



SEAONICS™

- your first choice in lift and handling technology

T3.2.4 Moon-pool use for deployment and recovery of research tools



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Specialized in handling technology to support sustainable exploration development and management of ocean resources



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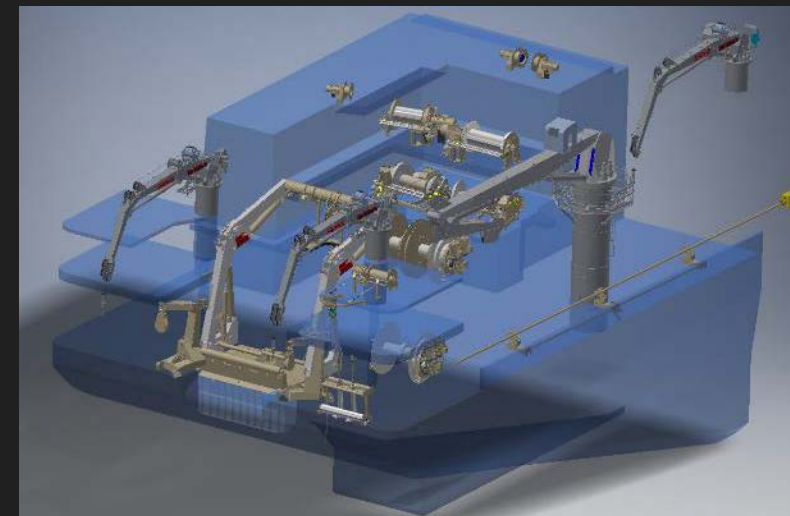
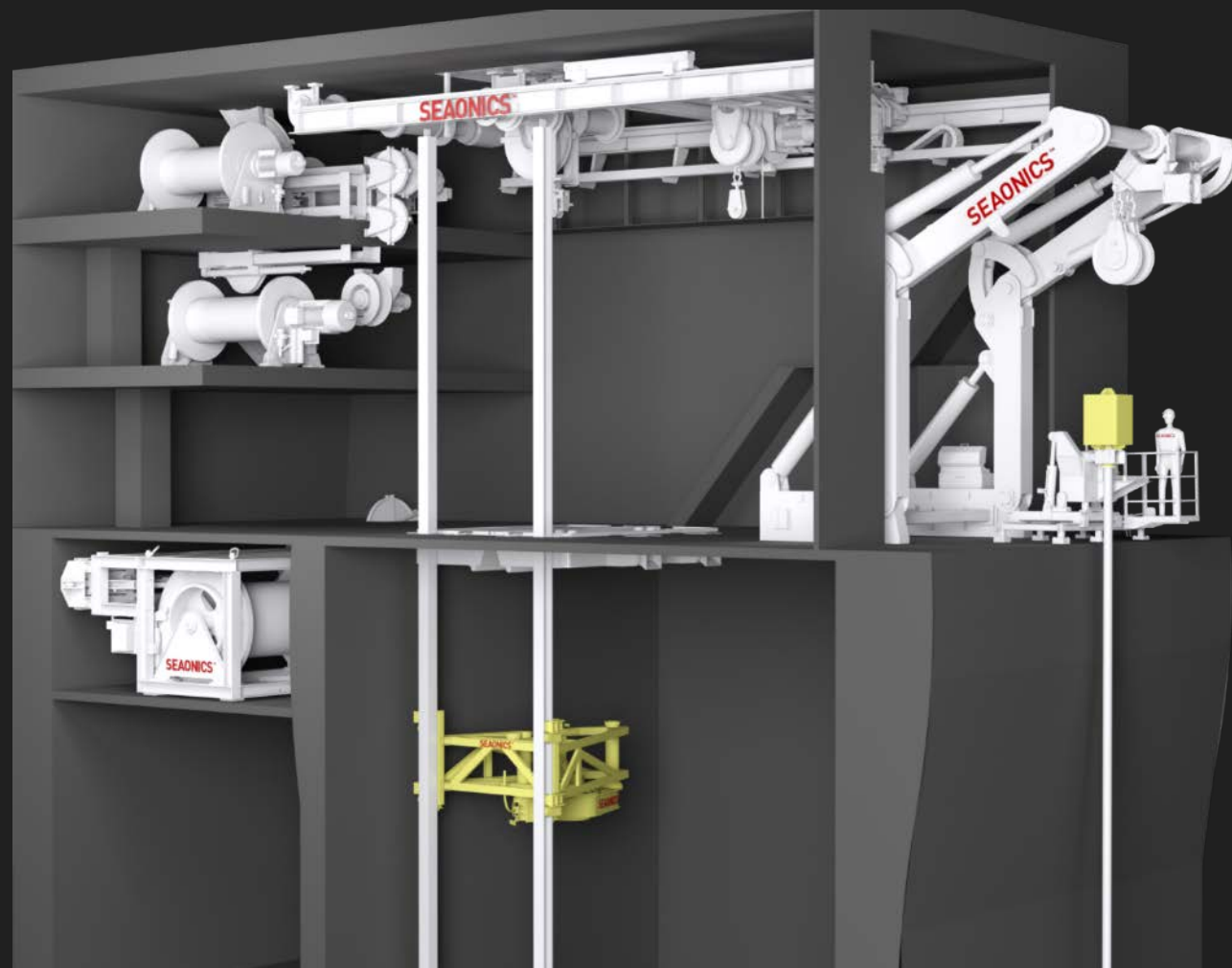


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Research vessels



REV Ocean

Research Expedition Vessel



Electric winches

- 2 x 30T Trawl Winches, 3000m fibre rope
- 2 x 20T Splitt Net Drums
- 1 x 5T Hose Drum
- 1 x 2T CTD Winch
- 1 x 3T Net Sounder Winch
- 1 x 12T Multipurpose winch, 8000m 16.5mm umbilical
- 1 x 20T Traction Winch system, 6000m fibre rope
- 1 x 18T ROV Winch, 5500m Umbilical

Deck

- 15T@25 Deck crane
- 20T@15m , 6000m fibre rope
- 30T@20m in 2 fall
- 2T@12m Super Compact Crane

Hangar

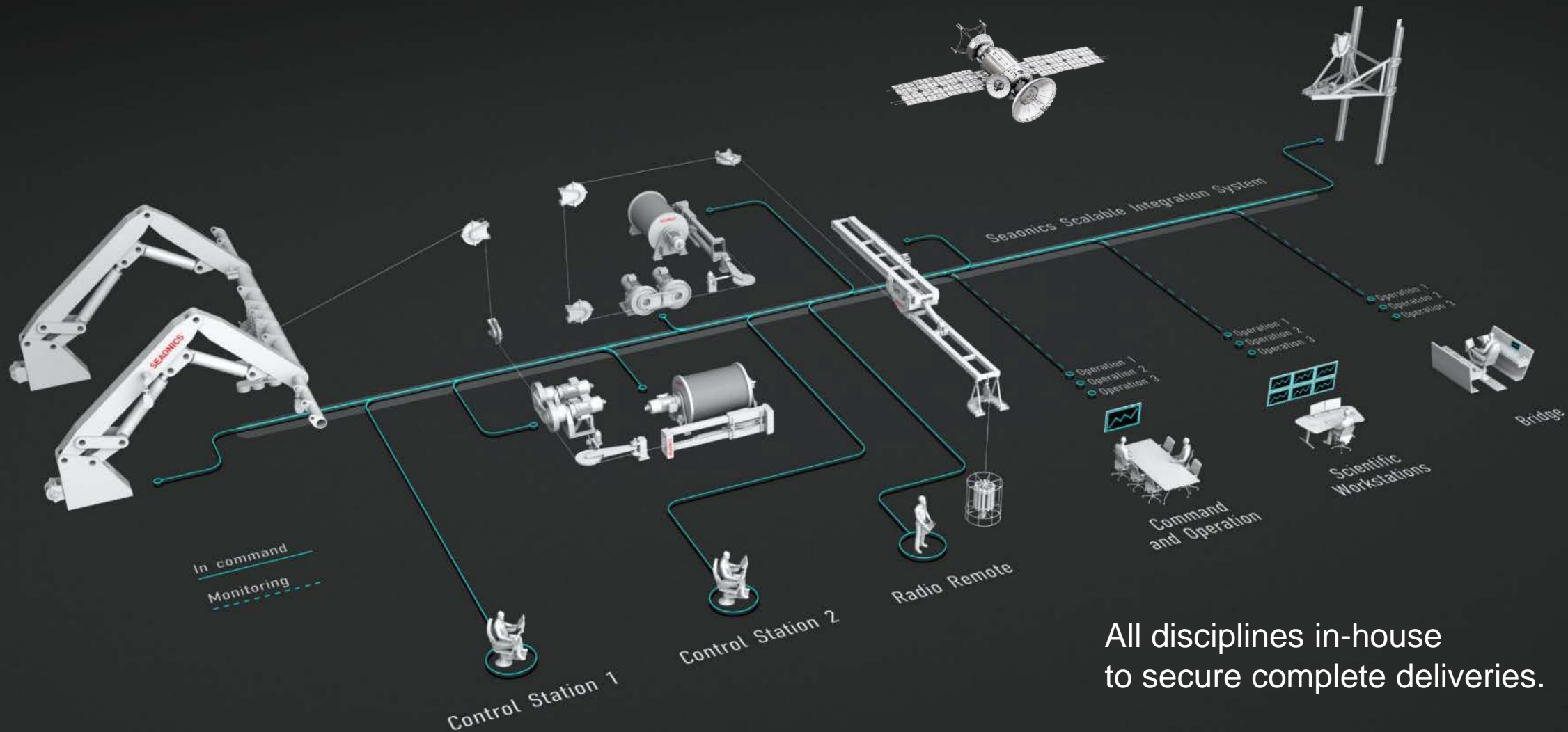
- Coring system
- 5 x 10T Overhead cranes for over side operations
- Moonpool (7.7x5m)
- ROV handling system
- AUV handling system
- SUBmarine handling system
- CTD handling system
- Bottom and top moonpool hatch

Trawl handling system

- Skidded stern paltform
- Skidded Trawl door handling system
- Spooling device for Net drums

Drop keels

Seaonics technology



All disciplines in-house
to secure complete deliveries.



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Eurofleets WP3.2, T3.2.4 Moon-pool use for deployment and recovery of research tools, Work to date

Deliverable D3.16 Functional system specification has been completed and report issued.

This report covers the scope of supply for a dual multipurpose launch and recovery system for oceanographic research tools and equipment such as (but not limited to) ROV's, grabs, drop cameras and observatory components to seabed through moonpool and/or over the side.

The Dual Mode Handling System (DMHS) shall be designed for operation in a tough and corrosive offshore environment. Due to the remote areas the equipment is to be operated in, it shall be of rugged design and have remote handling system diagnosis and support.

Special attention to been given to allow for launch and recovery of a wide variety of equipment while keeping the setup/rigging time to a minimum.

The DMHS shall consist of all required equipment to facilitate launch over side and through moonpool.



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Eurofleets WP3.2, T3.2.4 Moon-pool use for deployment and recovery of research tools, Work to date

The umbilical winch to be equipped with active heave compensation and have all required functionality for safe and efficient lifting operations. It shall be possible to route the umbilical winch to both over side and moonpool systems.

The system shall be designed to accept other winches (oceanographic) than the dedicated umbilical winch

Operation of the system can either be performed from the operator cabinet located in the operation room or from a remote control on deck. Emergency operations are performed from emergency panels placed on the various components.

Eurofleets work ahead, WP3.2

In preparation for the next deliverables D3.18, Dynamic simulation model and D3.22 Concept design package for moon-pool and overside equipment, several activities has started and is currently ongoing:

- Information gathering, acquire relevant information about typical research tools and operations
- Acquire relevant 3D models of research tools for visualization of relevant launch and retrieval operations
- Concept design. Design and evaluation of different concept to achieve a flexible and robust system
- HAZOP/HACID/FMECA to be performed to validate the design
- Visualization of solution



Q&A

- Bonus material
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Since 2011 have Seaonics delivered approx. 30 ROV LARS (moonpool and overside)



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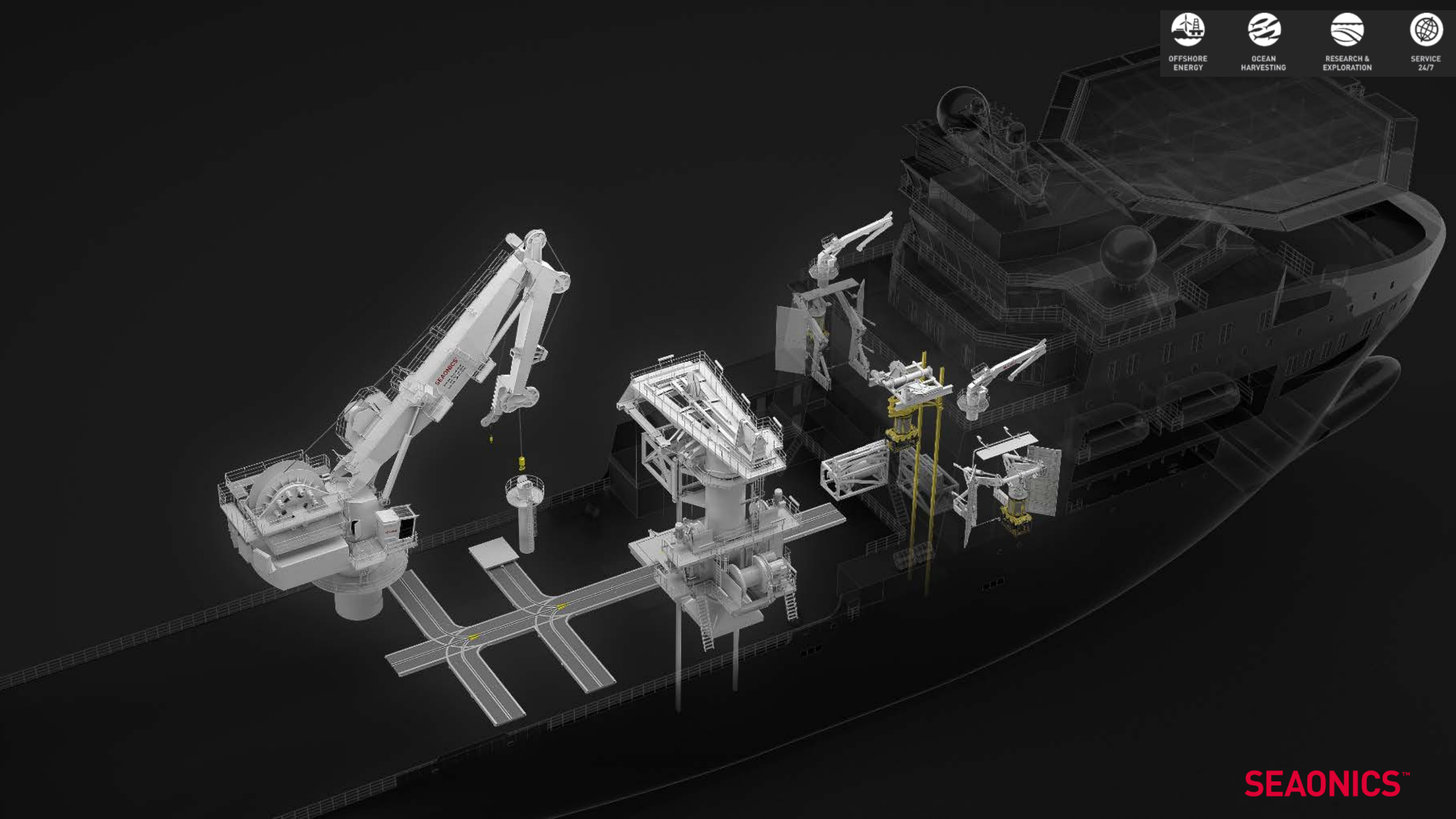
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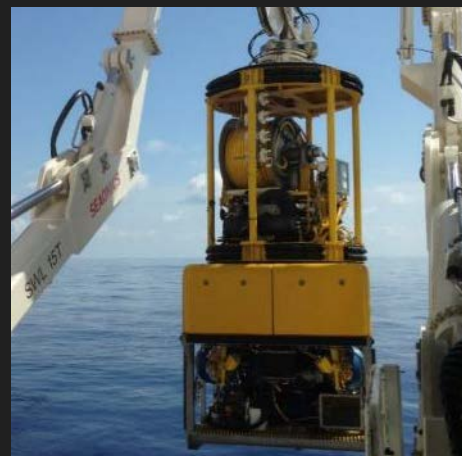


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Seaonics Offshore Energy



Cranes



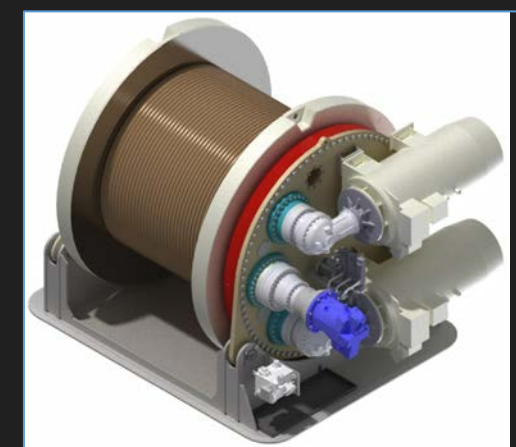
LARS



Compact LARS



Winches





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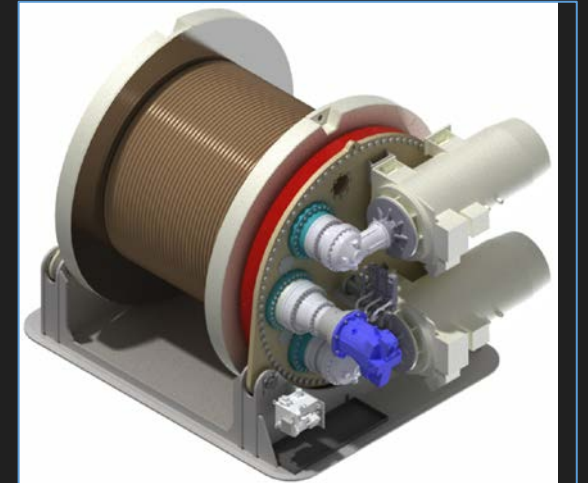


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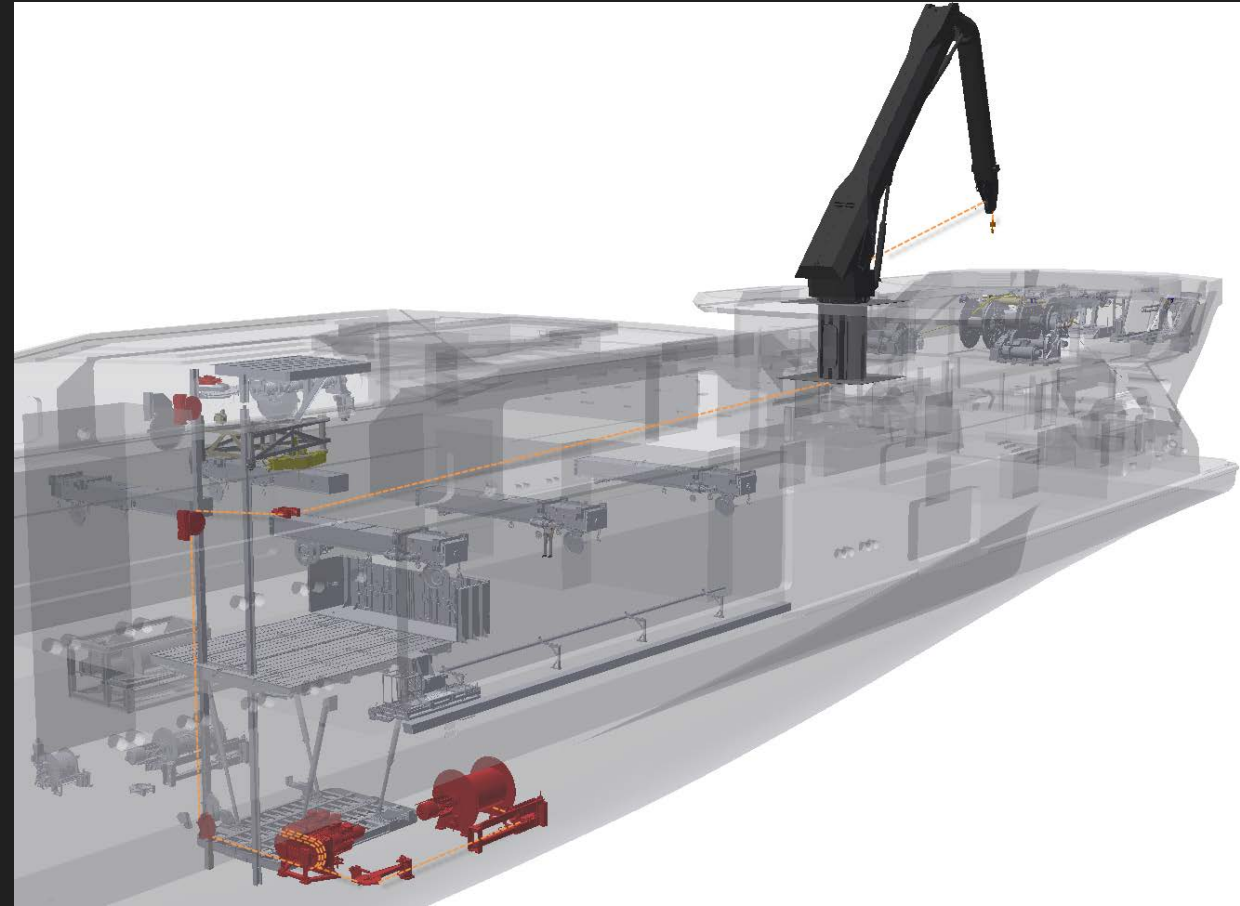


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Offshore cranes



Fiber rope Systems



LARS - Launch & Recovery Systems

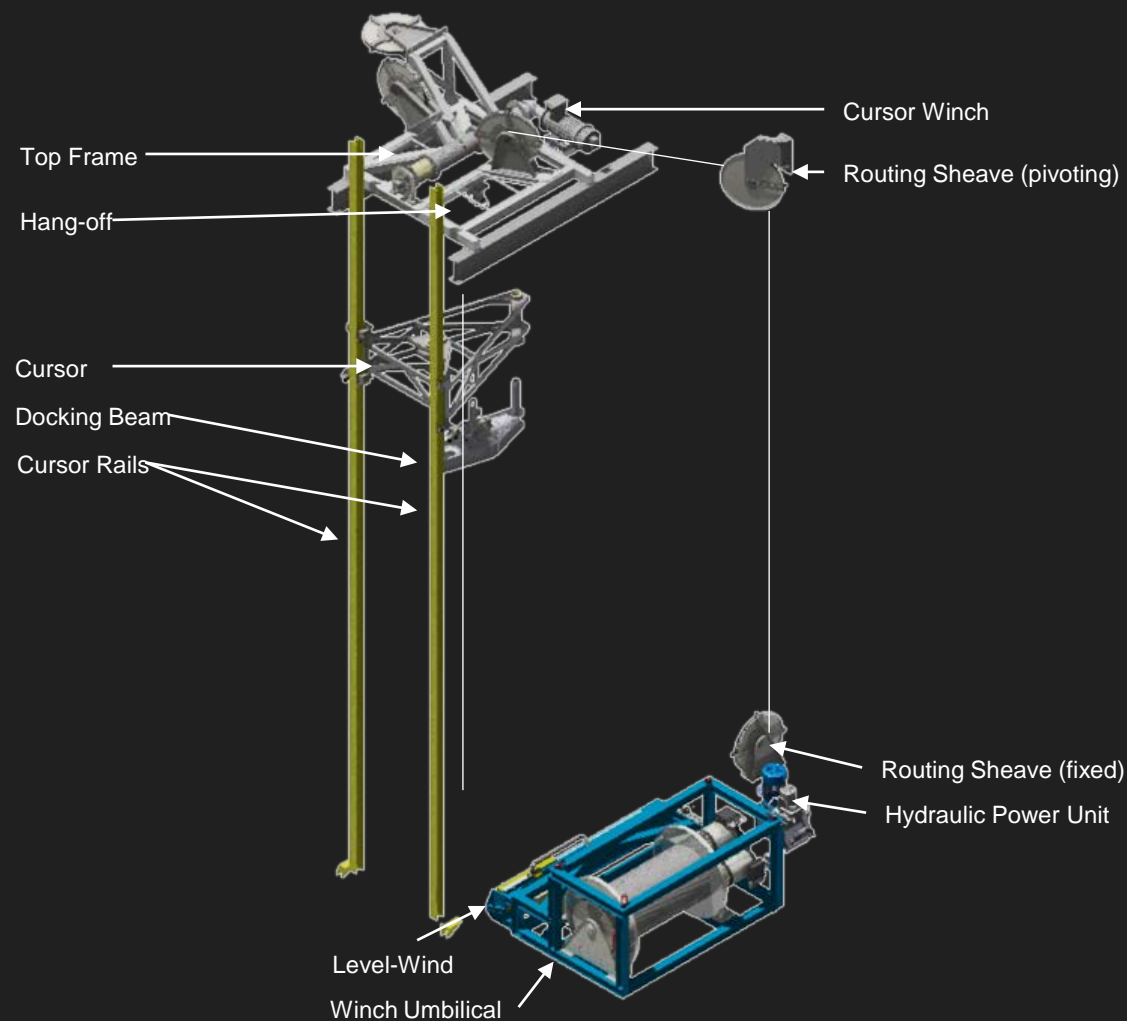
- Simple and robust design
- Long reach inward and outward
- Low height
- Main cylinders in inn position while parked
- Synchronized movement with ROV Winch
- Local control tableau
- Capacity:
 - SWL: 22T ROV in operation
 - SWL: 15T ROV Latched
 - DAF: 2.2/1.8 (Splash zone/ operational)
 - Outreach: 6.7m
 - Inward reach: 4.5m
 - Speed: 120s (from inner to outer pos)



A-Frame overside LARS



Moonpool LARS





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Trencher LARS

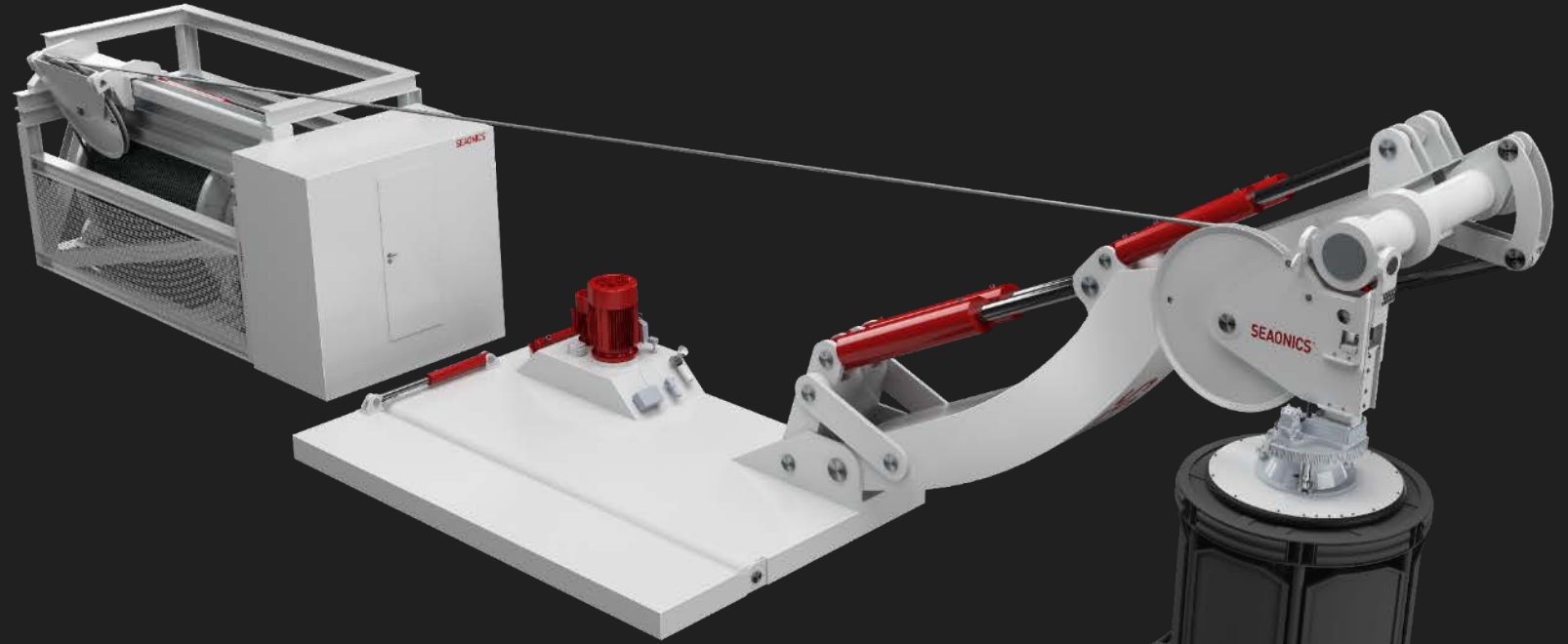
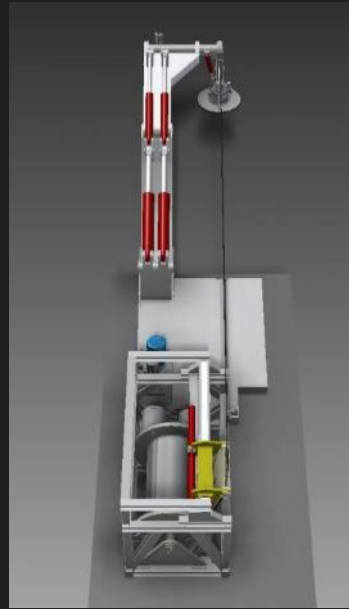


Umbilical Winch:

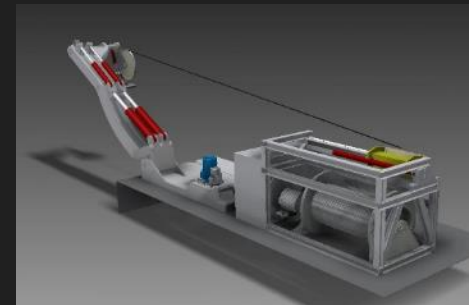
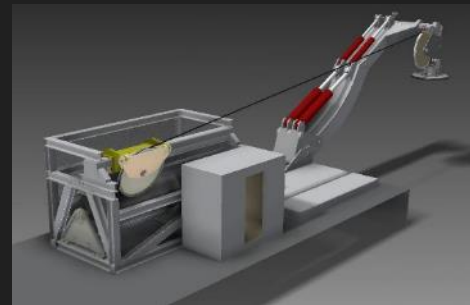
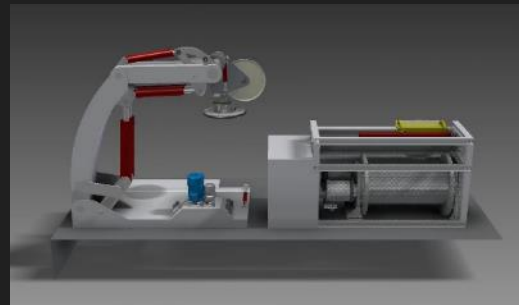
- SWL 13/20T (Outer /inner layer on winch)
- Dynamic load 36T (Peak)
- Capacity 3000m , 38mm wire



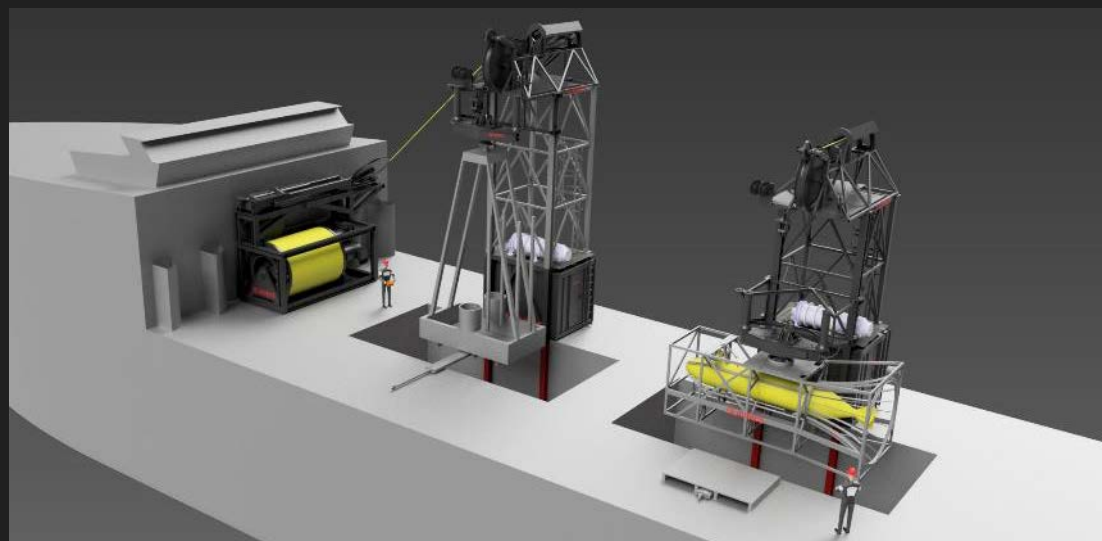
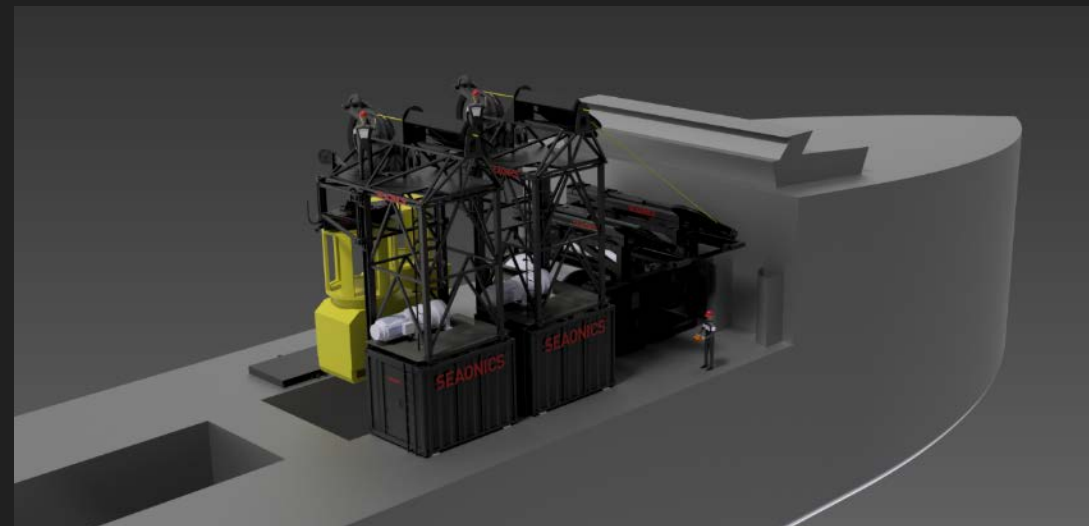
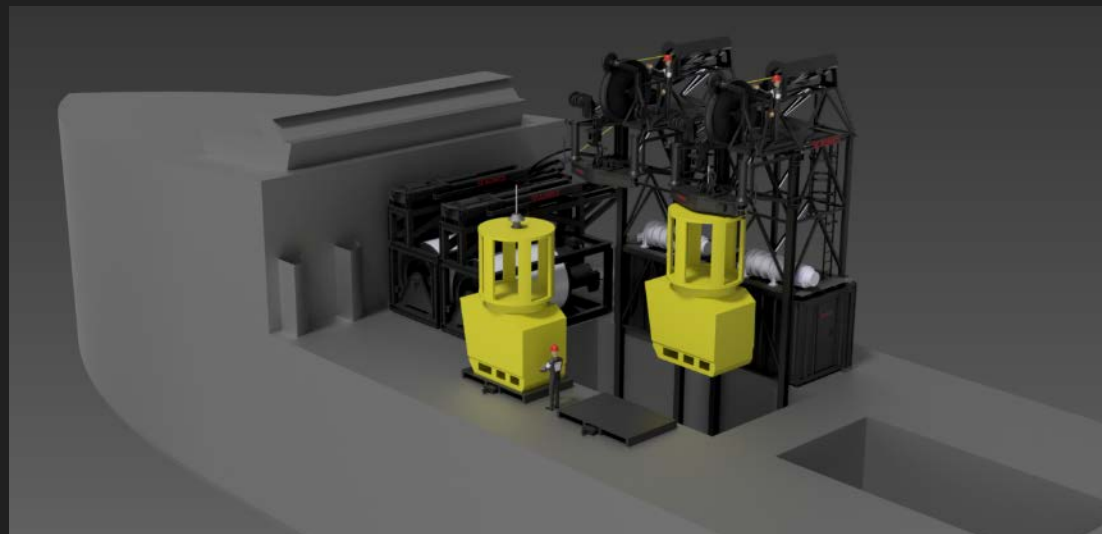
Compact mobile overside LARS



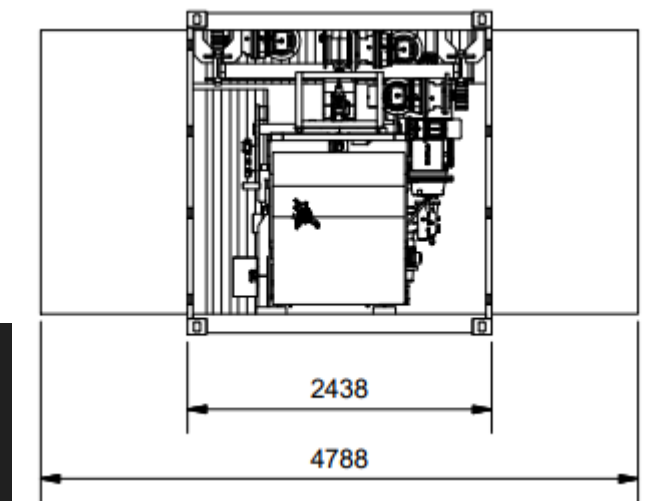
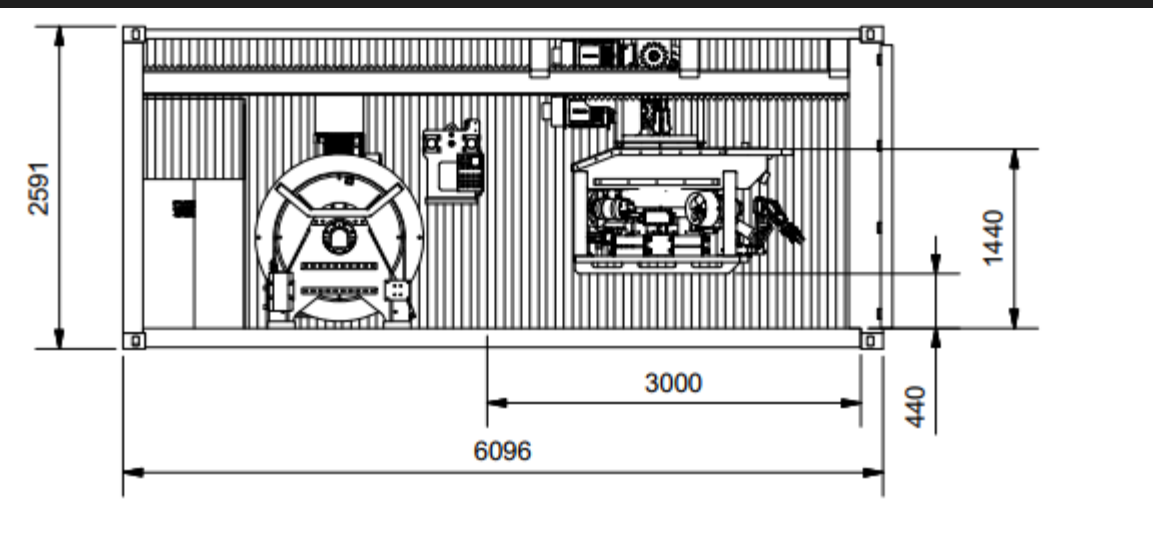
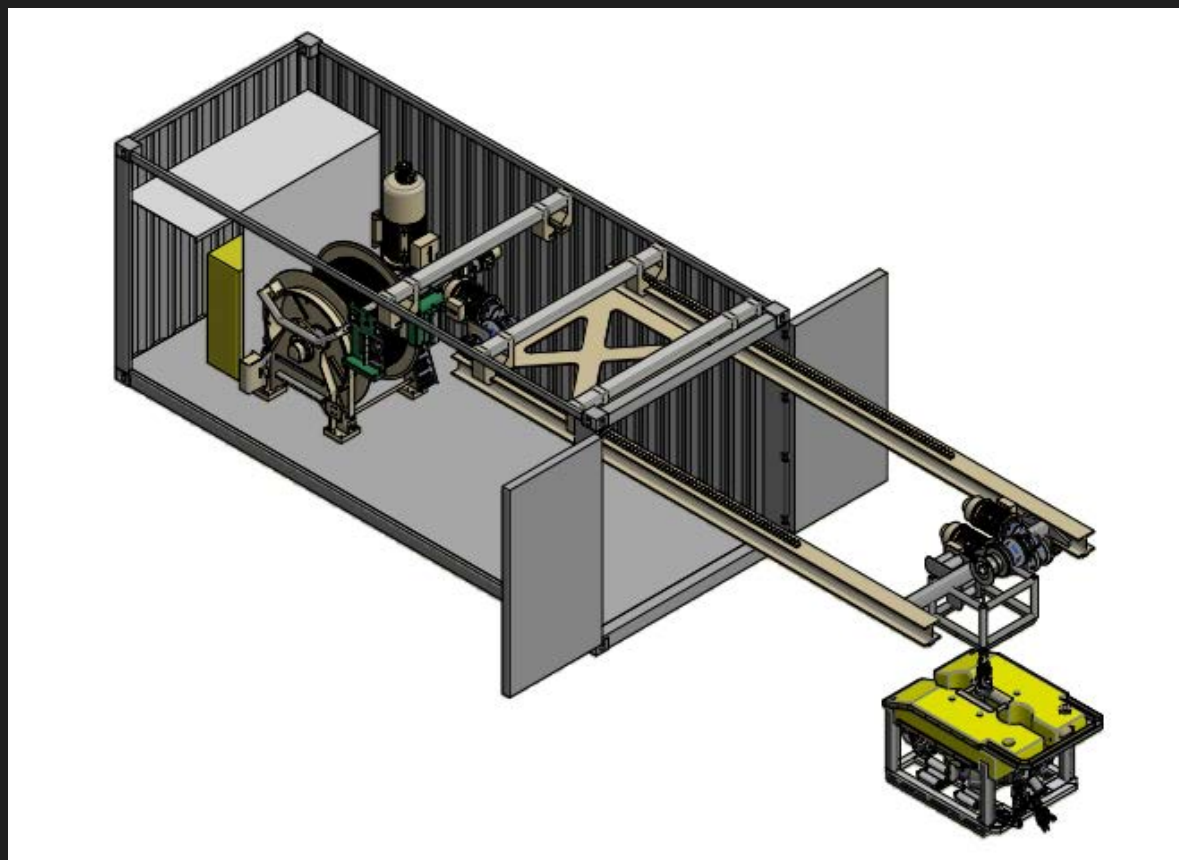
Outreach: 6.3 m



LARS – Design studies for USV's



Containerized LARS for Mini- / OBS ROV's



Over Head LARS for EROV

- Innovative - Simple and proven design
- Efficient - Fully Electric with PM motors on winch
- High performance - Dynamic operation
- Spalsh Zone Mode



FAT - Similar System



A-Frames

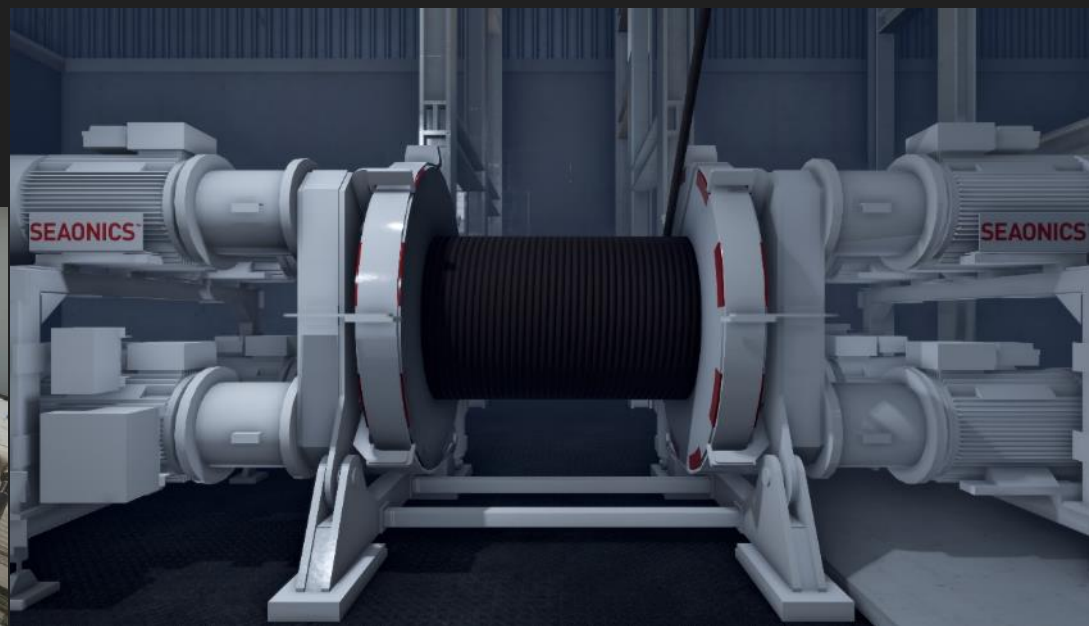


Drilling/Rig



X-mas tree handling system

- Complete system delivery including Control system, VFD's, electrical cabinets, water cooling and brake resistor
- Full electric frequency controlled containerized drive system
- Fully redundant and segregated driveline & control system
- 80t SWL pull - 600 m wire
- EX-rated



Offshore Wind



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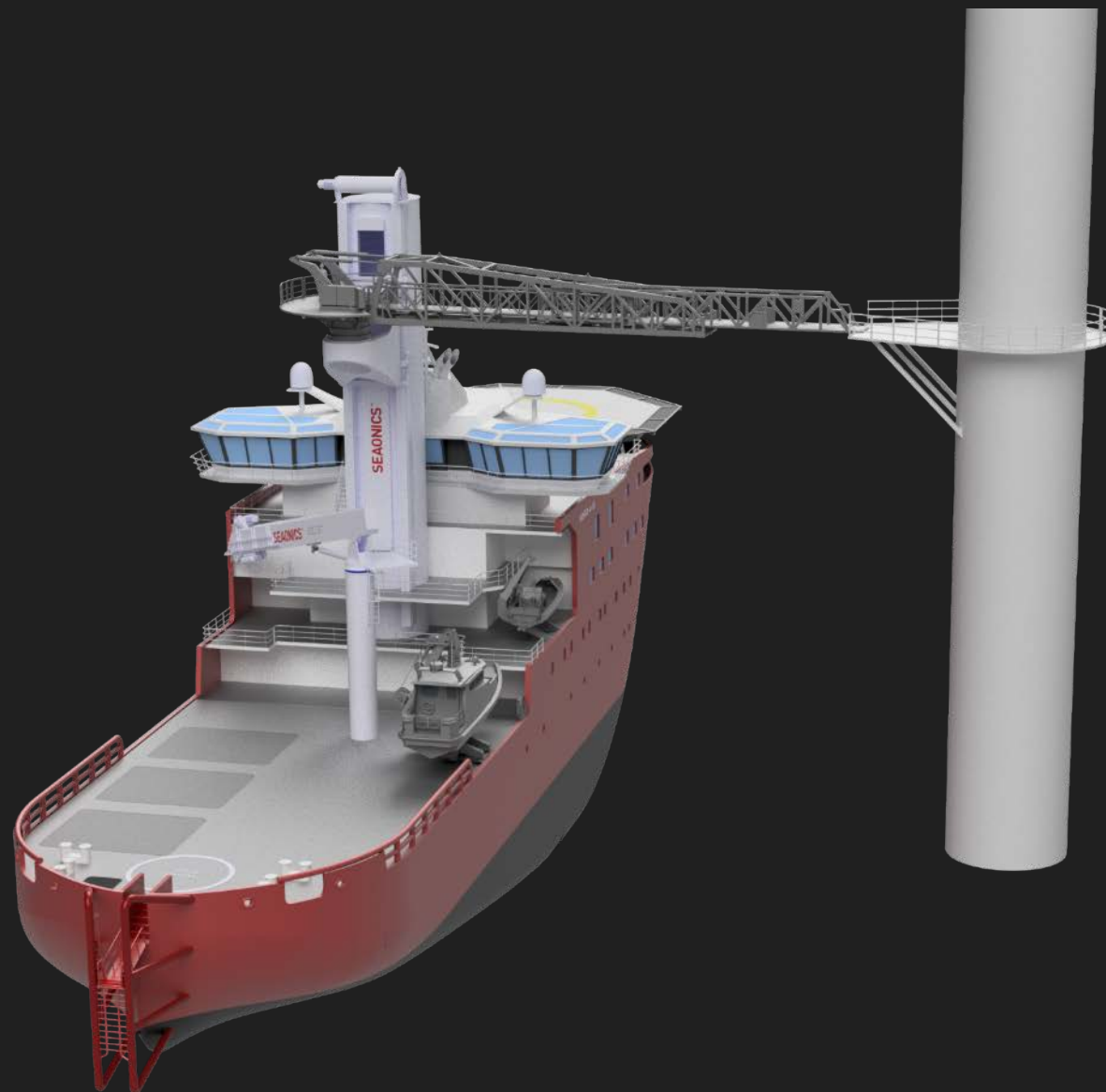
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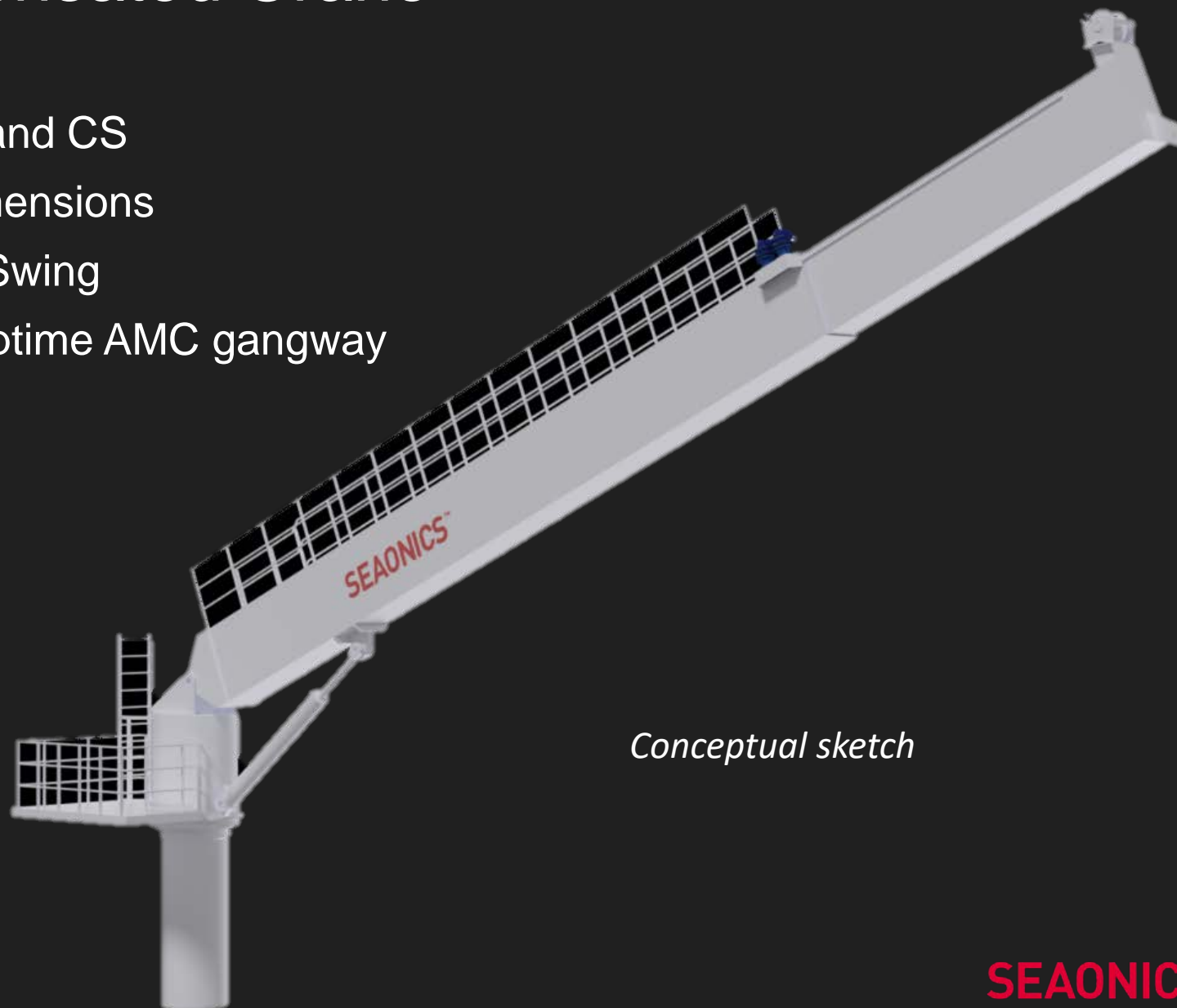
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Telescopic 3D Compensated Crane

- Complete delivery with electro and CS
- Crane tip compensated in 3 dimensions
- Electric Winch, Telescope and Swing
- Ready to go intergration with Uptime AMC gangway systems
- Sharing of HPU, MRU and HMI



Conceptual sketch

Offshore Wind

3D crane for Uptime Gangway

- Complete delivery with electro and CS
- Wire hook compensated in 3 dimensions with exit sheave on tip
- Fully intergrated with Uptime Gangway CS
- SWL 1t, Hs 2,5, Full 3D compensation
- SWL 3t, Hs 1,5, Active Heave Compensation

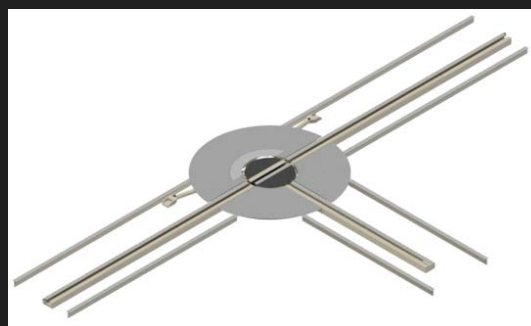
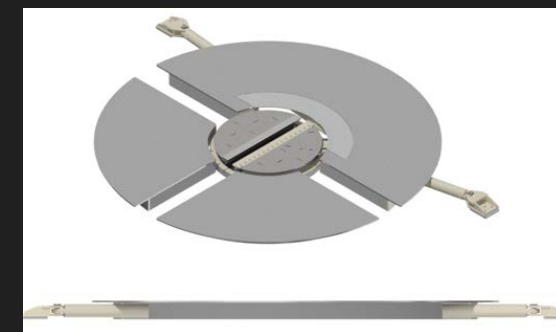
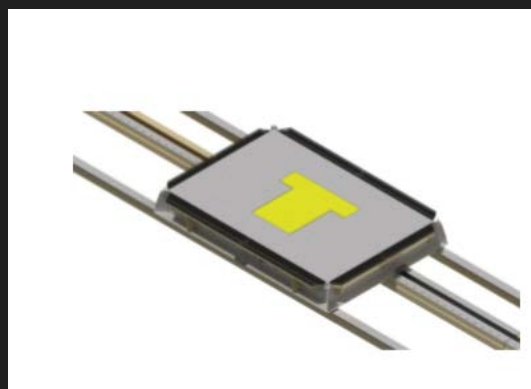


Control System for Uptime Gangways

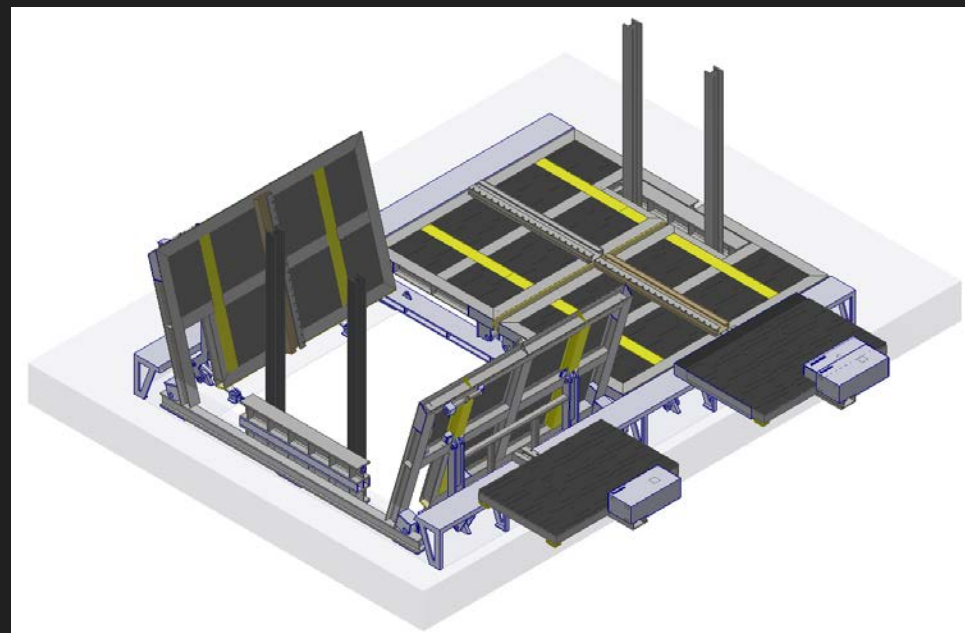
- >30 systems delivered and in operation
- Whole control system with electro package, instrumentation, HMI and software
- Integrated Gangway Monitoring System
- Redundant CS
- Control System with Autonomous Landing

Special handling Equipment

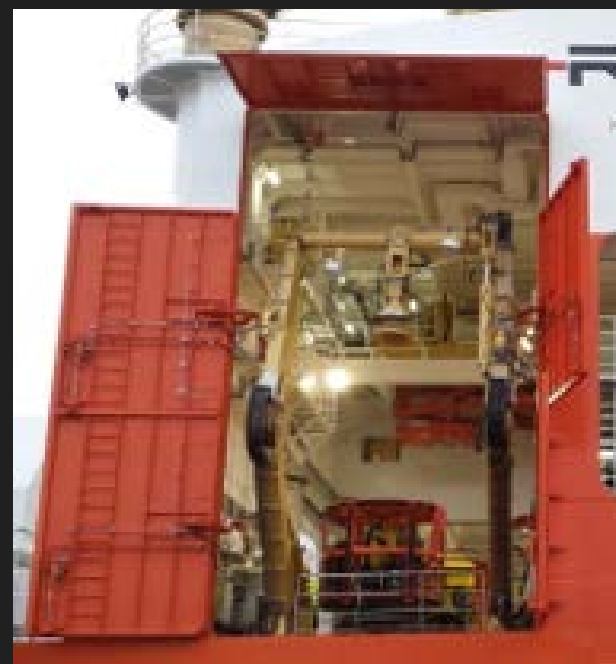
Skidding system



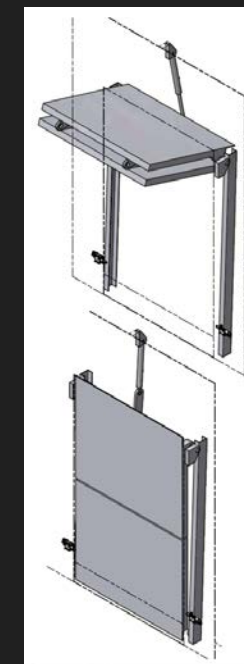
Hatches & Doors



Moonpool deck and bottom hatches



ROV Hangar doors

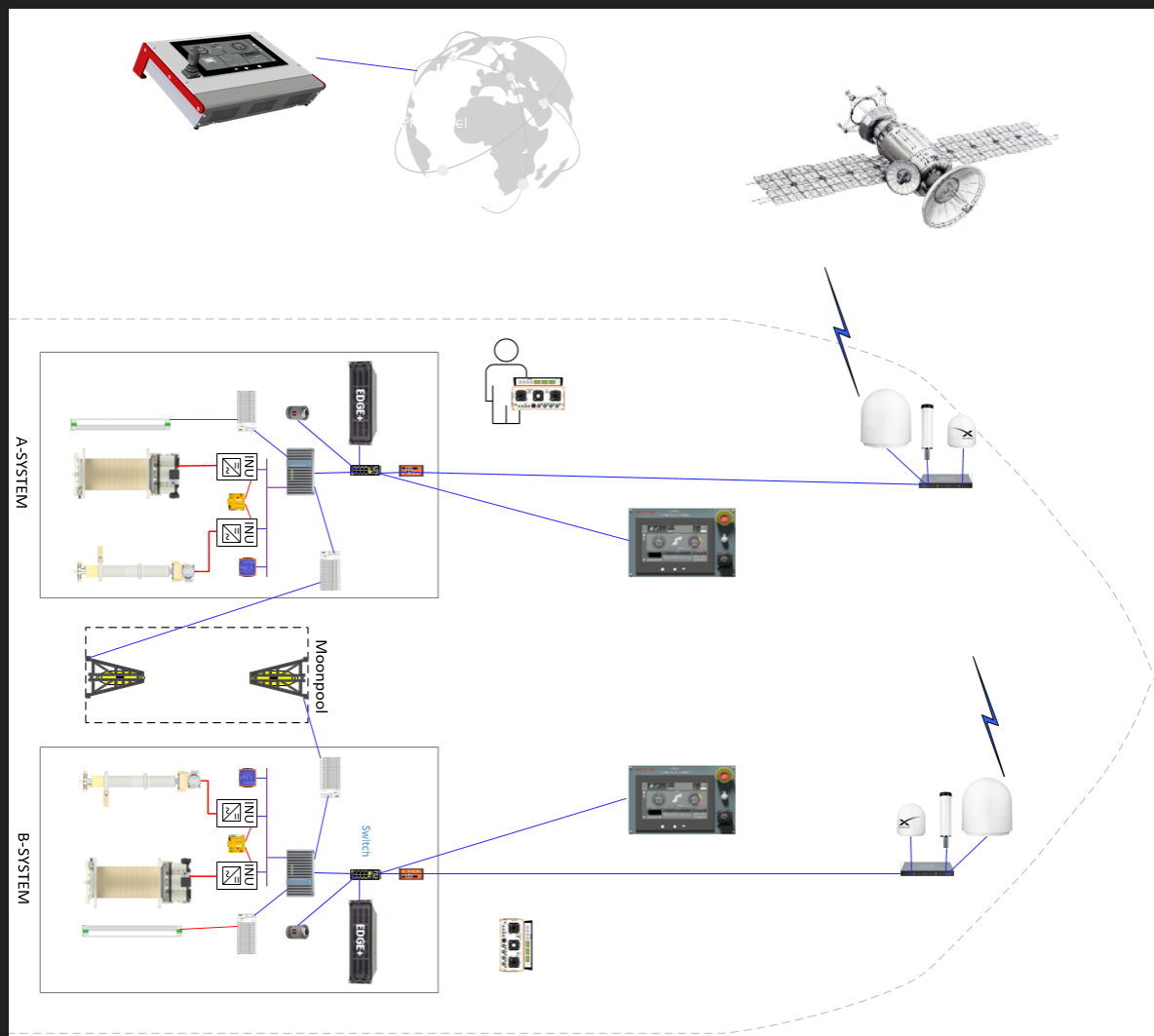


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Control system, Remote operations and
Simulators

Remote operations of Seaonics Equipment





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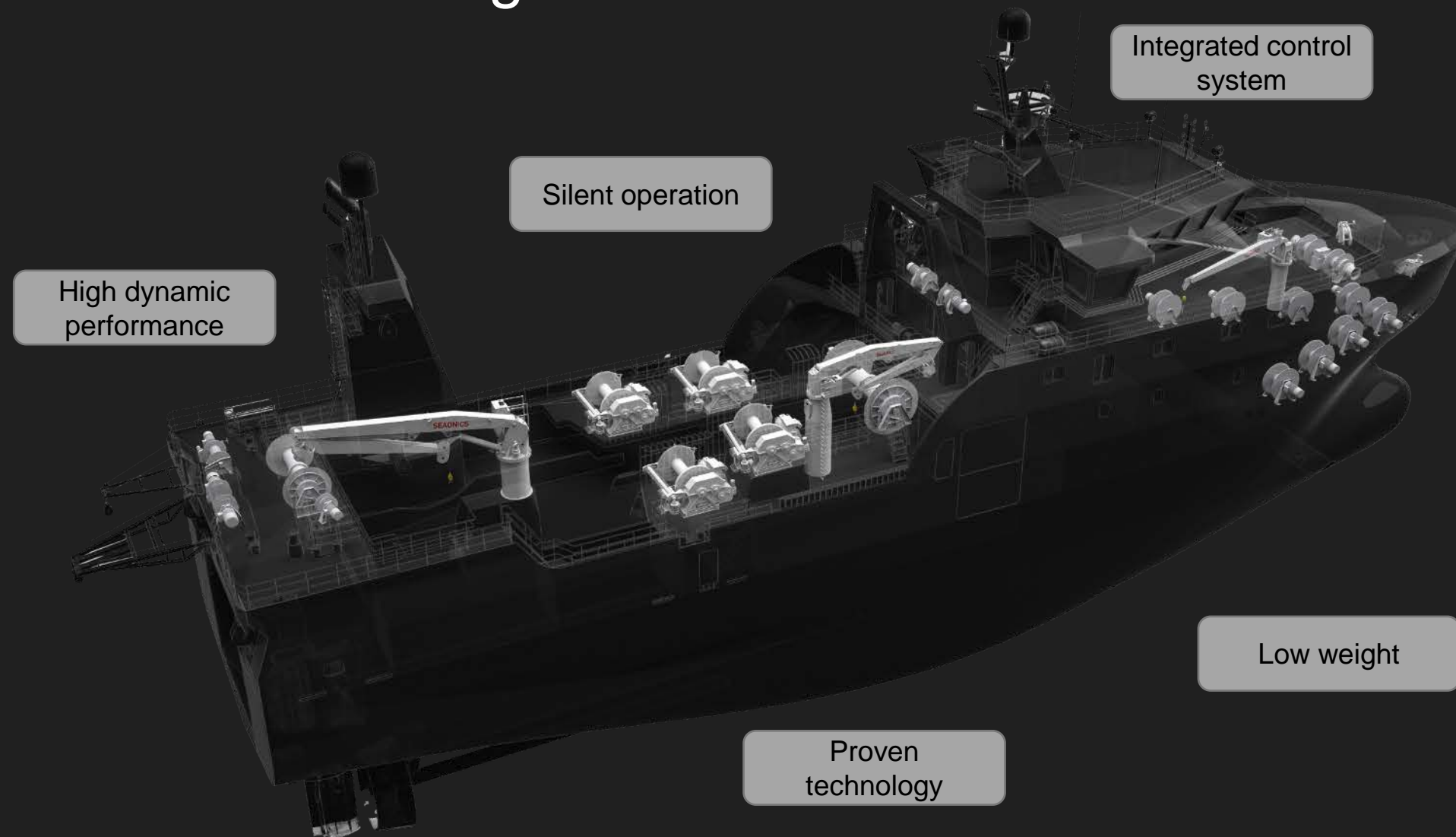
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Since 2011 have Seaonics delivered Trawl winch systems to approx. 30 trawlers, making us one of the market leaders within this segment

Ocean Harvesting



Ocean Harvesting

Seaonics equipment:

- Trawlwinches
- Auxiliary winches
- Net Drums
- Net Sounder Winches
- Cargo Winches
- Ice Trawl Gallows
- Cranes





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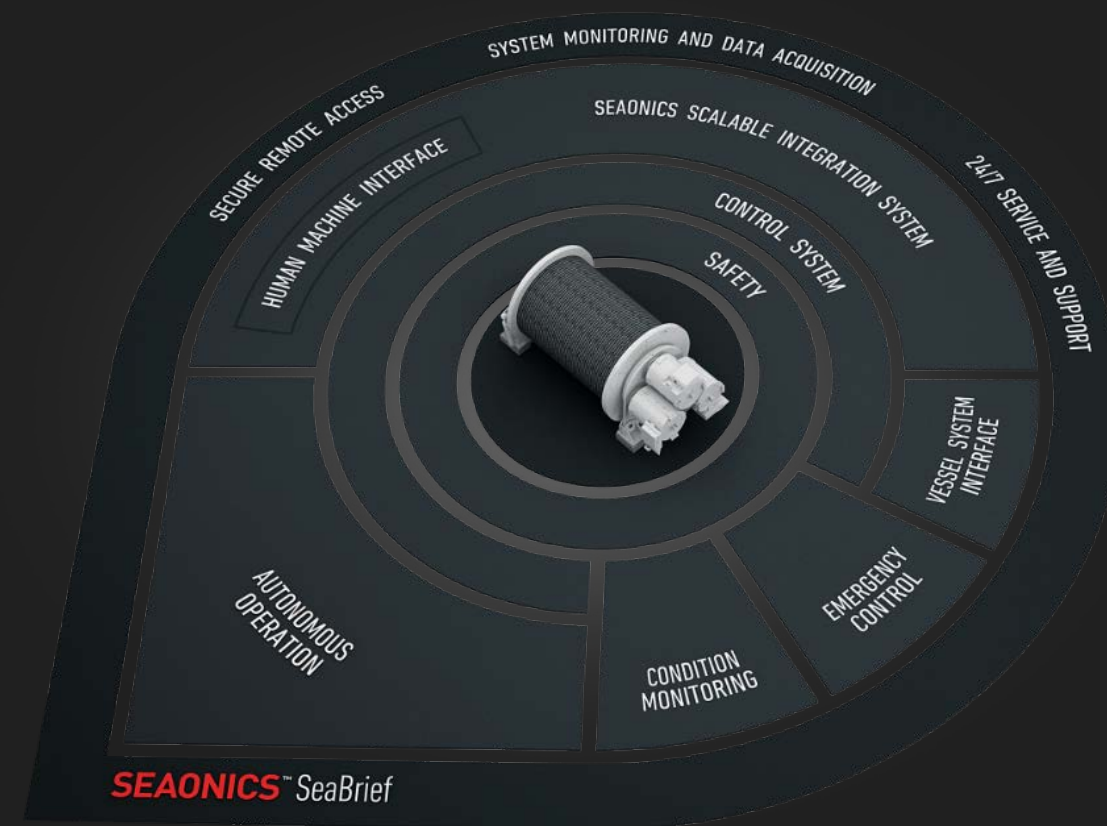
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SeaBrief

Digital platform for sharing data and services between locations

- Enabling Connectivity solution for remote operations
- Data Connectivity through secure embedded VPN service
- Data Acquisition and onboard machine/system monitoring
- Secure access for remote support and service
- Secure remote machine/system update
- Utilizes onboard vessel internet connection



Reference Customers

