILER 1E 0100-IE, 10 m ³ /hr
Oily Water Separator	1 x GEA WESTFALIA WSE 10-01-037, 1.2 m ³ /hr
Ballast Water Management System	1 x OBS-220 BK, 220m ³ /hr

2.16 Miscellaneous Equipment

Anchor	2 x 6,450 kg anchors with 605 meters of 62 mm diameter chain
Anchor Windlass	Norwegian Deck Machinery

3 DYNAMIC POSITIONING SYSTEM

The Vessel is fitted with a Dynamic Positioning System meeting IMO DP Class 3 requirements. The Vessel also has a very high ERN number due to her high operability and redundancy.

Model	Kongsberg Dual Redundant K-Pos DP-22 and K-Pos DP-21
ERN	DYNPOS-AUTR: 99,99,99,99 DYNPOS-AUTRO: 99,99,99,85
Workstations	4 x located on aft bridge and 1 x Emergency station located on aft E Deck
MRU	2 x Kongsberg MRU D 2 x Kongsberg MRU 5
Gyrocompass	3 x Raytheon Anschutz 1 x JLR-21
DGPS #1, #2	DPS 700, consisting of: 2 x DPS 132 1 x DPS 232
DGPS #3	1 x DPS 132
RADius	Radius 1000D-Dual, 3 interrogators
SpotTrack	1 x SpotTrack
HiPAP	2 x Kongsberg HiPAP 501



Aft DP console chair

4 FUEL CONSUMPTION

All major consumers are fitted with Variable Frequency Drives and all thrusters operate at a variable speed, resulting in very low operating consumption at sea.

Operation	Speed	Consumption
Two engines @ 90 %	Approx. 11 knots	23 – 27 m ³ / day
Three engines @ 90 %	Approx. 12 – 14 knots	27 – 34 m ³ / day
DP Operations	N/A	10 – 14 m ³ / day
In Port	N/A	4 – 6 m ³ / day

All fuel consumption above is subject to weather and loading conditions of the Vessel and is provided without guarantee.

5 ACCOMMODATION LAYOUT

There are 130 berths available on the Vessel, split into 48 single berth cabins, and 41 twin berth cabins.

The vessel has multiple office spaces, including an office on B deck and 3 on A deck. There is also a conference room on E deck and A deck.

Deck	Configuration	
E Deck	10 x 2 Man cabins 1 x Emergency Bridge 1 x Laundry	1 x Hospital 1 x Heli-conference room
D Deck	16 x 1 Man cabins 1 x Capt. Office 1 x Non-smoking Day room 1 x Laundry	7 x 2 Man cabins 1 x Internet Lounge 1 x Smoking Day room
C Deck	16 x 1 Man cabins 1 x ROV Online room	14 x 2 Man cabins 2 x Laundry
B Deck	16 x 1 Man cabins 1 x Client office 2 x Laundry	10 x 2 Man cabins 1 x Gym
A Deck	1 x Galley 1 x Day Room 3 x Client office 1 x ROV Workshop	1 x Messroom with 71 seats 1 x Auditorium 1 x Conference room 1 x ROV Offline room
Main Deck	1 x ECR 2 x Shower 1 x Laundry 2 x Deep Freezer 1 x Dry provision store	1 x Changing Rooms with lockers 1 x Coffee Shop 1 x Laundry handling room 2 x Cooler

In normal operations, the Vessel can offer the following cabin configuration for Charterers use. This allows for a standard complement of marine crew, including crane and vessel operations on a 24 hour basis, but excludes mission equipment operators (for example operators for the gangway system).

Single Cabins	Double Cabins	Total Berths
33 Cabins	29 Cabins	91 Berths



Mess Room



Conference room and Auditorium



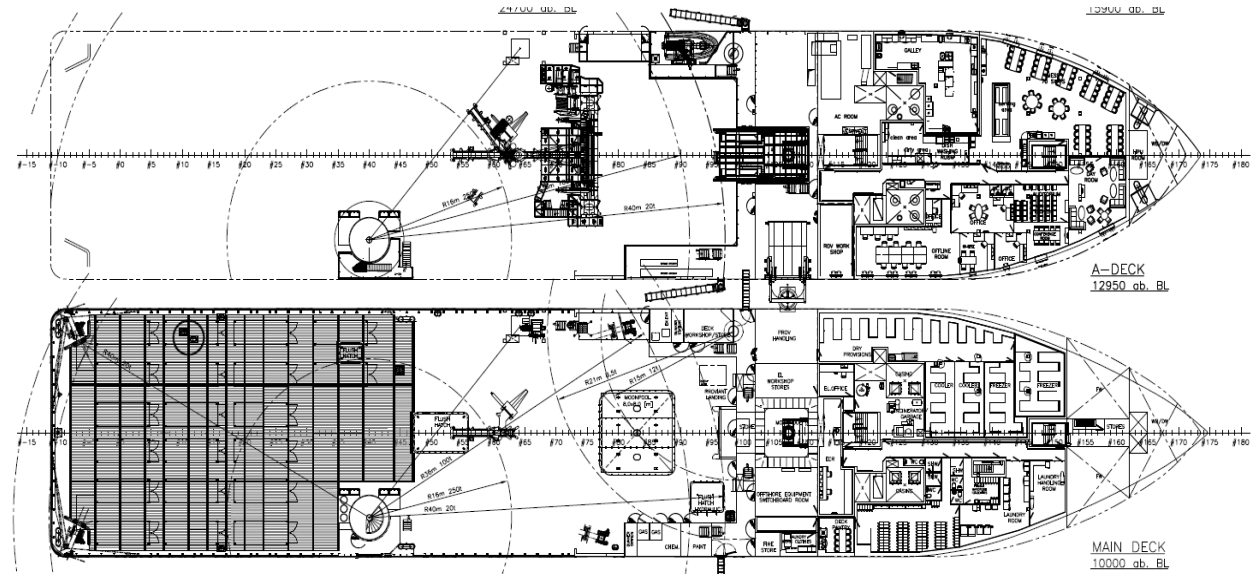
Typical Bedroom

6 SAFETY EQUIPMENT

Equipment	Type	Quantity	Capacity
Lifeboats	NOREQ LBT850	2	160 persons (80 pax each)
Liferafts	VIKING 25 F Self Inflated + Davit Type Vestdavit	4	100 persons (25 pax each)
FRC	MARE SAFETY 600	1	10 persons
Lifebuoys	LALIZAS	18	
Lifejackets	Alcares Jack A-Alk	279	Each cabin + Muster Station
EEBD	VIKING TH15B	15	
Medical Equipment	Fully equipped Hospital with bunk and treatment table	1	
Fire Pumps	ALLWEILER NB 050-250	2	100 m ³ / hr
Fixed Fire Extinguishing System (Engine Room)	Autronica FlexiFog	12 Zones	12 Zones: Engine Room (PS/SB) / Main Switchboard (PS/SB) / Incinerator Room / LP Engines (PS/SB) / Boiler / Purifiers (PS/SB) / Carousel Room / Local Protection Incinerator
Fixed Fire Fighting (Galley)	Autronica	Deep Fat Fryer and Galley Ducts	Wet Chemical System for the Fat Fryer / CO2 for the ducts

7 VESSEL EQUIPMENT

7.1 Deck Layout



7.2 Deck Equipment

The Vessel has a main deck of approximately 1,700 square meters.

Removeable Cargo Rails	Port Side (as marked on GA) Starboard side (as marked on GA)
Deck Strength	10 MT / m ²
Deck Hatches	1 hydraulically operated flush hatches and 2 x crane lift as marked on the GA, giving access to the lower holds
Moonpool	Flush moonpool hatch (VLS currently fitted above this), opening of 8 meters x 8 meters
Aft Mooring Winches	2 x 12 MT mooring winches, manufactured by Norwegian Deck Machinery

7.3 Main Crane

A 250 MT, electro-hydraulic Active Heave Compensated main crane is fitted on the starboard side of the main deck. There are two boom rests for the crane – one forward and one aft.

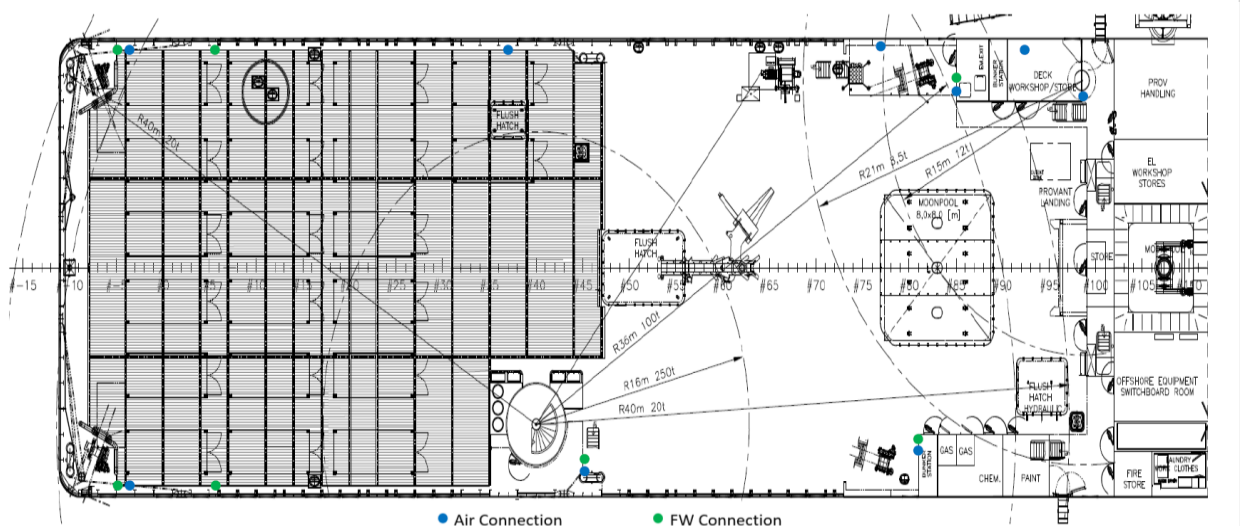
Type	OC 4500 KSCE
SWL Main Hook	250 MT @ 8 – 14m Radius 100 MT 8 – 36 m radius
Main Hook Wire Length	3,000 meters
SWL Aux Hook	20 MT @ 9 – 40 m radius
Aux Hook Wire Length	575 meters
Tugger Winch	2 x 5 MT
Main Hook Speed Full Load	0 – 18.3 m / min
Main Hook Speed Light Load	0 – 75 m / min

7.4 Provisions Crane

Type	KOC 300-12T-15M
Location	1 x Port Side Forward
SWL	12 MT @ 3.4 – 15 m radius

7.5 Fresh Water and Air Connections

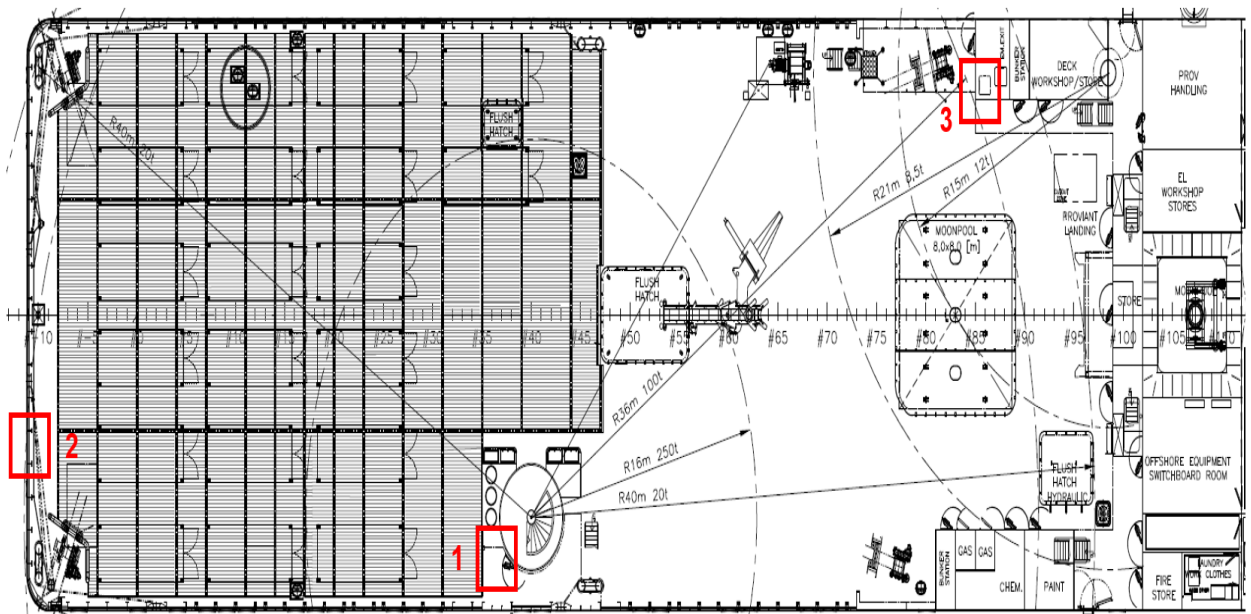
The vessel is fitted with multiple air and freshwater connections on deck as follows:



7.6

Deck Power Outlets

No.	Breaker rate	Location.
1.	<u>UTILITY STATION</u> 1 x 125A(440VAC) 2 x 32A(440VAC) 2 x 16A(220VAC) 2 x 16A(110VAC)	<u>MAIN DECK STBD CRANE PEDESTAL</u>
2.	<u>UTILITY STATION</u> 1 x 63/160A(440VAC) 2 x 32A(440VAC) 2 x 16A(220VAC) 2 x 16A(110VAC)	<u>MAIN DECK STBD STERN</u>
3.	<u>UTILITY STATION</u> 1 x 40/100A(440VAC) 2 x 32A(440VAC) 2 x 16A(220VAC) 2 x 16A(110VAC)	<u>MAIN DECK PORT</u>
4.	<u>UTILITY STATION</u> 2 x 250/630A(440VAC) 1 x 100/250A(440VAC) 1 x 63/160A(440VAC) 1 x 40/100A(440VAC)	<u>BOOM REST PORT AFT</u>



Power outlets on main deck

8 VERTICAL LAY SYSTEM

The vessel is presently fitted with a vertical lay system manufactured by Huisman.

Tensioner	
Tensioner	4 Track, retractable out of the firing line 2 and 4 track mode
Line Pull	275 MT including dynamic factor of 1.2
Nominal Line Pull	230 MT – 19 m/min
Reduced Line Pull	117 MT – 32 m/min
Product Diameter	50 mm to 630 mm size
Squeeze Pressure	Variable

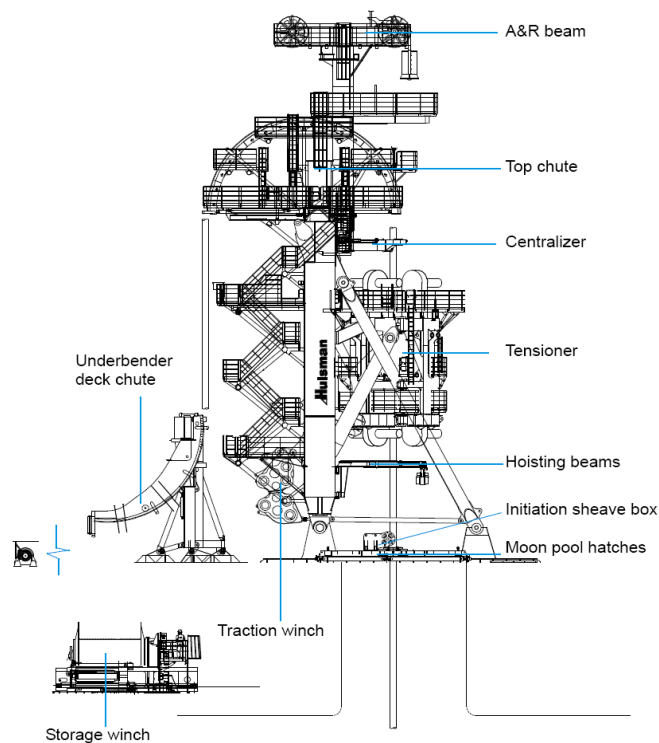
Centralizer
Retractable Centralizer roller box with two arms 5 m free passage diameter Side load capacity of 7.5 MT

Top Chute
6 m radius, 18 rollers 3 m horizontal adjustment for A&R operations

Abandonment & Recovery System	
Under Deck Storage Winch	15 MT under deck storage winch 3,000 m of 96 mm wire
Traction Winch	300 MT traction winch Two capstan drums with several winding
Nominal Line Pull	240 MT – 19 m/min
Reduced Line Pull	120 MT – 32 m/min
A&R deployment beam located on top of the tower with a socket catcher	

Abandonment & Recovery System	
Under Deck Storage Winch	15 MT under deck storage winch 3,000 m of 96 mm wire
Traction Winch	300 MT traction winch Two capstan drums with several winding
Nominal Line Pull	240 MT – 19 m/min
Reduced Line Pull	120 MT – 32 m/min
A&R deployment beam located on top of the tower with a socket catcher	

Underbender	
Deck Chute	6 m bending radius
Measurement	Back tension measurement, overload protection



9 ROV HANGAR

An ROV Hangar is fitted aft of the accommodation, capable of housing 2 x Work Class ROV. Hangar may be closed by means of roll-up door on either side in order to function as a protected work area for storage, maintenance and handling of ROV systems.

9.1 ROV LARS and Umbilical Winches

The ROV Hangar is equipped with two ROV LARS and Umbilical Winches.

Equipment	Model	Basic Specifications	Safe Working Load
ROV LARS Winch	Ulmatec Waverunner 13R	Capable of holding 3300 m x 39.5 (±0.5) mm cable in 10 wraps*	SWL 1 st Layer 19 MT SWL last layer 13 MT
LARS A Frame	Ulmatec Waverunner 13R	Ulmatec A Frame for ROV Handling	Max Outreach 5.5 m SWL 12 MT latched
Moonpool LARS	Ulmatec Waverunner 13R		Cursor Winch SWL 20 MT x 2

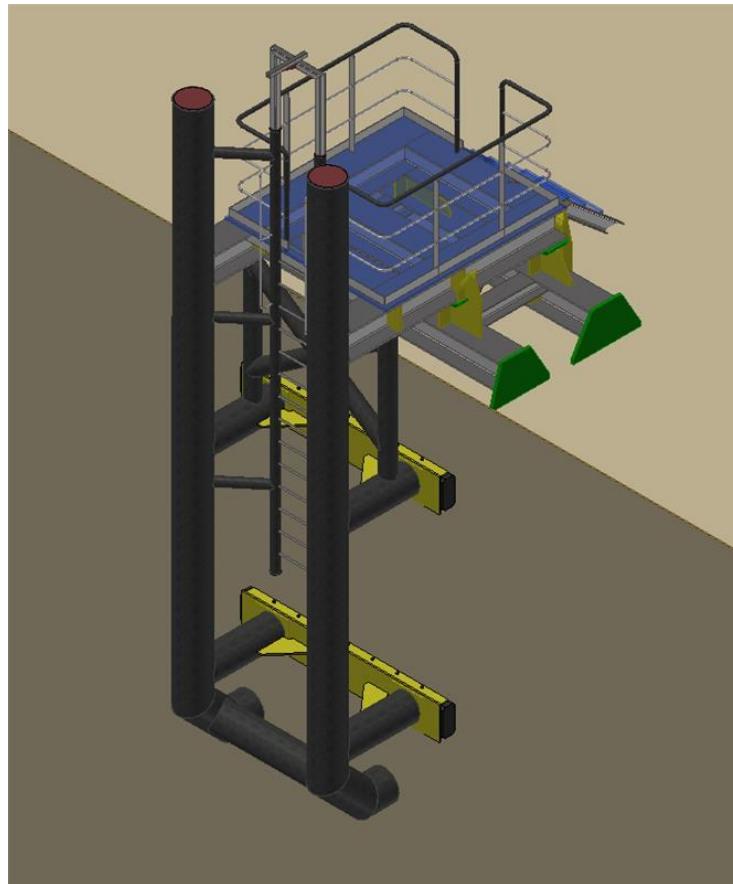
Both Lebus shells are fitted for a 39.5 (±0.5) mm wire.

Specifications are subject to change, and Charterers are advised to verify the configuration of equipment on site.

10 BOAT LANDING

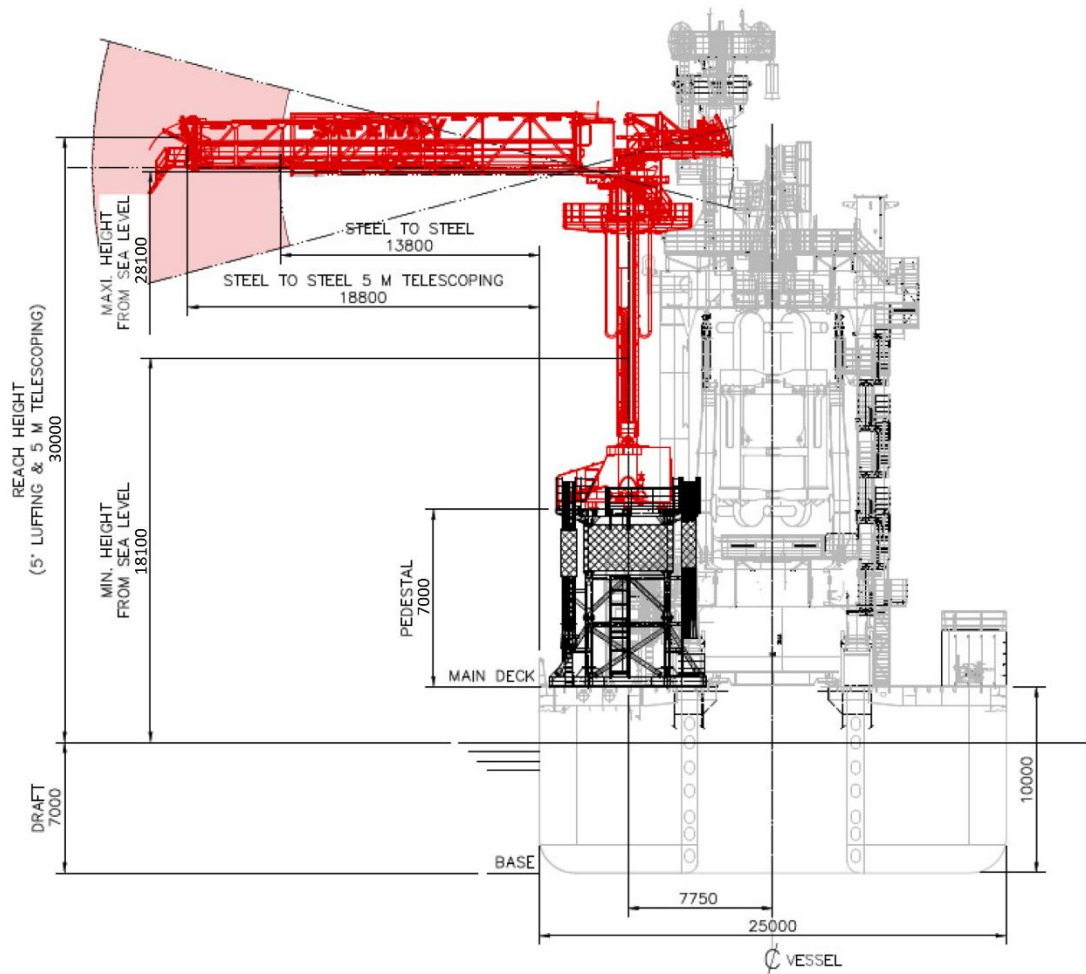
The vessel is fitted with a DNV approved removeable boat landing on port mid-ships. The typical climbing height from one of DFO's CTV to the deck is approximately 1 – 2 meters, and the boat landing is fitted with a fall arrestor with an attachment point tested for 300 kg. The boat landing is within reach of the auxiliary hook on the main crane for cargo transfers.

The boat landing is presently fitted.



11 WALK TO WORK GANGWAY

The Vessel is fitted with a Walk to Work gangway system from Safeway. The system operates in hover mode to wind turbine foundations, either using a set of foldable stairs or a flat platform. This allows for optimum selection of vessel heading. The gangway is mounted on the port side, aft of the VLS.



The gangway is currently mounted on a 7-meter pedestal that allows for safe connections at the higher landing heights in Taiwan. The landing height ranges are as follows at the maximum draft.

The draft is 7.00 meters which is the baseline used in the drawing above. When operating at typical operating drafts, the connection heights attainable are higher. The vessel can operate with as shallow a draft of approximately 6.8 meters, which allows connection height as follows:

Gangway condition	Height (meters above WL) 5.5-meter operating draft
Height at maximum upward angle	31.8
Height at top of mast, level gangway	28.3
Height at bottom of mast, level gangway	18.3
Height at maximum downward angle	14.8

Operational draft can be varied at site depending on weather conditions and loading of the vessel. Note that increasing the height of the gangway due to increasing the upward angle may result in some decrease in workability. The heights provided are to the tip of the gangway and as a reference should be approximately 1.5 meters above the deck to allow for sufficient clearance of any structures in hover mode.

The “steel on steel” distance from the side of the ship to the tip of the gangway (prior to the stairs) is approximately 18.8 meters when the gangway telescope is positioned in the middle position.

Transfer of personnel is accomplished utilizing a stair tower onto the gangway. The unit also has an up to 1,000 kg 3D motion compensated hoist for lifting cargo.

Further information is available separately on the walk to work system, including:

1. Installation drawings to determine jacket compatibility
2. Workability analysis specific to the vessel and Taiwan weather conditions
3. Technical specifications



Photographs of the gangway arrangement on another vessel in fleet

12 SURVEY SERVICES & EQUIPMENT

The Vessel is presently mobilised with surface and subsea survey positioning spread supplied by Sulmara Subsea. The following details the specifics for the mobilised Survey Spread, including instrumentation, sensors and tooling available onboard as base-case, which can then be augmented with additional sensors on a project-by-project basis. Note that some of the Vessel sensors are shared and interfaced to the surface and subsea positioning spread. Unless otherwise stated, all quotations exclude survey services.

12.1 Vessel Positioning and Subsea Positioning

Full redundancy on all survey equipment is included either through the presence of an identical spare system or through alternative equipment (two complete systems of different types). Note that some of the Vessel sensors are shared and interfaced to the Surface and Subsea Positioning Spread.

Description	No.	Manufacturer / Model	Onboard
Positioning Systems	Primary and Secondary	3 x Veripos Receivers & Signal PCs and Peripherals Remote Navigation Screens	Yes
Heading Sensor	1+1 Spare	Meridian Surveyor	Yes
Motion Sensor	1+1 Spare	Kongsberg MRU	Yes
USBL	2	Vessel Kongsberg HiPAP 501	Yes
Sound Velocity Sensor	1+1 Spare	Valeport Midas SVX or similar	Yes
USBL Positioning	10	Kongsberg cNODE MiniS 34-180V Omni Transponder or similar	Yes

12.1.1 Surface Positioning

Surface Positioning is determined using 3 x Veripos GNSS Systems providing Precise Point Positioning (PPP) based on GPS and GLONASS positioning.

12.1.2 Subsea Positioning

Subsea Positioning is provided by the permanently installed HiPAP 501 USBL systems. Kongsberg C-node beacons are used for subsea positioning, tracking and navigation of static and dynamic assets.

12.1.3 Additional Survey Equipment

The Surface and Subsea Survey Positioning Spread can be augmented with additional equipment as required. For example, the list below itemises the equipment that is currently mobilised to support current projects.

Description	No.	Manufacturer / Model	Onboard for Current Project
Heading & Motion Sensor	1+1 Spare	iXblue ROVINS incl. Teledyne 1200 RDI Workhorse Navigator DVL or similar	WC ROV
MUX	1+1 Spare	MacArtney Nexus or similar	WC ROV
Dual Head Multibeam Echosounders	2+1 Spare	R2 Sonic 2024 or similar	WC ROV
Bathy system	1+1 Spare	Tritech SK70/40 Seaking Bathy & Barometer or similar	WC ROV
Sound Velocity Sensor	1+1 Spare	Valeport Mini SVS or similar	WC ROV
Pipetracker	1+1 Spare	TSS 440	WC ROV
Imaging Subsea Sonar	1+1 Spare	Teledyne Blueview M900-130-D Sonar or similar	WC ROV
Video Recording Suite	1+1 Spare	Visualsoft or similar	WC ROV and TROV
Direct Reading Current Meter	1+1 Spare	Valeport 108 or similar	Vessel
Pressure Sensor	1+1 Spare	Mini IPS	MFE

12.1.4 Survey Software

The following software is installed to support current projects.

Description	Purpose
EIVA NaviPac v4.5	Online navigation and remote helmsman display
EIVA NaviScan v9.3.2	Online acquisition and logging
Microsoft Office 365	Online Log
VNC	Remote control of Remote HD PCs
SyncBackFree	Data backup
Valeport DataLog Express	SV Profile acquisition
Sound Velocity Profile Manager v1.7h	SV Profile processing
EIVA NaviEdit v8.5.1	Logged data database management
EIVA NaviModel v4.4.2	MBES and pipeline processor
Microsoft Office 365	Reporting
BricsCAD v19	Background drawings and shapefiles
Tide Processor v1.0	Smoothing DGNSS tides
SWC Grapher v1.0	Seawater check QC
SBC Grapher v1.0	Static bathy check QC