



Schiff & Hafen Ship & Offshore



the cylinder pressure people

www.imes.de

Two-stroke combustion sensor TCS-01CA[®]-PMI

- > for application on electronically controlled 2-stroke diesel engines
- > suitable as replacement sensor on PMI-auto-tuning-systems

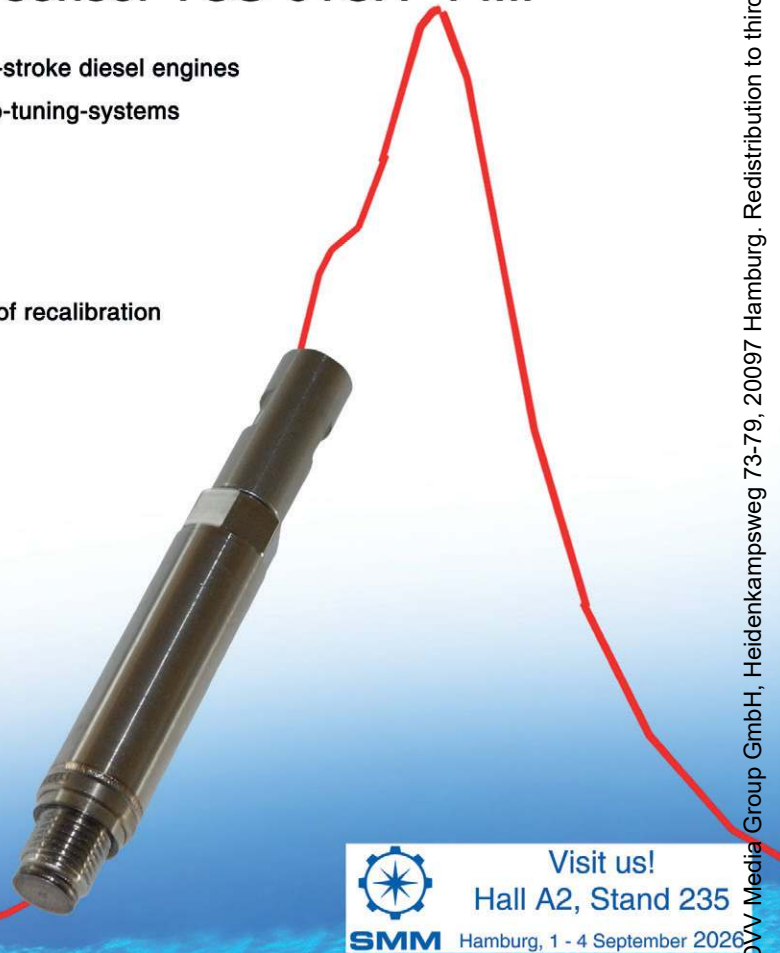
Characteristics

- continuous measurements on two-stroke diesel engines
- very good thermodynamic performance
- outstanding longevity and constant sensitivity without the need of recalibration



Marine Application

Bureau Veritas Class NK DNV Korean Register
Lloyd's Register RINA



SMM Hamburg, 1 - 4 September 2026

Visit us!
Hall A2, Stand 235

Forever forward. Forever decarbonization. Forever excellence.

Retrofit solutions are among the most effective ways to achieve net-zero targets. Our experts convert your conventional fuel engines into dual fuel systems that can also run on green e-fuels. By upgrading existing engines and turbomachinery, we balance ecology and economy, and give your business a long, clean future.

We move big things to zero with
future-proof retrofit solutions.

Everllence



Visit us in
Hall A3
Stand A3.301

everllence.com



TECHNOLOGY TRENDS

MAKING INNOVATION WORK

Explore how the latest advancements in technology are reshaping how assets are designed, built and operated.

Download your copy today at www.eagle.org/techtrends26.





Shipbuilding & Equipment

Future Fuels & Energy Solutions

- 12 The distributed ship of the future
- 15 Hybrid-electric propulsion system targets various sectors
- 15 Partners to assess whether WAPS benefit MR tankers

Propulsion & Manoeuvring Technology

- 16 Interaction is becoming a decisive factor

Offshore & Marine Technology

Conference Programme

- 71 Securing offshore technologies for future oceans

Offshore Wind Energy

- 72 Interview: "We wanted to enter the market with a fresh and unbiased perspective"

Renewable Energy

- 75 Prototype Certificate for wave energy converter

Ship Operation

Industry News

- 77 Netherlands plans zero-emission emergency response vessels

Safety & Security

- 78 The blind spot in maritime emissions reduction

Digitalisation

- 80 How the maritime industry is making robotic technology part of the furniture



In Focus: SMM 2026

The world's leading trade fair and conference event for the maritime industry, SMM 2026 will bring together about 49,000 participants from over 120 countries and serve as a unique platform for business, the exchange of ideas and cooperation.

On the exhibition floor, more than 2,200 companies will present state-of-the-art technologies and services.

The SMM feature with exhibitor previews starts on page 19

Schiff&Hafen | Ship&Offshore
Visit us at SMM 2026 Hall A1 Stand 307



Regulars

- 7 Comment
- 8 News & Facts
- 83 Imprint



The current issue of the
Ship and Offshore Repair
Journal starts on page 45



Driving the maritime transition.

The world's leading
maritime industry event.

 Hamburg
Messe + Congress

01 ————— 04
Sept 2026



Buy ticket or
redeem invitation
smm-hamburg.com



Responding to change

The hustle and bustle is on! This, and please allow me a personal way of starting this editorial, is going to be my eighth SMM (it would have been my ninth if it weren't for Covid-19...) as part of the editorial team of Schiff&Hafen and Ship&Offshore, and I can still feel the excitement leading towards the four-day event in my chosen home Hamburg. It will be a packed week – that much I can tell everyone who might be travelling to the biggest maritime show for the first time.

Speaking of Covid, though, some say the world has never been the same since the pandemic. And while change doesn't necessarily always mean something bad, in this case it is hard to find silver linings. Russia's invasion of Ukraine, the Hamas attack on Israel, the war in Iran, droughts, fires and climate-change-induced crises – all of this had, and continues to have, partly severe consequences for shipping, supply chains and maritime industry as a whole.

Those topics and their impacts have been covered here previously in detail. And they continue to set the tone of our discussions and considerations – not only but especially at SMM.

These days, however, the pressure is particularly visible beyond seagoing vessels: across Europe, low water levels are putting inland navigation under strain, with the Rhine once again showing how quickly cargo capacity and supply reliability are affected. And while the "quick fix" to put more lorries on the roads and temporarily lift the Sunday driving ban for them might make sense as a way of keeping transport volumes as high and steady as possible, it again shows two things: we are not prepared for the impact of climate change! And we are still downplaying the responsibility of industrial polluters in order to keep alive the persistent hope of economic growth.

The best way the shipping and maritime industries can respond to these unusually difficult conditions is with a wide range of technological developments.

For inland shipping, for example, shallow-draught vessels, adapted hull designs and propulsion and steering systems suited to changing water levels can help keep goods moving. This is technology responding to a physical constraint, with ship design closely connected to climate conditions and the resilience of supply chains.

On a larger scale, the same applies to all types of oceangoing vessels. The search for lower-emission fuels and alternative propulsion systems stays high on every player's agenda, not only to meet current and future legislation (and avoid potential heavy fines) but really to help transform maritime transport.

Technology can and will make a difference. But it needs the people to develop, design and operate it. The shortage of qualified personnel affects maritime and inland waterway transport alike, while digitalisation and automation are changing the skills required on board and ashore.

Above all, people and technology need to stay safe and secure! The past weeks and months have shown how vulnerable our industry, its infrastructure and its supply chains are to geopolitical conflicts, climate-related disruption and cyber threats.

The decision to create a dedicated Naval Hall at SMM for the first time reflects this wider reality. It will bring together specialist exhibitors, the Naval Stage and networking opportunities, with a focus on maritime security and defence, naval and dual-use technologies, surveillance, communications, unmanned systems and underwater applications. Its significance comes from giving security a clearly defined place within the broader conversation about maritime technology. The new hall will be one of the areas to watch in Hamburg.

Coming back to our SMM products: you may have noticed that this issue is a double edition both of the Schiff&Hafen and Ship&Offshore brand. Rest assured, we will of course keep you fully informed. Our regular edition is published entirely in English – really a no-brainer in an international market. In the run-up to and throughout the trade fair, we will provide daily, up-to-the-minute coverage of everything happening in and around the exhibition halls.

We will, of course, also be present throughout the week, featuring a modern new booth with our exclusive and original products, reporting on the trade fair in our newspapers every day, and hosting and moderating a range of panels. And we are looking forward to discussing the future of maritime with you!



Source: Bourbon

Designed for deepwater operations, the vessel is beginning its first long-term contract off the Indian coast

IMR vessel deployed offshore India

800 Series | The *Bourbon Evolution 810*, an inspection, maintenance and repair (IMR) vessel and the latest in the Bourbon Evolution 800 series, has embarked on deepwater operations off the Indian coast. The adaptable 800 series vessels are designed to work at water depths of up to 3,000m.

The latest vessel retains the main features of its sister ships but has upgrades to its DP3 dynamic positioning systems, propulsion control and power generation management arrangements. It will be deployed on ROV operations, surveying and construction services.

The vessel has two active heave compensated cranes of 40 tonnes and 150 tonnes capacity, a 1,200m² deck that includes 230m² of mezzanine space, fire-fighting equipment and oil spill response gear. Up to 105 people can be accommodated in 69 cabins.

Stephan Midenet, Bourbon COO, commented: "With the entry into service of *Bourbon Evolution 810*, we are providing our customers with an IMR vessel capable of meeting the technical challenges of deepwater operations, while offering our teams a safe and suitable working environment."

ECSA welcomes addition of Indian yards

EU recycling list | The European Community Shipowners' Association (ECSA) has welcomed a proposal by the European Commission to add two Indian facilities to the European List of Ship Recycling Facilities, describing the move as an important step towards expanding compliant recycling capacity available to European shipowners.

The inclusion of the yards would mark a significant development under the EU Ship Recycling Regulation (SRR), which governs where EU-flagged vessels can be recycled. ECSA said that the proposal carries wider significance beyond the immediate increase in approved recycling capacity, demonstrating that ship recycling facilities outside OECD countries can achieve compliance with EU standards and gain recognition on the European List.



Baltazar during its official sea trials in July 2026

Source: KCC

Combination carrier commissioned

CABU III | Klaveness Combination Carriers ASA (KCC) has taken delivery of the third and final third-generation combination carrier in the CABU III new-building series. *Baltazar*, built at New Yangzi Shipyard in China, has been designed to operate in caustic soda solution trades to

Australia, returning with dry bulk commodities. Klaveness' CABU fleet now comprises 19 vessels. *Baltazar* will have an earnings capacity about 20% higher than first-generation CABU ships as well as a 35% lower carbon footprint, benefiting the Scope 3 emissions of its customers.

Approvals extended

Rotor Sails | Anemoi Marine Technologies has secured additional design assessment certificates from Bureau Veritas for several variants of its Rotor Sail wind-assisted propulsion technology, expanding the range of independently approved systems available for both retrofit and newbuild projects.

The latest approvals cover the company's fixed and rail-deployed 3.5m x 24.5m Rotor Sails, including Ex-rated models and shorter variants designed for vessels operating with air draft restrictions.

The certifications mean Anemoi's Rotor Sail portfolio is now covered by approvals from Bureau Veritas, Lloyd's Register, DNV and ClassNK,

confirming that equipment can be manufactured, installed and operated in accordance with recognised industry standards, helping to reduce project-specific assurance requirements and streamline deployment.



Source: Anemoi

3.5m diameter Rotor Sails at Anemoi's production facility

Sallaum Lines adds ninth vessel to its newbuilding programme

PCTC | Sallaum Lines has signed a contract with China Merchants Shipyard for one, option one, 8,600-CEU pure car and truck carriers (PCTC) for delivery in 2029. The new vessel will be LNG dual-fuel and ammonia-ready.

The latest contract takes the shipowner's newbuilding programme to nine vessels, representing a total order value of

USD 850 million. Four ships have already been delivered; one is due for delivery in August; a second in December; and three more for delivery in 2029.

The latest order comes only a couple of weeks after another contract with Xiamen Shipbuilding Industry for two, option two, 8,600-CEU vessels, Sallaum said.

New BWMS designed for smaller vessel sector

Filter-free system | Norwegian marine engineering firm, TeamTec, has released a new ballast water management system (BWMS) designed for smaller vessels. The TeamTec Senza Compact BWMS is intended for vessels up to 10,000dwt and is available in a capacity range from 50-300m³/h.

Based on TeamTec's filter-free technology, the system removes some of the common operational challenges of filter systems, including clogging and the need for regular cleaning. This ensures effective operation in a wide range of waters including those with high levels of sediment. The company also claims that the system has a longer operational lifespan than those fitted with filters.

Key components have been reduced in size and optimised,

and the system requires minimal integration on board ship. The biocide tank has been redesigned and reduced in size and power consumption of 1.9-3kW sets a new standard for energy efficiency, the company claims.

"We are extending our technology to a wider part of the fleet," explained Olav Valsvik, Head of Sales. "We have focused on reducing complexity and energy consumption while ensuring reliable operation in all water conditions. This gives our customers a solution that is easier to install, operate, and maintain – with full compliance and predictable performance."

The TeamTec BWMS range now covers capacities from 50 to 3,750m³/h and supplies systems for vessels of all sizes.

Source: Sallaum Lines



Earlier this year, the PCTC *Ocean Legacy* was delivered

Maersk to sell training and gas safety divisions

Agreement | A.P. Moeller-Maersk has reached an agreement with private equity firm Open Gate Capital to sell Maersk Training and Maersk H2S Safety Services. The new ownership will enable the businesses to continue their growth path with a dedicated focus on training, gas detection, safety, and workforce

competency, the company said in a statement. Maersk Training, established in 1978, has provided specialised training, competence development and safety services to sectors including energy, maritime, renewables and logistics, supporting customers in managing operational risks and workforce safety.



Maersk Training is a global provider of training and competence concepts

Source: Maersk



CF *Anja* has foundations for an Econowind VentoFoil

Source: Damen

Combi Freighter delivered to Juru Agentura Forsa

CF *Anja* | Damen Shipyards has handed over a Combi Freighter 3850 to Lithuanian shipping company, Juru Agentura Forsa. The vessel, CF *Anja*, is the first new vessel to join the company's fleet.

Damen's CF 3850 has proved a popular vessel since its introduction five years ago. Da-

men has won orders for more than 50 of these ships. The low-resistance hull, optimised with computation fluid dynamics, ensures good fuel and emissions performance and is designed 'ready' for a range of efficiency-improving systems. The vessel is equipped to operate on HVO biofuel.

Fincantieri delivers *Explora III* cruise ship



The *Explora III* represents the next phase of MSC Group's investment of more than EUR 3.5 billion in its fleet

Source: Explora Journeys

MSC Group | The third in a series of six cruise vessels under construction for MSC Group's luxury brand, Explora Journeys, has been delivered at Fin-

cantieri's Sestri Ponente yard in Genoa. *Explora III* has capacity for about 920 passengers and is the first in the series to be powered by LNG.

The three remaining cruise ships are under construction: two will be commissioned in 2027 and one in 2028. *Explora III* and those that follow will be able to operate on new forms of LNG, including bio-LNG and synthetic LNG as well as biofuels.

All ships in the series are equipped with shore power connectivity and the last two vessels, *Explora V* and *Explora VI*, will also have fuel cell installations.

Fincantieri CEO, Pierroberto Folgiero, said: "*Explora III* demonstrates Fincantieri's ability to drive the transformation of shipbuilding through innovation, sustainability and the adoption of new technologies and alternative fuels."

Keel laid for new floating dock

Western Shiprepair | BLRT Grupp has laid the keel for a new floating dock under construction at Hat-San Shipyard in Yalova, Turkey, destined for BLRT's Western Shiprepair in Klaipėda. The newbuild, designated NB26, is set to assist BLRT Grupp in modernising and expanding shiprepair infrastructure across its operations in Lithuania, Estonia and Finland. On completion, the floating dock will measure 200m in length and 35m in width, with a lifting capacity of 15,000 tonnes.

The drydock will replace one of the existing facilities and increase the yard's ability to accommodate larger vessels, including Panamax-class ships.

Cadeler orders two new T-class vessels

Installation capacity | Offshore wind installation company Cadeler has signed firm contracts with COSCO Shipping Offshore shipyard in China for two new T-class vessels. The ships are scheduled for delivery in 2030 and 2031, at a combined contract value of approximately EUR 805 million. The vessels will be among the largest and most advanced installation ships in the offshore

wind sector, designed to handle increasingly complex projects with greater efficiency and flexibility, Cadeler said in a statement. The orders form part of Cadeler's long-term fleet expansion strategy and support the global growth of offshore wind. Cadeler has already secured equity financing for the investment and is in discussions with key clients about deploying the new vessels.



Source: IRS

The newly built patrol boat features collision avoidance software

Workboat with collision avoidance software launched

Infrastructure protection | The Indian Register of Shipping has certified a new workboat developed by the country's Accurate Industrial Control equipped with collision avoidance software. The 13m-long vessel, suitable for port and harbour security, critical infrastructure protection, offshore energy, coastal surveillance and environmental monitoring, has undergone sea trials in the Arabian

Sea following construction at the SHM Shipyard Limited in Mumbai.

The vessel is equipped with Intelligent Situational Awareness and Collision Avoidance (ISACA) technology including a range of situational awareness sensors and a full collision avoidance system. The vessel has been confirmed as complying in full with the IMO's collision regulations.



The new vessels are designed to tackle increasingly complex projects with greater efficiency, versatility and performance

Source: Cadeler

Wind sail installed on new multipurpose cargo vessel

Na Hiro E Pae | Spanish wind sail developer, bound4blue (b4b), has recently installed a 22m-high e-Sail® on a new multipurpose cargo vessel at Astilleros Armon Vigo in Spain. The ship, named *Na Hiro E Pae*, has now entered service for owner, Société de Navigation des Australes SNA Tuha'a Pae Shipping Company between Tahiti and the Austral Islands. It is thought to be the first multipurpose vessel to have a wind propulsion system. *Na Hiro E Pae* provides a combination of passenger services, with capacity for up to 200, together with an essential and affordable transport link for students, families and workers, and cargo efficiency, supporting fast loading and unloading operations for

up to 1,500 tonnes of supplies for the South Pacific archipelago. The b4b suction sail is part of a sustainable technology combination that includes engines running on biofuel or e-fuel, electric POD propulsion, efficient waste management and autonomous fresh water supply. José Miguel Bermúdez, the wind sail company's CEO and co-founder, commented: "Multipurpose vessels have traditionally been seen as a challenging segment for wind power, due to the required flexibility of operations and related integration demands." The company now has eSAIL systems on twelve ships, with a further six on its order-book, comprising more than 50 sails in total.



The installation was carried out at Astilleros Armon Vigo, Spain, prior to the vessel delivery

Source: bound4blue



TUI Luzia is the first purpose-built ship for TUI River Cruises Source: TUI

River cruise ship floated out at Kladovo Shipyard

TUI Luzia | TUI River Cruises has announced the float-out of its first purpose-built river cruise ship at Concordia Damen's partner yard, Kladovo Shipyard in Serbia. The 111-passenger *TUI Luzia* is due for delivery in June next year and will begin cruising in the Douro Valley in Portugal. Katy Berzins, head of River Cruises at the cruise company, said: "As our first purpose-built ship, *TUI Luzia* represents an exciting new chapter for our brand. Her arrival on the River Douro in summer 2027 will not only extend our portfolio into

one of Europe's most sought-after river cruise destinations, but also open up new experiences for both existing and new TUI River Cruises customers." Concordia Damen CEO, Chris Kornet, commented: "We are proud to be partnering with TUI River Cruises on its first purpose-built river ship, *TUI Luzia*. The new vessel embodies our shared ambition to bring innovative, future-ready ship designs to the European river cruise market, by combining Concordia Damen's engineering expertise with TUI River Cruises' clear vision for expanding the brand."

Practical answers for the next era of shipping.

RINA combines **classification, engineering** and **digital expertise** to help fleets comply, perform and evolve with confidence.

Visit us at **SMM Hamburg 2026** booth n. B4.EG.310



Our experience. Your growth.
rina.org

The distributed ship of the future

DIVERSIFYING GRIDS With energy storage and renewables diversifying onshore power grids, ships can be expected to follow suit in the absence of a clear fuel of the future, reports freelance journalist Charlie Bartlett



Eidesvik Offshore's *Viking Lady* became the first ship to be fitted with a 330kW fuel cell as early as 2009

Source: Eidesvik Offshore

Today's deepsea ships are the product of a long-term focus on economies of scale, maximising the amount of cargo that can be pushed along using a single six-storey prime-mover, and eking out fuel efficiency with absurdly undersquare pistons and two-stage turbocharging. Boilers and heat exchangers scavenge engine jacket and exhaust heat, meaning that in some cases, ship powerplants can beat onshore ones for efficiency, putting more than half of their fuel to good use.

There is just one problem. Like a Mercedes on the Autobahn, the ship is presumed to be carving a path across open sea, holds full and speed constant. But this optimal operating profile to which ships are magnificently highly tuned is becoming a rarity. Close to port, a ship is more like a Mercedes in heavy traffic; lumbering and fuel-hungry. Though lower generally, specific fuel consumption is higher. Incomplete combustion causes sooty by-products and noxious black smoke to be emitted from the funnel.

Critical systems come under strain. For example in March 2025, the *CMA CGM Shanghai* suffered an engine room explosion during a towing operation in Singapore, as its compressed-air-start system malfunctioned while repeatedly restarting the pistons at low load.

Retrofits and upgrades abound to help re-spec ships for a lower speed. But when the concern is not slow- but variable-steaming, de-rating and new bulbous bows are not adequate. Ships hurry to port, only to sit idle in queues for hours at a time, a problem technology companies insist can be solved, but which never seems to be.

Past analyses from 2024 show that vessels exceeded their design speeds in order to make good time around the Cape of Good Hope. At other times, ships strategically speed up to grab market share off dozing competitors – demonstrating that slow-steaming is not a decarbonisation measure, but a capacity management strategy.

And now, operators have more challenges to deal with than ever before. A ship

might be being escorted by naval vessels in a military convoy, speeding up to avoid interception, or even picking its way through a potential minefield. It may come under pressure to switch off its engines at quay-side to comply with local emissions regulations. A vessel that suddenly catches the wind with its rotor sails might see an unwelcome variance in its below-the-waterline propulsion load.

Adapted to a market in which they often act as financial assets over-and-above their purpose as transportation machines, ships are accustomed to cheap fuel, economies of scale, and a global trade status quo that is not coming back. In response, the way ship systems are designed is beginning to change.

Splitting the difference

By now, the alternative fuels landscape was expected to have settled on a winner, providing the certainty needed for shipowners and fuel suppliers to make investments that would bring costs down. That has not happened, held back by grandstanding and sabotage in various arenas including IMO. Shipowners should instead plan for a future in which vessels – echoing what is happening ashore – become like distributed power grids with varied energy sources and consumers.

For some time, shipping companies have sought to make fuel cells viable. Proton exchange membrane (PEMFC) and solid oxide fuel cells (SOFC) already deliver brake thermal efficiencies close to 60%. But before fuel such as LNG or ammonia can be fed into a fuel cell, it must be split – 'cracked' or 'reformed' – into hydrogen and other constituents separately, an energy-expensive additional process which brings down efficiency. Net of this reaction, recent research has put the efficiency of methanol and ammonia PEMFCs well below the upper range of a marine diesel running on conventional fuel.

For SOFCs to generate the same power using fuel cells, it would take an installation greater than the size and weight of a low-speed two-stroke – hardly practical. Instead, we can expect



Battery-maker Corvus Energy garnered DNV type approval for its 'pelican' fuel cell system in 2024

Source: Corvus Energy



Many OEMs have proposed containerised fuel cell arrays to be positioned on deck and plugged into the ship's grid, like this proposal by HAV Hydrogen

Source: HAV Hydrogen

SOFCs to make their way onto vessels as containerised or skid-mounted units, used as a substitution for auxiliary diesel generators. High-temperature naturally aspirated SOFCs running methanol directly are found to reach a brake thermal efficiency of 58%, already exceeding the 45-50% generation efficiency of marine diesels despite a much lower level of research and development. That power is delivered as electrical energy, which can be sent to batteries, thrusters and rotor sails with close to zero losses.

Even more promising: the waste heat from these high-temperature SOFCs is hotter – around 600-1,000°C – making it perfect for energy recovery via gas turbine. In a 2021 submission to *Applied Energy*, an SOFC combined with a supercritical CO₂ Brayton-cycle turbine gave an electrical efficiency of 65-70%. Because it is not delivered through a crank and motor, it is not alternating current (AC), but direct current

(DC) – supporting another critical component of the distributed ship.

Thunderstruck

DC current is required by shipboard devices. Each rectifier conversion from DC to AC and vice-versa incurs a single-digit efficiency loss. Though small, these quickly compound into a long-term fuel premium, one that is particularly significant on vessels where fixed-speed, AC-producing gensets must provide electrical power for onboard heavy machinery, which is why these types of vessels are now being equipped with DC-grid architectures. This offers a single, highly-efficient rectifier transaction from AC genset output to DC machinery power, making it easier to integrate equipment like batteries, solar, fuel cells and LED lighting.

The main advantage of a DC grid is what it unlocks for diesel generators. These are either off, or operating at a fixed speed – generally, more than necessary – to provide

specific 50 or 60Hz AC power. With a DC grid, though, they can operate at variable speed, matching output and fuel consumption to what is required, and producing the headline 20-30% fuel saving.

Meanwhile, according to research by Ember, solar power has fallen to USD 43 (EUR 38) per MWh, putting it lower than new coal power tariffs in India in late 2025. In testing on general cargo vessel *Vertom Anette*, Rotterdam's Wattlab – one of the almost zero companies helping photovoltaic power for ships – found that its 'solar flat-rack' was able to contribute 496kWh over a seven-month period, entailing a fuel saving of 123 litres operating between North-European ports and Egypt.

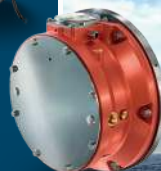
This is not much; but in 2025, Wattlab installed 44 flatracks on the hatch covers of general cargo *Vertom Tula*. Generating as much as 79kWp 'peak' of DC power, a solar installation like this one is enough to make a substantial contribution to a vessel's

Safety Brakes Built Tough

Extreme torques, maximum loads, harsh environments – in sectors such as ports, shipping, and wind power, as well as in general industry, reliable and high-performance safety brakes are in demand.

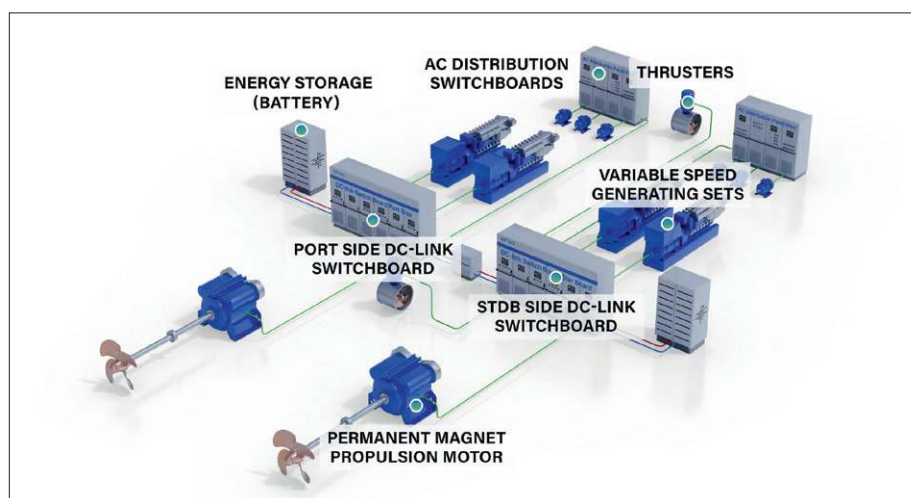
The ROBA-stop® S and ROBA-stop M® series are designed precisely for these requirements: flexible, robust, and available for torques exceeding 1,000 Nm.

mayr®
your reliable partner



www.mayr.com

Visit us at **SMM: Hall A4, Booth 326** and at **WindEnergy: Hall B5, Booth 425**



An example of a vessel DC grid, integrating batteries and other components Source: WeTech

hotel load, and offset a significant volume of MDO (USD 1,200 per tonne at time of writing). Other companies, too, are starting to take an interest in shipborne solar, with the high-profile rebuild of Sea Cargo's *Trans Hav* and *Trans Sol* incorporating some 1,600m² of solar panels each.

Downsizing the atom

A nuclear reactor could easily power an entire vessel by itself. The promised thorium-molten-salt reactors still prove elusive, but pressurised water reactors (PWRs) have been used for generations on submarines, icebreakers and aircraft carriers.

Now, Vard wants to put them on off-shore vessels – but not in the configuration that shipping had perhaps expected. Instead of a large PWR running a steam

turbine for direct propulsion, Vard's concept, *Island Explorer*, is for a self-contained power unit, similar to a genset, comprising a helium-cooled 12.5MWth (megawatt-thermal) reactor encased in shielding; a separate marine diesel engine running HVO biofuel as a backup; and a supercritical (s)CO₂ turbine to harvest the reactor's heat energy.

The reactor, which produces all its energy as heat, is able to ramp at 5% per minute; however, in the Vard system, the reactor runs continuously to provide 5MWh of electricity, with a thermal battery system used for load-levelling. (It is slow and less than optimal for a nuclear reactor to ramp up and down to match variable load requirements, something the staff at Chernobyl power plant discovered in 1986).

The smaller reactor acts as part of a distributed grid, covering the vessel's baseload power while topping up the thermal battery with stored heat. The heat is then released into the sCO₂ turbine loop to cover any sudden peaks, which could occur, for example, during manoeuvring or dynamic positioning operation.

The arrangement is elegant for an off-shore vessel. Rather than an enormously costly oversized reactor whose capacity sits mostly unused, or a complex and high-maintenance electrical battery system, the designers have chosen to oversize the thermal battery – by far the cheaper component, which could be as simple as sealed tubs of sodium hydroxide, or even sand.

On a deepsea vessel, a bigger reactor would be needed to provide peak propulsion power by itself. On the KUN-24AP concept for a 24,000-TEU nuclear container ship, for example, a thorium-molten-salt reactor provides 200MWth, likely yielding some 80-90MWh of electricity, more than enough to match a low-speed marine two-stroke if paired with powerful azimuth pods. When such a vessel is not under way, it could use that heat to charge batteries, thermal and otherwise; or even connect up in port and sell its excess energy to shore.

The likelihood is that the distributed ship of the future will become like an extension of power grids on land, and work more intelligently in tandem with them; preferring batteries to auxiliary gensets, with electricity provided from a shore power connection, or solar panels, a containerised fuel cell, or even a nuclear reactor.



steute Controltec
SAFE INDUSTRIAL AUTOMATION

Rock in a storm.



RF 99
Wireless position monitoring for heavy-duty applications. Reliable where cables let you down.

Pay us a visit.
SMM 2026
September 1-4, 2026
Hall B6, Booth B6.137

.steute

Hybrid-electric propulsion system targets various sectors

ENERGY MANAGEMENT | A fully integrated hybrid-electric propulsion system has been released by Volvo Penta targeting the ferry, offshore, short-sea, river, and workboat sectors. The helm-to-propeller package is grounded in Volvo Penta's IPS platform combining propulsion, electric motors, batteries, energy management and controls within one complete system.

Designed to maximise uptime, the system is built around the company's Electronic Vessel Control (EVC) platform which integrates propulsion and energy management into one interface. Vessel captains have constant access to real-time energy use, charging, battery status, and power flow. They also benefit from Volvo Penta features including joystick control, assisted docking, and a new 24-inch type-approved display.

The integrated control setup is intended to reduce workload in demand environments such as small or busy harbours, standing by offshore installations in demanding conditions, or transferring engineers and other staff at sea. In such applications, responsive low-speed handling, precise manoeuvring, and uninterrupted power transition ensures robust vessel control at all times, the company said.

A series of options are available. They include pure electric, hybrid electric, hybrid fuel and cross-over configurations enabling operators to adopt the most suitable configuration for intended activities. All the options are intended to optimise performance, minimise fuel consumption, and match energy output with project requirements.

Partners to assess whether WAPS benefit MR tankers

CROSS-SECTOR JDP | Greek-owned Capital Ship Management, South Korean shipyard group, K Shipbuilding, and Lloyd's Register have launched a joint development project (JDP) to assess whether wind-assisted propulsion systems (WAPS) can generate commercially viable efficiency gains on medium-range tankers. The partners will focus on the development of a 50,000dwt medium-range (MR) tanker.

Although WAPS technology has been successfully adopted across various sectors including bulk carriers and specialist vessels, the partners are aiming to test the technologies in the MR tanker sector which, they say, remains largely unexplored. The three companies will bring their respective expertise to the project: Capital Ship Management as an owner and operator of MR tankers; K Shipbuilding (formerly STX Offshore and Shipbuilding); and LR's technical assurance and regulatory knowledge. The project will include technical studies, design optimisation, and regulatory assessments to support the possible issuance in future of Approvals in Principle.

The shipowner's CTO, Nikolas Vaporis, revealed that its six three-year-old MR tankers were originally ordered with Wind-Assisted Ready notation. This, he explained, was a deliberate design choice that reflected the company's conviction that wind propulsion would become commercially viable in this sector.

"Our priority now is to move from 'ready' to 'proven,'" he declared. "A design that delivers real efficiency and emissions benefits while preserving the operation and cargo flexibility our charterers depend on."

LR's global business director for Tankers, Theo Kourmpelis, commented: "Wind-assisted propulsion has already demonstrated its potential to improve vessel efficiency, but wider adoption will depend on proving that the technology can deliver commercial value in mainstream shipping sectors. The MR tanker market is an important test case ... By combining practical operational insight with advanced ship design expertise, this project will help evaluate how wind-assisted propulsion can be effectively incorporated into future tanker designs."

OSWALD
POWER TO MOVE

CUSTOM MADE DIRECT DRIVES

*energy-efficient
compact design
sustainable*



MAIN PROPULSION
100 – 3 000 kW | 100 – 700 rpm



PM THRUSTER
100 – 3 000 kW | 600 – 1 800 rpm



PM GENERATOR
100 – 2 000 kW | 1 000 – 2 300 rpm



Oswaldstrasse 1
D-63897 Miltenberg
oswald@oswald.de
+49 9371 9719 0
www.oswald.de



Interaction is becoming a decisive factor

VESSEL PERFORMANCE Under the theme “Together in Every Water”, Germany’s ZF is presenting a range of technologies at SMM 2026 that address the evolving requirements of propulsion systems

Electrification, increasing efficiency requirements and growing demands on vessel availability are changing the way propulsion systems are designed and operated. Across many vessel segments, shipowners are looking for systems that combine operational flexibility, reliability and efficiency while supporting increasingly complex operating profiles.

For ZF, a Friedrichshafen-based supplier of advanced propulsion, drivetrain, and control technologies for maritime applications, this development is reflected in a clear trend: propulsion systems are no longer evaluated as individual components. Instead, the interaction of driveline technology, control systems and digital services is becoming a decisive factor in vessel performance. As a global leader of propulsion systems for commercial, leisure and governmental vessels, ZF combines decades of marine expertise with a broad portfolio spanning hybrid, electric and conventional transmissions, thrusters and propulsion systems, as well as control systems.

Electrification moves into higher power classes

One of the most significant developments in maritime propulsion is the expansion of hybrid and electric technologies into larger and more demanding vessel segments. What began primarily in smaller applications is now increasingly relevant for commercial vessels that require both high performance and operational flexibility.

To support this development, ZF continues to expand its hybrid transmission portfolio. A central highlight at SMM 2026, the company said, is the new ZF 9200 A/V PTI, the latest addition to the established ZF 9000 transmission family. Designed for main drive powers of up to 3,903 kW and featuring an integrated power take-in (PTI) capable of accommodating approximately 700 kW, the transmission supports both conventional and hybrid operating modes.

Its modular design has been developed to allow adaptation for different vessel types, electric motor sizes and propulsion concepts. Depending on operational requirements, vessels can benefit from electric manoeuvring capabilities, low-noise operation and increased flexibility in power management, ZF said. The transmission can be installed in either V-drive or down-angle configurations, while optional features such as PTOs, shaft brakes and flexible mounting arrangements provide additional design freedom for shipyards and system integrators, the company added.

Complementing its hybrid portfolio, ZF also offers dedicated systems for fully electric vessel concepts, including the ENC gear-box variants, which were specifically developed for battery-electric propulsion systems and optimised for maximum efficiency.

Together, these systems illustrate how electrification is expanding across a growing range of vessel applications and driv-



Source for both images: ZF

ZF presents the ZF 9200 A/V PTI for efficient hybrid propulsion

etrain architectures. Hybrid propulsion is no longer simply an additional feature; it is increasingly becoming an integral part of modern propulsion concepts, ZF explained.

More power for growing vessel requirements

While propulsion concepts continue to evolve, ship sizes and operational demands are increasing as well. This is particularly evident in harbour operations and offshore applications, where larger merchant vessels require more capable support fleets.

In response, ZF said it is extending its thruster portfolio with the AT 110, the largest azimuth thruster developed by the company so far. Designed for engine outputs of up to 2,944 kW, the new thruster targets demanding applications such as modern tugboats and offshore support vessels. It enables bollard pull values of around 100 tonnes and supports operators facing increasingly challenging towing and manoeuvring tasks.

The AT 110 also helps efficient system integration. With centre-to-centre dimensions of approximately 3,700mm, the thruster is said to offer a comparatively compact design that facilitates installation in space-constrained vessel concepts.

Meanwhile, a revised lubrication concept reduces the required oil volume while maintaining reliable operation, contributing to lower operating costs over the vessel lifecycle. Optional features such as a tilted nozzle provide additional flexibility for vessel designers seeking to optimise propulsion efficiency and hull layouts.

Looking for the level? Measuring the impossible with radar.



No matter whether your products are liquid or solid, hot, cold, or corrosive – for decades, our radar technology has been setting the standards in level measurement for shipbuilding. We deliver precise, reliable measured values exactly where they're needed, resulting in more stable processes, greater safety, and maximum product quality. With our radar solutions, innovation knows no limits.

Everything is possible. With VEGA.



SMM

Hall B6, Booth 101
Hamburg

vega.com

VEGA HOME
OF VALUES



With the AT 110, ZF introduces its largest azimuth thruster so far

These characteristics reflect a broader shift in the maritime industry. Today, propulsion systems are assessed not only by their performance figures but also by installation flexibility, maintainability and lifecycle efficiency.

Precision becomes a performance factor

Power alone does not determine operational performance. In many vessel applications, the ability to control propulsion accurately is equally important.

For thruster applications, ZF also offers AutoTroll Firefighting, an optional feature specifically developed for vessels involved in firefighting operations. The system enables efficient distribution of engine power between propulsion and firefighting pumps while maintaining manoeuvrability and protecting drivetrain components during prolonged high-load scenarios.

Reliability through data

As propulsion systems become more sophisticated, operational transparency becomes increasingly important, ZF noted. Ship-owners are looking for ways to maximise availability, reduce unplanned downtime and make maintenance decisions based on actual operating conditions. For this reason, digital services are becoming an increasingly important component of modern propulsion solutions.

ZF's condition monitoring system has been developed to combine on-board hardware with cloud-based analytics to provide continuous insight into drivetrain performance. Data from gearbox electronics and connected sensors, including speed, temperature, pressure and operating modes, is collected and analysed to support condition-based maintenance strategies. By transforming operational data into actionable information, operators should gain greater transparency into drivetrain health with scope to can identify potential issues before they lead to costly disruptions, the company claims.

To evaluate further the practical benefits of this approach, ZF is conducting a proof-of-concept project together with Danish ferry operator Molslinjen. The initiative is intended to demonstrate how digital tools can support maintenance planning and contribute to improved fleet availability through data-driven decision making.

Integrated systems for a changing industry

The requirements placed on modern vessels continue to grow, but so do the opportunities created by new technologies, ZF said. Hybrid and electric propulsion systems, advanced control technologies and data-driven maintenance are increasingly moving from innovation projects into everyday vessel operation.

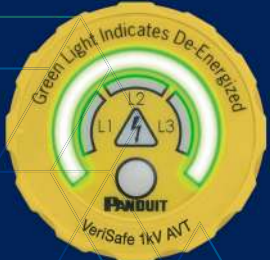
By combining proven driveline technology with intelligent controls and digital services, ZF is aiming to support shipowners and shipyards in addressing these challenges across a wide range of applications. The products presented at SMM 2026 are to demonstrate how propulsion, control and digital technologies can work together to improve efficiency, reliability and operational flexibility throughout the vessel lifecycle.

PANDUIT™



VeriSafe™
Absence of Voltage Tester

Safer. Smarter. More Efficient.



Increased Safety

Minimizes risk and helps prevent electrical incidents



Rapid Results

Reduces voltage verification process from 20 minutes to just 10 seconds

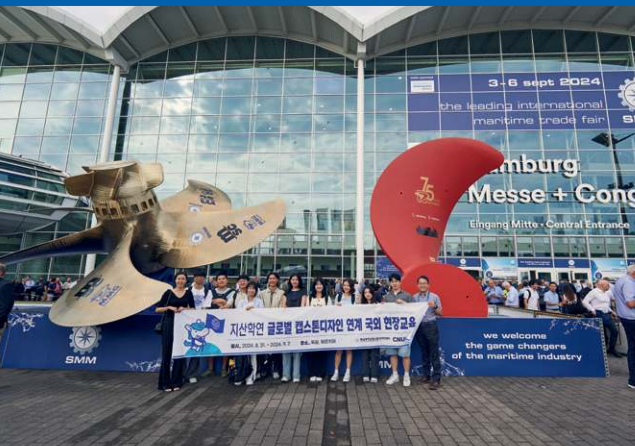


Automated Process

Simple process reduces human error for mechanical and electrical workers



www.panduit.com/verisafe



Maritime industry focuses on efficiency, innovation and resilience

The first week of September will once again be dedicated to the world's leading maritime trade fair, SMM in Hamburg. For four days (September 1st to 4th), technologies and concepts will be presented that "shape the future of maritime transport", according to the show's organisers, Hamburg Messe + Congress GmbH (HMC). Under the guiding theme "Driving the Maritime Transition", SMM aims to bring together international stakeholders from across the maritime industry to discuss key future topics and actively shape the development of the sector. More than 2,200 exhibiting companies from around 60 countries and approximately 50,000 participants from up to 120 nations are expected. Spanning around 90,000 m² across twelve exhibition halls, SMM showcases the entire value chain of the industry.

The programme, which spans the entire week, focuses on energy efficiency, digitalisation, automation, alternative propulsion, artificial intelligence, cyber resilience and maritime security.

The Energy Efficiency Route and the Energy Efficiency Hub will showcase systems and products for reducing fuel consumption, emissions and operating costs. The accompanying programme covers propulsion systems, ship design, onboard technologies and operational processes designed to improve vessel performance and support decarbonisation.

The topic of digitalisation is addressed through the Digital Route and the Digital Stage. Topics include connected ships,

data-based fleet management, automated operations and artificial intelligence. The programme examines how digital systems can improve efficiency, safety and decision-making on board ships and across fleets.

The Maritime Future Summit will address long-term developments in shipping and shipbuilding. The gmec: Global Maritime Environmental Congress will focus on environmental requirements and the transition to lower-emission maritime operations.

SMM also includes dedicated platforms for maritime security, defence and naval technologies. The MS&D Expo and Conference focuses on security and defence issues, while the Security & Defence Route guides visitors to relevant exhibitors. The Naval Stage provides a programme for naval topics and technologies.

Start-ups@SMM and the Start-up Route will present young companies and new approaches and concepts. The Maritime Career Market connects companies, professionals and students. The Cruise & Ferry Route focuses on cruise and ferry operations. The Job Route highlights employment and recruitment in the maritime sector.

The programme is complemented by exhibitor events, networking formats and open stages.

More information at

www.smm-hamburg.com

«Germany and Europe have a strong maritime industry»

Foto: Bundesregierung / Steffen Kugler



Friedrich Merz, Chancellor of the Federal Republic of Germany and patron of SMM 2026

As the world's leading maritime industry event, this year's SMM is taking place at a time when international shipping and European shipbuilding face landmark decisions. Geopolitical tensions, fragile supply chains, increasing maritime security requirements and the path to climate neutrality make determination, innovativeness and close cooperation imperative.

Shipping is the lifeline of the global economy. It ensures our prosperity and supplies us with goods. To sum it up, no shipping means no shopping. Likewise, no shipbuilding means no shipping, as the prerequisites for modern, safe and sustainable shipping can only be brought

about by an efficient and technologically leading shipbuilding industry.

Germany and Europe have a strong maritime industry, excellent research and great innovativeness in this sector. We must use these strengths decisively because we will only be able to meet the demands of tomorrow's maritime industry by making greater use of digitalisation and artificial intelligence, more sustainable technologies, and efficient production and value-added chains.

SMM is the central international platform for turning innovations into market-ready solutions, concrete projects and commercial contracts. At the same time, the International Conference on Maritime Security & Defence, an important part of this trade fair, underlines the growing importance of maritime security.

Safe shipping routes and resilient critical infrastructure are vital for free trade, stable supply chains and investment security. The close dialogue between industry, the security authorities and policymakers is thus of crucial importance.

I am pleased to have taken on the patronage of this year's SMM. As an outstanding location for the maritime industry, the Free and Hanseatic City of Hamburg is the ideal setting for this trade fair. I hope that the exhibitors and visitors from all over the world will experience inspiring meetings, successful talks and game-changing ideas for the future of the maritime industry.

ABB

Hall B6, Stand 327

ABB is looking forward to discussing the current and emerging efficiency, reliability, and safety needs of the maritime industry with visitors to its stand at SMM 2026.

ABB representatives will be available to discuss a range of vessel types and the solutions the group offers – from grid to propeller and ship to gate – including propulsion, electric, and hybrid technologies as well as various digital innovations.

This year, a special area of focus will be the ABB Parametric Rolling Solution. Launched in 2025, the award-winning groundbreaking solution is the result of a collaboration between ABB and CMA CGM Group.

Affecting container ships, RoPax vessels, and car carriers around the globe, parametric rolling occurs when the natural roll period of a vessel synchronises with the wave period, and this resonance amplifies the rolling motion – which can become heavy within a few cycles. By integrating CMA CGM's original wave behaviour methodology into the ABB Ability™ OCTOPUS Marine Advisory system, the Parametric Rolling Solution enables operators to anticipate and avoid such incidents using real-time measurements. This not only overcomes a longstanding vessel and crew safety challenge but also minimises cargo losses, cutting the volume of claims made and the number of incidents likely to cause marine pollution.

Using sensor-based analytics to monitor and evaluate wave behaviour as part of enriched OCTOPUS capabilities, the solution raises risk alerts so that crew can respond quickly. It also overcomes the difficulty and error risk associated with inputting observations manually.

The capability can be integrated into any ship equipped with the OCTOPUS system. It aligns with objectives for maritime sustainability, providing further evidence for how digitalisation can improve safety and operational efficiency, reduce weather-related downtime, and enhance voyage performance.

<https://www.abb.com/global/en>

ABS

Hall B3, Stand 200

The marine and offshore sectors have never faced a period of technological change quite like this one. Digitalisation, artificial intelligence, new energy sources and applied research are reshaping how assets are designed, built and operated, and the pace is straining an industry built around rules and regulatory frameworks.

"ABS Technology Trends: Making Innovation Work" examines how these developments are advancing across the industry and where they are beginning to have the greatest impact. It looks at the continued progress in autonomy and digital twins, investment in new fuels and electrification, renewed interest in nuclear technology, and how many of these trends are intersecting with rapidly advancing AI.



Source: ABS

Visitors can explore how ABS is supporting the industry through change and helping bridge the gap between what's imagined and what's possible for innovative technologies

For executives navigating decisions around fleet investment, operations and regulatory compliance, knowing where technology is heading matters as much as where it stands today. The publication gives industry leaders the context they need to understand where pressure is building and a roadmap to what comes next.

www.eagle.org

Agwa

Hall B7, Stand 334

Agwa helps maritime and offshore operators improve crew wellbeing, sustainability and operational resilience through autonomous onboard food production powered by artificial intelligence.

Designed for vessels, FPSOs, offshore installations and other remote environments, Agwa enables crew to grow and harvest fresh produce year-round directly on board. Its AI-powered Virtual Agronomist manages growing conditions with

minimal crew involvement, using only water, electricity and connectivity.

By reducing reliance on conventional provisioning chains, Agwa provides a more reliable source of fresh nutrition during long rotations. In safety-critical settings, nutrition influences crew health, morale, fatigue, cognitive performance and quality of life – factors that underpin safe, resilient operations. The system also helps operators cut food waste, packaging and provisioning-related emissions.

For shipowners, managers and offshore operators, Agwa addresses four industry priorities: crew welfare, operational resilience, sustainability and digitalisation. It also demonstrates how AI can deliver practical, everyday value in maritime operations.

Agwa's systems are already deployed on board vessels owned, managed and operated by leading maritime organisations including Synergy Marine, Eastern Pacific Shipping, Capital Ship Management and Anglo-Eastern.

<https://www.agwafarm.com/>



Source: Agwa

At SMM, visitors can see a live growing unit and try fresh greens grown by the system



www.brombach-gess.com



IDEAS IN GLASS®

Meet us
at booth
B5.310

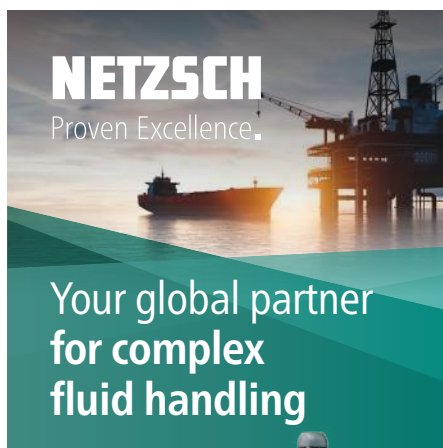


SMM
1.-4. September 2026
Hamburg Messe & Congress

- exterior and interior glazing
- turnkey solutions
- refit & refurbish
- worldwide service



System Partner



This is how you convey sensible media effectively

Choosing the right pump optimizes the processes and reduces energy costs. NETZSCH offers:

- ✓ Individual consultation
- ✓ More than 70 years of experience
- ✓ Various pump technologies

Together we will find the optimal solution for your application.

Partnership does not end with the purchase

We support you from commissioning, maintenance up to repair and modernisation of your pump.



Visit us at the trade fair:
SMM Hamburg,
September 1-4, 2026
Hall A2, Booth 208

NETZSCH Pumpen & Systeme GmbH
www.pumps-systems.netzsch.com



Alfa Laval provides a variety of systems for the shipping industry

Source: Alfa Laval

Alfa Laval

Hall A1, Stand 226

As the maritime industry navigates a complex technology and regulatory landscape, Alfa Laval arrives at SMM 2026 with a broad portfolio of technologies, digital systems and services built to cut emissions, improve efficiency and keep vessels compliant.

Alfa Laval will showcase solutions spanning LNG, LPG, biofuels, ammonia, methanol/ethanol, including the recently launched FCM LNG fuel supply system, along with unique expertise on the traditional fuel line. Visitors can also learn about Oceanbird's completed Wing560 installation and successful sea trials.

On energy efficiency, the company will present the OceanGlide air lubrication system, Aalborg economisers and E-PowerPack, alongside innovative freshwater generators

of the AQUA Blue family. Environmental systems include oily water separation PureBilge, superior crankcase gas cleaning solution PureVent and Sonihull anti-fouling technology, plus a new PureBallast designed for simpler installation and faster retrofits.

On the digital front, StormGeo experts will demonstrate Voyage Intelligence, an integrated platform combining voyage planning, route optimisation, weather intelligence and fleet performance monitoring. Alfa Laval's global marine service network rounds out the offering, providing on-call remote support, online monitoring, preventive maintenance, dry dock services and lifecycle expertise to maximise vessel performance and uptime.

<https://www.alfalaval.de/>

Ankeri

Hall B6, Stand 514

At SMM 2026, Ankeri is presenting its Time Charter Operating System, a connected software platform that helps shipping companies manage the time charter lifecycle in one environment.

Celebrating its tenth anniversary in 2026, Ankeri continues to expand its operating system with capabilities that connect planning, execution and decision-making across time charter operations.

Designed for shipowners, managers, brokers and operators, Ankeri provides the infrastructure to maintain a single source of truth across the time charter lifecycle. By connecting charter party terms, vessel performance, operational events, emissions management and settlements, the platform

brings commercial, technical and accounting teams together around the same operational data, creating a scalable foundation for future capabilities, including AI.

At SMM, visitors will be able to explore how Ankeri brings together Time Charter Execution and Emissions Management, including Charter Party Management, automated invoicing and settlement, performance management, reporting, data integration, and support for ETS, FuelEU Maritime and CII. The latest additions, Fleet Transition and Ankeri AI, build on this connected operational foundation, enabling long-term scenario planning and AI-powered insights grounded in operational context.

www.ankeri.net

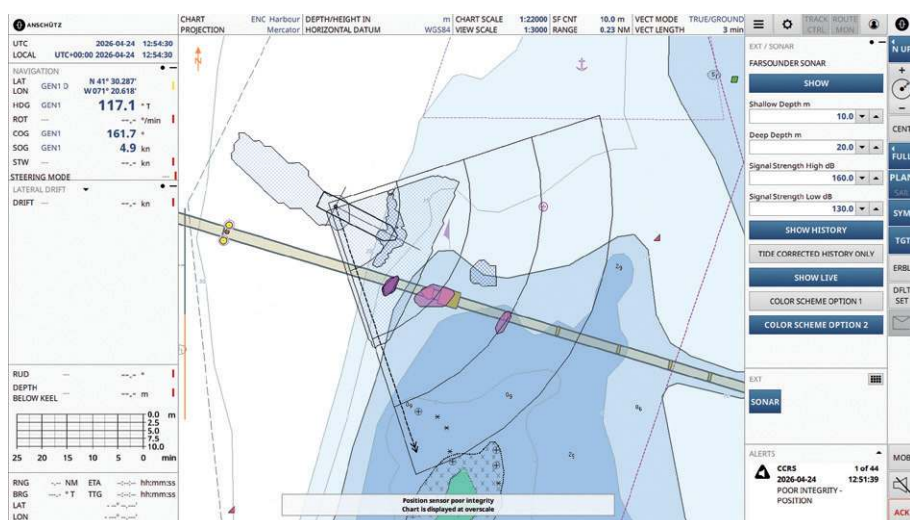
Anschütz

Hall B6, Stand 304

Anschütz will use SMM 2026 in Hamburg to showcase a new generation of navigation systems designed to sustainably strengthen situational awareness, resilience and efficiency on the bridge, even in demanding operational conditions.

A key highlight is the latest SYNOPSIS NX software release, which represents the next step in expanding the capabilities of the Anschütz integrated navigation system. Based on real operational requirements, the update sharpens situational awareness, optimises workflows and eases the workload on the bridge, helping crews make clearer, faster and safer decisions in daily operation.

The release introduces a set of targeted functional enhancements. Generic Overlay, for example, enables seamless integration of external sensor data directly into ECDIS NX. This creates a unified operational picture on a single display, without media discontinuities between different systems. Beyond the current software release, Anschütz will also provide an outlook on the



Generic Overlay enables seamless integration of external sensor data into ECDIS NX

next generation of maritime navigation at SMM. Anschütz will showcase its first Collision Avoidance Assistance System (CAS), a 'virtual officer of the watch' that marks the move from assistance towards intelligent,

rule-based decision support. Anschütz will also introduce a new maintenance-free gyrocompass, based on the well-proven Coriolis vibratory gyro technology.

www.anschuetz.com

Source: Anschütz

Redistribution to third parties is prohibited under copyright law.

FIND YOUR PATH WITH BUREAU VERITAS

"Sustainability for the future cannot be achieved alone."

Ramona Zettelmaier

M&O Central Europe Director,
Bureau Veritas Marine & Offshore



Contact



SMM

MEET US AT
SMM 2026!

Hall B3, Booth 103



BUREAU
VERITAS

Azure Campfire

Hall B6, Stand 145

Azure Campfire is managing and coordinating the Maritime Technologies Pavilion at SMM 2026 in Hamburg in cooperation with the German Association for Marine Technology (GMT).

This year's exhibitors include Canada's Maritime Industries, German Association for Marine Technology (GMT), Maritime Cluster Northern Germany, Amollo, Bender, Bluematt, GISMA, and Subdron. Together they are presenting the latest developments and technologies in the maritime industry.

With many years of experience in the maritime sector and a strong service-oriented approach, Azure Campfire invites visitors, partners, and industry professionals to visit the pavilion and connect with leading organisations from across the international maritime community.

<https://azurecampfire.com>

Bachmann

Hall B6, Stand 307

Maritime automation is the focus of Bachmann electronic's presentation at SMM 2026. The company will showcase the new "openBridge for atvise" template, which integrates open-source openBridge web components into the atvise® visualisation platform. The template supports standards-compliant and individually tailored maritime applications, including ship bridges. Bachmann will also present the third generation of its MX200 processor modules, equipped with Intel industrial CPUs, the VxWorks 7 real-time operating system and an integrated TPM 2.0 chip. The portfolio further includes the CPS100 CPU family and the PPC1200 panel PC. For condition monitoring, Bachmann will show a scalable smart maintenance system



Source: Bachmann electronic

From new M100 Series processor modules to recently released PPC1200 panel PC and third generation of MX200 processor modules, Bachmann electronic is introducing a wide range of hardware innovations

based on the AIC206 and AIC214 modules and the CMSPLC application platform. The M100 and M200 control platforms provide the basis for automation systems for low-emission and autonomous shipping, supporting communication protocols including MTP, DDS and openBridge.

www.bachmann.info



Together in Every Water

ZF Marine is a global leader in integrated propulsion and control systems for commercial, leisure and governmental vessels covering a power range from 10 to 12,000 kilowatts. Backed by global service and deep industry expertise, ZF Marine is a trusted long-term partner at sea.

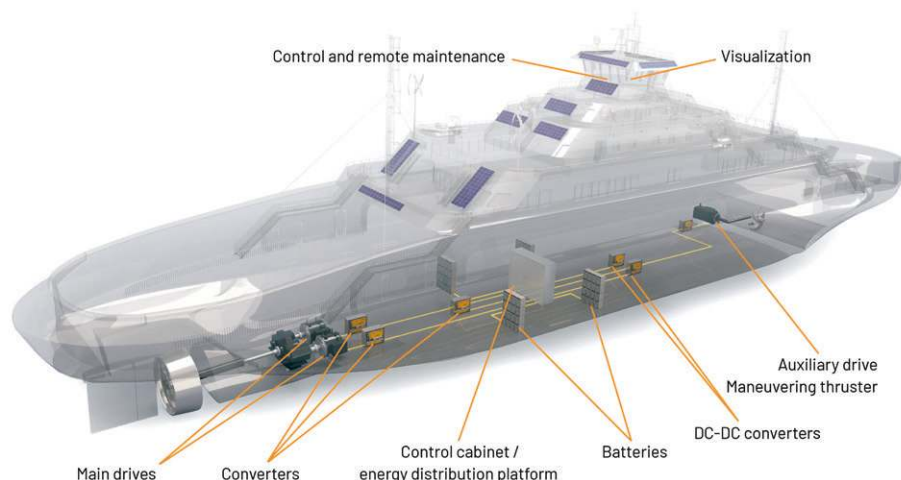


zf.com/marine

Baumüller

Hall A4, Stand 334

At SMM 2026, Baumüller will present intelligent propulsion and charging systems for inland waterway vessels, ferries, workboats, research vessels and yachts. Visitors can use a games console to explore different driving modes and see how energy sources and loads interact in an electric vessel. Baumüller develops complete propulsion and power-generation systems for fully electric and hybrid vessels. The portfolio includes electric motors, inverters, generators, scalable lithium-ion batteries with energy management systems, onboard power supply units, control cabinets, and drives for propellers and bow thrusters. The company will also show charging systems for ships and ports. Depending on the vessel and its intended use, these include autonomous telescopic charging via a loading crane, ram charging systems and manual charging stations. Charg-



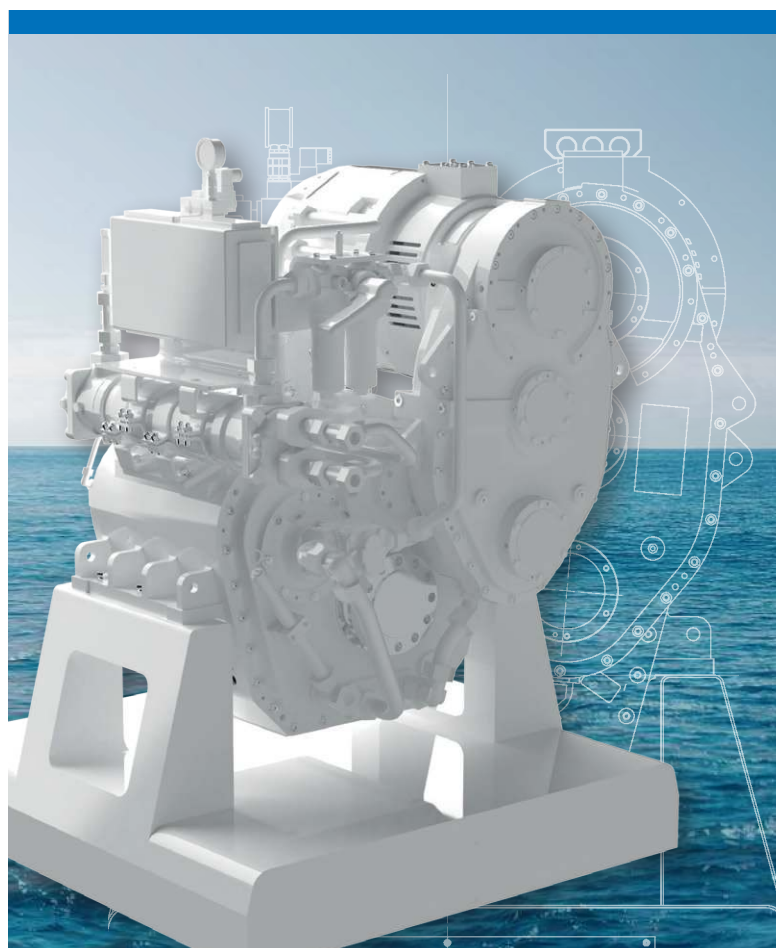
Baumüller is a system partner for the entire drive system: from control systems to power management

Source: Baumüller

ing capacities can be tailored to local requirements, ranging from AC charging stations and DC standards such as CCS2 and MCS to customised DC charging systems with capacities of up to 6 MW. Baumüller will also highlight the growth

of its marine network, including new local partnerships in Greece, Italy and Slovenia, as well as its role as a Danfoss Drives system integrator.

www.baumueller.com





Hybrid made easy.

For more information visit us at the
SMM - hall A4 booth no. 211
www.reintjes-gears.com

Berg Propulsion

Hall A4, Stand 316

Visitors to SMM 2026 can see Berg Propulsion's Marine Information Display, developed to give bridge teams a centralised overview of propulsion performance and

vessel status. The display presents real-time data on engine and generator load, propeller thrust, thruster utilisation and fuel consumption through a single interface.



The Marine Information Display provides a centralised overview of propulsion performance and vessel status

Source: Berg Propulsion

Its integrated Mode Selector automatically switches between electrical, mechanical and hybrid propulsion modes, supporting the management of clutches, engines, motors and gensets. This reduces the workload for the crew and helps the propulsion system operate efficiently throughout the voyage. The automation can also support faster interpretation of changes in power and thrust during manoeuvring, particularly in congested waterways and port areas. By reducing uncertainty and decision bottlenecks, the Marine Information Display is intended to support crew and vessel safety, fuel efficiency and longer maintenance intervals. Berg Propulsion will also present its range of controllable-pitch propellers, azimuth thrusters, integrated hybrid-electric packages, control systems and lifecycle support.

www.bergpropulsion.com

BLRT Repair Yards

Hall B4, Stand 106

At SMM 2026, BLRT Repair Yards, part of BLRT Grupp - one of the largest industrial groups in the Baltic Sea region - will showcase how its continuously expanding capabilities help shipowners keep their fleets safe, reliable, compliant and ready for the next mission.

With three strategically located repair yards in Estonia, Lithuania and Finland and seven docks across the region, BLRT Repair Yards delivers more than 270 re-

pair, retrofit, conversion and modernisation projects every year, supported by in-house engineering, experienced project teams and comprehensive all-in-house production capabilities.

Recent investments include the commissioning of a 180-metre floating dock in Tallinn in 2024 and the construction of a new 200-metre floating dock for Klaipėda, scheduled to enter operation in autumn 2027.

These developments strengthen BLRT Repair Yards' docking capacity across the Baltic Sea region and enhance its ability to carry out increasingly complex repair, retrofit and conversion projects. Combined with growing technical expertise, they enable the group to support shipowners in improving operational efficiency, extending vessel lifetime and meeting environmental and regulatory requirements.

<https://blrtyards.com/en/>

VOLVO PENTA



THE NEXT EVOLUTION OF IPS

Experience the new
Volvo Penta IPS 900 Electric
and D13 IPS 900 Hybrid

Discover integrated propulsion solutions
designed for the future of marine operations.

Visit us at: Stand A4.312



Engine Insights turns onboard cylinder measurement data into clear digital reports on engine condition and wear

Source: Chris-Marine

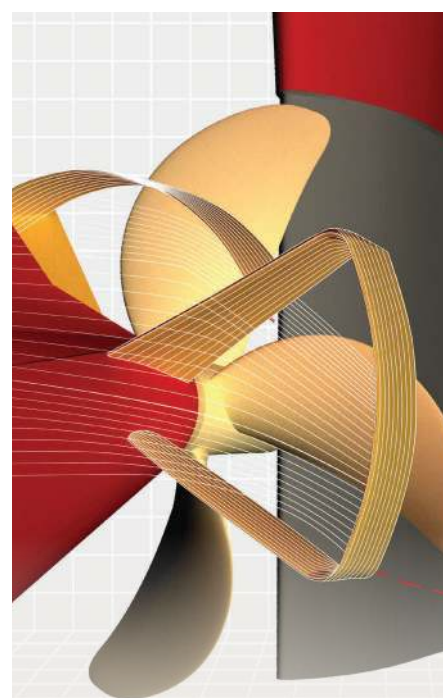
Chris-Marine

Hall A3, Stand 402

At SMM 2026, Chris-Marine will present Engine Insights, which transforms onboard cylinder measurement data into standardised digital reports. The system provides ship operators with a clear overview of engine condition and wear development over time. As operators face growing pressure to reduce fuel consumption, lower emissions and maximise engine availability, reliable condition data is essential for making informed maintenance decisions. Without this data, components may be serviced too early, too late or without a clear un-

derstanding of their actual condition. Engine Insights enables technical teams to identify trends, compare historical data and make maintenance decisions with greater confidence. It does not replace existing measurement routines but enhances their value by making the data easier to interpret, share and use across the organisation. The result is improved maintenance planning, greater operational awareness and a stronger basis for optimising engine performance throughout a vessel's lifecycle.

<https://chris-marine.com>



Mastering the design

One propulsion concept.
Our aligned solution.

Discover the next level of
propulsion at SMM 2026!
Booth-No. A3 308



Follow us!



mecklenburger-metallguss.com

DMZ - German Maritime Centre

Hall B6, Stand 215

The German Maritime Centre (DMZ) is the cross-sector think tank for the German maritime sector. As a source of ideas and inspiration, it supports the industry, policymakers, and public administration with studies, analyses, and information. As a voice for the maritime economy, it promotes the sector's importance to the wider economy.

The DMZ's work covers the entire maritime sector, including its sub-sectors of

shipbuilding and suppliers, shipping, ports and logistics, and offshore. It focuses on sustainability and climate change, technological change, competitiveness, demographics and securing the next generation of talent, and security and geopolitics.

In Hall B6 at booth 215, visitors can meet the think tank's experts, learn more about its tools and events, and studies, and attend live sessions on a variety of topics.

Together with the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping the DMZ will host the panel "Designing ships for an uncertain future" on Tuesday, September 1st at 15:30, on the Energy Efficiency Stage in hall A4. On Thursday, September 3rd at 13:45, the DMZ will launch the new umbrella brand and campaign for talent recruitment for the German maritime sector on the Open Stage in Hall B2 (upstairs). This event will be held in German.

<https://dmz-maritim.de>



In Hall B6 at booth 215, visitors can learn more about the German Maritime Centre

Source: DMZ

DNV

Hall B4, Stand 221

At this year's SMM, classification society DNV will launch the tenth edition of its Maritime Forecast to 2050. Energy efficiency remains a key immediate decarbonisation lever, and a scenario-based framework helps shipowners assess strategies across several possible pathways. It will be presented at a special event with a keynote and panel discussion. DNV will also demonstrate the new RuleAgent AI tool that helps its customers find the right rule faster.

In addition, the classification society will be highlighting v2.0 of the Steel Load Planner, which can create an AI supported plan for loading steel coils in under five minutes. For the first time, it also covers general cargo and multi-purpose vessels alongside bulk carriers. What's more, every day, DNV will be holding expert "silent talks" and there will be many events with partners from across all industry segments.

<https://www.dnv.com/>

DVV Media Group

Hall A1, Stand 307

Hamburg-based DVV Media Group, publisher of the leading technical trade publications for the international maritime markets, Schiff&Hafen and Ship&Offshore, enters SMM 2026 with an updated and modern booth concept. However, this will only be the presenting area of its top-tier magazines and online offerings. Of course, once again DVV Media will be responsible for the publishing of the show newspaper, the official SMM Daily News. Its editorial expertise and strong industry networks also made it a valued partner for creating, organising and moderating high-profile panels at SMM. On the various stages, editor-in-chief Kathrin Lau will host and moderate the following panels throughout the week:

- › From Assistance to Autonomy: Routing and Collision Avoidance as the First Real Step into the Future of Shipping (1/9, 12.00 - 12.50, Digital Stage)
- › Propulsion of the Future – What Will Power Future Global Trade? (1/9, 14:30 - 15:20, Energy Efficiency Stage)
- › Retrofitting the Fleet: The Case for Marine Engine Upgrades (3/9, 13:15 - 14:15, Energy Efficiency Stage)
- › Maritime Career Market Goes International (3/9, 15:50 - 16:40, Open Stage)



Illustration of the new booth at SMM

Source: Didid Brand Spaces

› Nuclear-Powered Shipping: A Competitive Edge, a Decarbonisation Pathway or a Capex-Heavy Threat?" (4/9, 10:30 - 11:20, Energy Efficiency Stage)

DVV Media Group will also moderate panels at the newly established ALL ABOUT PORTS conference, focusing on the influence of private equity and investment funds on shipping and ports, next-generation logistics operating models, and the future of energy transition and digital transformation.

www.schiffundhafen.de; www.shipandoffshore.net

THE SEA IS UNPREDICTABLE

You stay relaxed

Because you can rely on **high-quality HEROSE valves** and **our global service**.

Valves at sea must operate flawlessly. That is precisely why we offer you a dedicated service that tackles every challenge on your behalf. We are also happy to inspect your entire systems every five years and provide you with genuine spare parts for class renewals. HEROSE is there for you worldwide: **fast, flexible and reliable**.

Meet us:
Hall 4
Stand 222



Book your
SMM appointment
now and get
your ticket

herose.com

Peace of mind with **HEROSE**:
Francesco Querciola
LNG ENGINEER, COSTA TOSCANA



Right time for the right move

Improve efficiency when it matters most with Wärtsilä solutions designed to reduce fuel use, support compliance and strengthen vessel performance



Discover more at SMM 2026:
Wärtsilä stand, Hall A3
Stand-No. 108





AR and VR will be the focus of Furuno's trade fair concept

Source: Furuno Electric Co, Ltd

Furuno Electric Co, Ltd

Hall B6, Stand 100

Furuno is taking bridge navigation beyond conventional radar and ECDIS with augmented and virtual reality technologies. The AR-100M overlays navigation data onto live camera images, helping navigators quickly understand their surroundings and make informed decisions. Building on this approach, the VNS-100 provides a three-dimensional virtual navigation

environment. Its Bird View, Fully Automatic Acquisition and Tracking, and Risk Visualizer™ functions are designed to help bridge teams assess traffic situations, identify risks and share situational awareness. At SMM 2026, Furuno will show how navigation can evolve from understanding the real world to sharing situational awareness across the bridge.

www.furuno.com/en


HEICO Fastening Systems

The best value to secure and tighten bolted joints.



Visit us at:



1. - 4. September 2026
Hamburg
Hall B7 | 344

Proven. Precise. Made in Germany.

Contact us for
more information:
www.heico-group.com
+49 2938 - 805 0



Geislinger

Hall A3, Stand 107

Hall A4 Outdoor Area, Stand 08

Austria's Geislinger will introduce the SILENCO® Neo at SMM 2026.

Developed for demanding drivetrain applications, the ultra-lightweight coupling is designed to reduce stiffness and mass while supporting precise eigenfrequency tuning and improved overall system performance.

As a dedicated NVH coupling and marine NVH solution, SILENCO® Neo helps reduce structure-borne sound transfer between the engine and connected drivetrain components. Its optimised dynamic stiffness characteristics support engine vibration isolation, improved transmission loss and reduced engine foundation vibration, contributing to lower noise and vibration levels throughout the drivetrain.

SILENCO® Neo incorporates advanced carbon fibre composite engineering to deliver a robust, solution for demanding drivetrain requirements. By significantly reducing the weight of the SILENCO® coupling, Geislinger has not only created the most lightweight NVH coupling on the marine market but also demonstrates that superior noise reduction and weight-saving design can go hand in hand. The coupling supports simplified assembly and faster installation while offering high misalignment capability, low reaction forces and electrical insulation capability. This makes SILENCO® Neo particularly well suited for demanding marine applications such as superyachts, naval vessels, research vessels and ultra-lightweight passenger transport vessels.

www.geislinger.com


Visitors can see SILENCO® Neo at SMM 2026 and learn more during Geislinger's technical presentation

Source: Geislinger

German Association for Marine Technology (GMT)

Hall B6, Stand 145

The German Association for Marine Technology (GMT) will be presenting its services and expertise at the joint stand "Maritime Technologies" at SMM.

The GMT represents the interests of companies and research institutions in the field of marine technology. It connects its members from industry and science in order to initiate national and international research projects and provides support in the development of innovative products and services as well as in the opening up of new national and international market segments. Particularly regarding the United Nations' Sustainable Development Goals, sustainable marine technology is becoming increasingly important by developing technologies for the exploration, protection and sustainable use of the oceans. Among its activities at SMM are:

➤ The Session "The future of critical underwater infrastructure protection: from individual platforms to secure network operation" at the Naval Stage in Hall B8 on September 1 (12:00 to 12:50 p.m.) is organised by the GMT.

➤ GMT is once again partner of the Offshore Dialogue, which will take place on September 3rd under the theme "Secure Offshore Technologies for Future Oceans" and is an official initiative of the UN Decade of the Ocean. The two sessions, "Secure Offshore Infrastructures (10.30 to 11.30 a.m.)" and "Secure Offshore Energy" (11.45 a.m. to 12.45 p.m.) will take place on the Energy Efficiency Stage in Hall A4.

➤ On September 3rd, from 4.00 to 6.00 p.m., the Maritime Cluster Northern Germany and the GMT will once again be inviting members and representatives from business, science, politics and the media to the traditional "Blue Hour" at the joint stand.

➤ In the immediate vicinity of the joint stand, Canadian companies and organisations will be presenting themselves at the stand "Canada's Maritime Industries". The GMT will continue the successful cooperation of recent years.

<https://marine-technology.eu>



The Association is involved in various activities during SMM

Source: GMT

GTT Marine

Hall B6, Stand 525

GTT Marine will make its first appearance at SMM following the launch of the new GTT Group division, bringing together the complementary capabilities of Danelec, Ascenz Marorka and Vessel Performance Solutions under a single brand. Built on a combined installed base of more than 17,000 units, GTT Marine is focused on

helping shipowners turn trusted operational data into better decisions across safety, performance and decarbonisation.

At SMM, visitors will be able to explore how the company's integrated, platform-agnostic approach connects onboard data acquisition, voyage optimisation, performance analytics and regulatory compliance

within a single digital ecosystem. Rather than replacing existing systems, GTT Marine is focused on helping owners make better use of the data they already have to improve fuel efficiency, strengthen safety, simplify compliance and support more confident ship-to-shore decision-making.

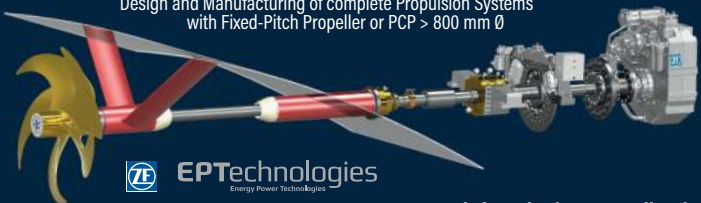
www.gttmarine.fr

Pieining Propeller



YOUR PARTNER FOR HYBRID SOLUTIONS

Design and Manufacturing of complete Propulsion Systems
with Fixed-Pitch Propeller or PCP > 800 mm Ø





EPTTechnologies
Energy Power Technologies

info@pieining-propeller.de

Hamworthy

Hall A1, Stand 205

Hamworthy will make its first appearance at SMM as an independent company following its launch earlier this year, marking an important milestone for the marine water and waste treatment specialist. While the business begins a new chapter, it continues to build on decades of experience supporting the global shipping industry, combining Hamworthy's expertise with more than 180 years of maritime heritage alongside Serck Como.

The company plans to use SMM 2026 to showcase the next stage of its development, including the unveiling of a forthcoming new product and discussions around the evolving environmental and operational challenges facing shipowners and shipbuilders. Its focus will be on integrated water and waste treatment solutions that help operators improve compliance, efficiency and long-term vessel performance.

Hamworthy will also be represented within the conference programme, with CEO Fraser Scott presenting "Protecting tomorrow by treating today" on the Exhibitor Innovation Stage in Hall B5 at 1:45 pm on Thursday September 3rd. The session will examine how advances in marine water and



Hamworthy will showcase its ballast water treatment system at the fair

Source: Hamworthy

waste treatment are supporting the industry's transition towards more sustainable and efficient vessel operations.

waste treatment are supporting the industry's transition towards more sustainable and efficient vessel operations.

www.hamworthy.com


Wilhelmsen
Ships Service

Sail ahead with #WilhelmsenEdge

Delivering greater value and peace of mind wherever and whenever you need it.

As a market leader in the global maritime industry, we at Wilhelmsen Ships Service are proud to offer a wide range of maritime solutions coupled with expert advice.

Global Availability
#MaritimeAvailabilityNow

Efficient Delivery
#MaritimeTransportationNow

Expert Service
#MaritimeExpertsNow

Proven Solutions
#MaritimeCertifiedNow

Safety Compliance
#MaritimeComplianceNow

World Class Digital Services
#MaritimeInnovationNow



Follow us:




Visit us at SMM Hall B6, Stand 331

IMES

Hall A2, Stand 235

At SMM 2026, IMES will present the TCS-01CA®-PMI two-stroke combustion sensor for continuous cylinder pressure measurement on electronically controlled two-stroke diesel and dual-fuel engines. Designed for 24/7 operation, the sensor can replace the standard pressure sensor in PMI auto-tuning systems. Its pin-compatible connector and plug-and-play design support straightforward installation. A specially designed adaptor between the cylinder cover and indicator cock reduces the build-up of combus-

tion deposits on the sensor membrane. The sensor's closed face reduces the risk of sooting during long-term operation. It provides cylinder pressure measurements with an accuracy of less than 1% of full scale and is designed for continuous operation for three years without recalibration. The TCS-01CA®-PMI has received marine type approval from Bureau Veritas, ClassNK, DNV, Korean Register, Lloyd's Register and RINA.



Source: IMES

TCS-01CA®-PMI sensor installed on an Everllence ME two-stroke diesel engine

www.imes.de

Inmarsat

Hall B6, Stand 625

At SMM 2026 in Hamburg, Inmarsat Maritime will present NexusWave, its fully managed, bonded connectivity service for shipping companies. Since its launch, the service has secured more than 3,000 vessel orders from operators including MOL, Pacific Basin, "K" Line, Auerbach, Evergreen, EXMAR, Krey Schifffahrt, F.A. Vinnen and Vega Reederei. NexusWave bonds GEO, LEO, LTE and L-band connectivity into a single managed service. This allows applications to use the best available network and benefit from combined capacity when multiple networks are available. The service provides uptime of more than 99.9 per cent. During sea trials, it achieved download speeds of up to 340 Mbps and upload speeds of up to 80 Mbps. NexusWave supports business-critical applications, video conferencing, cloud services and crew welfare platforms. Unlimited data and global coverage provide crews with internet access at sea. The service has also received Cyber Security Type Approval from ClassNK, confirming compliance with the IACS UR E27 cyber security standard for onboard systems and equipment.

www.inmarsat.com

The original delivers what copies promise

HAMMELMANN®

WE KEEP PUSHING TECHNOLOGY FURTHER!

- 20% higher operating pressure of 3,600 bar
- 40% greater area performance of 180 m²/h
- 45% less water consumption

SMM
HALL B5
BOOTH 434

www.hammelmann.com

Experience the full range of Hammelmann ship cleaning systems:



Intellian Technologies

Hall B6, Stand 317

Intellian Technologies, a leading global provider of satellite communication antennas and ground gateway systems, will showcase its latest range of dedicated maritime products including its Iridium Certus® GMDSS systems and the new VS60 Viasat Global Ka-band Satellite Antenna at this year's SMM.

Intellian's GMDSS range features Iridium Certus®, offering the fastest L-band satellite connectivity available for the Global Mari-

time Distress and Safety System (GMDSS) worldwide.

Its C200 and C100M systems meet the new IEC 61097-16 (2019) GMDSS standard and are Marine Equipment Directive (MED) Wheelmark approved as required by SOLAS.

Intellian's new single-unit GMDSS console is the first console on the market with built-in Iridium GMDSS products, offering a complete system for new vessels, arriv-

ing factory-assembled, pre-wired and fully tested.

Another new addition to Intellian's range of specialist maritime antennas, is the 65cm Ka-band VSAT terminal. Fully optimised for the ViaSat-3 satellite network, delivering reliable performance, with advanced link adaptation and automatic beam switching, ensuring stable connectivity, fully aligned with ViaSat-3's dynamic bandwidth allocation.

<https://intelliantech.com/en/home#>

Korean Register

Hall B2, Stand 325

As EU ETS, FuelEU Maritime and the IMO's evolving Net-Zero Framework add complexity to regulatory planning, shipowners need reliable tools to assess compliance scenarios and support long-term investment decisions. At SMM 2026, Korean Register (KR) will present KR PILOT and KR POWER, software platforms developed by KR and

based on its experience in global maritime regulation. KR PILOT analyses fleet emissions, CII performance and projected regulatory costs, comparing different compliance scenarios to help shipowners develop Net-Zero roadmaps. KR POWER assesses real-world vessel performance using AIS data, weather

conditions and fuel consumption records, identifying efficiency opportunities across successive voyages. Korean Register has integrated both platforms into KR-DAON, its digital platform, linking strategic planning with operational verification in a single workflow.

www.krs.co.kr

the power to control

Solutions for Green Shipping

Automation. Efficient. Sustainable.

Increase efficiency, reduce emissions

Our automation systems provide smart technologies to reduce emissions and increase efficiency.

Reliability through redundancy

You can rely on certified safety standards and redundant systems for uninterrupted availability.



Certified system solutions meeting the highest quality standards.



bachmann.

Visit us:
SMM Hamburg, GER
Booth: B6.307



energy.industry.maritime.

www.bachmann.info

Redistribution to third parties is prohibited under copyright law.

MacGregor

Hall A1, Stand 330

MacGregor will present advanced deck and cargo equipment backed by global lifecycle support. The portfolio is aimed at shipowners looking to invest in electric equipment, optimise hydraulic systems or modernise existing fleets through retrofits and maintenance. The range includes electric and hydraulic cargo cranes designed to reduce energy consumption and environmental impact, supported by ROC-M remote access. MacGregor will also showcase deck machinery, including winches and windlasses, as well as brake test kits for safety and compliance. The class-approved Balanced Lashing System enables container ships to safely carry up to 10% more cargo on deck. In combination with the Hippo Fully Automatic Twistlock, it helps eliminate manual risks and reduce port turnaround times.



MacGregor will present advanced deck and cargo equipment at SMM Source: MacGregor

For cruise ships, naval vessels and megayachts, MacGregor provides customised load-handling systems, tailor-made equipment and dedicated lifetime services. GravityVibe™ technology supports the unloading of sticky or difficult bulk materials. MacGregor is also presenting its work on autonomous cranes. Level 3 Highly Automated Cranes use lidar for automated cargo scanning and machine-learning Auto-Grip technology. Operations can be supervised from a remote bridge desk. The Carbon Calculator enables shipowners to calculate the emission-reduction potential and return on investment of container vessel upgrades. Global lifecycle support includes spare parts, modernisations, retrofits and customised service agreements.

<https://www.macgregor.com>

FURUNO

SHARE WHAT EXPERTS KNOW.

Supporting situational awareness in congested waters.

TYPE : Landmark
LIGHT : <No Light>

Key Features:

- Bird View (bird's-eye)
- Fully Automatic Acquisition and Tracking
- Risk Visualizer™



MAN Engines

Hall A3, Stand 211

Higher performance, lower emissions and resource-saving service concepts are the focus of MAN Engines' presentation in Hamburg. The company will show its expanded portfolio for maritime applications in the workboat sector, including the 30-litre MAN D3872 V12 engine. It will be presented for the first time in versions for onboard units, diesel-electric drive systems and heavy-duty applications.

For generator operation, the engine is available with outputs of 800 kW, 840 kW and 960 kW. Heavy-duty versions deliver 735 kW or 920 kW. Depend-



At SMM 2026, MAN Engines will be showcasing a single-stage MAN D3872 for heavy-duty or on-board engine applications. The exhaust gas aftertreatment shown can also be seen at the trade fair. Source: MAN Engines

ing on requirements, variants are available for IMO Tier II, IMO Tier III and EU Stage V. MAN Engines will also present a modular exhaust gas aftertreatment system comprising a diesel particulate filter and SCR system for EU Stage V applications. The engine, aftertreatment and control systems are developed as a coordinated and certified package. A further exhibit will be an MAN Genuine remanufactured engine. The standardised process restores engines and components to like-new condition. Compared with producing a new MAN D2842 engine, remanufacturing can save up to 72% of CO₂.

www.man.eu

Marlink

Hall B6, Stand 427

As the shipping industry gathers in Hamburg, cyber resilience will be high on the agenda, with Marlink contributing to the conversation on protecting both IT and operational technology (OT) environments while meeting evolving regulations in an increasingly complex geopolitical landscape. The company protects its customers through a global network of Security Operations Centres (SOCs), providing 24/7 threat monitoring, incident response and expert support.

Marlink will also showcase the role of its Possibility Portfolio in helping shipowners simplify increasingly complex digital operations through integrated connectivity, cyber security, cloud and edge services. Among the latest additions to the portfolio is Sealink Multi-LEO, which uses intelligent network orchestration to maximise the performance of multiple low Earth orbit networks, delivering resilient, flexible and operationally consistent connectivity for global maritime operations.

Another Marlink focus at SMM will be XChange NextGen. The company's new, next-generation edge platform bringing together secure onboard applications, cyber protection and digital services across connected vessels and fleets.

Marlink will also explore how GMDSS is reshaping maritime safety communications, and how its technology-agnostic approach helps operators deploy compliant, resilient services across multiple technologies while simplifying the transition to new capabilities.

www.marlink.com

SET SAIL WITH SEAWATER RESISTING PUMPS

Efficiency increase and conserving resources through thick coating.



SMM 2026
01.09.-04.09.
Hamburg
booth A2.109



**HERBORNER
PUMPEN**

www.herborner-pumpen.com

mayr

Hall A4, Stand 326

At SMM 2026, mayr® power transmission will present new models in the ROBA-stop® S and ROBA-stop M® series, extending its safety brake portfolio to braking torques above 1,000 Nm for maritime applications. The new ROBA-stop M® 2000 is designed for harbour and construction cranes, hoists and overhead travelling cranes. It achieves a braking torque of 3,500 Nm in the holding brake version and up to 2,500 Nm as a dynamic brake. It is available in protection ratings IP54 and IP66. For applications involving seawater – such as harbour crane installations and deck winches – the ROBA-stop® S offers protection rating IP67

combined with high-performance corrosion protection. The new size 11 delivers up to 1,200 Nm dynamic braking torque. Both series are designed for easy installation and long maintenance intervals. On the ROBA-stop® S size 11, the rotor is accessible from the rear of the brake even when installed, simplifying maintenance under demanding conditions.

www.mayr.com

Applications involving extreme torques call for reliable and high-performance safety brakes. This is especially true when the environment presents additional challenges, such as in harbours or on the open sea.

Source: mayr



MCN (Maritime Cluster Northern Germany)

Hall B6, Stand 154

Just in time for SMM, the Maritime Cluster Northern Germany (MCN) is publishing the fifth edition of its MCN Ship Efficiency Guide. The guide provides a concise overview of the latest regulatory requirements, new technologies and best practices for efficient ship operation. The content is relevant for both existing and new-build vessels. The guide thus offers practical guidance on selecting and evaluating technologies and fuel options.

New additions include content on fuel blends and additives, as well as various fuel options for decarbonising shipping. Updated fuel matrices also make it easier to compare different fuel options. The Digitalisation, Assistance and Performance Monitoring chapter has also been expanded to include, for example, the use of artificial intelligence in collecting, analysing and evaluating operational data. This data is playing an increasingly im-

portant role in optimising vessel efficiency. The guide has also been supplemented with an overview of engine retrofits available for future fuels, as well as other retrofit technologies designed to improve ship efficiency. A new chapter is devoted to batteries in maritime applications and their growing importance for fully electric propulsion systems, as seen in ferry services, for example.

<https://www.maritimes-cluster.de/>



**LEHMANN
MARINE**





SMM
A4 · 327

**SAFE AND COMPACT
ENERGY STORAGE SOLUTIONS**

- Superior energy density
- Flexible and easy installation
- Patented air-cooling (**CUBE**)
- Water-cooled 2C (**AQUBE**)
- Inherently safe LFP chemistry
- Zero Cobalt and Nickel
- Scalable and modular design






LEHMANN-MARINE.COM

Oceanbird

Hall A1, Stand 226

Oceanbird was created to unlock the full potential of wind propulsion in modern shipping, reimagining how vessels can operate sustainably at scale. At its core is a bold ambition: to see wind-powered ships crossing the oceans, reducing reliance on fossil fuels while maintaining commercial viability. This vision has led to the development of Oceanbird's innovative rigid wing sail, a fully automated WPU that ensures that wind is captured in the most effective way.

Unlike traditional sails, the rigid wing sail is designed for efficiency, durability, and measurable performance. It enables significant fuel savings while contributing to meaningful reductions in CO₂ emissions – key factors in the maritime industry's transition toward greener operations. By harnessing wind as a primary or support-



At SMM, visitors can learn about Oceanbird's recent installation on Wallenius Wilhelmsen's car carrier, *Tiranna*

Source: David Falk, Göteborgs Hamn

ing propulsion source, Oceanbird helps shipowners comply with increasingly strict environmental regulations while reducing operating costs.

Beyond the technology itself, Oceanbird acts as a trusted partner throughout the in-

tegration process. The company supports shipowners, designers, and operators in implementing wind propulsion systems on board, ensuring seamless adaptation to existing and new vessels.

<https://www.theoceanbird.com/>

Parker Hannifin

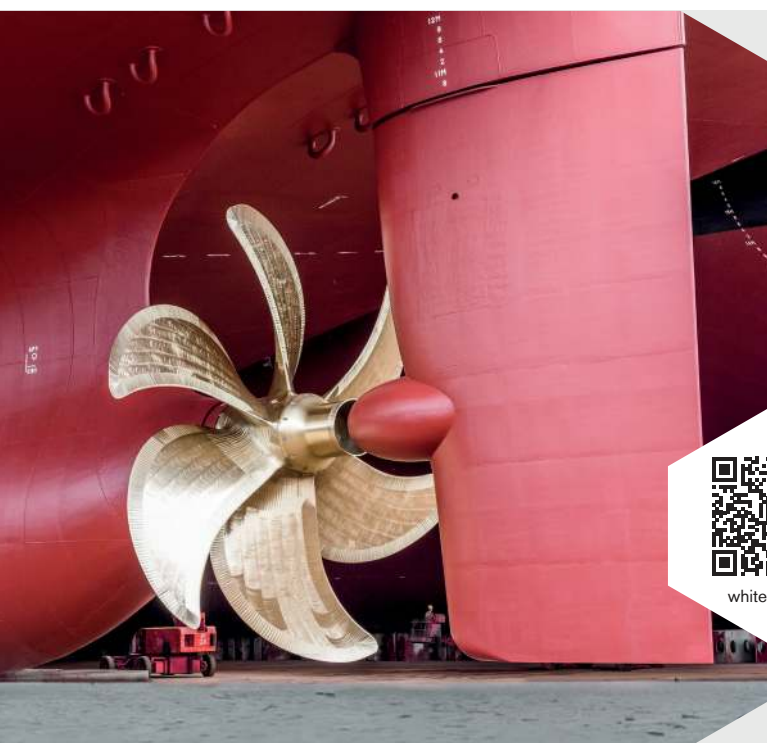
At SMM 2026, Parker Hannifin will focus on technologies for reducing vessel downtime, improving equipment reliability and lowering energy and maintenance requirements. The company will showcase the NFM-100 membrane for generating nitrogen as a protective gas

in hazardous areas, the Online Ferrous Wear Meter for monitoring oil condition, and products from the Racor brand. Parker will also address regulatory requirements associated with new marine fuels and provide information on hose products for newbuilds, retrofits, mod-

ernisation projects and service applications. Further topics include support for shipyard and system integrator projects, as well as improving the reliability of critical onboard systems in commercial and military shipping.

www.parker.com

Hall A3, Stand 412



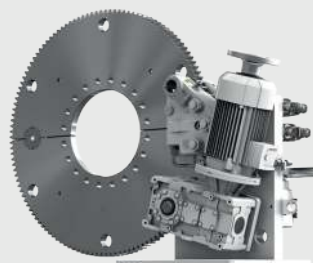
white paper

Made for Motion



STOP, BLOCK, TURN SBT-Systems for ship drives

Optionally with hydraulic, electromechanical or pneumatic operation



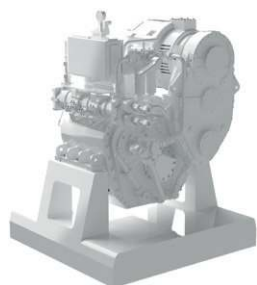
A4
233

Reintjes

Hall A4, Stand 211

At SMM 2026, propulsion specialist REINTJES will present the TME Hybrid System, a compact unit in which an electric motor and generator have been integrated directly into the gearbox. The design reduces installation space significantly and simplifies the scope of supply to a single package. The patent-pending TME supports PTI and PTO modes as well as boosting, and gives vessels the flexibility to switch between diesel and electric propulsion. The scope of supply includes a control panel with frequency converters and all electrical equipment required for operation. The electric motor covers a power range of 40 to 280 kW and is pre-assembled and fully tested at REINTJES, reducing both installation effort and commissioning time. Emission-free and low-noise operation makes the TME particularly suitable for use in coastal areas and ports. Target applications include ferries, yachts, supply and workboats, as well as naval and government vessels.

www.reintjes-gears.com



REINTJES is presenting its new TME Hybrid System at this year's SMM

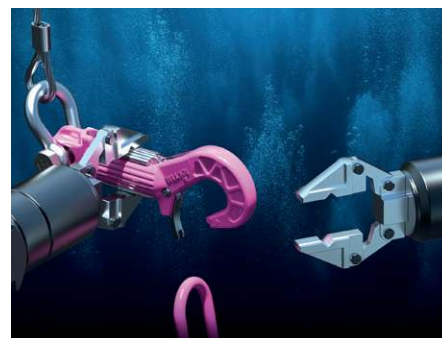
Source: REINTJES

RUD

Whether onshore, offshore, or subsea: safety, corrosion resistance and reliability are crucial for lifting solutions in the maritime environment. RUD will use the opportunity at SMM in Hamburg to demonstrate how these requirements can be fulfilled through collaborative partnerships, development expertise and DNV-certified lifting equipment under the motto "We share the load".

As a highlight, RUD presents the new ACP-TURNADO OCEANSTAR, the first lifting point approved by DNV for subsea environments. Its spring mechanism ensures that the lift bail automatically aligns with the direction of the pull. It also has a highly durable zinc flake coating for optimised corrosion protection. Moreover, the show features a wide range of solutions for a diverse array of maritime applications, from multi-directional load-bearing lifting points and swivel eye bolts that can rotate 360° to various hoist rings.

Among end components, RUD will be showcasing the ROV-HOOK. This is the result of a development partnership with Subsea7, a global provider of offshore solutions and services. Specially designed for offshore and subsea applications, the hook can be safely operated using standard ROV (Remotely Operated Vehicle) manipulators with its twin-trigger mechanism and automatic locking latches. The outwardly opening safety latch can only be opened by operating two release triggers. When the underwater robot releases



RUD will be presenting its development expertise and DNV-certified lifting equipment for safe operations in the maritime environment

Source: RUD

the trigger, the latch closes automatically and remains securely locked, thus preventing the load from being released unintentionally. The optimised design also reduces the risk of the unintentional snagging of components. A ROV-HOOK will be displayed on the stand to enable visitors to see how it works. The company will also provide information regarding potential partnerships.

RUD's trade fair offer will also include information on digital tools for the planning, selection, application, documentation and inspection of high-quality lifting equipment. These include a configurator for lifting points and lifting equipment and the RUD BUDDYtron app, which can be used to access product data and operating instructions at any time.

www.rud.com

Hall A1, Stand 321

SET COURSE FOR TOMORROW

1 - 4 SEPT 2026

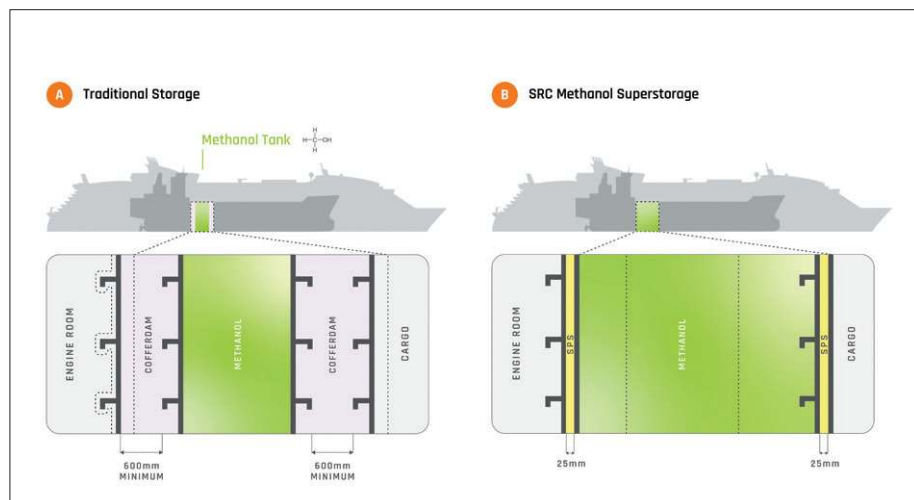
HALL A4 | BOOTH 305



SRC Group

Hall B7, Stand 510

At SMM 2026, SRC Group will present two space-saving systems for the maritime sector: the Methanol Superstorage system and an all-electric maritime heat pump system. Methanol Superstorage, recently type-approved by RINA, replaces conventional cofferdams of up to 600mm with a compact sandwich structure based on SPS Technology's Sandwich Plate System. A 25mm polyurethane elastomer core, fully bonded between two steel plates and rated to A60 fire resistance equivalence, acts as a load-transferring, energy-absorbing and sealing layer. The oxygen-free environment it creates prevents corrosion and reduces maintenance. The system complies with IMO MSC.1/Circ.1621 and can store nearly twice the volume of methanol or ethanol compared to a conventional tank. The all-electric heat pump system, developed in partnership with Energy Transfer, replaces conventional oil-fired boilers and



SRC Group's Methanol Superstorage system uses a compact sandwich structure to store nearly twice the volume of methanol as a conventional tank

Source: SRC Group

chillers. Its modular, skid-mounted design suits space-constrained engine rooms. Inverter-controlled screw compressors and high-efficiency heat exchangers deliver a thermal capacity of 200 kW to 3 MW. Under peak conditions, the system produces 11 kW of combined thermal output from 1

kW of electrical input, enabling simultaneous heating and cooling. SRC Group states that shipowners can expect a return on investment within two years. The system has been deployed on a large European ferry and a vessel operating in Canada.

<https://src.ee/methanol-super-storage>

STG - Schiffbautechnische Gesellschaft

Hall B4, Stand 209

At SMM 2026, the German Society for Maritime Technology (Schiffbautechnische Gesellschaft, STG) will be present at the stand of the German Shipbuilding and Ocean Industries Association (VSM) in Hall B4. The STG is a network and knowledge platform for maritime technology, promoting the dissemination and exchange of research and development results with a focus on their practical application.

Beyond SMM, the STG has a busy autumn programme. On September 8th, a meeting of the Naval Architecture and Production Technology Committee will address productivity gains through automation in shipbuilding. A further meeting on September 24th will focus on resilient energy systems and automation. On October 23rd, the Education and Training Committee will host a "Stu-

dents meet Industry" event at HAW Kiel. The STG's 121st Annual General Meeting will take place from November 18th to 20th at Hotel Hafen Hamburg. Looking further ahead, the International Conference on Ship Efficiency is scheduled for September 28th and 29th 2027 at the Maritime Museum Hamburg.

<https://www.stg-online.org/>

RUDDER
MARINE SERVICES & SHIP REPAIRS

Technische Services, Crew-Services und Logistik aus einer Hand

Arbeiten während des laufenden Betriebs - mit lokaler Expertise.

www.rudder.eu | comercial@rudder.eu | Spanien & Nordafrika

stuckeGROUP

Hall B6, Stand 430

Network protection and control systems for the shipbuilding industry are the DNA of stuckeGROUP. With an installed base of more than 40,000 systems, the company has grown into a market leading position in which most medium-voltage switchboards in the commercial newbuilding market from South-Korea feature its products.

Based on year-long experience and knowledge, all stucke products perfectly match the requirements of the maritime industry. Customers do benefit from quality Made in Germany, sophisticated products and worldwide service.

In times of increasing geopolitical unrest, cyber security gets more and more important. stuckeGROUP is most likely the first provider to be certified according to

the latest cyber security standards by six leading classification societies: ABS, DNV, Bureau Veritas, Lloyd's Register, Korean Register and China Classification Society. The SYMAP® series is cyber secure type approved according to IEC standards, thus making a reliable contribution to increasing maritime safety.

stuckeGROUP's answer to sustainability, life-cycle and obsolescence management are quality products, reliability, service including

spare parts and repairs, upgrades and efficient retrofit solutions, even for products such as the SYNPOL®D, being launched in 1994.

With SYMAP®ARC the company offers an arc protection system for medium- and low-voltage switchboards with extremely short tripping time – meeting the needs to protect vessels and people against the risks of arc flashes, fires and complete failure of all systems on board.

<https://www.stuckegroup.com/>

Thordon Bearings

Hall A4, Stand 123

Thordon Bearings will present the T-BOSS® (Thordon Blue Ocean Stern Space) at SMM 2026 – a shaftline design that replaces the conventional sterntube with a dry chamber. This allows inspection and maintenance of a single seawater-lubricated propeller shaft bearing and seal from inside the vessel without withdrawing the shaft in drydock. The oil-free arrangement eliminates stern-tube oil and reduces the risk of environmental fines related to stern-tube oil pollution to zero. Ship operators can save more than USD 1 million in through-life operational costs. The shorter shaft-line also creates additional space that can be used to increase cargo capacity or to install a shaft generator, improving fuel consumption and EEDI ratings. The COMPAC seawater-lubricated propeller shaft bearings used in the T-BOSS® system are installed in more than 500 vessels, including tankers, bulk carriers, ferries, cruise ships and container ships. Thordon offers a Lifetime COMPAC Bearing Wearlife Guarantee. T-BOSS® was developed in cooperation with classification society ABS, ship designer CSSC-SDARI, Wärtsilä Shaft Line Solutions and the National Technical University of Athens.

www.thordonbearings.com

Engine Solutions for a Decarbonized World



Visit us at SMM Hamburg from Sept 01-04, 2026 Hall A4, Booth 407

- > Methanol
- > Ammonia
- > E-Methane
- > Ethanol
- > Hydrogen ...

For further information please visit www.woodward.com

WOODWARD

VDMA Marine Equipment and Systems, VDMA Engines and Systems, CIMAC

Hall A1, Stand 520

At SMM 2026, VDMA Marine Equipment and Systems, VDMA Engines and Systems and CIMAC will once again jointly host a stand, providing a central meeting point for industry professionals, member companies, partners, and international visitors.

A key attraction will be the return of the popular Speakers' Corner. This open presentation platform allows exhibitors, member companies, and experts to showcase innovations, projects, and new ideas to the SMM audience in an informal setting, encouraging direct interaction and dialogue with visitors. Offering a welcoming atmosphere for informal meetings, new connections, and networking over freshly prepared coffee, the stand's well-known barista service will also return.

In addition, three special events will highlight important industry developments. On September 1st, the panel discussion "Propulsion of the Future – What Will Power Future Global Trade?" will take place at the Energy Efficiency Stage in Hall A4, focusing on future propulsion technologies and energy solutions for shipping. On September 3rd, the CIMAC Circle panel discussion and the MTP Panel "Smarter Ships through Improved Integration with the New MTP Automation Standard" will be held on the Digital Stage in Hall B6, addressing current technological, regulatory, and automation trends in the maritime sector.

www.vdma.eu
www.cimac.com



At SMM in Hamburg, VEGA is showcasing innovative level and pressure instrumentation for merchant vessels and yachts

Source: VEGA

VEGA

Hall B6, Stand 101

At SMM 2026, VEGA will showcase level and pressure measurement technology for ships, yachts and challenging applications in the maritime industry. The focus will be on robust and reliable systems, supported by a partnership-based approach that extends beyond the supply of products. A key focus will be applications involving alternative fuels such as LNG, methanol, ammonia and hydrogen. These substances place high demands on safety, material resistance and measurement accuracy. VEGA will present sensor technology developed for use under extreme conditions, including corrosion-resistant materials, durable sensors and maintenance-free designs. VEGA will also highlight its support

throughout the entire lifecycle of a vessel, from planning and commissioning to maintenance and modernisation. Through its VEGAcare service, the company provides global reachability, technical support across time zones and rapid response through regional contacts. VEGA also supports customers during critical project phases such as commissioning, classification and drydocking. High product availability, short lead times and flexible processes support new-build projects, retrofits and urgent replacement requirements. Trade visitors can discuss specific maritime applications with VEGA experts at the company's stand.

www.vega.com

Veinland GmbH

Hall B6, Stand 412

Veinland GmbH is celebrating its 20th anniversary in 2026 and will be presenting new solutions for maritime information, communication and networking technology at SMM in Hamburg.

The focus will be on new 4K DisplayPort extenders for lossless transmission of high-resolution video signals, a DisplayPort distributor for signal distribution, and a DVI KVM switch for the centralised operation of multiple systems. The portfolio is complemented by the new generation of

NMEA expanders, which enable the flexible integration and distribution of maritime navigation data.

A large proportion of Veinland products have held DNV approvals for many years and therefore meet the maritime industry's high standards in terms of quality, reliability and suitability for onboard use.

Cyber security is another key focus of the company's presence at the trade fair. As digitalisation continues to advance, protecting maritime networks and securing critical

systems are becoming increasingly important. Veinland will showcase solutions for secure data communication, network segmentation and the protection of interconnected ship systems.

With these developments, Veinland is addressing the current requirements of modern shipping and informing trade visitors at SMM 2026 about new technologies for onboard connectivity, signal transmission and IT security.

<https://veinland.net/en/home/>

VIKING Life-Saving Equipment

Hall B1, Stand 514

At SMM 2026, VIKING Life-Saving Equipment presents its customer-focused approach to maritime safety under the principle “Safety Your Way.” The stand combines products, services and digital offerings from across its portfolio. A dedicated marine fire service area highlights VIKING’s ability to maintain fire safety systems from multiple OEMs, providing operators with a single global service partner. A full-size lifeboat section showcases its multi-brand expertise and complete service lifecycle, from inspection and maintenance to certification. The stand’s centrepiece is the HydroPen Reefer, a new container firefighting system designed for refrigerated containers. Its external drill-and-spray technology enables targeted fire suppression while protecting crew, cargo and vessels. VIKING will also present new marine evacuation systems for cruise ships and ferries, as well as additions to its PPE range.

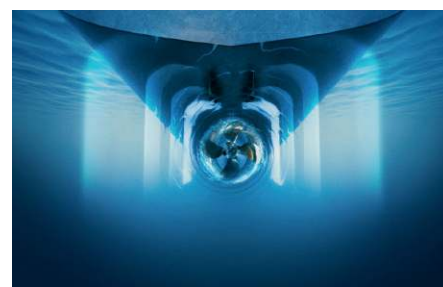
<https://www.viking-life.com/>

Wärtsilä

Hall A3, Stand 108

As the maritime industry gathers at SMM, much of the efficiency discussion will focus on fuels, engines and emissions control. Yet one of the most familiar components on board, the rudder, also has an important role to play. Conventional rudders steer by sitting behind the propeller and redirecting its flow, but this can add resistance and limit how effectively propulsion and steering work together.

Wärtsilä’s Gate Rudder™ takes a different approach. Instead of placing a single rudder blade behind the propeller, the concept uses twin foils positioned on either side of it. Designed as an integrated propulsion and steering concept from the earliest vessel design stages, the foils can contribute to thrust performance during transit and redirect force laterally during manoeuvring. This supports improved course-keeping and helps vessels hold speed more effectively through manoeuvres.



The new rudder is designed as an integrated propulsion and steering concept Source: Wärtsilä

For owners and designers, the value lies in considering the hull form, propeller, steering system and operating profile as one hydrodynamic package. Depending on vessel type and profile, vessels equipped with Gate Rudder technology have reported fuel savings of up to 20% compared with conventional arrangements, alongside improvements in ship handling, noise and vibration. At SMM, Wärtsilä will highlight how smarter aft-ship design can help unlock efficiency gains without adding propulsion complexity.

<https://www.wartsila.com/media/events/2026/09/01/marine/smm>



Visit us
at SMM:
Hall B7,
stand 125

AI-generated image

REYHER 

The safe haven in C-parts management

REYHER supplies high-quality fasteners and fastening technology to meet the specific requirements of the shipbuilding industry and ensures your supply through a C-parts management system tailored precisely to your needs.

We provide individual and personalised advice on our services

reyher.de

West Sea

West Sea Viana Shipyard is one of Portugal's leading shipyards, combining over 80 years of shipbuilding, conversion and ship repair expertise with a strategic location close to major international ports. Its infrastructure includes a maximum lifting capacity of 180 tonnes and three docks:

- Dock No.1 – 200 m x 30 m, with 2 x 100 t, 2 x 50 t, and 2 x 15 t cranes;
- Dock No.2 – 127 m x 18 m, with 2 x 50 t and 1 x 10 t cranes;
- Dock No.3 – 220 m x 45 m, prepared for vessels up to 8.5m draught.

Hall B3, Stand 207

Additional facilities include a 140m x 30m Construction Platform, and an Outfitting Quay with two 190m berths plus one 300m Pier.

West Sea is certified by Bureau Veritas under ISO 9001, ISO 14001 and ISO 45001.

Notable shipbuilding projects include work on the polar ships *World Explorer*, *World Voyager*, *World Navigator* and several vessels for the Portuguese Navy.

The shipyard is currently building six military vessels, two river ships and one cruise vessel for Japan.

<https://west-sea.pt/en/home/>

Wilhelmsen Ships Service

Hall B6, Stand 331

At SMM 2026, Wilhelmsen Ships Service will present a range of services and technologies designed to improve crew safety, support regulatory compliance and increase operational efficiency on board. Highlights include the DNV-approved GDS Inspection & Pressure Testing Service.

The Refrigeration Inventory Inspection Service helps operators identify deficiencies at an early stage, improve regulatory readiness, reduce emissions and costs, prevent emergencies and accurately plan future refrigerant requirements across their fleets. Wilhelmsen will also showcase the new-generation TIMM Master SBA™ mooring rope. It combines SBA™ Snap Back Arrestor technology with improved abrasion resistance, compactness, anti-twist colour indication and mesh eye protection. The rope is DNV type approved and complies with OCIMF MEG4 requirements. Further highlights include integrated potable water treatment and monitoring, as well as Revelle, Wilhelmsen's direct, real-time emission monitoring system. By measuring actual exhaust emissions, Revelle provides verified data to support compliance, reduce cost exposure and improve vessel operations.

www.wilhelmsen.com

WinGD

Hall A3, Stand 409

As the maritime industry accelerates its transition towards lower-emission operations, shipowners are increasingly seeking propulsion systems that balance regulatory compliance with operational efficiency and long-term flexibility. At SMM 2026, WinGD will showcase technologies and services designed to support both newbuild projects and the optimisation of existing vessels.

LNG continues to play an important role in shipping's decarbonisation pathway, with WinGD offering both its proven X-DF low-pressure technology and the high-pressure X-DF-HP concept, enabling owners to select the propulsion concept best suited to their operational and commercial requirements.

Alongside LNG, WinGD continues to expand its portfolio of future-fuel technologies, including ammonia, methanol and ethanol-capable engines, supporting several pathways towards zero and near-zero emissions.

For the existing fleet, retrofit products, life-cycle services and digital technologies are becoming increasingly important. WinGD's Global Service network, WiDE digital platform and X-EL hybrid energy management system help operators improve efficiency, optimise engine performance and enhance reliability while supporting compliance with tightening emissions regulations.

<https://wingd.com/>

becker

marine systems

OPTIMISING
HYDRODYNAMIC
PERFORMANCE

MANOEUVRING SYSTEMS

ENERGY- SAVING DEVICES

SERVICE & CONVERSION



Improve your marine operations:
Better manoeuvrability, lower energy consumption,
a greener future – with products from Becker Marine Systems.

becker-marine-systems.com

AUGUST/SEPTEMBER 2026

SORJ

SHIP AND OFFSHORE

REPAIR JOURNAL

In cooperation with



REPAIR MAINTENANCE SHIP WELL-BEING CONVERSION

www.bredo.de



BREDO
DRY DOCKS



COOPERATING FRIENDLY



FLOATING DOCK 1 : 250M X 38M
FLOATING DOCK 2 : 230M X 38M

REPAIR BERTH : 2.500M
CRANE CAP. : 300 TONS

REPAIR & MAINTENANCE

HAT-SAN Shipyard keeps on serving in ship repair and maintenance to worldwide clients with floating docks and vast berthing capacity.

CONVERSION PROJECTS

HAT-SAN Shipyard is also active in special conversion projects. Lengthening projects, new machinery, equipment or factory installations or heavy steel construction works on board of vessels is a proficiency of HAT-SAN Shipyard.



+90 226 461 50 20



repair@hat-san.com.tr



Altınova/Yalova - TÜRKİYE

www.hat-san.com.tr

WELCOME to this latest edition of Ship and Offshore Repair Journal published prior to the arrival of many thousands of shipping executives in Hamburg for the biennial main trade fair for the maritime industry – SMM.

Who could have foreseen at the last event in 2024 the scale of geopolitical developments and the regional conflicts that beset the world today. In many of them, a lasting peace appears further away by the day.

Shipping, of course, is a sector well-used to hostilities. But they cause untold disruption to supply chains and force up the delivered cost of commodities and manufactured goods.

Marine transport faces the operational repercussions of conflicts including significantly higher fuel costs that reinforce the industry's urgent drive to raise efficiency. Then, for many, there are climate concerns that drive the sector's decarbonisation initiatives.

Adapting existing ships with retrofits, upgrades, and new operational strategies are priorities that perhaps have never been more important. Some of these are described in this issue of Ship and Offshore Repair Journal.

They will inevitably be discussed in detail by many of shipping's leading technology developers and innovators in the exhibition halls by day and in Hamburg's many hostelrys and other meeting places by night.



Paul Bartlett
Managing Editor

CONTENTS



48

REGIONAL REPORT: NORTH EUROPE

48 North European yards – pioneers in upgrades and retrofits

INDUSTRY SECTOR SPECIAL REPORT: LNG CARRIERS/CONTAINER VESSELS

52 LNG carriers – promising sector for nuclear development?

53 Boxship conversions are climbing the agenda

IMPRINT

Ship and Offshore Repair Journal is published as a supplement of Ship&Offshore, DVV Media Group GmbH, Heidenkampsweg 73-79, 20097 Hamburg, Germany

EDITOR-IN-CHIEF: Kathrin Lau
MANAGING EDITOR: Paul Bartlett
EDITORIAL ASSISTANT: Sue Morson
ADVERTISING SALES: Richard Johnson
GRAPHIC DESIGN: Maren Diephaus

Further information and contact:
www.shipandoffshore.net

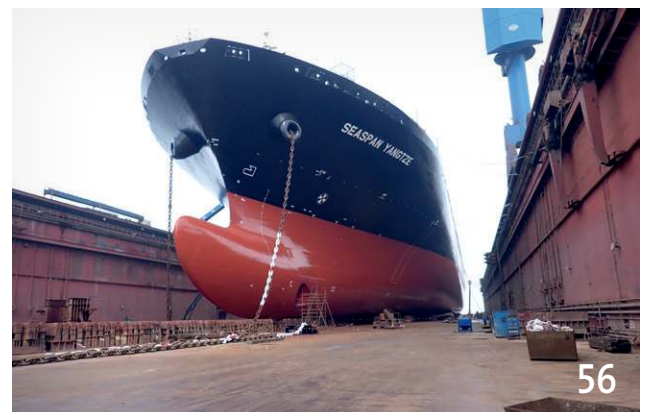
ENGINE UPGRADES AND MODERNISATION

56 Business case for engine retrofits stronger by the day

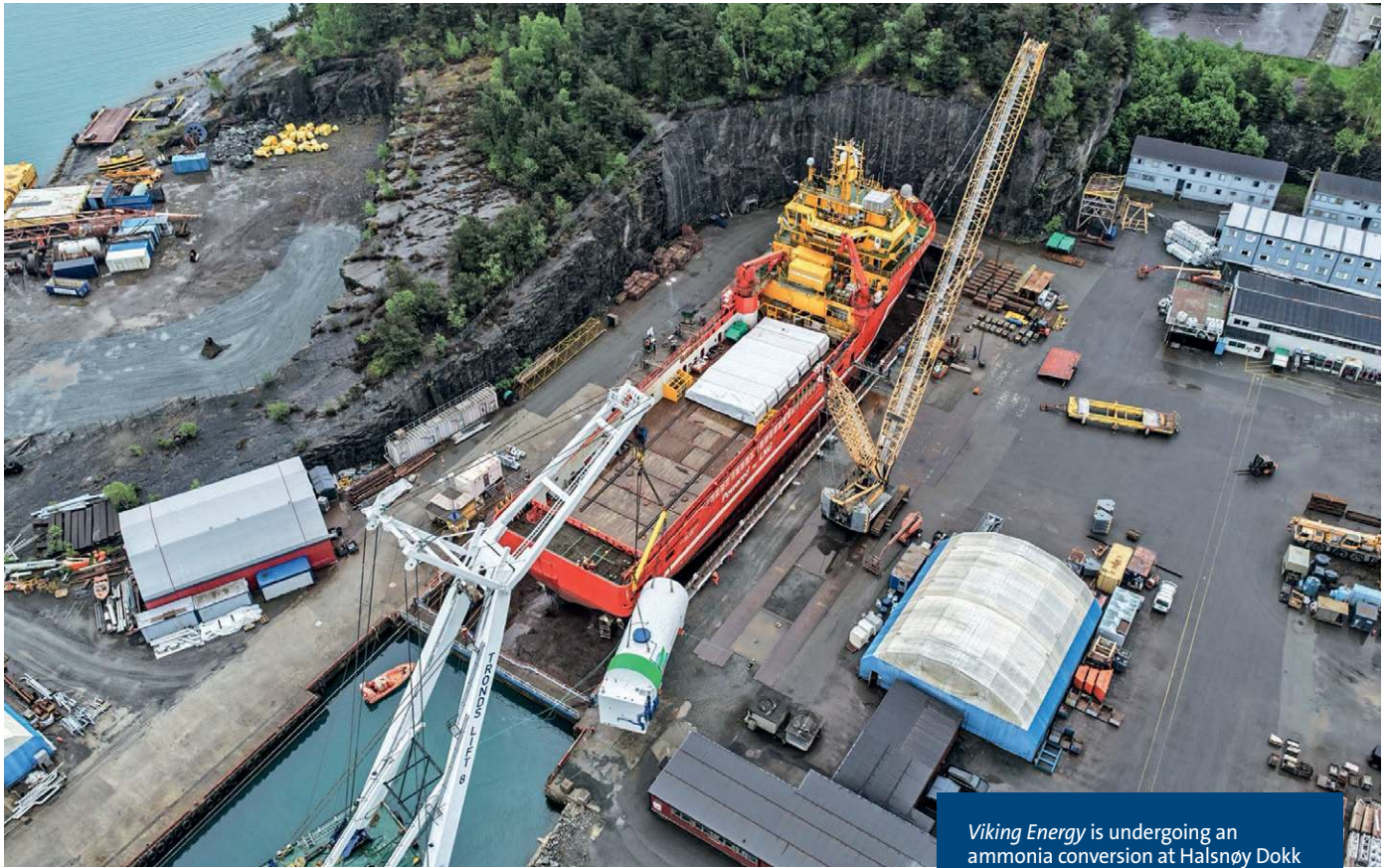
INDUSTRY REPORTS

60 Engineering-led optimisation of boil-off gas compression on *Avenir Advantage*

63 Major service for the LNG system



56



Source: Apollo Project

North European yards – pioneers in upgrades and retrofits

Though Chinese shipyards have about 70% of the global orderbook and are now undertaking more retrofits focusing on increasing capacity or changing fuels on deep-sea vessels, yards in North Europe have a regional near-shore trading fleet whose owners face tightening fuel regulations and have ambitious environmental goals of their own. Their needs are an excellent fit for the region's smaller but highly technically proficient yards. Charlie Bartlett reports.

In May, a European consortium of shipowners, yards and original equipment manufacturers (OEMs) launched FIT-Horizons, an initiative to match vessels to possible decarbonisation retrofits. Garnering some EUR 4 million in EU funding, it is hoped that the scheme will help to de-risk retrofits using artificial intelligence (AI). "FIT-Horizons will help the industry make better retrofit decisions by understanding how different technologies interact on board a vessel," declared Kourosh Koushan, Special Advisor at SINTEF Ocean, a Norwegian multidisciplinary research institute and FIT-Horizons project coordinator. "Our ambition is to reduce uncertainty and accelerate the transition from analysis to implementation."

However, what exactly FIT-Horizons will recommend to its clients remains to be seen. Interest in sails is booming for those routes upon which they are relevant. And thanks to sails' high public pro-

file, the retrofit market is now enjoying closer attention from the maritime industry.

There is a large and expanding array of alternative options, including air bubble lubrication, aft-hull devices, propeller boss cap fins, and rudder bulbs below the waterline. Meanwhile aerodynamic alterations to reduce drag on decks and superstructures are priorities for some operators too.

Solar power climbs agenda

Another new technology is solar. Despite being handily outstripped by China in the rollout of solar and other renewables on land, Europe's shipyards and OEMs are emerging as the unlikely pioneers of solar on ships – something which until now, has almost never left the concept-rendering dimension.

BLRT's Western Shipyard in Klaipėda, Lithuania, marked the completion of one of the most ambitious conversions in recent history, on two RoRo sister vessels, *Trans Hav* and *Trans Sol*. The changes included a new propeller and battery-hybridisation to improve performance.

But it also included expansion of the vessels' cargo capacity with a new weather deck manufactured by BLRT Grupp company Western Baltija Shipbuilding. This came as a result of the fact that the greatest efficiencies are realised when ships carry more cargo.

Furthermore, *Trans Hav* and *Trans Sol* were equipped with deck foundations for installation of three Norsepower rotor sails, and some 1,600m² of solar panels each, likely contributing around 300kWh on a clear day – sufficient to meet a substantial portion of the vessel's hotel load. Altogether, the vessels now achieve 50% lower carbon dioxide emissions per cargo unit, owner Sea-Cargo AS claims.

"These were far from routine retrofits," claims Simonas Keliotis, Commercial Director at Western Shiprepair. "A wide range of major upgrades was carried out in parallel, including the installation of scrubbers, deckhouse construction, the manufacturing and installation of a covered weather deck, and rotor sail foundations.

"In addition, executing the modernisation of two sister vessels within the same programme required detailed preparation and close collaboration across multiple teams. Managing such extensive work while maintaining the planned schedule required precise planning, careful sequencing of activities, and continuous alignment between all stakeholders."

The *Trans Hav* and *Trans Sol* retrofits are indicative of the type of technically advanced, boutique projects that are a growing feature of activities in the pioneering ship repair yards of northern Europe. As well as the two Sea-Cargo AS ships, a 79 kWp (kilowatt-peak, a measure of solar PV capacity) solar system was installed on 7,280dwt general cargo vessel *Vertom Tula* by Rotterdam's Wattlab, this time at the Port of Harlingen.

Completed in a single day with standard twist-lock fittings, the installation is expected to generate sufficient power to meet around 20% of the vessel's hotel load. It follows a previous Wattlab solar flatrack installation on *Vertom Anette*. Wattlab testing on that vessel generated some encouraging results.

"The test results show that SolarDeck performs well in the tougher environment of coastal shipping," said Wattlab CEO Bo Salet in early 2025. "Because salt water can drain freely from the solar panels, there's no chance of a salt crust forming. As such, SolarDeck generates the expected power output levels."

In July 2025, Wattlab installed a 35 kWp solar panel system on HGK Shipping and Salzgitter AG's *Blue Marlin*, at the De Gerlien van Tiem shipyard near Nijmegen, The Netherlands. The system's 192 solar panels feed into the vessel's propulsion system and generate sufficient power to correspond to one of the vessel's four diesel generators on sunny days.

"Furthermore, in situations where the ship is lightly loaded and travelling downstream, we anticipate that it may even sail using only solar power for limited periods," claimed Wattlab co-founder and COO David Kester.

Viking Energy gets another makeover

Meanwhile, at Norway's Halsnøy Dokk, in Høylandsbygda, platform supply vessel (PSV) *Viking Energy*, an environmental trailblazer ever since its delivery, is currently being converted to operate on ammonia dual-fuel, with a new Wärtsilä 25 engine, an ammonia tank, complex ammonia fuel systems, and a number of technical upgrades for safe operation. It is hoped that the vessel will return to operation at the end of this year.

Viking Energy was already one of the first LNG-powered vessels when delivered in 2003. In 2016, it was subsequently retrofitted with a battery and hybridised. Its owner Eidesvik Offshore is one of shipping's key innovators, installing the first maritime fuel cell on the offshore vessel *Viking Lady*, fuelled by LNG.

The 'Apollo Project', as it is known, aims to use *Viking Energy* as a proof-of-concept for ammonia as ship fuel. Initially, a solid-oxide fuel cell (SOFC) was set to be installed on *Viking Energy* at the outset of the retrofit, which may have allowed the vessel to achieve fuel efficiencies in excess of 60%.

However, this project was dropped after initial discussions. Fuel cells are finicky in a maritime context; a power-hungry additional process is required to separate the hydrogen from the fuel be- ▶



Sea-Cargo AS has been an early pioneer of shipboard solar installations

Source: Sea-Cargo AS

Source: Apollo Project



The Tronds Lift 8 enabled removal of the Viking Energy's LNG engines

► fore it can be fed into the fuel cell, incurring an energy penalty even if the net efficiency is greater.

As part of the conversion work, *Viking Energy's* deck was cut open. The existing LNG fuel tank was taken out and several engines were lifted out and removed with the help of crane barge *Tronds Lift 8*, which was also used to hoist the new Wärtsilä 200m³ ammonia tank into place.

Unlike other modifications of its type, concept renderings show *Viking Energy's* ammonia tank will be situated down in the hull, rather than above deck, paired with a scaled-up selective catalytic reduction (SCR) system installed to prevent emissions of nitric oxides (NOx). These are to ammonia engines what unburned methane is to LNG engines, if not dealt with properly.

It is thought that the vessel will replace at least 70% of its fuel with ammonia, thereby achieving a 70% emissions reduction compared

with a conventional LNG-fuelled ship by the time it returns to operation this autumn, resuming oil and gas operations for Equinor.

"With the yard contract signed, the project takes a decisive step towards demonstrating what is possible when it comes to ammonia as a maritime fuel," said Emilie Dorgeville, project co-ordinator of the Apollo Project.

Meanwhile, Everllence, together with Meyer Werft service arm Meyer Re, have formed a strategic partnership to develop methanol retrofit packages for cruise ships. Methanol is one of few alternative fuel options for this type of vessel, which bunker close to cities, and have a vast supplementary power requirement with large and powerful shipboard generators.

Norwegian Cruise Line has been the first operator to explore conversions of its large cruise ships, some of which were built by Meyer Werft and fitted with MAN (Everllence) engines.



Anthony Veder's Coral Patula with new Econowind sails

Source: Econowind

Sails make the headlines with increasing frequency

Leading manufacturers of wind assisted propulsion systems are on a roll. Rarely a week now goes by without a new deal coming to light.

Harnessing the power of the wind is a clever strategy for ships deployed on certain routes, whether as retrofits or installed during construction. And an increasing number of vessels are now being designed and delivered as 'wind ready', setting up a potentially lucrative revenue stream for proactive yards in the future.

Econowind has been on a winning streak recently. Finland's RABN took general cargo vessel *Odda Marie* to Damen Shiprepair Harlingen, which installed two 16m VentoFoil 3 sails. Part of a life-extension programme, the installation was proof of sails' viability on older vessels: *Odda Marie* was built in 1996.

In an earlier transaction, Rotterdam-headquartered Anthony Veder installed Econowind VentoFoil sails on the *Coral Patula* and *Coral Pearl* at BLRT Klaipėda. The sail installations were expected to reduce fuel burn by about 5%, or 10% if winds were favourable.

Earlier this year, a coastal cargo vessel operated by Amadeus Schiffahrts- und Spedition GmbH underwent installation of Econowind VentoFoil sails at Damen Shipyards Harlingen, re-entering service at the end of March. The sails are expected to cut fuel consumption by around 10%.

Most recently, *MV Baltic Timber*, operated by Reederei Bernd Sibum, called at Damen Shiprepair Harlingen for the installation of two more Econowind VentoFoil sails. The installation was undertaken entirely at the quayside, with no drydocking or associated downtime required.

With technical preparation taking place long before the installation, the job itself was completed in four days. The sails are expected to reduce *MV Baltic Timber's* fuel consumption by around 12%.

VentoFoil sails are suction sails, making use of a fan at the top of the sail which sucks in air and modifies the airflow around them. Though their rate of installation is comparable, suction sail manufacturers say that their systems are likely more reliable than competing rotor sails, which require a large fibreglass structure to spin continuously, rather than a relatively small fan.

Suction sails are the implementation of a similar system developed for aircraft wings in the 1950s; with boundary layer suction (BLS), a layer of high-speed laminar airflow binds tightly to the surface of the sail, thereby maximising the lift generated. If implemented for aircraft, it is thought that BLS could save around 30% of aviation fuel.

It has not been adopted, however, because it is thought that a sudden compressor failure could lead to an almost immediate unrecoverable stall. However, research is underway to examine another important use case for BLS: wind turbines.

According to one 2021 study, BLS might be able to improve the power output of a 2 MW turbine by 8.1%. This development could mean that just as ships borrowed its new sail concepts from aviation, wind turbine technology might now provide a basis for aircraft designers, in turn, to improve fuel efficiency from learnings in shipping.



BLRT
REPAIR YARDS
BLRT GRUPP

TAKE A TOUR



SMM

**MEET THE TEAM AT STAND
B4.EG.106**

SHIP REPAIR & DECARBONISATION SOLUTIONS

LNG carriers – promising sector for nuclear development?



The Knutsen-owned LNG carrier, *Cadiz Knutsen*, has been chosen as a prototype

Source: Knutsen OAS

Small modular reactors could help decarbonise deep-sea shipping, but while supporters are backing a pilot project aboard the LNG carrier *Cadiz Knutsen*, critics warn that major safety and radioactive-waste challenges remain unresolved. Nick Savvides reports.

Deepsea shipping is one of the so-called hard to abate sectors that needs to reduce its carbon footprint urgently to address climate change challenges. At the recent Nuclear Propulsion for Shipping conference held in the Norwegian University of Science and Technology (NTNU) speakers outlined a pathway to net zero that they claim could provide a sound strategy to tackle emissions from global shipping.

Per Peterson, former Chief Nuclear Officer at Kairos Power before he joined Tesser Atomics in February, argued that a project to retrofit an LNG carrier was a frontrunner ahead of broader industry decarbonisation.

Small modular reactors (SMRs) can easily fit into the engine room of container ships, large bulkers and tankers. They can operate, emissions free, for between five and 25 years without refuelling, according to Peterson. This has a significant impact on ship productivity.

“Over this last decade, we’ve seen fuel costs double, and we’re now starting to see carbon taxes, particularly for transportation coming into the EU. The future is bleak,” Peterson told the conference. Fuel costs will

continue to rise and ship speeds will come down to reduce consumption, he said.

“If you think about the implications of forcing ships to go slower and slower and using that capital investment less and less efficiently, this is, I believe, an existential problem for this industry,” claimed Peterson. Methanol and ammonia are not the answer because the energy density of these fuels means that large amounts of space are necessary to house the engines and fuel capacity for long voyages.

Tesser Atomics and Kairos Power in partnership with tanker operator Knutsen are therefore planning to install two SMRs to the 138,000m³ LNG carrier, *Cadiz Knutsen*. They aim to demonstrate that nuclear energy is the green fuel the maritime industry has been looking for.

“Two of these reactors integrated into a ship ... which can push around all sorts of other cargo, including on container ships, are of great interest,” noted Peterson. All parts of a vessel can be built in a conventional manner, with the nuclear power plant, installed by specialists, taking the place of the diesel main engine and auxiliaries.

SMRs will produce steam to power turbines that will produce electrical power for main and auxiliary purposes. The choice of converting the *Cadiz Knutsen* was made simpler as the vessel, like many similar LNG carriers, operated with gas turbines, thereby simplifying the retrofitting process as the ship already has two MHI, 65,000kg/h boilers, installed.

Tesser Atomics will use Kairos Power’s KP fluoride salt-cooled high-temperature reactor (KPFHR) with tri-structural isotropic (TRISO) fuel installed on the Knutsen ship. It operates with a passive cooling system of molten fluoride salt, allowing the reactor to operate at low pressure.

“We are leveraging TRISO fuel, not just because it has tremendous safety attributes because it’s a fully ceramic fuel, but also it has tremendous environmental attributes because it has extraordinary durability in sea water environments,” said Peterson.

TRISO fuel pebbles are composed of uranium fuel, enriched to 19.75%, encased in ceramic spheres on the outside and four layers of protective pyrolytic carbon inside.

Peterson believes that the passive safety systems and modern, fourth generation, SMR designs will allow the *Cadiz Knutsen* project to come to fruition as early as 2031.

This vessel would then operate on a nuclear corridor linking Texas to Europe. Once the proof of operations is achieved, Peterson estimates a fleet of up to 50 LNG tankers could be deployed on this trade.

This, in turn, would allow other nuclear corridors to be established: "Once successful a similar corridor can be established on the Pacific, and then other types of cargo, and ultimately, you can see nuclear-powered ships being used almost universally for cargo transportation. This is the future that we're looking for," Peterson told the conference.

Those predictions are predicated on the ability of the nuclear industry to produce SMRs in large numbers. This will reduce the cost of production after the initial major investments are made to prove that the technology works.

Professor Jan Emblemstvang, a speaker and organiser of the NTNU conference, argued that nuclear technology has never been pro-

duced on an industrial scale. SMRs will change that, the mass production of SMRs would reduce the capital costs of the technology by 80%, making it economically viable.

But nuclear power for ships has vociferous opponents. Edwin Lyman, for example, Director of nuclear power safety at the Union of Concerned Scientists in Washington, DC, and author of the April 2024 paper, "Five Things the 'Nuclear Bros' Don't Want You to Know About Small Modular Reactors," was sceptical about the claims made at NTNU.

Lyman quoted a 2018 Cambridge University study, entitled *Production Learning In A Small Modular Reactor Supply Chain*, which reportedly put reactor savings through mass production at no more than 30%.

Moreover, Lyman told SORJ that none of these technologies have ever been tested: "The so-called passive safety features that SMR proponents like to cite may not always work, especially during extreme events such as large earthquakes, major flooding, or wildfires that can degrade the environmental conditions under which they are designed to operate."

In addition, some molten salt reactors generate tritium which acts like hydrogen gas and cannot be contained within the reactor. In the 1960s this technology was abandoned due to the need for large columns of charcoal to capture the radiation.

That radiation would permeate an entire ship, including the cargo, claimed Lyman, and there has been no advance in preventing the escape of this radiation.

He also noted a failure by the industry to address the nuclear waste issue: "Radioactive waste disposal is something the nuclear industry promised they could solve 80 years ago, and it hasn't happened yet," noted Lyman.

In conclusion he noted some fuels, such as TRISO, will generate as much as ten times the volume of radioactive waste when compared to a light water reactor.

"Any shipping company that claims it's going down this path without having the parallel commitment for the management and storage of waste, which would generally require a license, in whatever country that storage facility is going to be, is just living in fantasy land," claimed Lyman. ■

Boxship conversions are climbing the agenda

The conversion of the *Kuang Chi Delta* from bulk carrier to boxship, alongside a series of methanol retrofits, is putting the practical limits of vessel repurposing to the test. Nick Savvides reports.

A spate of recent reports of container ship conversions seems to be testing the water for the viability of such projects. Market fundamentals must be strong to support the conversion of the 80,000dwt *Kuang Chi Delta* from a bulk carrier to a 3,600-TEU container ship.

Certification and approvals from the China Classification Society followed six months of conversion work on the cargo holds, with cell guides and lashing bridges required among other challenges undertaken by the Zhoushan Xinya Shipbuilding & Repair shipyard.

Repurposing a bulk carrier into a container carrier is a major project, but perhaps the most challenging work has been the conversions of container ships from diesel operations to

methanol dual fuel operations. A number of these methanol conversions are planned, five of them in a joint programme between owner Seaspan Corporation and charterer Hapag-Lloyd.

Hapag is investing around USD 24 million per ship to convert five ships. The first, the 10,100-TEU *Seaspan Yangtze*, was recently completed in June (see also the report starting on page 56).

"Retrofitting existing vessels is an important lever on our way to decarbonise our fleet operations by 2045," said Silke Lehmköster, MD Fleet at Hapag-Lloyd.

She added that *Seaspan Yangtze's* successful conversion to dual fuel, methanol and diesel "shows that technical innovation and close

cooperation with strong partners can make proven vessels ready for the use of low-carbon fuels."

Seaspan Corp and Hapag may have learned some lessons from the earlier conversion of the 20,000-TEU *Cosco Shipping Libra* at the CHI Shanghai yard in September 2025.

According to Boris Bondarenko, SVP and Area Manager for DNV, the supporting class society on the Cosco ship: "For a project like this, early preparation is essential. This means assessing how entirely new fuel systems, engines, automation, and safety concepts interact on an existing vessel."

Initially the yard had envisaged installing the methanol tank and preparation room as a prefabricated unit, lifted into place, ►



Source: DNV

The large methanol fuel tanks have reduced cargo capacity by 465 slots

► but the yard decided this was impractical. Instead, a phased installation strategy was devised, said Yan Hao, the yard's commercial director.

"This involved assembling major components at ground level before integrating them into the vessel. The change improved safety, reduced installation risk, and ultimately proved more efficient," he said.

Cosco Shipping's Safety Supervision Manager in the Technology & Innovation Department, Zhang Jun, said that although the conversion allows the carrier to act on emissions immediately, it comes with trade-offs including reduced cargo capacity. The methanol tanks and associated systems cost 465 cargo slots.

For the yard, the Cosco project "became a reference point" for later methanol conversions as well as LNG dual-fuel retrofits for MSC and Cosco.

"The significance of the *Cosco Shipping Libra* retrofit lies less in its status as a 'first', but more in what it enabled. By converting a technically demanding megaship, the project demonstrated a credible pathway for largescale methanol retrofitting," Jan-Olaf Probst, Segment Director Containerships at DNV acknowledged.

Emergent works a persistent challenge for repair yards

Saltwater Engineering was contracted to deliver detailed engineering work on the *Sealand Illinois*, a 300m-long container ship that had been involved in a collision, damaging

its hull. Repairs were scheduled to be completed within 40 days.

According to Saltwater, the initial view of the damaged area "seemed not too complex". So, the company modelled the vessel's stern using finite element analysis software and then arranged for prefabricated steel to be produced for the damaged sections.

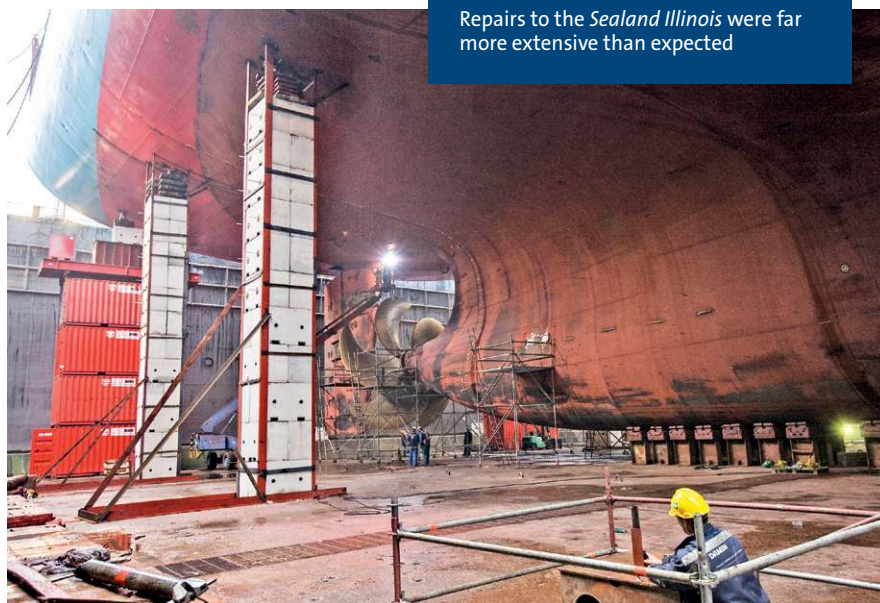
"When the vessel arrived and after assessing the damage, the full nature of the structural damage became apparent. The damage stretched from the bilge to the hatch coaming," said Saltwater.

As a new assessment of the required repairs was undertaken, it became clear that a substantial part of a structural bulkhead

had to be replaced, and further structural repairs were needed to frames and the greater part of another bulkhead, "introducing a new challenge".

Initially the repair job was to be completed, at least partially, at the quay, but with more than 100m of steel needing to be replaced – 400 tonnes in total – Saltwater found it necessary to reassess the vessel in 3D, using finite element modelling.

Moreover, the company said: "The vessel's shoring had to prevent any deformation by forces that would interfere with the patterning of frames and plates to restore the vessel to its former glory."



Repairs to the *Sealand Illinois* were far more extensive than expected

Source: Saltwater Engineering



**CELEBRATING OVER 60 YEARS OF
PROVIDING QUALITY DIVING SERVICES**

**CERTIFIED BY ALL MAJOR CLASS SOCIETIES
SERVICING THE PORTS OF NY/NJ AND THE ENTIRE U.S. EAST COAST**

CONTACT RANDIVE FOR ALL YOUR DIVING NEEDS

24 HOUR SERVICE - SEVEN DAYS A WEEK

TEL: +1 (732) 324-1144

FAX: +1 (732) 324-1555

EMAIL: DIVINGSERVICES@RANDIVE.COM

www.RANDIVE.com

Business case for engine retrofits stronger by the day

Whatever happens to the IMO's Net-Zero Framework (NZF) at the next MEPC meeting in November, the economics of bunker fuels have been seriously disrupted thus heralding the start of a multi-fuel future. Many prudent owners have already invested in engines designed or ready for new fuels from delivery. But there are many thousands of vessels with ten, 15, or even 20 years of service life left. Doing nothing is not an option. SORJ staff report.

While petrostates, climate deniers and some rich shipowners may hope that MEPC 85 will result in the NZF going on hold again or shelved completely later this year, there really is no business case for shipowners and operators to do nothing. Experts warn that if adoption of the NZF fails, a plethora of emission regulations are likely to enter force across many regions, creating an operational nightmare for the shipping industry.

Analysts have already warned that energy prices are unlikely ever to return to their pre-Gulf War levels. Energy infrastructure has been extensively damaged across major producing regions. Geopolitics is creating a whole new category of shipping risks which mean that bunker fuel and the delivered cost of hydrocarbon cargoes will be significantly higher.

Meanwhile, the dramatic speed at which countries' crude oil stockpiles have been drawn down means that there is little price protection. The extreme volatility of energy prices recently should serve as a sharp wake-up call to the risks of over-dependency on hydrocarbons.

Financial penalties are escalating. Regulations similar to the EU Emissions Trading System and FuelEU Maritime are in the pipeline in other regions. Some experts predict that the outcome will push the cost of running a 'dirty' ship far closer to those of a vessel operating on more expensive low- or zero-emission fuels.

Then there are shipping's customers. Major charterers in the bulk market have ambitious climate action plans and ESG strategies of their own which form a key component in their invest-

ment programmes. Meanwhile product manufacturers, the principal customers of container lines, have similar sustainability initiatives in place.

Even if these developments are dismissed, the case for retrofitting remains robust. Basic modifications can lower fuel consumption, improve efficiency, and extend ships' operating lives. More ambitious changes can facilitate the adoption of fuels including methanol, ammonia, and bio- or synthetic LNG. There are immediate benefits because such upgrades enable ships to comply more favourably with environmental frameworks including the IMO's energy efficiency existing ship index (EEXI) and carbon intensity indicator (CII).

Many types of retrofits and upgrades are available – from relatively straightforward engine tuning and optimisation and turbocharger upgrades, to dual fuel conversions, the addition of battery systems, and even fuel cell installations.

PrimeServ pioneers container ship retrofits

Everlence's after-sales division, PrimeServ, recently completed the first of five engine retrofits on a 10,100-TEU Saver-class vessel. The *Seaspan Yangtze*, owned by Seaspan but on long-term charter to Hapag-Lloyd, had its main engine retrofitted for dual-fuel methanol operation and returned to service early in June.

Four more vessels in the class will undergo similar retrofits. They are the *Seaspan Amazon*, *Seaspan Ganges*, *Seaspan Thames* and

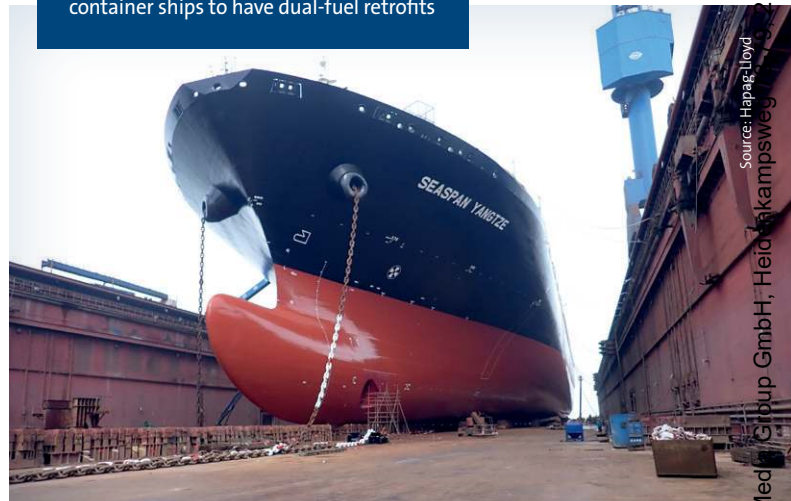
"Retrofitting existing vessels is an important level on our way to decarbonise"

Silke Lehmköster, Managing Director Fleet, Hapag-Lloyd



Source: Hapag-Lloyd

The *Seaspan Yangtze* is the first of five container ships to have dual-fuel retrofits



© 2007 Hamburg. Redistribution to third parties is prohibited under copyright law.

© DW Med Group GmbH, Heidkampsweg

Seaspan Zambezi. The total cost for the five ships is estimated at about USD 120 million.

The project, carried out at Cosco Shipping Heavy Industry (Shanghai), marked the 30th engine conversion undertaken by PrimeServ across shipping's new fuel range, including LNG, LPG and methanol. The company's experience has resulted in a robust project management capability that assures owners of a fast and efficient process and off-hire of less than three months. The contract included a two-year subscription to PrimeServ Assist, a 24/7 data-driven monitoring and advisory service.

The conversions will each cut carbon dioxide equivalent emissions by 30-50,000 tonnes annually when operating on low-carbon methanol. Not only will the vessels run favourably in regions where emission regulations either already apply, or will in the future, but also they are likely to operate efficiently for longer into the future.

Speaking for the charterer, Hapag-Lloyd's Silke Lehmköster, Managing Director Fleet, said: "Retrofitting existing vessels is an important lever on our way to decarbonise our fleet operations by 2045. The successful conversion shows that technical innovation and close cooperation with strong partners can make proven vessels ready for the use of low-carbon fuels. For our customers, this is another concrete step towards more sustainable supply chains."

The latest project follows the conversion of an Everllence B&W main engine to dual-fuel methanol for Cosco Shipping Lines last year. The 20,000-TEU *Cosco Shipping Libra* had its two-stroke 11S90ME-C engine retrofitted to an 11S90ME-LGIM (liquid gas injection methanol) unit.

The project was undertaken at Cosco Shipping Heavy Industry and came after an investment by the engine company in a dedicated 4S90 testbed engine in Japan commissioned early in 2025. The testbed validated the S90 engine's performance while using methanol fuel under real operating conditions.

The investment is likely to prove invaluable. Everllence believes that large-bore engine retrofits for vessels with S90 engines has substantial potential. There are over 300 vessels currently in operation which are potential retrofit candidates.

Commenting on the project, SVP and Head of Everllence PrimeServ, Denmark Michael Petersen, said: "While the journey toward full decarbonisation will require collaboration across the industry, this achievement demonstrates that large-scale conversions are both technically proven and commercially viable. This opens a practical pathway towards accelerating the maritime energy transition together with our customers."

Perhaps the most ambitious project undertaken by the Danish engine firm was the 88-day re-engining of the 15,000-TEU *Maersk Halifax*, a vessel in the Hong Kong class. The vessel was cut in half at the Asia Pacific Dockyard in China and fitted with an entirely new dual-fuel engine enabling it to operate on methanol. It was the first ship of this size to undergo such a project.

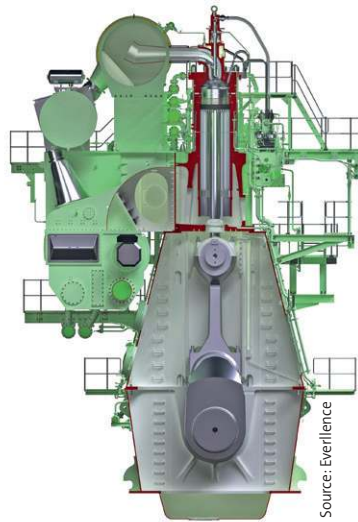
Running on green methanol enables the vessel to cut its carbon dioxide emissions by about 90%. Projects like this will be essential if the Danish container giant is to fulfil its decarbonisation strategy of achieving net zero by 2040, ten years ahead of shipping's global target.

Speaking at the time, Ole Graa Jakobsen, the company's Vice President and Head of Fleet Technology, said: "If you need to change the

world fleet just by building new vessels able to sail on low-emission fuels, it will take too long. Therefore, retrofitting is critical in order to decarbonise the world fleet."

After the hull had been separated into two sections, a new 15-metre section was added to provide space for more fuel tanks – methanol requires more space than fuel oil. The new section also increases the ship's capacity from 15,000 TEU to 15,690 TEU.

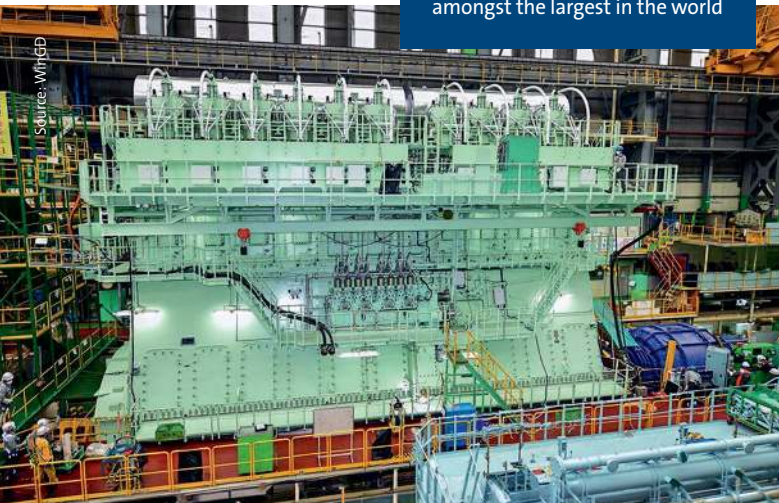
Maersk and Everllence worked closely together on this first project after the container line had approached Everllence ▶



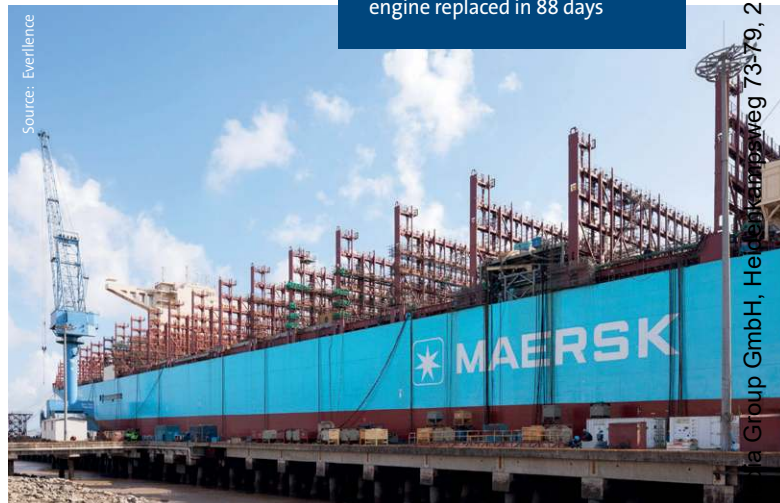
Source: Everllence

The *Cosco Shipping Libra* had its main engine retrofitted to operate on methanol

WinGD's X92-B engines are amongst the largest in the world



The *Maersk Halifax* had its main engine replaced in 88 days



► management to develop the 8G95ME-C9.5 LGIM engine to run on methanol. The *Maersk Halifax* now has this main engine. A key consideration was the need for an new engine control system capable of managing both diesel and dual-fuel controls. Maersk's Triton system provides a seamless transition between fuels which, the company says, cannot be detected on board ship.

The company has plans to retrofit another ten Hong Kong-class ships which are likely to remain in service until 2040. These similar projects will be undertaken to coincide with special surveys that fall due from next year. The company claims that the retrofits themselves generate 35 times less carbon than building new vessels.

WinGD focuses on first generation X-DFs

At Kormarine last October, Swiss-based WinGD announced a deal with Pania, a marine technology developer and system integrator, to focus on upgrades to more than 500 first-generation X-DF engines in service with emissions abatement and fuel efficiency technologies developed by the engine firm. The frame agreement, the partners claimed, would ensure the best possible return on investing in upgrades and retrofits by reducing fuel consumption and exposure to fuel penalties.

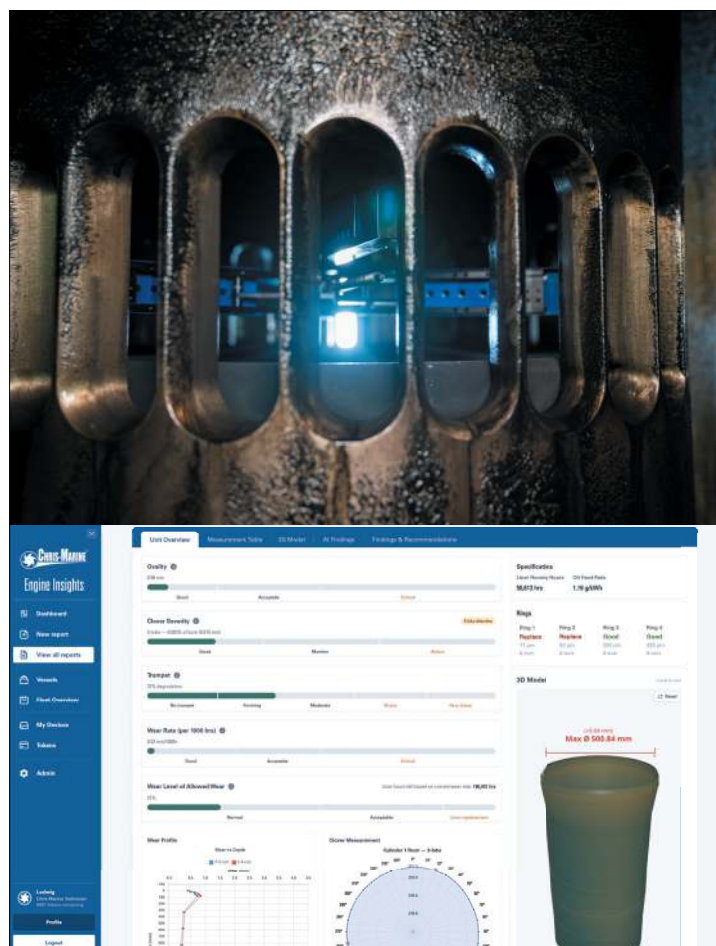
After the retrofit processes, the existing X-DFs compete with WinGD's latest XDF2.0 engines in terms of fuel consumption,

emissions, and methane slip. Retrofit options include intelligent control by exhaust gas recycling (iCER) and variable compression ratio technology. Together, these systems automatically optimise compression ratios depending on engine load and the fuel in use. The companies claim reductions in methane slip of more than 200%.

Initially, the partners have focused on the South Korean market. René Baart, WinGD's Head of Retrofit & Upgrade Solutions, explained that the country has been the largest market for X-DFs since their introduction ten years ago. Speaking at Kormarine, he said: "It was therefore natural that we start here as we aim to upgrade our installed base to the latest efficient technologies."

The company also offers retrofit packages for conventional two-stroke engines so that they can switch to new fuels including methanol, ethanol, and ammonia. The X92-B two-stroke engine, second only to the Wärtsilä-Sulzer RTA96-C in power output, comes in six- and twelve-cylinder variants across a power range from 24,420 to 77,400 kW and is intended for the ultra-large container ship sector.

Meanwhile, WinGD's Global Service, launched last year, provides lifecycle support for two-stroke engines including technical assistance, retrofit consultancy, and efficiency optimisation. Its extended network now takes in Wärtsilä Services Switzerland Ltd as an Authorised Global Service Provider for the company's two-stroke engines, further extending its international network.



Measurements don't reduce downtime. Decisions do.

Maintenance decisions shouldn't rely on assumptions.

Engine Insights converts cylinder condition measurements into clear, standardized reports that reveal wear trends, compare historical data and support maintenance planning across your fleet.

Know what's happening.
Know what comes next.

MEET US AT SMM 2026

Hamburg · Hall A3 · Stand 402
chris-marine.com



Coastal and short-sea vessels go electric

Vessels operating in coastal trades and short-sea ferry services lend themselves to electric power. Denmark, Norway, China, and the US are all pioneering fuel cells on certain routes as key components in power systems. However, fuel cells in shipping is a young technology; battery installations are simpler and cheaper.

Denmark's Øresundslinjen operates four short-sea double-ended short-sea ferries between Helsingør, Denmark, and Helsingborg in Sweden. Three of the vessels are now fully electric with the ferry, *Hamlet*, the latest vessel to undergo conversion from diesel engines.

The project was undertaken at the end of last year at Oresund Dry-docks in Landskrona. The 29-year-old *Hamlet* is now a fully-electric plug-in hybrid powered by renewable energy. The conversion included 2,800kWh of Echantia batteries housed in four containers on Deck 6; ABB charging modules on both sides of the Øresund; and structural reinforcement during two earlier dockings.

Carbon dioxide emissions on the route prior to the three retrofits were 37,800 tonnes a year. This has now fallen to just 2,500 tonnes. Meanwhile, the container vessel, *H2 Barge 2*, operated by Future-proof Shipping between the Netherlands and Germany, had its diesel engine removed and replaced with a 1.2-MW hydrogen-electric propulsion system comprising proton exchange membrane fuel cells. And the UK research vessel, *Prince Madog*, underwent a fuel cell retrofit certified by Lloyd's Register earlier this year.



Source: Øresundslinjen

Denmark's Øresundslinjen has adopted an ambitious electrification strategy

Norway's coastal operator, Hurtigruten, has modified several of its vessels with hybrid-electric systems consisting of low-emission engines and large battery packs. These projects are forerunners to the company's Sea Zero project, an initiative undertaken jointly with Vard Design and research establishment SINTEF. The development phase of the project was completed earlier this year and is likely to involve new zero-emission 143.5m coastal vessels based on a Vard design using a combination of sails, batteries, and contra-rotating propellers.



Repair Specialists for
Thrusters and Pods

MarineShaft

DK-9850 Hirtshals
Tel.: +45 9656 0202
marineshaft.com

Engineering-led optimisation of boil-off gas compression on *Avenir Advantage*

The LNG bunkering vessel *Avenir Advantage* experienced elevated discharge temperatures, reduced efficiency and increased mechanical wear under variable operating conditions. Its owner, Avenir LNG, worked with TGE Marine, an engineering specialist in gas carriers and fuel gas systems, to address the issue through intercooling and targeted process optimisation.

In LNG bunkering operations, boil-off gas (BOG) compressor systems are rarely operating at steady state design conditions. Instead, they are exposed to highly transient demand, variable suction pressures, and frequent start-stop cycles.

In these circumstances, small inefficiencies in process design can quickly translate into thermal instability, mechanical stress, and reduced system reliability. This was exactly the situation encountered on *Avenir Advantage*, a 7,500m³ LNG bunkering vessel operating across Southeast Asia.

The vessel's fuel gas supply system is based on BOG compressors drawing from two Type C tanks and supplying gas to both propul-

sion and auxiliary consumers. From a design standpoint, the system was sound. But in operation, without realisation, the compressors were consistently being driven outside their optimal thermodynamic window.

Key issues observed included elevated discharge temperatures across a wide operating range, reduced isentropic efficiency, particularly at low suction pressures, and increased mechanical wear linked to sustained high thermal loading.

These problems were most pronounced during low tank pressure operation – the condition frequently encountered during bunkering operations. Despite repeated interventions, including component-level maintenance and original manufacturer input, the underlying issues continued.

Craig MacDonald, Assistant Asset Manager at Avenir LNG, stated: "Despite multiple interventions over time by the manufacturer and shipyard, the root cause of the issues had not been fully resolved, and a more holistic engineering solution was required."

System-level diagnostics, not component-level fixes

Through other ongoing projects, Avenir was already familiar with TGE Marine. After the initial consultation and feedback, the team travelled to Malaysia to investigate first-hand. TGE Marine approached the problem from a system and thermodynamics standpoint. This approach made it possible to map how the compressors were operating relative to their design envelope.

The assessment combined time-series analysis of compressor operating data, including temperature, pressure and load, a review of compressor performance curves against actual duty points, shipboard observation of dynamic operation during bunkering procedures, and evaluation of control logic and system response under transient conditions.

Key findings

The compressors were experiencing an excessive temperature rise due to insufficient intermediate cooling and unfavourable compression ratios under low suction pressure conditions. High compression ratios increased polytropic work, while limited heat rejection between stages led to temperature accumulation.

The elevated discharge temperatures reduced gas density and increased volumetric inefficiency, resulting in higher mechanical and thermal loading on compressor internals. This created a feedback loop of declining efficiency and increasing wear.

Intercooling and process optimisation

With the root cause defined, the solution focused on improving the thermodynamic path of the compression process. The primary intervention was the introduction of intercooling between compression stages, combined with targeted system optimisation.

The technical objectives were to reduce gas temperatures between different stages in order to limit cumulative thermal rise, improve compression efficiency by bringing the system closer to ideal multi-stage compression behaviour, and lower discharge temperatures to safe and stable operating limits. In addition, the retrofit aimed to reduce specific power consumption and mechanical stress.

Hans-Christian Haarmann-Kühn, head of Engineering at TGE Marine, explains why intercooling matters: "From a thermodynamic standpoint, intercooling reduces the specific work of compression by approximating an isothermal process rather than an adiabatic one."

For this system, these improvements translated into lower final discharge temperatures, improved gas density entering ▶



Onboard service support forms a big part of TGE Marine's global service reach helping customers reach the best vessel performance



TGE Marine carries out service inspections and repairs on a variety of brands

Source for both images: TGE Marine



NAMDOCK

THE PREFERRED SHIP
REPAIR PARTNER
IN WEST AFRICA



3
FLOATING
DOCKS



30,000T
COMBINED
LIFTING CAPACITY



8
WORKSHOPS
& FACILITIES



**QUICK
TURNAROUND
TIME**



Offering trusted quality, and cost-efficient solutions to
keep your fleet moving.

For more information contact us at:



+264 64 218 6000



commercial@namdock.com



Walvis Bay, Namibia



www.namdock.com

► subsequent stages, reduced load on compressor components and more stable operation across varying suction conditions.

Retrofit design under real constraints

Designing the concept for an in-service vessel introduced practical constraints: space, interfaces, and installation time. TGE Marine addressed these issues by undertaking detailed routing and integration studies to avoid clashes and minimise rework, choosing a modular design to maximise off-vessel fabrication, and careful consideration of pressure drops, heat exchanger sizing and control integration.

The engineering focus was not just on performance improvement, but on ensuring the system remained operable, maintainable, and robust over time. During installation, TGE Marine provided on-site supervision to ensure that the design intent was fully realised. This included on-site supervision through locally based personnel.

The team acted as an effective interface between the owner and shipyard, ensuring

alignment throughout the project. Daily progress updates, structured inspections, snag list management and oversight of quality control were all handled professionally. Testing and commissioning were completed in a controlled and systematic manner, contributing to a smooth delivery of the retrofit.

Particular attention was given to the installation quality of thermal equipment and piping, correct integration into existing control and safety systems as well as the verification of system tightness and integrity. Commissioning followed a structured approach, including a stepwise introduction of load conditions, monitoring of temperature profiles across compression stages, and a validation of performance under low-pressure scenarios

Performance outcomes

Post-retrofit data confirmed a clear improvement in overall system behaviour. Discharge temperatures were significantly reduced across all operating modes, while temperature gradients between the compression stages became more stable.

Compressor efficiency also improved, particularly at low suction pressures, accompa-

nied by reduced thermal cycling and lower mechanical stress. From a reliability perspective, these improvements resulted in less frequent maintenance, lower wear rates on critical components and more predictable system performance.

A practical approach to system optimisation

This project highlights a common issue in LNG fuel gas systems: compression systems designed for nominal conditions often struggle under real, variable operating profiles. When that happens, the symptoms such as overheating, wear and inefficiency are often treated individually rather than addressed at source. In this case, the solution was not a redesign of the compressor, but an optimisation of the process in which it operated.

TGE Marine's role in this project was not to replace the system, but to make it work as it should – within the constraints of an operating vessel. By focusing on thermodynamics, real operating data, and practical engineering, the result was a targeted intervention with measurable impact. ■

Where EXPERIENCE Meets INNOVATION

Since 1969, Gemak Group has been providing comprehensive repair and conversion services **for more than 3,000 projects worldwide.**

GEMAK

Group of Companies

SCAN FOR OUR
PRESENTATION

SCAN FOR OUR
PROMOTION VIDEO

gemak.com

/gemakgroup

SHIP REPAIR &
CONVERSION

SHIP
BUILDING

INDUSTRIAL
PROJECTS

WIND, OIL &
GAS PROJECTS

62 Ship&Offshore | Schiff&Hafen | 2026 | N° 8/9

© DVV Media Group GmbH, Heidenkampsweg 73-79, 20097 Hamburg. Redistribution to third parties is prohibited under copyright law.

Major service for the LNG system

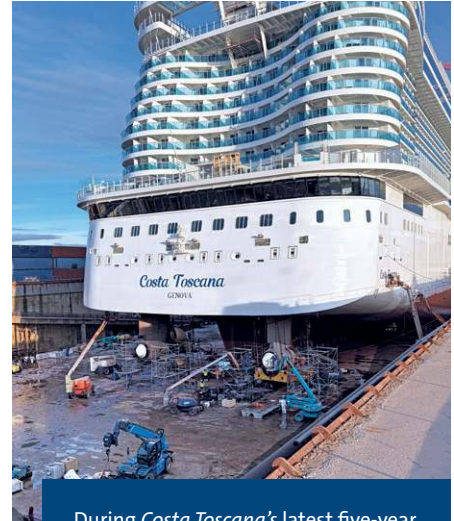
When all systems on the cruise ship *Costa Toscana* were checked and overhauled, service specialists from Germany's Herose attended to work on a series of valves in the vessel's gas system

The cruise ship *Costa Toscana* is 337m long and can accommodate 6,500 passengers and 1,800 crew members. The four Caterpillar MaK 16M-46DF dual-fuel engines can run on both LNG and marine diesel and generate a total of 61,760 kW. The engines run on LNG more than 90% of the time, which significantly reduces emissions. The ship is powered by two Azipod drives, whose propeller nacelles can be rotated 180 degrees, eliminating the need for a classic rudder. During its latest five-year docking at the Chantier Naval de Marseille shipyard in France, the LNG system was checked and overhauled. Herose, a German developer and manufacturer of valves and fittings for cryogenic and industrial applications, had its service team on board. The classification society RINA had its surveyors in attendance at the time.

Service – the basis for reliable operation

The Herose service team's work on board the *Costa Toscana* began during ongoing passenger operations, starting with the valves in the bunker station. Once the vessel's LNG engineers had secured and fully prepared the system, the Herose team proceeded through the extensive service checklist in close coordination with the vessel's engineers.

According to the company's report, many of the valves on board are located in hard-to-access places: the tank connection space is cramped and full of technical installations, and there is the added difficulty that the upper parts of the large valves can weigh over 100 kg. Chain hoists and rope hoists were used to pull the upper parts out of the valve body. ▶



Source for both images: Herose

During *Costa Toscana*'s latest five-year docking at the Chantier Naval de Marseille shipyard in France, the LNG system was checked and overhauled



(843) 991-2626 DRYDOCK@DETYENS.COM

SHIP REPAIR | CONVERSIONS | DRYDOCKING



► A suitable suspension point had to be found for this but sometimes there was not enough space – above the large LNG tanks, for example. The service team relied on a blend of long-standing experience and practical ability to manage the diverse challenges they encountered. Even the heaviest valve components had to be positioned with absolute precision during assembly, as the slightest misalignment can damage the disc or sealing elements.



Several Herose valves are in use on board the cruise ship

A good warm-up is a prerequisite for the service

The LNG system is only completely emptied of gas and brought from -163°C to ambient temperature once every five years. The warm-up is necessary so that all important components in the fuel gas supply system can be inspected and serviced, including the tanks, pumps and valves. During normal ship operations, the tank connection space rooms are alarm-secured

Ex-zones with a protective atmosphere that can only be entered via a double barrier in an emergency. To bring the system to a gas-free condition safely, the engineers followed a carefully planned sequence of steps.

The tanks had to be gradually emptied and the entire system slowly warmed. To create safe working conditions, any remaining combustible gases were removed from the tanks and piping which were then inerted

with nitrogen before ambient air was reintroduced. Any areas that required welding were identified and agreed upon in coordination with RINA inspectors.

Green light to continue using LNG

After servicing, the RINA inspectors approved the LNG system and authorised its continued use. To remove any moisture from the system, it was inerted with nitrogen. Otherwise, ice crystals could form in the tank and pipes, which could

be dangerous for the valves, pumps and filters. The liquid nitrogen was delivered to the docked ship by truck. It was then cooled down slowly – the temperature was lowered by 10°C per hour.

As Herose notes, cooling down the entire gas system is a critical phase; the components must not be exposed to cold stress. Once the system had been cooled down, the first refuelling process after the inspection followed a few days later. ■





International Association of Ship Repair Agents

CABEKA House, 2 Grasscroft, Furzton, Milton Keynes MK4 1AS, United Kingdom, Tel: +44 1908 378822, Mob (Secretary): +44 7720074113, Email: mail@shiprepairagents.org, Web: www.shiprepairagents.org

Baltic States

Lithuania, Latvia, Estonia, Poland



ORCA MARINE UAB



Liepu gatve 87B, LT-92195 Klaipėda, Lithuania
Tel: +370 46 246430
Mobile: +370 650 40900
Email: info@orca-marine.eu
Web: www.orca-marine.eu
Contact: Viktoras Cernusevicius

SHIPYARDS
ASABA Shipyard (Malabo, Equatorial Guinea);
ASMAR Shipyard (Chile);
BRODOTROGIR D.D. Shipyard Trogir (Croatia);
CARENA (Abidjan, Ivory Coast);
CHANTIER NAVAL de MARSEILLE (France);
COLOMBO Dockyards (Sri Lanka);
COSCO SHIPYARDS GROUP (China)
DAVIE (Quebec, Canada);
DETYENS Shipyard (N. Charleston, USA);
DONG SUNG Engineering & Shiprepair (S.Korea);
DAMEN SHIPREPAIR & CONVERSION (the Netherlands, France, Curaçao, UAE, Senegal);
ENAVI Reparo Navais (Rio de Janeiro, Brazil);
FAMA Group (Cyprus);
GIBDOCK (Gibraltar);
HARLAND & WOLFF (Belfast, UK);
MMHE Shipyard (Malaysia);
ASTIBAL (Panama)
NAMDOCK (Walvis Bay, Namibia)
NARNARP SHIPREPAIR (Tuzla/Yalova, Turkey)
ASYAD (Oman);
SIMA (Peru);
SAN GIORGIO del PORTO (Genova, Italy);
TANDANOR (Buenos Aires, Argentina);
TSAKON Industries Navales (Montevideo, Uruguay);
ZAMAKONA Yards:
• Zamakona Pasaia (Spain);
• Zamakona Las Palmas (Canary Isl., Spain);

MARINE SERVICE COMPANIES
NARP PORY AGENCY (Turkey)
DAMEN MARINE COMPONENTS
DAMEN SCHELDE MARINE SERVICES
DAMEN GREEN SOLUTIONS
DAMEN BAWAT
DEX QM LUBRICANTS
ARGO NAVIS (Greece);
CHINAPORT CLEANSEAS - de-slopping, cleaning (China);
DGS Industrial & Naval (Brazil) - afloat repairs;
MECHADINAMIK - mechanical services, Turkey
ONE NET - satellite communications, bridge equipment service;
ONE TECH - technical service;
SYM - afloat repairs & marine services.

Benelux



AYS SHIPREPAIR

Oranjekanaal ZZ 14,
7853TC Wezuperbrug,
The Netherlands
Mobile: +31 6 47 952 452
Telephone: +31 85 0160 635
Email: hilka@aysshiprepair.nl
Web: www.aysshiprepair.nl
Contact: Hilka Willms

SHIPYARDS
EUROPE
Bulyard (Bulgaria)
Bredo Drydocks (Germany)
Balearia/Gibdock (Gibraltar)
Gryfia Shipyard (Poland)
NORTH AMERICA - CARIBIC
Canada West - Seaspan (Vancouver)
Canada West - Seaspan (Victoria)
US East Coast - Detyens
Jamaica - German Ship Repair Jamaica Ltd
Colombia - Cotecmar
SOUTH AMERICA
Brasil - Atlântico Sul - EAS
ARABIAN GULF
Qatar - Qatar Shipyard Technology Solutions
AFRICA
South Africa - Dormac (Capetown, Durban, East London)
Namibia - NAMDOCK (Namibia Drydock & Ship Repair)
ASIA
Singapore - ASL-Marine
Batam - ASL-Marine
Korea - Orient (Busan)
CHINA
Hong Kong - China Mergant/Maylong Trading
Shekou - China Mergant/Maylong Trading
Zhoushan - China Mergant/Maylong Trading
Zhejiang - CIMC/Maylong Trading
Putuo - CIMC/Maylong Trading
Changdong - CIMC/Maylong Trading
Changtu Island - CIMC/Maylong Trading
Dalian - CSSC-DSIC Changxingdao Shipyard
Shanhaiguan - CSSC-Shanhaiguan Shipyard
Tianjin - CSSC-Tianjin Shipyard

SHIP REPAIR SERVICES
EUROPE
BMT (Spain)
North America/South America
Sirco Pty (Panama)
Mapamar (Brazil)
SINGAPORE
Brightsun Marine
FAR EAST/KOREA
Haen Enc Co., Ltd
Worldwide
UPE Underwater Propulsion Engineers
Greentec Marine Engineering



AIMSS NL

Jan van Polanenkaade 3
4811 KM Breda
The Netherlands
T +31 76 737 0002
Email: sales@aimss-shiprepair.com
Web: aimss-shiprepair.com

SHIPYARDS

- APCL (UK)
- ASL (Indonesia)
- ASMAR (Chile)
- ASYAD Drydock (Oman)
- CNDM (France)
- DQS (Vietnam)
- NASCO (China)
- SGDP (Italy)
- SNC (Romania)
- TERSAN (Turkey)
- TNG (Mexico)
- UNITHAI (Thailand)
- ZTHI (China)

MARINE PRODUCTS & SERVICES

- AIMSS RIDING TEAM (Romania)
- Supply of Qualified Welders, Fitters, Technicians, Electricians etc.
- CROSSCOMAR (Spain)
- Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
- GENERAL SHIPPING (Greece)
- Protection of Metallic Surfaces and Tank Coating Application Services
- HAI HA M&S (Vietnam)
- Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
- JASON MARINE ELECTRONICS (Spain)
- Supply, Repair, Maintenance & Surveys for Marine Electronics & NavCom
- PBM (Croatia)
- Marine Engines & Control Systems Specialist, Governor Overhaul, Woodward Authorised Independent Service Facility
- PMS (Panama)
- Afloat Repairs, Voyage Repairs & Underwater Services
- SINGATAC (Singapore)
- Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
- WINKONG (China)
- Supply of Parts & Equipment, Afloat Repairs, Voyage Repairs & Underwater Services

Cyprus



Member of the UW Group

WSR SERVICES LTD



234 Ayias Fylaxeos, CY 3082 Limassol, Cyprus
Tel: +357 25344418
Email: mail.cy@umarwsr.com
Web: www.uwgroup.com

SHIPYARDS
ASRY (Arab Shipbuilding & Repair Yard) - Al Hidd, Kingdom of Bahrain

ASL Marine Holdings Ltd-Batam, Indonesia
Caribbean Dockyard Engineering Services Ltd (CDESL) - Trinidad & Tobago
Chengxi Shipyard Co. Ltd - Shanghai, China
Colombo Dockyard Ltd - Colombo, Sri Lanka
CUD (Weihai) Shipyard - Shandong, North China
Dakarnave - Dakar, Senegal
Detyens Shipyards - Charleston, South Carolina, USA
Dormac Marine & Engineering - Capetown/Durban, South Africa
EDR Antwerp Shipyard - Antwerp, Belgium
Fayard A/S - Munkebo, Denmark
Gemak Shipyard - Tuzla, Turkey
Guangzhou Wenchong Shipyard - Guangzhou, South China
Hindustan Shipyard Ltd (HSL) - Visakhapatnam, India
Huarun Dadong Dockyard (HRDD) - Shanghai, China
Hutchison Ports TNG (Talleres Navales del Golfo S.A.) - Veracruz, Mexico
International Ship Repair - Tampa, Florida, USA
Lisnave Estaleiros Navais - Setubal, Portugal
Lloyd Werft Bremerhaven AG - Bremerhaven, Germany
MTG Dolphin - Varna, Bulgaria
Naval Rocha - Lisbon, Portugal
Netaman Repair Group - Tallinn, Estonia
Onex Elefsis Shipyards SA - Elefsina, Greece
Sociber - Valparaíso, Chile
IMC Shipyard (Zhoushan) - Zhoushan, China
Nanyang Star Group - Zhoushan, China
Orient Shipyard Co., Ltd - Busan, South Korea

UNDERWATER AND AFLOAT
International Marine and Diving (IMID) - Singapore
Professional Manpower Supply (PMS) - Panama
FG Marine, China
HAI HA M&S - Vietnam
KIMI SA - Greece
Ifaistus General Constructions
Nico International - Fujairah
Argus Marine Services - Columbia
ROG Ship Repair - Rotterdam
Atlantis Marine Services LLC - Fujairah, UAE
Underwater Contractors - Spain
Resolve Marine Services - Gibraltar
Reprosub - Las Palmas
On Site Alignment - Rotterdam Netherlands
LongKong Marine Engineering Co., LTD - China
Voyager Marine - India & Singapore
LDM Stations in Singapore and Europe

COATING & CHEMICALS
Eurochem International
Nippon Paint Marine

Denmark / Finland



BSA SHIPPING AGENCIES ANS



Akershusstranda 15, skur 35
0150 Oslo, Norway
Contact: Mr. Thord Peter Mossberg
Tel: +4723085000
Mobile: +4792012755
Email: peter@bsaship.com
Web: www.bsaship.com
Brodogradiliste d.o.o Shipyard LP (Croatia)
Falkvarv (Sweden)
Cernaval Group Algeciras (Spain)
Hidramar S.L (Canary Islands)

SORJ (Ship and Offshore Repair Journal) takes no responsibility for the accuracy of the information in the Agents Contact Directory (ACD). All information was supplied by the individual agents

General Shipping S. A (Greece)
TK Tuzla Shipyard (Turkey)
Sandock Austral Shipyards (South Africa)
Qatar Shipyard Technology Solutions (Qatar)
Seagull Group (Singapore, Malaysia, UAE, India, Indonesia)
Unithai Shipyard & Engineering Ltd (Thailand)
Fujian Huadong Shipyard Ltd (China)
HuaRunDadong Dockyard Ltd HRDD (China)
CUD (Weihai) Shipyard (China)
Pax Ocean Shipyard Zhoushan (China)
Pax Ocean (Singapore)
Pax Ocean Batam (Indonesia)
First Suez Ltd - Suez Canal Transit and Shiprepair (Egypt)
Caribbean Drydock Company S.A CDC (Cuba)
NOSCO Shipyard, Vietnam



JML SHIPYARD AGENCY

Falkevägen 3,
457 40 Fjällbacka, Sweden
Contact: Markus Larsson, Managing Director
Mobile: +46 702 20 37 43
Email: markus@jmlshipyardagency.com
Web: www.jmlshipyardagency.com

SHIPYARDS REPRESENTED

EUROPE
Lloyd Werft, Bremerhaven, Germany
MSR Gryfia Shipyard, Szczecin, Polen
Sefine Shipyard, Tuzla, Turkey
San Giorgio del Porto, Genoa, Italy
Chantier Naval de Marseille, France
EDR Shipyard, Antwerp, Belgium
ASIA
Drydocks World, Dubai
Chengxi Shipyard, Jiangyin, China
Changhong International Shipyard, Zhoushan, China
Wenchong Shipyard Guangzhou, China
Shan Hai Guan Shipyard, China
Qingdao Beihai Shipyard, China
DSIC Marine Services, Dalian, China
US, CANADA & CARIBBEAN
TNG, Veracruz, Mexico
Cimarar Shipyard, Dominican Republic
Chantier Davie, Quebec, Canada
German Ship Repair Jamaica
AFLOAT REPAIR/SERVICES
Global Offshore Service, Dubai UAE
Offshore Inland, US Gulf/Mexico
Crosscomar, Algeciras
UMA Marine, India
Link Marine / Automation, UAE
MCU Coatings
Carell, Greece

Germany



GERMANIA SHIPYARD AGENCY GMBH



Schauenburgerstr. 35,
20095 Hamburg, Germany
Tel: +49 40 300 877 99
Fax: +49 40 303 826 07
Email: germania@shipyard-agency.de
Web: www.shipyard-agency.com

Contacts:
Christof Gross, Eliane Tietz
SHIPYARDS
NORTH AMERICA/CENTRAL AMERICA/CARIBBEAN:
• Astibal (Panama)

• Chantier Davie Canada Inc. (Canada)
• Seaspan Vancouver Drydock (Canada)
• Seaspan Victoria Shipyards Company Ltd. (Canada)
• TNG Talleres Navales del Golfo (Mexico)
SOUTH AMERICA:
• SPI Astilleros S.A. (Argentina)
FAR EAST:
• Huarun Dadong Dockyard Co., Ltd. (China)
• IMC Shipyard (Zhoushan) Co., Ltd.
• PaxOcean Engineering Zhoushan Co. Ltd. (China)
• PaxOcean Shipyard Pte. Ltd. (Singapore)
• PaxOcean Asia (Pertama, Indonesia)
• CSSC Qingdao Beihai Shipbuilding Co., Ltd.
• Unithai Shipyard and Engineering Ltd (Thailand)
• Yiu Lian Dockyards Limited (Hongkong)
• Yiu Lian Dockyards (Shekou) Limited, China
• Yiu Lian Dockyards (Weihai) Limited, China
• Yiu Lian Dockyards (Zhoushan) Limited, China
PERSIAN GULF:
• Drydocks World Dubai LLC (UAE)
MED/BLACK SEA:
• Bulyard Shipbuilding Industry AD (Bulgaria)
• Carell S.A. (Greece)
• Chantier Naval de Marseille (France)
• San Giorgio del Porto Genoa (Italy)
• Sefine Shipyard (Turkey)
EUROPE ATLANTIC/BALTIC:
• Astander (Spain)
• Astican (Gran Canaria, Spain)
• Balt Yard (Gdynia)
• BREDO Dry Docks GmbH (Germany)
• Oresund Drydocks (Sweden)

AFLOAT COMPANIES:

• BMT Repairs (Spain)
• Drydocks World Global Offshore Services (UAE)
• DSK Co., Ltd (Korea)
• HON Marine (Malaysia)
• Longkong Marine Engineering Co., Ltd (China)
• Oceantrans Marine Services Co. Ltd (China)
• Offshore Inland Marine & Oilfield, LLC (USA)
• MarineService Hirthals A.S. (Denmark)
• Metalock (Brasil)
• Trident B.V. (Netherlands)
• Trident (Italia)
• Trident (Malta)
• Trident (Spain)
• Trident (UAE)

SPARES AND EQUIPMENT:

• Greentec Marine Engineering Co. Ltd
• IHB ShipDesign AD
• LAB S.A.
• OceanWings
• SunKui Marine Environment Engineering (China)
• VICUS Desarrollos Tecnológicos S.L. (Spain)

Greece

RESOLUTE

RESOLUTE MARITIME SERVICES INC.

296, Kifisias Avenue,
152 32, Chalandri,
Athens - Greece
Tel: +30 211 182 9000 / +30 210 689 2743
Email: main@resolute.gr
Web: www.resolute.gr
Contact: Alex & Andreas Scaramangas,
Dimitris Svoronos

EXCLUSIVE REPRESENTATIONS

ASRY (Bahrein)
Lisnave (Portugal)
Dakarnave (Senegal)
Navalrocha (Portugal)
HSD Marine and Shiprepair (Singapore)
Maindeck (Technical project management software)
Dynamic Group of Companies (Greece)
Platinum Marine Services (Netherlands & Turkey)
DEDICATED CO-OPERATIONS
Gemak Group (Turkey)
HAT SAN Shipyard (Turkey)
Odessos Shiprepair Yard (Bulgaria)

GSRI – German Ship Repair Jamaica
Dominicana Caribbean (Dominican Republic)
Caribbean Dockyard (Trinidad and Tobago)
Gulf Marine Repair (Tampa, Florida, US Gulf)
CSSC Qingdao Beihai Shipbuilding Co., LTD. (China)
Fujian Huadong Shipyard (China)
Ruitai Nantong Shipyard Co., LTD. (China)
Zhoushan Huafeng Shipyard Co., LTD. (China)



WSR SERVICES LTD

77 Vasileos Pavlou,
1st Floor 16673,
Voula, Greece
Tel: +3021 0428 2552
Email: mail.gr@umarwsr.com
Web: www.uwgroup.com

SHIPYARDS

ASL Marine Holdings Ltd-Batam, Indonesia
Caribbean Dockyard Engineering Services Ltd (CDESL) - Trinidad & Tobago
Chengxi Shipyard Co. Ltd - Shanghai, China
Colombo Dockyard Ltd – Colombo, Sri Lanka
Detysens Shipyards - Charleston, South Carolina, USA
Dormac Marine & Engineering - Capetown/Durban, South Africa
EDR Antwerp Shipyard - Antwerp, Belgium
Fayard A/S - Munkebo, Denmark
Gemak Shipyard – Tuzla, Turkey
Guangzhou Wenchong Shipyard – Guangzhou, South China
Huarun Dadong Dockyard (HRDD) - Shanghai, China
International Ship Repair - Tampa, Florida, USA
Lloyd Werft Bremerhaven AG - Bremerhaven, Germany
MTG Dolphin - Varna, Bulgaria
Netaman Repair Group - Tallinn, Estonia
Torlak Shipyard – Tuzla, Turkey
IMC Shipyard (Zhoushan) – Zhoushan, China
Nanyang Star Group – Zhoushan, China
Port Said Shipyard - Egypt
UNDERWATER AND AFLOAT
Argus Marine Services - Columbia
ROG Ship Repair – Rotterdam
Atlantis Marine Services LLC - Fujairah, UAE
Underwater Contractors - Spain
Resolve Marine Services – Gibraltar
Reprosub – Las Palmas
On Site Alignment – Rotterdam, Netherlands
LongKong Marine Engineering Co., LTD – China
Voyager Marine – India & Singapore
LDM Stations in Singapore and Europe
International Marine and Diving (IMID) – Singapore
Professional Manpower Supply (PMS) – Panama
FG Marine, China
HAI HA M&S - Vietnam
Nico International - Fujairah

Italy



BANCHERO COSTA & C.

Agenzia Marittima S.p.A.,
2 Via Pammatone,
16121 Genoa, Italy
Tel: +39 010 5631 626/629/634
Fax: +39 010 5631 602
Email: shipyard@bcagiy.it
Web: www.bancosta.it
Contact: Fabio Bertolini
Mobile: +39 335 8078217
Contact: Daniele Perotti

Mobile: +39 335 7366801
Contact: Giovanna Ximone
Mobile: +39 335 7366802

COMPANIES REPRESENTED

Asaba shipyard (Equatorial Guinea)
Astilleros Cernaval, Algeciras (Spain)
Astilleros Mario Lopez, Malaga (Spain)
Chengxi Shipyard (China)
CM Korea Ltd
CMR Tunisie (Tunisia)
Colombo Dockyard (Sri Lanka)
Cromwell & C. (Argentina)
Crug-Versitec (marine sealing solutions - Cyprus)
Damen Shiprepair & Conversion
• Damen Shiprepair Amsterdam (The Netherlands)
• Damen Shiprepair Oranjerwerf, Amsterdam (The Netherlands)
• Damen Shiprepair Brest (France)
• Damen Shipyards Den Helder (The Netherlands)
• Damen Shiprepair Dunkerque (France)
• Damen Shiprepair Harlingen (The Netherlands)
• Damen Oskarshamnsväret (Sweden)
• Damen Shiprepair Van Brink Rotterdam (The Netherlands)
• Damen Shiprepair Rotterdam (The Netherlands)
• Damen Shiprepair Vlissingen (The Netherlands)
• Damen Shipyards Sharjah-Albwardy Marine Engineering (UAE)
• Damen Curacao shipyard
• Damen Mangalia (former Daewoo Mangalia)
• Damen Verolme (former Keppel Verolme)
• DIANCA Astilleros (Venezuela)
EST Engineering Ship Technology (Singapore)
Gemak Shipyard (Turkey)
General Naval Control (Italy)
General Shipping S.A (Greece)
Guangzhou Dengtai Shipyard (China)
Hyundai Mipo Dockyard (South Korea)
Hyundai Vinashin Shipyard (Vietnam)
Ibercisa (Spanish winches and deck machinery producer)
Komas-Korean Maritime Repairs Service (South Korea)
Malaysia Marine & Heavy Engineering (Malaysia)
MSR Gryfia Shiprepair Yard (Poland)
Paxocean Batam
Paxocean Singapore
Pregol Shiprepair Yard - Kaliningrad (Russian Federation)
Promar Uab (propulsion and sealing services – Lithuania)
Qingdao Beihai Shipyard (China)
Riga Shipyard (Latvia)
Sasebo Heavy Industries (Japan)
Shanghai Shipyard (China)
Sociber (Chile)
SYM (Barcelona, Spain - Santo Domingo, Dominican Republic)
ST Marine
Underwater Shipcare, Singapore.
Zhoushan Xinya Shipyard (China)

Italy / Monaco / Switzerland



CAMBIASO RISSO SERVICES SAM

Gildo Pastor Center, 7 Rue du Gabian,
MC 98000, Monaco
Switchboard: + 377 98801360
Fax: + 377 97987848
Email: tech@cariservice.com
Web: www.cambiasorissoeservice.com
Contact: Massimiliano (Max) Iguera
Direct Line: +377 98 801361
Mobile: +33 640 623327
Private email: max@cariservice.com
Contact: Giovanni Palumbo
Direct Line: + 377 98801362
Mobile: +33 640616602

Contact: Mr Enrico Pittaluga
Direct Line: +37798801363
Mobile: +33640623184

COMPANIES REPRESENTED

Alabama Shipyard – Mobile (USA)
ASMAR, Chile
China Shipbuilding Corporation (Taiwan)
• Kaohsiung Shipyard
• Keelung Shipyard
Cosco Shipping Heavy Industry
• Cosco Dalian Shipyard
• Cosco Guangdong Shipyard
• Cosco Nantong Shipyard
• Cosco Shanghai Shipyard
• Cosco Zhoushan Shipyard
• Cosco Qidong Offshore
• Cosco Shipping Ppa, Greece
• Nacks
• Dacks
CUD Weihai (China)
Dakarnave (Senegal)
Drydock World Dubai
Elgin Brown & Hamer (South Africa)
Grand Bahama Shipyard (Bahamas)
Guangzhou Wenchong Dockyard (China)
Gulf Copper (Port Arthur / Galveston / Corpus Christi – USA)
IMC – Yy Zhoushan (Zhoushan, China),
Lisnave Estaleiros Navais SA (Portugal)
Namibia Drydock
Odessos Shiprepair Yard (Bulgaria)
ONEX Elefsis Shipyards SA, Greece
ONEX Neorion Shipyards SA, Greece
Orient Shipyard (South Korea)
PaxOcean Batam
PaxOcean Singapore
Qingdao Beihai Shipyard (China)
Remontowa Shiprepair Yard (Poland)
Renave (Brasil)
Santierul Naval Costanta (Romania)
Scamp Network Ltd (Gibraltar)
Smit International (Rotterdam)
Sefine Shipyard (Turkey)
Tersan Shipyard (Turkey)
Tsakos Industrias Navales (Montevideo, Uruguay)
Tuzla Shipyard (Turkey)
Unithai Shipyard & Engineering (Thailand)
Western India Shipyard (India)



VICTORIA MARITIME SERVICES



MEMBER

The International Association of Shiprepair Agents Ltd

7 Avenue des Papalins,
MC 98000, Monaco
Tel: +377 99995160
Email: shiprepair@victoriamaritime.com
Web: www.victoriamaritime.com

Contact: Luca Spinelli-Donati,
Julia Sandmann, Carlo Spinelli-Donati,

SHIPYARDS REPRESENTED

Adria Docks of Trogir, Croatia
Asry of Bahrain
Alimia Group:
• Astander of Santander, Spain
• Astibal of Balboa, Panama
• Astican of Las Palmas de Gran Canaria, Spain
Besiktas Group:
• Art Shipyard of Tuzla, Turkey
• Besiktas Shipyard of Yalova, Turkey
• Park Shipyard of Yalova, Turkey
BLRT Group:
• Tallinn Shipyard of Tallinn, Estonia
• Turku Repair Yard of Naantali, Finland
• Western Shipyard of Klaipeda, Lithuania
Cammell Laird of Birkenhead, UK
Carell of Piraeus, Greece

Chantier Naval de Marseille, France
Dormac of Durban and Cape Town, South Africa
DS Ship / Yeosu Ocean of Ulsan, Korea
Fujian Huadong Shipyard of Fuzhou-Fujian, China
Huarun Dadong Dockyard (HRDD) of Shanghai, China
Oresund Drydocks of Landskrona, Sweden
ROG of Rotterdam, Netherlands
San Giorgio del Porto of Genoa, Italy
Seatrium:
• Admiralty, Tuas, Tuas Boulevard, Benoi and Gul Yard of Singapore
• Tuas Boulevard Yard of Singapore
• Subic Bay of Philippines
• Estaleiro Jurong Aracruz of Aracruz, Brazil
Shanhaiguan Shipyard of Qinhuangdao, China
Talleres Navales Del Golfo of Veracruz, Mexico
Tampa Ship of Tampa, Florida
Tandanor of Buenos Aires, Argentina

CHINESE SHIPYARD PARTNERS

• FUJIAN HUADONG SHIPYARD of Fuzhou-Fujian
• HUARUN DADONG DOCKYARD (HRDD) of Shanghai
• SHANHAIGUAN SHIPYARD of Qinhuangdao
• XINYA SHIPYARD of Zhoushan

MARINE SERVICE COMPANIES REPRESENTED

Elettrotek Kabel of Bagnolo in Piano, Italy (special electrical cables producer)
HARRIS PYE (repair, maintenance, upgrade and installation services for boilers and heat transfer)
Nextcorr of London, UK (marine growth prevention and corrosion protection systems)
PBM of Rijeka, Croatia (mechanical repairs)
Polyflake of Miami, USA (high-performance, long-term anti corrosion protection)
Turbo-Technik Repair Yard of Wilhelmshaven, Germany (mechanical repairs)

Lithuania, Latvia, Estonia, Poland



ORCA MARINE UAB



MEMBER

The International Association of Shiprepair Agents Ltd

Liepu gatve 87B, LT-92195 Klaipeda,
Lithuania

Tel: +370 46 246430

Mobile: +370 650 40900

Email: info@orca-marine.eu

Web: www.orca-marine.eu

Contact: Viktoras Cernusevicius

SHIPYARDS

ASABA Shipyard (Malabo, Equatorial Guinea);
ASMAR Shipyard (Chile);
BRODOTROGIR D.D. Shipyard Trogir (Croatia);
CARENA (Abidjan, Ivory Coast);
CHANTIER NAVAL de MARSEILLE (France);
COLOMBO Dockyards (Sri Lanka);
COSCO SHIPYARDS GROUP (China)
DAVIE (Quebec, Canada);
DETYENS Shipyard (N. Charleston, USA);
DONG SUNG Engineering & Shiprepair (S.Korea);
DAMEN SHIPREPAIR & CONVERSION (the Netherlands, France, Curaçao, UAE, Senegal)
ENAVI Reparos Navais (Rio de Janeiro, Brazil);
FAMA Group (Cyprus);
GIBDOCK (Gibraltar);
HARLAND & WOLFF (Belfast, UK);
MMHE Shipyard (Malaysia);
ASTIBAL (Panama)
NAMDOCK (Walvis Bay, Namibia)
NARNARP SHIPEPAIR (Tuzla/Yalova, Turkey)
ASYAD (Oman);
SIMA (Peru);
SAN GIORGIO del PORTO (Genova, Italy);
TANDANOR (Buenos Aires, Argentina);
TSAKOS Industrias Navales (Montevideo, Uruguay);
ZAMAKONA Yards:
• Zamakona Pasaia (Spain);

• Zamakona Las Palmas (Canary Isl., Spain);

MARINE SERVICE COMPANIES

NARP PORY AGENCY (Turkey)
DAMEN MARINE COMPONENTS
DAMEN SCHELDE MARINE SERVICES
DAMEN GREEN SOLUTIONS
DAMEN BAWAT
DEX QM LUBRICANTS
ARGO NAVIS (Greece);
CHINAPORT CLEANSEAS - de-slopping, cleaning (China);
DGS Industrial & Naval (Brazil) - afloat repairs;
MECHADINAMIK - mechanical services, Turkey
ONE NET - satellite communications, bridge equipment service;
ONE TECH - technical service;
SYM - afloat repairs & marine services.

The Netherlands



AYS SHIPREPAIR



MEMBER

The International Association of Shiprepair Agents Ltd

Oranjekanaal ZZ 14,
7853TC Wezuperbrug,
The Netherlands
Mobile: +31 6 47 952 452
Telephone: +31 85 0160 635
Email: hilka@aysshirepair.nl
Web: www.aysshirepair.nl

SHIPYARDS

EUROPE
Bulyard (Bulgaria)
Bredo Drydocks (Germany)
Balearia/Gibdock (Gibraltar)
Gryfia Shipyard (Poland)
NORTH AMERICA – CARIBIC
Canada West - Seaspan (Vancouver)
Canada West - Seaspan (Victoria)
US East Coast - Detysens
Jamaica - German Ship Repair Jamaica Ltd
Colombia - Cotecmar
SOUTH AMERICA
Brasil - Atlântico Sul - EAS
ARABIAN GULF
Qatar - Qatar Shipyard Technology Solutions
AFRICA
South Africa - Dormac (Capetown, Durban, East London)
Namibia - NAMDOCK (Namibia Drydock & Ship Repair)
ASIA
Singapore - ASL-Marine
Batam - ASL-Marine
Korea - Orient (Busan)
CHINA
Hong Kong - China Mergant/Maylong Trading
Shekou - China Mergant/Maylong Trading
Zhoushan - China Mergant/Maylong Trading
Zhejiang - CIMC/Maylong Trading
Putuo - CIMC/Maylong Trading
Changdong - CIMC/Maylong Trading
Changtu Island - CIMC/Maylong Trading
Dalian - CSSC-DSIC Changxingdao Shipyard
Shanhaiguan - CSSC-Shanhaiguan Shipyard
Tianjin - CSSC-Tianjin Shipyard

SHIP REPAIR SERVICES

EUROPE
BMT (Spain)
North America/South America
Sirco Pty (Panama)
Mapamar (Brazil)
SINGAPORE
Brightsun Marine
FAR EAST/KOREA
Haein Enc Co, Ltd
Worldwide
UPE Underwater Propulsion Engineers
Greentec Marine Engineering



AIMSS NL

Jan van Polanenkaade 3
4811 KM Breda
The Netherlands
T +31 76 737 0002
Email: sales@aimss-shiprepair.com
Web: aimss-shiprepair.com

SHIPYARDS

• APCL (UK)
• ASL (Indonesia)
• ASMAR (Chile)
• ASYAD Drydock (Oman)
• CNDM (France)
• DQS (Vietnam)
• NASCO (China)
• SGDP (Italy)
• SNC (Romania)
• TERSAN (Turkey)
• TNG (Mexico)
• UNITHAI (Thailand)
• ZTHI (China)

MARINE PRODUCTS & SERVICES

• AIMSS RIDING TEAM (Romania)
Supply of Qualified Welders, Fitters, Technicians, Electricians etc.
• CROSSCOMAR (Spain)
Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
• GENERAL SHIPPING (Greece)
Protection of Metallic Surfaces and Tank Coating Application Services
• HAI HA M&S (Vietnam)
Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
• JASON MARINE ELECTRONICS (Spain)
Supply, Repair, Maintenance & Surveys for Marine Electronics & NavCom
• PBM (Croatia)
Marine Engines & Control Systems Specialist, Governor Overhaul, Woodward Authorised Independent Service Facility
• PMS (Panama)
Afloat Repairs, Voyage Repairs & Underwater Services
• SINGATAC (Singapore)
Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
• WINKONG (China)
Supply of Parts & Equipment, Afloat Repairs, Voyage Repairs & Underwater Services



ESMA MARINE AGENCIES B.V.



Kuiperbergweg 35,
1101 AE, Amsterdam,
The Netherlands
Tel: +31 20 312 1353
Email: shiprepair@esma.nl
Contact: Cees Onink
Mob: +31 622 790 463
Web: www.agentondemand.nl
AGENT ON DEMAND MEMBERS
AFRICA
ASABA Astilleros De Guinea Ecuatorial S.A
(Malabo, Equatorial Guinea)
CHINA
Cosco Group
EUROPE
Cernaval (Algerias, Spain)
ICDAS (Cannakale/Istanbul, Turkey)
Netaman Repair Group (Riga, Tallin)
FAR EAST
Colombo Dockyards (Colombo, Sri Lanka)
Nosco Shipyard (Quang Ninh, Vietnam)
MIDDLE EAST
Drydocks World (Dubai, UAE)
Drydocks World Global Offshore Services

Norway



BSA SHIPPING AGENCIES ANS



Akershusstranda 15,
skur 35,
0150 Oslo, Norway
Contact:
Mr. Thord Peter Mossberg
Tel: +4723085000
Mobile: +4792012755
Email: peter@bsaship.com
Web: www.bsaship.com
SHIPYARDS
Brodogradiliste d.o.o Shipyard LP (Croatia)
Falkvarv (Sweden)
Cernaval Group Algeciras (Spain)
Hidramar S.L (Canary Islands)
General Shipping S. A (Greece)
TK Tuzla Shipyard (Turkey)
Sandock Austral Shipyards (South Africa)
Qatar Shipyard Technology Solutions (Qatar)
Seagull Group (Singapore, Malaysia, UAE, India, Indonesia)
Unithai Shipyard & Engineering Ltd (Thailand)
Fujian Huadong Shipyard Ltd (China)
HuaRunDadong Dockyard Ltd HRDD (China)
CUD (Weihai) Shipyard (China)
Pax Ocean Shipyard Zhoushan (China)
Pax Ocean (Singapore)
Pax Ocean Batam (Indonesia)
First Suez Ltd - Suez Canal Transit and Shiprepair (Egypt)
Caribbean Drydock Company S.A CDC (Cuba)
NOSCO Shipyard, Vietnam



JML SHIPYARD AGENCY

Falkevägen 3, 457 40 Fjällbacka, Sweden
Contact: Markus Larsson, Managing Director
Mobile: +46 702 20 37 43
Email: markus@jmlshipyardagency.com
Web: www.jmlshipyardagency.com
SHIPYARDS REPRESENTED
EUROPE
Lloyd Werft, Bremerhaven, Germany
Sefine Shipyard, Tuzla, Turkey
San Giorgio del Porto, Genoa, Italy
Chantier Naval de Marseille, France
EDR Shipyard, Antwerp, Belgium
ASIA
Drydocks World, Dubai
Chengxi Shipyard, Jiangyin, China
Changhong International Shipyard, Zhoushan, China
Wenchong Shipyard Guangzhou, China
Shan Hai Guan Shipyard, China
Qingdao Beihai Shipyard, China
DSIC Marine Services, Dalian, China
US, CANADA & CARIBBEAN
TNG, Veracruz, Mexico
Ciramar Shipyard, Dominican Republic
Chantier Davie, Quebec, Canada
German Ship Repair Jamaica
AFLOAT REPAIR
Global Offshore Service, Dubai UAE
Offshore Inland, US Gulf/Mexico
Crosscomar, Algeciras
UMA Marine, India
Link Marine / Automation, UAE
MCU Coatings
Carell, Greece



ULRIK QVALE & PARTNERS AS



Hoffsveien 13, 0275 Oslo
Tel: +47 22511616
Email: post@uqp.no
Web: www.uqp.no
Contact: Oivind Qvale or Anders Lindheim
SHIPYARDS REPRESENTED
EUROPE:
Bredo Drydocks (Germany)
Nauta Shipyard (Poland)
Lisnave (Portugal)
Gemak (Turkey)
AFRICA:
Dakarnave (Senegal)
Dormac Marine & Engineering (South Africa)
AMERICAS:
Asmar (Chile)
Grand Bahama Shipyard (Bahamas)
Renave Industrial Group (Brazil)
Seaspan Vancouver Shipyard (Canada)
ASIA:
Arab Shipbuilding and Repair Yard (ASRY)
CHI Dalian Shipyard (China)
CHI Guangzhou Shipyard (China)
COSCO Shipping Shipyard (NANTONG) CO Ltd (China)
CHI Shanghai Shipyard (China)
CHI Xidong (China)

CHI Zhoushan Shipyard (China)
Japan Marine United Corp (Japan)
AFLOAT REPAIRS
Rotterdam Ship Repair (Netherlands)
Eerland Shiprepair (Netherlands)
HSD Marine (Singapore)
Marval (Chile)

Republic of Ireland



ENCOMPASS MARINE LIMITED



Telegraph House, 80 Cleethorpe Road, Grimsby, UK.
DN31 3EF, UK
Tel: +44 (0) 1472 245500
Fax: +44 (0) 1472 245511
Email: services@encompassmarine.com
Web: www.encompassmarine.com
Contacts
Drydock: David Maitland, Jon Thompson
Diving & Marine: Alan Jagger, Danielle Roberts,
Holly Ferneyhough,
BD, Lagersmit & Techcross: Maria Mott
SHIPYARDS REPRESENTED
Art Shipyard (Tuzla, Turkey)
Asyd Drydock (Duqm, Oman)
Asaba Shipyard (Malabo, Equatorial Guinea)
Cammell Laird Shiprepairers (Merseyside, UK)
Colombo Dockyard (Colombo, Sri Lanka)
COSCO Shipping Heavy Industry, China
• CHI Dalian
• CHI Nantong
• CHI Shanghai
• CHI Zhoushan
• CHI Guangdong
CUD (Weihai) Shipyard Co., Ltd.
Detyens Shipyard (Charleston, USA)
EDR Antwerp Shipyard (Belgium)
Grand Bahama Shipyard (Freeport, Bahamas)
Guangzhou Wenchong Dockyard (Guangzhou, China)
Hidramar Shipyards (Canary Isles, Spain)
Malaysia Marine and Heavy Engineering (Johor Bahru, Malaysia)
Namibia Drydock and Ship Repair (Walvis Bay, Namibia)
Navantia (Spain)
• Cadiz Shipyard (Cadiz)
• Cartagena Shipyard (Cartagena)
• Ferrol-Fene Shipyard (Ferrol)
• San Fernando Shipyard (San Fernando)
Orient Shipyards (Busan / Gwangyang, Korea)
Zhoushan Xinya Shipyard (Zhoushan, China)
MARINE SERVICE COMPANIES REPRESENTED
Blay Marine Tech (Spain)
Hellenika (Bulgaria)
Irwin Marine
Komas (Korea)
Lagersmit (Netherlands)
Link Instrumentation (UAE & Singapore)
Marine Technical Services (Poland)
Maritime Shipcleaning Rotterdam
NARP Ship Repair (Turkey)
PmaxOne Services (Singapore)
TruMaine Group (Rotterdam, Singapore, China, Dubai)
UNDERWATER & DIVING SERVICES
U/W inspections, surveys, cleaning, and repairs
Over 200 class approved diving stations worldwide
COMPANIES REPRESENTED
Atlantis Marine Services (Fujairah, UAE)
Underwater Shipcare (Singapore)

Singapore



Member of the UW Group

WSR SERVICES LTD



10 Eunos Road 8, #13-06,
Singapore Post Centre, S408600
Tel: +65 315 81050
Email: mail.sg@umarwsr.com
Web: www.uwgroup.com
SHIPYARDS
ASL Marine Holdings Ltd-Batam, Indonesia
Caribbean Dockyard Engineering Services Ltd (CDESL) - Trinidad & Tobago
Chengxi Shipyard Co. Ltd - Shanghai, China
Ciramar Shipyards - Dominican Republic
Colombo Dockyard Ltd - Colombo, Sri Lanka
CUD (Weihai) Shipyard - Shandong, North China
Detyens Shipyards - Charleston, South Carolina, USA
Dormac Marine & Engineering - Capetown/Durban, South Africa
EDR Antwerp Shipyard - Antwerp, Belgium
Fayard A/S - Munkebo, Denmark
Guangzhou Wenchong Shipyard - Guangzhou, South China
Huarun Dadong Dockyard (HRDD) - Shanghai, China
Hutchison Ports TNG (Talleres Navales del Golfo S.A.) - Veracruz, Mexico
International Ship Repair - Tampa, Florida, USA
Netaman Repair Group - Tallinn, Estonia
Onex Elefsis Shipyards SA - Elefsina, Greece
IMC Shipyard (Zhoushan) - Zhoushan, China
Nanyang Star Group - Zhoushan, China
Port Said Shipyard - Egypt
Shanhaiquan Shipbuilding Industry Co., Ltd - Hebei, North China
UNDERWATER AND Afloat
LDM Stations in Singapore and Europe
International Marine and Diving (IMID) - Singapore
Nico International - Fujairah

Sweden



BSA SHIPPING AGENCIES ANS



Akershusstranda 15, skur 35, 0150 Oslo, Norway
Contact:
Mr. Thord Peter Mossberg
Tel: +4723085000
Mobile: +4792012755
Email: peter@bsaship.com
Web: www.bsaship.com
SHIPYARDS
Brodogradiliste d.o.o Shipyard LP (Croatia)
Cernaval Group Algeciras (Spain)
Hidramar S.L (Canary Islands)
General Shipping S. A (Greece)
TK Tuzla Shipyard (Turkey)
Sandock Austral Shipyards (South Africa)
Qatar Shipyard Technology Solutions (Qatar)
Seagull Group (Singapore, Malaysia, UAE, India, Indonesia)
Unithai Shipyard & Engineering Ltd (Thailand)
Fujian Huadong Shipyard Ltd (China)
HuaRunDadong Dockyard Ltd HRDD (China)
CUD (Weihai) Shipyard (China)
Pax Ocean Shipyard Zhoushan (China)
Pax Ocean (Singapore)
Pax Ocean Batam (Indonesia)
First Suez Ltd - Suez Canal Transit and Shiprepair (Egypt)
Caribbean Drydock Company S.A CDC (Cuba)
NOSCO Shipyard, Vietnam

JML

Shipyard Agency

JML SHIPYARD AGENCY

Falkevägen 3, 457 40 Fjällbacka, Sweden
Contact: Markus Larsson, Managing Director
Mobile: +46 702 20 37 43
Email: markus@jmlshipyardagency.com
Web: www.jmlshipyardagency.com

SHIPYARDS REPRESENTED

EUROPE
Lloyd Werft, Bremerhaven, Germany
MSR Gryfia Shipyard, Szczecin, Polen
Sefine Shipyard, Tuzla, Turkey
San Giorgio del Porto, Genoa, Italy
Chantier Naval de Marseille, France
EDR Shipyard, Antwerp, Belgium
ASIA
Drydocks World, Dubai
Chengxi Shipyard, Jiangyin, China
Changhong International Shipyard, Zhoushan, China
Wenchong Shipyard Guangzhou, China
Shan Hai Guan Shipyard, China
Qingdao Beihai Shipyard, China
DSIC Marine Services, Dalian, China
US, CANADA & CARIBBEAN
TNG, Veracruz, Mexico
Ciramar Shipyard, Dominican Republic
Chantier Davie, Quebec, Canada
German Ship Repair Jamaica
AFLOAT REPAIR/SERVICES
Global Offshore Service, Dubai UAE
Offshore Inland, US Gulf/Mexico
Crosscomar, Algeciras
UMA Marine, India
Link Marine / Automation, UAE
MCU Coatings
Carell, Greece

Switzerland



ENCOMPASS MARINE LIMITED



Telegraph House, 80 Cleethorpe Road, Grimsby, UK.
DN31 3EF, UK
Tel: +44 (0) 1472 245500
Fax: +44 (0) 1472 245511
Email: services@encompassmarine.com
Web: www.encompassmarine.com

Contacts
Drydock: David Maitland, Jon Thompson
Diving & Marine: Alan Jagger, Danielle Roberts, Holly Ferneyhough, BD, Lagersmit & Techcross: Maria Mott
SHIPYARDS REPRESENTED
Art Shipyard (Tuzla, Turkey)
Asyad Drydock (Duqm, Oman)
Asaba Shipyard (Malabo, Equatorial Guinea)
Cammell Laird Shiprepairers (Merseyside, UK)
Colombo Dockyard (Colombo, Sri Lanka)
COSCO Shipping Heavy Industry, China
• CHI Dalian
• CHI Nantong
• CHI Shanghai
• CHI Zhoushan
• CHI Guangdong
CUD (Weihai) Shipyard Co., Ltd.
Detyens Shipyard (Charleston, USA)
EDR Antwerp Shipyard (Belgium)
Grand Bahama Shipyard (Freeport, Bahamas)
Guangzhou Wenchong Dockyard (Guangzhou, China)
Hidramar Shipyards (Canary Isles, Spain)
Malaysia Marine and Heavy Engineering (Johor Bahru, Malaysia)

Namibia Drydock and Ship Repair (Walvis Bay, Namibia)
Navantia (Spain)

- Cadiz Shipyard (Cadiz)
- Cartagena Shipyard (Cartagena)
- Ferrol-Fene Shipyard (Ferrol)
- San Fernando Shipyard (San Fernando)
- Orient Shipyards (Busan / Gwanyang, Korea)
- Zhoushan Xinya Shipyard (Zhoushan, China)

MARINE SERVICE COMPANIES REPRESENTED

Blay Marine Tech (Spain)
Hellenika (Bulgaria)
Irwin Marine
Komas (Korea)
Lagersmit (Netherlands)
Link Instrumentation (UAE & Singapore)
Marine Technical Services (Poland)
Maritime Shipcleaning Rotterdam
NARP Ship Repair (Turkey)
PmaxOne Services (Singapore)
TruMaine Group (Rotterdam, Singapore, China, Dubai)

UNDERWATER & DIVING SERVICES

U/W inspections, surveys, cleaning, and repairs
Over 200 class approved diving stations worldwide

COMPANIES REPRESENTED

Atlantis Marine Services (Fujairah, UAE)
Underwater Shipcare (Singapore)

U.A.E.



BSA SHIPPING AGENCIES ANS



Akershusstranda 15, skur 35,
0150 Oslo, Norway
Contact: Mr. Thord Peter Mossberg
Tel: +4723085000
Mobile: +4792012755
Email: peter@bsaship.com
Web: www.bsaship.com

SHIPYARDS

NOSCO Shipyard, Vietnam



Member of the UW Group

WSR SERVICES LTD



Sheikha Maryam Bint Rashid
Bin Saeed Al Maktoum Bld.,
P114 Baniyas Square, Dubai
T: +971 4338 8918
Email: mail.ae@umarwsr.com
Web: www.uwgroup.com
SHIPYARDS
ASL Marine Holdings Ltd-Batam, Indonesia
Caribbean Dockyard Engineering Services Ltd (CDESL) - Trinidad & Tobago
Chengxi Shipyard Co. Ltd - Shanghai, China
Ciramar Shipyards - Dominican Republic
Colombo Dockyard Ltd - Colombo, Sri Lanka
Detyens Shipyards - Charleston, South Carolina, USA
Dormac Marine & Engineering - Capetown/Durban, South Africa
EDR Antwerp Shipyard - Antwerp, Belgium
Fayard A/S - Munkebo, Denmark

Guangzhou Wenchong Shipyard - Guangzhou, South China
Huarun Dadong Dockyard (HRDD) - Shanghai, China
Hutchison Ports TNG (Talleres Navales del Golfo S.A.) - Veracruz, Mexico
International Ship Repair - Tampa, Florida, USA
Netaman Repair Group - Tallinn, Estonia
Onex Elefsis Shipyards SA - Elefsina, Greece
IMC Shipyard (Zhoushan) - Zhoushan, China
Nanyang Star Group - Zhoushan, China
Shanhaiguan Shipbuilding Industry Co., Ltd - Hebei, North China

UNDERWATER AND AFLOAT

LDM Stations in Singapore and Europe
International Marine and Diving (IMD) - Singapore
Nico International - Fujairah

United Kingdom



AIMSS UK

Unit 450, China Works
100 Black Prince Road
London SE1 7SJ
United Kingdom
T +44 20 3488 5528
E sales@aimss-shiprepair.com
W aimss-shiprepair.com

SHIPYARDS

- ASL (Indonesia)
- ASMAR (Chile)
- ASTANDER (North Spain)
- ASTIBAL (Panama)
- ASTICAN (Las Palmas)
- DQS (Vietnam)
- GRYFIA (Poland)
- NASCO (China)
- REIMERSWAAL (The Netherlands)
- SNC (Romania)
- TERSAN (Turkey)
- TNG (Mexico)
- UNITHAI (Thailand)
- ZTHI (China)

MARINE PRODUCTS & SERVICES

- AIMSS RIDING TEAM (Romania)
- Supply of Qualified Welders, Fitters, Technicians, Electricians etc.
- CROSSCOMAR (Spain)
- Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
- DAMEN SCHELDE MARINE SERVICES (The Netherlands)
- Supply & Overhaul of Engine Parts, Pneumatics, Hydraulics, T/C & Pumps
- GENERAL SHIPPING (Greece)
- Protection of Metallic Surfaces and Tank Coating Application Services
- HAI HA M&S (Vietnam)
- Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
- JASON MARINE ELECTRONICS (Spain)
- Supply, Repair, Maintenance & Surveys for Marine Electronics & NavCom
- KET MARINE (The Netherlands)
- Supply of Separators & Spare Parts, Bowl Services, Services for Obsolete Control Units
- PBM (Croatia)
- Marine Engines & Control Systems Specialist, Governor Overhaul, Woodward Authorised Independent Service Facility
- PMS (Panama)
- Afloat Repairs, Voyage Repairs & Underwater Services
- ROG (The Netherlands)
- Afloat Repairs, Mob/ Demob, Construction, Under-

water Services & Voyage Repairs
• SINGATAC (Singapore)
Afloat Repairs, Mob/ Demob, Construction, Underwater Services & Voyage Repairs
• UPE (The Netherlands)
Propeller Bolt/ Blade Replacement, Tunnel Thruster Exchange/ Seal off, Propeller Blade Straightening/ Cropping, Stabiliser Repairs, Blanking/ Sealing Ops with Cofferdam
• WINKONG (China)
Supply of Parts & Equipment, Afloat Repairs, Voyage Repairs & Underwater Services
• ZEBEC MARINE (India)
Design, Engineering & Consulting Solution



CALVEY MARINE LIMITED

Broomers Barn, Merrywood Lane,
Storrington, West Sussex RH20 3HD,
United Kingdom
Tel: +44 (0) 1903 748860
Fax: +44 (0) 1903 743390
Email: calvey@calveymarine.co.uk
Web: www.calveymarine.co.uk
Contact: Steven Black
Mobile: +44 (0) 7885 217869
Contact: Suzanne Black
Mobile: +44 (0) 7867 785957
Contact: Jessica Smart
Mobile: +44 (0) 7917 726274
COMPANIES REPRESENTED
AML Exchangers (Hartlepool)
Anchor and Chain Manufacturers and Stockists (Worldwide)
Beihai Shipyard (Qingdao)
Beihai Lifeboats (Qingdao)
Bredo Shipyard (Germany)
Brightsun Group (Singapore)
Cassar Ship Repair (Malta)
Chengxi Shipyard (Jiangyin)
Chengxi Shipyard (Xinrong)
Changxing Shipyard (Shanghai)
CHI Shipyards (China)
Ciramar Shipyard (Dominican Republic)
Diesel Marine International (Worldwide)
Drydocks World Dubai (UAE)
Drydocks World Dubai Global Offshore Services (UAE)
Fujian Shipyard (Huadong)
Guangzhou Wenchong Dockyard
Industrial Power & Marine, global pressure system support
King-Marine (Global procurement specialists based in China)
Lisnave Shipyard (Portugal)
Nauta Shiprepair (Gdynia, Poland)
North East Ship Repair, (Boston)
Offshore Inland Marine & Oilfield Services (Alabama, USA)
Pan Asia Company Ltd (South Korea)
PaxOcean Graha (Indonesia)
PaxOcean Nanindah (Indonesia)
PaxOcean Offshore (Zhuhai)
PaxOcean Pertama (Indonesia)
PaxOcean Shipyard (Zhoushan)
PaxOcean (Singapore)
Professional Manpower Supply (Global)
Global divers, underwater maintenance and cleaning
Sefine Shipyard (Turkey)
Vancouver Shipyard - (Vancouver)
Victoria Shipyard - (Victoria)
Worldwide Underwater Services
Yiu Lian Dockyards (Hong Kong)
Yiu Lian Dockyards (Shekou)
Yiu Lian Dockyards (Zhoushan, China)
Young & Cunningham Valves (North Shield)



ENCOMPASS MARINE LIMITED



Telegraph House,
80 Cleethorpe Road,
Grimsby,
DN31 3EF, United Kingdom
Tel: +44 (0) 1472 245500
Email: services@encompassmarine.com
Web: www.encompassmarine.com

Contacts
Drydock: David Maitland, Jon Thompson
Diving & Marine: Alan Jagger, Danielle Roberts,
Holly Fernyhough,
BD, Lagersmit & Techcross: Maria Mott

SHIPYARDS

ART (Tuzla, Turkey)
Asyad (Duqm, Oman)
Asaba Shipyard (Malabo, Equatorial Guinea)
Besiktas Shipyard (Yalova, Turkey)
BLRT Group
• Tallinn Shipyard (Tallinn, Estonia)
• Turku Repair Yard (Turku, Finland)
• Western Shipyard (Klaipeda, Lithuania)
Cammell Laird Shipyards (Merseyside, UK)
Colombo Dockyard (Colombo, Sri Lanka)
COSCO Shipping Heavy Industry, China
• CHI Dalian
• CHI Nantong
• CHI Shanghai
• CHI Zhoushan
• CHI Guangdong
CUD (Weihai) Shipyard Co., Ltd.
Detyens Shipyard (Charleston, USA)
EDR Antwerp Shipyard (Belgium)
Guangzhou Wenchong Dockyard (Guangzhou, China)
Hidramar Shipyards (Canary Isles, Spain)
ISR Repair & Marine Service (Tampa, USA)
Malaysia Marine and Heavy Engineering (Johor Bahru, Malaysia)
Namibia Drydock and Ship Repair (Walvis Bay, Namibia)
Orient Shipyards (Busan / Gwangyang, Korea)
West Sea Viana Shipyard (Viana de Castelo, Portugal)
Zhoushan Xinya Shipyard (Zhoushan, China)

MARINE SERVICE COMPANIES REPRESENTED
Blay Marine Tech (Spain)
Corrosion (Netherlands)
Hellenika (Bulgaria)
Irwin Marine (China)
Komas (Korea)
Keyser Technologies (Singapore)
Lagersmit (Netherlands)
Link Instrumentation (UAE & Singapore)
Marine Technical Services (Poland)
Maritime Ship cleaning Rotterdam
Metalock Brasil (Brazil)
Metalock Engineering DE (Germany)
NARP Ship Repair (Tuzla, Turkey)
Netherlands Radiator Factory, NRF
PmaxOne Services (Singapore)
Talleras Industriales (Panama)
Techcross BWMS (Korea)
TruMaine Group (Rotterdam, Singapore, China, Dubai, Türkiye)
Wortelboer (Netherlands)
Zener Maritime (Rotterdam, Mumbai, Singapore, China)

UNDERWATER & DIVING SERVICES

U/W inspections, surveys, cleaning, and repairs
Over 200 class approved diving stations worldwide

COMPANIES REPRESENTED

Atlantis Marine Services (Fujairah, UAE)
Underwater Shipcare (Singapore)



EMCS INTERNATIONAL LTD

(MLC2006 Approved/ISO9001:2015 Accredited)

Marion House, 9 Station Road
Port Erin, Isle of Man IM9 6AE,
United Kingdom

Tel: +44 1624 833955

Group email: enquiries@emcs.co.uk

Web: www.emcs.co.uk

Contact: Richard George

Mobile: +44 7624 492 716

Contact: Amanda Green

(North East UK Representative)

Tel: +44 191 5160010

Jamie Skillen (Diving Services)

Tel: +44 7624 232916

Cheryl Reeday (Superintendents Course)

Email: superscourse@emcs.co.uk

SERVICES PROVIDED

Labour Supply for afloat ("riding teams")/shipyard/

offshore repairs and maintenance

All trades provided including welders, platers,

mechanical/engine fitters, pipefitters, scaf-

folders, riggers, blaster/painters, tank cleaners,

electricians plus chargehands and foremen.

Consultancy Services/Vessel Inspections

Diving Services Worldwide (Class and general

vessel inspections, hull cleaning, underwater

repairs, blanking etc)

COMPANIES REPRESENTED

Electro Partners NV - Electrical/Electro

Mechanical Workshop and Vessel Based Repairs

(Antwerp/NW Europe)

Web: www.electropartners.com

Callu bv

Workshop support - Welding & Fabrication,

Maintenance & Machining

Web: www.callu.be

COURSE MANAGED

Ship Superintendents' Training Course

Web: www.emcs.co.uk/superintendents-course/



L&R MIDLAND (UK) LTD.

Parkshot House,

5 Kew Road

Richmond, TW9 2PR

Tel: +44 (0) 20 3856 6520

Email: ukenquiries@lrmidland.com

Web: www.lrmidland.co.uk

Contact: Russell Bell - Managing Director

Direct: +44 (0) 20 3856 6520

Mobile: +44 (0) 7887 473 123

Email: rbell@lrmidland.com

SHIPYARDS REPRESENTED

Seatrium (Singapore)

• Seatrium Admiralty Yard

• Seatrium Benoi Yard

• Seatrium Tuas Yard

• Seatrium Tuas Boulevard Yard

Seatrium Subic Bay (Philippines)

ASRY (Bahrain)

Dakarnave - Dakar (Senegal)

Dormac (South Africa)

• Cape Town

• Durban

• Walvis Bay

Gemak - Tuzla (Turkey)

Gibdock (Gibraltar)

Grand Bahama Shipyard - Freeport (Bahamas)

NICO International (UAE)

• Abu Dhabi

• Dubai

• Fujairah

Oresund Drydocks - Landskrona (Sweden)



MARINE MARKETING INTERNATIONAL LTD



CABEKA House, 2 Grasscroft,

Furztown, Milton Keynes,

Bucks MK4 1AS,

United Kingdom

Tel: +44 1908 378822

Mob: +44 7720074113

Email: repair@marine.marketing

Web: www.marine.marketing

Contact: Mike McMahon

COMPANIES REPRESENTED

SHIPYARDS

Carell SA (Piraeus, Greece)

Carena (Abidjan, Ivory Coast)

Caridoc (Chaguaramas, Trinidad)

CMR Tunisia (Menzel Bourguiba, Tunisia)

Cotecmar (Cartagena, Colombia)

MTG Dolphin (Varna, Bulgaria)

Navalrocha (Lisbon, Portugal)

PGZ SW (Gdynia, Poland)

Sandock Austral Shipyard (Durban, South Africa)

TURKEY - With our partner OKT Ltd

Kuzey Star (Tuzla)

Hat-San (Yalova)

Sefine Shipyard (Yalova)

TK TUZLA (Tuzla)

Ozata Shipyard (Altinova)

CHINA - With our partner Shanghai Willing

CUD Weihai (Weihai)

Qingdao Beihai (Qingdao)

Chengxi Shipyard (Jiangyin)

Zhoushan Xinya (Zhoushan)

HRDD (Chongming, Shanghai)

Yiu Lian (Shekhou)

Batangas Shipyard Corporation, Philippines

GSRI Shipyard, Kingston Jamaica

MARINE SERVICES

BIO-UV Ballast Water Treatment (Lunel, France)

Boilerman (Shanghai, Singapore, Dubai)

Kwang Youn Gi Engineering (Kaohsiung, Taiwan)

Marine Services & Shipping (Varna, Bulgaria)

Sinco Automation (Singapore, Malaysia, Indonesia)

Sunrui Environmental Engineering (Qingdao)

United States



L&R MIDLAND INC.

788 W Sam Houston Pkwy North,

Suite 200,

Houston, TX 77024, USA

Tel: +001 713 680 0909

Fax: +001 713 680 9704

Email: shipyard@lrmidland.com

Web: www.lrmidland.com

Contact:

Tom McQuilling,

Ryan Smith,

James McQuilling

SHIPYARDS REPRESENTED

Seatrium (Singapore)

• Seatrium Admiralty Yard

• Seatrium Benoi Yard

• Seatrium Tuas Yard

• Seatrium Tuas Boulevard Yard

Seatrium Subic Bay (Philippines)

Damen Shiprepair & Conversion (Netherlands)

• Amsterdam

• Rotterdam

• Vlissingen
Damen Shiprepair & Conversion (France)
• Dunkerque
• Brest
Damen Shiprepair & Conversion (Curacao)
• Willemstad
Dormac (South Africa)
• Cape Town
• Durban
• Walvis Bay
Fincantieri (Italy)



VOGLER MARINE AGENCIES LLC

20 Bartles Corner Road, Flemington

New Jersey 08822, USA

Tel: +1-908-237-9500

Fax: +1-908-237-9503

Email: shiprepair@vogler.net

Contact: Donald W Vogler

SHIPYARDS

ASRY Arab Shipbuilding and Repair Yard (Bahrain)

Saldanha Bay, Walvis Bay South Africa)

SOCIBER (Chile)

ASMAR Shipyards CHILE (Talcahuano, Punta Arenas

and Valparaiso)

SHIPREPAIR COMPANIES EXCLUSIVELY REPRESENTED

Metalock do Brasil Ltda. (Brazil)



SIMPLEX AMERICAS LLC



20 Bartles Corner Road, Flemington,

New Jersey 08822, USA

Tel: +1-908-237-9099

Mobile: 24/7/365 +1-908-581-0900

Email: sales@simplexamericas.com

Web: www.simplexamericas.com

Contact: Donald W Vogler - President

SERVICE, SPARES AND SALES

Stern Tube Seals, Bearings and Bush Bearings

Propeller and Rudder Repairs, CPP & FPP

Thrusters and Azimuth Propulsion

Marine Diesel Engines, overhaul of 4-stroke engines

Couplings, Gearbox, Z-Drives

Full Propulsion Packages and Total Shifting Solutions

Hydraulic couplings, Nuts and Bolts

Shaft Alignment, In-Situ Machining, Chocking and

Mounting Service

Underwater Repairs and Service

FACTORY SERVICE, SPARES AND SALES

SKF Marine GmbH (SIMPLEX Compact & SIMPLAN)

Jastram GmbH

Niigata Power Systems Co. Ltd

Nakashima Propeller Co. Ltd

SKF Coupling Systems AB

Pilgrim International Ltd

KUMERA Marine

Turbulo Oily Water Separators



The Offshore Dialogue is an integral part of SMM (picture from 2024)

Source: HMC

Securing offshore technologies for future oceans

OFFSHORE DIALOGUE | Under the motto “Secure Offshore Technologies for Future Oceans”, the Offshore Dialogue 2026 will take place on September 3rd as part of SMM, the world’s leading maritime industry trade fair. Bringing together representatives from industry, engineering, politics and academia, the programme will examine how offshore technologies can help make the oceans safer, more resilient and more sustainable. Held under the patronage of the UN Decade of Ocean Science for Sustainable Development, both sessions will take place on the open-access Energy Efficiency Stage (Hall A4, Stand 311)

The programme opens with “Secure Offshore Infrastructures” (10:30–11:30). The session will focus on protecting and strengthening the resilience of critical offshore and maritime infrastructures that support energy supply, connectivity and offshore operations. Discussions will cover technological, operational and strategic approaches to enhancing the robustness, availability and security of these systems. The session will be moderated by Walter L. Kuehnlein, Founder of NRG.Vision and Deputy Chairman of GMT, and will feature Sönke Diesener (NABU), Hartwig Ross (Nexmaris) and Markus Beer (EUROATLAS).

The second session, “Secure Offshore Energy” (11:45–12:45), will examine resilient offshore energy systems and the role of engineering, digitalisation, artificial intelligence and innovative operating concepts in ensuring a secure and future-ready offshore energy supply. Professor Sören Ehlers, Director of the DLR Institute of Maritime Technologies and Propulsion Systems, will moderate the exchange, which will feature Bernadette Zipfel (Amprion), Rachel Bridges (Alfa Laval, UK) and Claudene Sharp-Patel (Lloyd’s Register, UK).

“The safe use of our oceans requires an interdisciplinary dialogue. Offshore energy systems and critical maritime infrastructures are becoming increasingly complex and must at the same time become more resilient. The Offshore Dialogue brings together the key stakeholders to discuss technological innovations and practical solutions for the future,” explains Professor Ehlers.

Both sessions will begin with short keynote impulses from the panellists, followed by an interactive discussion with the audi-

ence. The Offshore Dialogue provides a platform for cross-sector exchange on the safety, resilience and future viability of offshore technologies.

The conference language is English.

PODSZUCK®

Marine and Offshore Doors – Made in Germany Established in 1919



A-, B- and C-Class doors...
Only the best should be standard

Hinged and sliding doors with and without glass

Podszuck® GmbH
Klausdorfer Weg 163
24148 Kiel
Germany
Tel. +49 (0) 431-66 1110
Fax. +49 (0) 431-66 111 28
info@podszuck.eu

www.podszuck.eu

“We wanted to enter the market with a fresh and unbiased perspective”

INTERVIEW Deutsche Offshore Schifffahrt (DO) was founded by managing partners Philipp Maracke and Johannes Wolters in 2024 to enter the offshore energy market with a dedicated fleet of construction commissioning service operation vessels (C-CSOVs). The company will introduce the four innovative newbuildings, acting as commercial manager and operator. Ship&Offshore spoke with Johannes Wolters (JWO) and Philipp Maracke (PMA) about the company setup and the market requirements for which the newbuildings are intended.



Johannes Wolters (left) and Philipp Maracke

When founding Deutsche Offshore Schifffahrt in 2024, what main market opportunities did you have in mind?

(JWO) Philipp and I have worked side by side in the maritime industry for a long time, but mostly in shipbuilding and related business. However, developments in the market led us to develop a new vessel-owning structure and to found DO.

We were driven by the fact that global energy demand continues to climb and gain pace. And that is an unstoppable driver underpinning the entire offshore energy market. If you combine the decarbonisation drive and the strategic requirement for robust energy independence, you have a long-term perspective that presents a great opportunity.

Our heritage was not in offshore oil and gas, and we wanted to enter the offshore wind market with a fresh and unbiased perspective. Our aim is to offer innovative designs incorporating the latest technologies. We therefore developed a new generation of C-CSOV vessel designs incorporating a ‘construction’ capability

thereby broadening their appeal. And they will be managed by a German offshore operator.

What is so special about your new design and why do you believe it can actually be of benefit to the industry?

(JWO) When looking at market requirements and how the CSOV vessel type has developed, we saw how different designs started converging into similar vessel types: highly specialised assets, focused on providing walk-to-work (W2W) operations. But we did not want to be limited by this level of specialisation. We therefore developed an asset with the goal of maximising its marketability without cutting back on competitiveness in the primary market.

This is how we decided on our new C-CSOV class, which benchmarks W2W and accommodation services, while offering charterers significant added value. The versatility and additional capabilities hold the potential to increase the efficiency of CAPEX-heavy installation vessels, while at the same time offer effective contingency measures when risks materialise offshore.

The C-CSOVs are the first vessels which address the requirements of the offshore wind market as a whole and consider the cable grid as a vital backbone of the sector. We also wanted to ensure that our vessels were capable of meeting short-notice repair requirements and not only focus on the turbines.

Steel-cutting for the “DO Joule” in March together with the announcement that Japan’s Mitsui O.S.K. (MOL) is investing in DO are viewed as strong signals. What are the next steps both in the development of the fleet and the partnership with MOL?

(PMA) Our ambition is clear: we want to establish DO as a strong, long-term player in the offshore energy market. As a platform for further innovation and growth, securing a partner such as MOL – reliable, financially solid with a genuine long-term outlook – is a major step towards this goal, and one we are very proud of.

On the fleet side, our focus is on delivering our C-CSOV newbuilding programme to the high standard our clients expect, and on establishing the highest standards in safety and operational excellence. Beyond that, MOL and DO share the ambition to expand in Europe and beyond and to explore new products and segments together.

It is still early in a partnership we expect to run over many years, so I’d ask for a little patience on the specifics. What I can say >

SAFE FAIRWAY FOR YOUR PROPULSION PROJECTS.

SMM

1 TO 4 SEP 2026

HALL A3

BOOTH 238



NAVILUS® marine gear units: quality and reliability, from support to product. Flender supports you with tailor made products for conventional **Diesel, Diesel Electric and fully electric** propulsion drive lines. Expect the best project support for your propulsion train.

Profit also from our **Marine Services** for global lifecycle support. We specialize in the supply of spare parts and field service engineers for the complete mechanical drive portfolio.

CONTACT US AT ANY TIME:

Marine Spare Parts:

marine.spares@flender.com

Marine Field Services:

marine.services@flender.com



WE MOVE THE WORLD

FLENDER



Illustration of the C-CSOV fleet

Source for both images: DO

is that the signals you mention are exactly that: the starting point of something we intend to build on steadily.

As commercial manager and future operator of the C-CSOV fleet, how do you structure responsibilities across the joint-venture partners, and what operating and charter models are you aiming for?

(PMA) DO is the operator and the ‘face to the customer’ – the main point of contact for all enquiries relating to ship operations. In this way, we will meet all the requirements of charterers quickly and efficiently. Behind that operational front sits a strong partnership. With Schoeller Holdings (SHL) and the Columbia Group, we have highly capable partners which will act as technical manager and hospitality provider. They introduce an impressive track record in ship management, crewing, training, accommodation and catering. As we have common ownership structures, we collaborate on a 100% aligned basis and can avoid arbitrary supplier-owner arrangements with uncertain interfaces.

On the commercial side, we will establish strong partnerships based on trust and proven cooperation models. We aim to serve the needs of each inquiry flexibly, whether on short- or long-term commitments.

At the same time, we intend to discuss with clients how DO and our new vessels can add value for our clients. So, rather than following a fixed model, we will aim jointly with clients to develop individual solutions that generate the highest value for their charter.

Demand is rising in the offshore energy market. What customer requirements are most acute today and how are you translating them into vessel design and operations?

(JWO) Safety, uptime and performance are the highest priority for our customers. They want to establish proven collaboration models, which are driven not just by the vessels’ design, but also by the crews maximising the potential of the vessels. Our design lays the foundation for safe and reliable operations in which we have chosen well-proven systems such as the SMST TAB L2

gangway and diverted them into modern, yet robust systems that guarantee uptime and maintainability.

Your ambition is to become a relevant operator in the global energy market: which regions are you targeting first, and what needs to be built up operationally to scale internationally?

(PMA) Europe is by far the most developed market for offshore renewables. This is our core market for now. However, we do not want to limit ourselves to one region only. Renewables are pushing ahead on a global scale, from APAC to Canada, and W2W concepts are recognised as the safest and most reliable option for personnel transfer across all offshore energy sectors.

However, local markets are challenging, as individual requirements need to be met. We want to overcome this by forming strong partnerships, for which the global footprints of both MOL and SHL form the basis.

You highlight “innovative specialty vessels”: which technology options are you already evaluating to keep the fleet competitive over its lifetime?

(JWO) Operationally, there is of course our asset’s versatility. This gives us the option to adapt easily to the changing market. Offshore wind is still ever evolving, and we will continue to both see advancements in foundation and turbine development as well as in how these are installed, commissioned and operated.

In terms of technology, operators need to be able to adapt to changes in regulations and customer requirements. For our C-CSOVs, we are embracing today’s technologies to push the boundaries of sustainability in a risk-cautious fashion. On the other hand, we have made sure to prepare for the future and offer decarbonisation concepts that are more than just promises. Our vessels are prepared for full electric operation by batteries and carbon-neutral methanol combustion – a concept that goes way beyond known classification requirements.

Looking five years ahead, which offshore energy market trends will matter most for your strategy and where do you see the biggest uncertainties?

(PMA) The biggest threat is less about whether this market grows than about timing and pace. Policy and permitting cycles, financing conditions and auction outcomes can delay developers’ investment decisions, and that feeds straight through to vessel demand. We see how prone offshore developments can be to political disruptions – offshore renewable energy is a polarising topic in many countries.

In five years’ time, however, the underlying direction is clear and encouraging. Europe’s drive towards energy independence has turned offshore wind into a strategic priority – there is real political will and policy momentum behind expanding home-grown, secure energy capacity. That translates into robust, long-term demand for Europe’s OEMs, contractors and vessel operators.

Offshore wind will have broadened geographically beyond the established European markets. At the same time, we see the addressable market widening: offshore renewables pledged to cut costs by 30% by 2040, which fosters innovation in technology and collaboration models.

Furthermore, there is also growing demand for W2W tonnage in the oil and gas sector. A versatile W2W platform can serve both sectors, providing a sound basis for consistent demand for our services in the future.

Prototype Certificate for wave energy converter

RENEWABLE SOURCES | Stockholm-based CorPower Ocean has been awarded a Prototype Certificate for a wave energy converter (WEC) by classification society, DNV. In what is claimed to be the first award of this type for a WEC, the company's CorPower C4 has received DNV-SE-0120 Certification of Wave Energy Converters and Arrays. The certificate confirms that the technology meets DNV's requirements relating to strength, reliability and safety. It also assures a reduced technology risk which could well assist in future project financing, insurance, and institutional investment in commercial deployment. The certification comes as the company continues the development of two industrial wave farms in Portugal and Scotland. It is also part of CorePower Ocean's drive to establish wave energy as the third largest source of renewable round-the-clock energy after wind and sun.

The award follows a seven-year process with the classification society – from first design to detailed engineering, strength and



The certification comes as the company continues the development of two industrial wave farms in Portugal and Scotland

Source: CorPower Ocean

fatigue analysis, manufacturing, assembly, testing, installation, operation and maintenance. The system has been tested in extreme conditions with storm waves of up to 18.5m.

The company's co-founder and CEO, Patrik Möller, commented: "This is a historic milestone, for CorPower Ocean and the sector. It moves wave energy from being a promising technology to being a proven and bankable one. I am immensely proud of our team for making CorPower the first wave energy technology to pass this bar."

Speaking for the classification society, Claudio Bittencourt Ferreira, project manager DNV Renewables Certification, said: The issue of the first Wave

Energy Converter Prototype Certificate ... marks an important stepping stone in the realisation of commercial wave energy. DNV has supported the sector for over 20 years and is familiar with the many challenges these devices face. The commitment shown by the CorPower team in achieving this milestone is impressive, and we look forward to continuing the journey with them."



Securing Energy,

Sustaining the Future



Cross-market focus: connect with leaders across oil & gas, offshore wind, maritime, CCS, hydrogen & renewables.



Conference program: sessions on security, clean tech, circularity & renewable solutions.



Networking: meet peers, partners & industry experts.



Innovators' Area: dedicated space for startups & emerging solutions.

Get your tickets now





EXHIBITION & CONFERENCE

24 & 25 NOVEMBER 2026

AMSTERDAM | THE NETHERLANDS

JOIN US

OEEC.BIZ

Created and produced by





WindEnergy Hamburg

The global on & offshore event

22 ————— 25
September 2026

Get
your ticket
now!

Driving the energy transition. *Together!*

The meeting place of the global wind industry – onshore & offshore

- 1,600 exhibitors from 40 countries
- First-rate conference programme on six open stages
- Networking with 45,000 international participants
- Recruiting Days on 24 and 25 September

NEW An entire hall dedicated to energy storage

windenergyhamburg.com



Organised by:



Global Partner:



European Partner:



Partners:



Netherlands plans zero-emission emergency response vessels

Power2Tow | The Netherlands state shipping company, Rijkswaterstaat, has unveiled the research and development phase of the Power2Tow project in which three consortia will generate designs for zero-emission emergency response towing vessels (ERTVs) and the related charging infrastructure ashore and at sea. On receiving the proposals, the Rijkswaterstaat will choose one project to go ahead.

The consortia selected to undertake the research and development phase are:

- › Kustkracht: Kotug International, IHC Defence, and Bluewater Energy Services;
- › Multiship Ocean Towage, Damen Shipbuilding & Cooperation, and Stillstrom A/S;
- › Smit Terminals Europe and Smit Salvage.

Power2Tow is part of the Rijkswaterstaat's Fleet Renewal Programme, an initiative being undertaken jointly by the Ministry of Infrastructure and Water Management, the Ministry of Economic Affairs and Climate Policy, the Netherlands Coastguard, and the interdepartmental Maritime Manufacturing Industry Coordination Office.



From left: Christina Kempenaar, RWS; Kristian Stillstrom, Stillstrom; Marc Tijssen, Damen Shipyards; Eline Muller, Multiship; Marja van Bijsterveldt, gezant Maritieme Maakindustrie / cabinet representative maritime industry; Martin Wijnen, RWS; Petra Lugtenberg, Ministerie van Binnenlandse Zaken / Ministry of the Interior; Stefan Quist, Multiship; Raymond Stillstrom, Stillstrom; Jelle Brantsma, Damen Shipyards

Source: Damen Shipyards

The aim of the project is to develop three ERTV designs capable of using wind energy to charge at sea enabling them to protect offshore wind farms from collisions involving vessels in distress. The land-based and offshore infrastructure and the provision of services for a period of 25 years is

a key element of the Power2Tow project. The vessels will use electric power when possible but sustainable e-methanol will be used during emergency towing operations. The project is therefore a significant development in the region's maritime decarbonisation drive.

AI-powered Permit to Work Dashboard launched

SAFETY REPORTING | A new Permit to Work (PtW) Dashboard unveiled by Helsinki-based digital and software specialist, NAPA, has been announced and has already been adopted by Virgin Voyages and Ritz Carlton Yacht Collection fleets. The launch of the AI-powered PtW, which coincided with the IMO's Day of the Seafarer, is designed to support seafarers who face a range of new technologies, regulations, and demanding administrative tasks, some of which are safety-critical. They can also be audit-sensitive and heavily dependent on accurate record-keeping sometimes across many vessels at the same time.

Research conducted by the International Seafarers' Welfare and Assistance Network has revealed that 54% of seafarers have reported an increase in workload, and 44% have noted higher stress levels. Manual administration tasks such as permit manage-

ment and safety reporting can no account for up to 20% of crew time.

NAPA's strategy on artificial intelligence is to adopt it when it adds operational value to ships' crew and shore personnel. In one recent example, the consultancy released its AI-assisted cargo loading system: NAPA Stability was developed together with Stena Line for RoRo and ferry personnel. The setup cuts cargo planning time from a typical 60-90 minutes to around 10-15 minutes. NAPA's Tommi Vihavainen, who has worked on PtW development, explained: "The AI-powered PtW Dashboard addresses a problem every fleet manager, particularly across cruise and ferry operations, recognises too well: the data exists, but getting the right view of it across the whole fleet, in real time, has always required manual effort or technical support. "Applying AI to tackle this challenge was both a natural evolution and a well-

thought-out solution. Rather than applying AI for the sake of it, we carefully evaluated the problem and built a solution that could embed itself seamlessly into existing operational workflows. Our goal is always to make the lives of our end user easier," he added.

Marco Carsjens, a Fleet Captain with Virgin Voyages, commented: "Managing permit activity across a fleet used to mean waiting for reports or trawling through data manually. NAPA's new AI dashboard removes that inefficiency and provides us with a data-secure, clear picture of what's happening across the fleet just by asking for it. We can build and save our own, customised dashboards without any technical support, which means it is a tool we can actually use every day. It's this element of usability that NAPA understands intimately and has made them indispensable to our teams."



Figure 1: Unitor™ Refrigerants ready to be delivered



Figure 2: Engineer on board searching for refrigerant leaks with Unitor™ Refrigerant leak detector

The blind spot in maritime emissions reduction

RESPONSIBLE REFRIGERATION While shipping's decarbonisation debate has focused mainly on fuel and propulsion, refrigerant leakage remains a major but often overlooked source of emissions. Wilhelmsen Ships Service addresses this flaw with its Responsible Refrigeration approach, helping shipowners reduce leakage, improve compliance, and lower the climate impact of onboard cooling systems, writes the company's Francis Lai, head of Product Management for Refrigeration solutions.

Shipping's decarbonisation debate has, rightly, focused on what goes into the funnel from alternative fuels, relative propulsion efficiency, and carbon intensity ratings. Yet there is another emission source operating silently on board that the industry has largely failed to address: refrigerant leakage.

As global efforts to combat climate change intensify, attention within the maritime industry has rightly focused on fuel efficiency and carbon dioxide (CO₂) emissions. However, an often overlooked yet increasingly regulated source of greenhouse gas emissions lies within onboard refrigeration systems. Refrigerant leakage and poor system management contribute significantly to climate impact, operational inefficiency, safety risks, and regulatory non-compliance. The consequences are no longer abstract.

The IMO's carbon intensity indicator (CII), which rates vessels from A to E based on annual CO₂ emissions per tonne-mile, has become a familiar fixture in the industry's compliance toolkit. But CII has a critical limitation: it is calculated purely on the basis

of fuel combustion. Refrigerant leakage, despite carrying a climate impact thousands of times greater than CO₂ per kilogram, is entirely absent from the CII formula. There is no operational signal to manage it.

Meanwhile, under the EU Corporate Sustainability Reporting Directive (CSRD), the picture is fundamentally different. Leaks of hydrofluorocarbons (HFCs) from refrigeration equipment owned or controlled by an organisation are unambiguously classified as Scope 1 greenhouse gas emissions – direct, reportable, and subject to disclosure.

The reporting obligation already exists. For most shipowners, the measurement system does not. This gap between what CSRD requires and what ships currently track is where responsible refrigeration becomes not just good practice, but an essential compliance imperative.

Why refrigerant leakage is a material emissions issue

The scale of this problem is larger than most operators appreciate. Industry and regulatory studies, including work refer-

enced by the United Nations Environment Programme, indicate that annual refrigerant leakage rates on ships can range between 20% and 40% of the total system charge. In practical terms, a vessel may consume one or more refrigerant cylinders each year simply to maintain system operation.

To put the climate impact into context: the loss of a single 45 kg cylinder of R-404A – a commonly used high-GWP refrigerant results in emissions equivalent to approximately 75,000 litres of gasoline consumed. Multiply that across a fleet operating year after year, and the accumulated emissions are significant, often without being visible in day-to-day operations.

At a global level, the numbers are striking. Total annual refrigerant losses from the global shipping sector were estimated to be equivalent to 18.2 million tonnes of CO₂ in 2018 (IMO 4th GHG Study) comparable with nearly four million passenger vehicles driven for one year.

There is also a compounding effect. When refrigerant leaks occur, systems do not simply lose refrigerant, they become less efficient. Every 10% loss of refrigerant can

increase energy consumption by up to 20%, forcing compressors to work harder and consume more fuel. This is the double impact: direct emissions from the leaking refrigerant itself, and indirect emissions from the additional energy required to compensate. Both are real; only one is measured.

A tightening regulatory landscape - with a maritime gap

The regulatory direction globally is clear and consistent. Reduced availability of high-GWP refrigerants, strengthened controls on refrigerant handling, and increasing emphasis on lifecycle management including leak prevention, recovery, and record-keeping.

The EU's revised F-Gas Regulation (EU) 2024/573, in force from March 2024, prohibits the use of virgin HFCs with GWP above 2,500 (such as R-404A) for servicing, introduces enhanced traceability requirements, and strengthens controls against illegal trade. The Kigali Amendment to the Montreal Protocol, now ratified by more than 170 countries, establishes legally binding commitments to phase down HFC production and consumption globally. Under the Kigali pathway, global HFC use is expected to fall by approximately 80 – 85% by 2047. In the US, the AIM Act mirrors these ambitions at a federal level, with California and New York introducing accelerated state-level restrictions on the sale of high-GWP virgin refrigerants.

For shipowners, the critical reality is this: compliance is increasingly being judged not just on which refrigerant is on board, but on how the entire refrigerant lifecycle is managed from leak prevention and recovery through to record-keeping, traceability, and supply chain integrity. A vessel arriving at an EU port with undocumented refrigerant handling practices faces real enforcement risk, regardless of the refrigerant in its system.

Yet despite this tightening landscape, refrigerant management has remained largely absent from the decarbonisation strategies that shipowners are presenting to charterers, financiers, and regulators. The CII framework provides no incentive to manage it. And while CSRD now requires it to be tracked and disclosed, many operators simply lack the processes to do so.

Responsible Refrigeration (R²): closing the gap

A Responsible Refrigeration (R²) approach addresses precisely this gap. It is not a single product or a one-time decision, but a structured, future-ready framework built around three integrated steps.

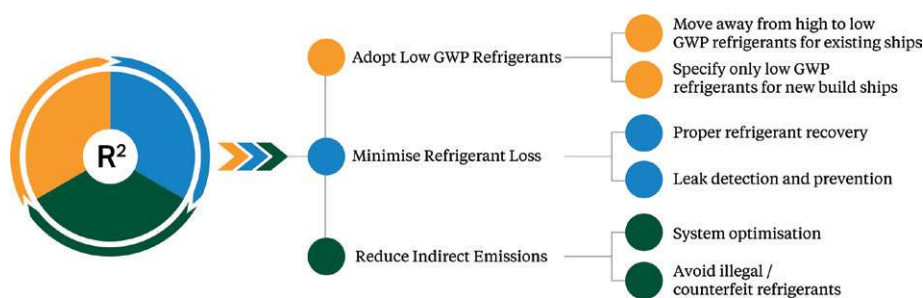


Figure 3: The Responsible Refrigeration approach is a structured, future-ready framework built around three integrated steps

Step 1: Adopt low-GWP refrigerants

The right refrigerant choice depends on whether the system is a new installation or an existing one. For newbuilds, systems can be optimised from the outset. A2L or natural refrigerants suit smaller, self-contained systems where charge limits and safety requirements can be effectively managed, while low-GWP A1 refrigerants remain the practical choice for larger systems requiring safety, regulatory compliance, and global serviceability. There is no single approach that fits all maritime refrigeration systems; a hybrid, practical approach is the recommended starting point.

For existing systems, the objective is not to identify the theoretically lowest GWP refrigerant, but to select a proven, retrofit-compatible option that delivers meaningful emissions reduction without a complete system overhaul. For systems operating on R-404A, options such as R-448A and R-449A have become industry standards, offering approximately 65% GWP reduction while maintaining comparable cooling capacity and component compatibility, without requiring fundamental changes to safety infrastructure.

Step 2: Minimise refrigerant loss

Selecting a lower-GWP refrigerant is only the beginning. Containing refrigerant loss is the single most critical factor in reducing actual emissions. All refrigerants must be recovered using an approved recovery package before

maintenance or repair, and at end-of-life for proper recycling, reclamation, or destruction. Venting refrigerants to atmosphere is prohibited under most regulatory frameworks.

Routine checks with handheld detectors, targeted methods such as UV tracing, and continuous monitoring systems help minimise emissions, reduce unplanned downtime, and stabilise refrigerant demand amid tightening HFC quotas and supply volatility.

Step 3: Reduce indirect emissions

Correct refrigerant charge, proper superheat control, and preventive maintenance are essential to avoid excess energy consumption and premature component wear. Dirty filters, blocked airflow, or undercharged systems force compressors to work harder, increasing fuel and electricity consumption. Maintaining optimal system efficiency ensures that the emissions reductions benefits of low-GWP refrigerant are realised in operation and not lost to poor system maintenance.

From reactive compliance to proactive stewardship

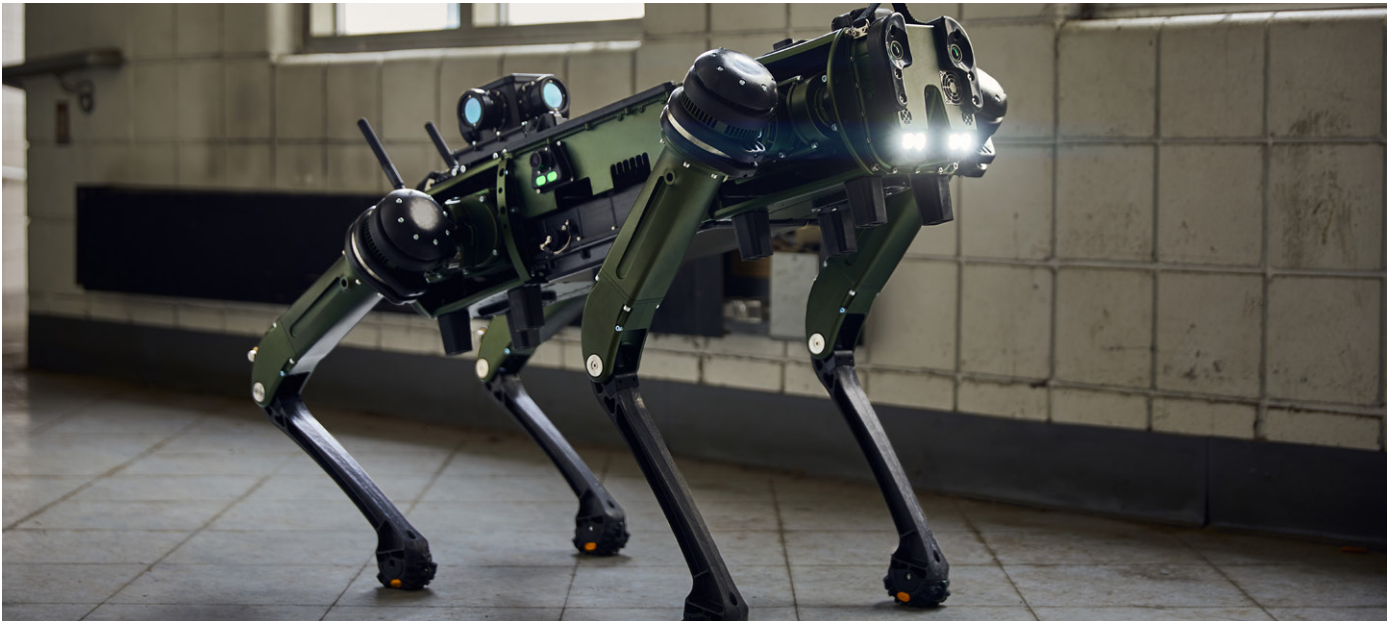
The convergence of CSRD Scope 1 reporting obligations, tightening HFC supply, and rising ESG scrutiny from charterers and financiers means that refrigerant management is no longer a purely technical consideration. It has become a strategic issue.

Treating refrigeration as solely a maintenance issue creates exposure on various fronts. It can lead to undisclosed Scope 1 emissions in the next CSRD reporting cycle, non-compliant refrigerant handling practices during port inspections, and a sustainability narrative that falls short when charter negotiations begin.

Responsible Refrigeration is the bridge between the emissions that CII does not currently count and the emissions that CSRD now requires shipowners to report. It addresses both by making refrigerant leakage visible, measurable, and manageable for the first time.



Figure 4: Refrigerant recovery in action



Autonomous underwater robot inspection – the future of maritime maintenance?

Source: Ghost Robotics

How the maritime industry is making robotic technology part of the furniture

OPERATIONAL CAPABILITY For shipowners and class, robotics is evolving from a specialist tool into an embedded operational capability, with implications for inspection, maintenance, certification and asset performance, writes Eric VanDerHorn, director of Technology at classification society ABS.

Robotics is gaining traction across the maritime industry, from shipbuilding to in-service inspection and maintenance. What is changing now is not only the range of applications, but the role these systems can play across the asset lifecycle.

While many of the early applications were narrow in scope and only deployed as tools used intermittently by specialist service suppliers, often to support a specific inspection or maintenance task, a broader operating model for such platforms is beginning to evolve. The technology is now moving into a new phase: systems are becoming more autonomous, more capable, and more closely integrated into day-to-day operations.

This shift matters because it changes the role robotics can play across an asset's working life. In vessel operations, robotic systems are beginning to move from intermittent service applications towards the concept of the 'resident robot', equipment installed on board as part of the vessel's operating capability.

The significance of this transition lies not only in task automation but in the quality, frequency and consistency of the data these systems can generate. As robotics becomes more embedded in maritime operations, it has the potential to reshape how assets are maintained, how surveys are supported and how compliance may be demonstrated in the future.

In-service vessel applications

For in-service vessel applications, the adoption of robotics can be seen as a natural extension of technologies already familiar to the industry, including unmanned autonomous vehicles, crawlers and remotely operated vehicles used for inspection and maintenance support. These assets have demonstrated the value of accessing difficult or hazardous areas more efficiently while reducing the reliance on conventional, higher risk human inspections.

What's changing now is the level of sophistication and integration. Early maritime robotics applications were often limited to discrete tasks and deployed on demand, typically through specialist service providers. As the technology matures, robotic systems are becoming more autonomous, capable of operating routinely and better suited to integration into normal vessel operations.

This marks an important transition. It is a shift that opens the door to a different model for how robotics can support both owners and class over the life of the asset.

The rise of the 'resident robot'

A key development in this evolution is the emergence of the 'resident robot' — a system installed on board as part of the



all
about
ports

02+03 Sep 2026

CCH – Congress Center Hamburg

Introducing the platform for holistic port solutions

all about ports is the first event to take a holistic view of the transition of port infrastructure and operations - and to provide solutions designed to support cutting-edge multidisciplinary approaches.

Connect with industry leaders and innovators at the two-day conference and accompanying exhibition covering all aspects of port security, sustainability, logistics, autonomous port terminals, digitalisation, and smart bunkering.

Join us in Hamburg, the place where tomorrow's port technology is tested today, alongside SMM, the world's leading maritime industry event.

Register here



vessel's permanent operating equipment rather than deployed only when needed by a third-party provider. This is more than a change in how the technology is supplied: it represents a different operating model for maritime robotics.

When a robotic system becomes a resident capability, its value extends beyond the completion of a single inspection or maintenance task. It can be used routinely, in a more consistent way, and potentially across a much broader range of applications over the life of the vessel. That creates opportunities not only for improved operational efficiency, but also for a more regular and structured understanding of asset condition.

For class, this shift is particularly significant. It moves the conversation beyond the traditional model of service supplier recognition and towards the certification and assurance of systems that are installed on board, operated as part of normal vessel activities and contributing directly to inspection and maintenance processes.

In that context, the focus is no longer only on whether a robot can perform a task, but on whether the system, its sensors and its outputs are suitable, reliable and traceable enough to support decisions over time.

From inspection snapshot to continuous data

One of the most important implications of resident robotics is the way such systems can change the collection of asset condition data. A resident robot does not simply carry out a task; it can also generate frequent, structured and potentially high-quality data over time, including imagery, sensor outputs and other inspection-related information gathered in a consistent operating context.

This creates the possibility of moving beyond the traditional snapshot approach to inspection and towards a more continuous understanding of vessel condition. Instead of relying solely on periodic observations taken at fixed intervals, owners may be able to build a longitudinal record of how specific structures or components perform over time.

For owners, this could support better-informed maintenance planning and earlier identification of developing issues. For class, it raises the prospect that, where data quality, repeatability and traceability are sufficient, robotic outputs could help target survey attention more effectively toward areas of concern. In time, this could influence how inspection evidence is gathered, how survey scope is considered and how condition is assessed over time.

Realising this potential will depend on confidence in the robotic system itself – not only its ability to access and perform in the intended environment – but also the integrity of the data it produces and the consistency with which that data can be interpreted and applied.

A new generation of robotics applications

The recent agreement between ABS and Fleet Robotics to collaborate on autonomous robotic systems for continuous hull cleaning and inspection illustrates how this technology is evolving in practice. An autonomous hull cleaning robot offers immediate operational value by helping to manage biofouling, which can support fuel-efficiency and performance objectives. But the significance of such a system may extend well beyond cleaning alone.

If the same platform can also collect inspection imagery, thickness measurements or other relevant condition data on a

recurring basis, it begins to create a longitudinal view of hull condition rather than a series of isolated observations. That kind of continuity could help owners make more informed maintenance decisions, identify trends earlier and plan interventions more effectively.

For class, the relevance lies in the possibility that regularly collected, high-quality data could help inform where survey attention is most needed. While that does not eliminate the need for assurance, oversight or verification, it points toward a future in which robotic systems may contribute to a more targeted and evidence-based view of hull condition over time.

Standards and adoption

This is one reason ABS is working with industry partners to help define the standards and assurance frameworks that will be needed as maritime robotic science matures. The goal is not only to support innovation, but to help ensure that robotic systems intended for vessel applications can be evaluated in a way that is consistent, credible and relevant to certification and compliance.

ABS' Memorandum of Understanding with Fleet Robotics is part of that effort, supporting the development of new standards for the types and quality of data needed to underpin digital and remote survey techniques. Those standards will help shape how robotic outputs are collected, assessed and applied when they are used to support inspection, production and verification activities.

More broadly, the development of clear protocols for data quality, system suitability, repeatability, traceability and operational reliability will be essential if robotics is to move from promising application to trusted capability. By contributing to that foundation, ABS is helping to create the conditions for broader and more confident adoption across the maritime sector.

Toward a practical transformation

Advanced robotics is no longer a distant concept in maritime. It is moving steadily toward practical, certified application in vessel operations, with the potential to change how the industry inspects and maintains its assets.

For owners and class, the significance of that shift lies not simply in automation, but in the broader operational model robotics makes possible: one in which robotic systems become embedded contributors to maintenance, inspection and data generation. As that model develops, the questions of safety, reliability, assurance and data integrity will become increasingly important.

It is for this reason that robotics will form part of the focus of the newly established ABS SeaTech Innovation Exchange, which is intended to accelerate maritime innovation, applied research and collaboration with leading academic institutions on both sides of the Atlantic. As the industry explores new use cases and operating models, initiatives such as this can help build the research base, partnerships and technical confidence needed to support wider adoption.

How quickly the industry captures the full value of robotics will depend on its ability to build confidence in the systems themselves and in the information they produce. The opportunity is not only to use robotics as a tool, but to integrate it as part of the vessel environment in a way that supports better decisions, stronger assurance and more efficient operations.

› IMPRINT

PUBLISHER

DVV Media Group GmbH
Heidenkampsweg 73-79, DE-20097 Hamburg
+49 40 23714 100

MANAGING DIRECTOR

Martin Weber

PUBLISHING DIRECTOR

Manuel Bosch
manuel.bosch@dvvmmedia.com

EDITORIAL STAFF

Editor-in-Chief
Kathrin Lau
+49 40 23714 237 | kathrin.lau@dvvmmedia.com

ADVERTISING

Advertising Sales
Oliver Schulte
+49 (0)172 1880807 | oliver.schulte@dvvmmedia.com
Stephan-Andreas Schaefer
+49 40 23714 253 | stephan-andreas.schaefer@dvvmmedia.com
Technical Department
Vera Hermanns
+49 40 23714 293 | vera.hermanns@dvvmmedia.com

Advertising rate card:

No 71 valid from January, the 1st, 2026

ADVERTISING REPRESENTATIVES

Germany, Austria, Switzerland
Gerald Ulbricht
+49 6195 9769734 | Smart: +49 170 3859573
gerald.ulbricht.extern@dvvmmedia.com

Scandinavia

Örn Marketing AB
+46 411 18400 | marine.marketing@orn.nu

UK, Ireland, BeNeLux, UAE, Oman, Bahrain,

Saudi Arabia, Kuwait

Richard Johnson

+44 7565 010217

richard.johnson.extern@dvvmmedia.com

Singapore/Indonesia/Vietnam

Marimark Pte Ltd., John Bodill

+65 6719 8022 | john.bodill@marimark.com.sg

China

Nana Wang

Cssc_704@cssmc.cn

SUBSCRIPTION/DISTRIBUTION

Director Sales + Marketing

Markus Kukuk

+49 40 23714 291 | markus.kukuk@dvvmmedia.com

Readers'/Subscribers' Service

+49 40 23714 260 | service@dvvmmedia.com

SUBSCRIPTION TERMS

Subscriptions may be terminated at the end of any subscription period. Ordering a subscription first applies to the agreed-upon period (term of contract). The subscription contract can be terminated in writing at the end of the base period. If there has been no termination at that time, the contract is extended and can be terminated at the end of the new base period. The publishers accept no liability if it is not possible to publish the magazine due to force majeure or any other cause beyond their control.

ANNUAL SUBSCRIPTION RATES

Abonnement

Germany and outside Germany EUR 212.00 (Germany: excl. MWST/VAT) per year.

Single copy

EUR 42.33 (incl. MWST/VAT).

GMT members receive the magazine within their membership.

PRINTING HOUSE

Silber Druck GmbH & Co KG, Lohfelden

COPYRIGHT

by DVV Media Group, Hamburg, Germany

It is not permitted to publish, distribute or reproduce any part of this magazine without the publishers' prior written permission. This prohibition extends, in particular, to any form of commercial copying, inclusion in electronic databases or distribution including electronic databases or distribution in any electronic format, such as CD-ROMs or DVDs.

ISSN: 2191-0057

Commercial register HRB Hamburg 7906

MEMBER



SHIP&OFFSHORE IS OFFICIAL ORGAN
OF THE ASSOCIATIONS:



› ADVERTISERS

Ship&Offshore

ABS World Headquarters, US-Spring
Bachmann electronic GmbH, DE-Hamburg
Becker Marine Systems GmbH, DE-Hamburg
Bureau Veritas SA Marine&Offshore, AT-Feldkirch
Chr. Mayr GmbH & Co. KG, DE-Mauerstetten
Everlence SE, DE-Augsburg
Fil-Tec Rixen GmbH, DE-Hamburg
Flender GmbH, DE-Bocholt
F. Reyher Nchfg. GmbH & Co. KG., DE-Hamburg
FURUNO Electric CO., Ltd., JP-Nishinomiya
Hamburg Messe und Congress GmbH, DE-Hamburg
Hammelmann GmbH, DE-Oelde
HEICO Befestigungstechnik GmbH, DEU-Ense-Höingen
Herborner Pumpentechnik GmbH & Co. KG, DE-Herborn
Herose GmbH Armaturen und Metalle, DE-Bad Oldesloe
IMES GmbH, DE-Kaufbeuren
KTR Systems GmbH, DE-Rheine
Lehmann Marine GmbH, DE-Seevetal-Hittfeld
marine glazing Brombach + Gess GmbH & Co. KG, DE-Sulz am Neckar
Mecklenburger Metallguß GmbH, DE-Waren
Navingo BV, NL-Schiedamm
Netzsck-Pumpen & Systeme GmbH, DE-Waldkraiburg
OSWALD Elektromotoren GmbH, DE-Miltenberg
Otto Piening GmbH, DE-Blomesche Wildnis
Panduit Europe Ltd, GB-London

FC, 03
34
44
23
13
BC
19
73
42
35
06, 76, 80
33
30
36
28
FC
38
37
21
27
75
22
15
31
18

Podszuck GmbH, DE-Kiel
Reintjes GmbH, DE-Hamel
Remontowa Shiprepair Yard S.A., PL-Gdansk
RINA Germany GmbH, DE-Hamburg
RUDDER Marine Service & Ship Repair, ES-Barcelona
steute Technologies GmbH & Co. KG, DE-Löhne
VEGA Grieshaber KG, DE-Schiltach
Volvo Penta Central Europe GmbH, DE-Kiel
Wilhelmsen Ships Service GmbH, DE-Sittensen
Woodward L'Orange GmbH, DE-Stuttgart
Wärtsilä Deutschland GmbH, DE-Hamburg
Zeppelin Power Systems GmbH, DE-Hamburg
ZF Friedrichshafen AG, DE-Friedrichshafen

Ship and Offshore Repair Journal (SORJ)

BREDO DRY DOCKS GmbH, DE-Bremerhaven
Chris-Marine AB, SE-Malmö
Detyens Shipyards Inc (Dsi), US-North Charleston
GEMAK Shipbuilding Industry & Trading SA, TR-Istanbul
Hat-San Shipyard, TR-Altinova, Yalova
MarineShaft A/S, DK-Hirtshals
Namibia Drydock & Ship Repair Ltd. NAMDOCK, NA-Walvis Bay
Navantia SA SME, ES-Madrid
Randvie Inc., US-Cliffwood Beach
Tallinn Shipyard - Blrt Grupp, EE-Tallinn

71
25
IFC
11
40
14
17
26
32
41
29
39
24

45
58
63
62
46
59
61
64
55
51

REMONTOWA
SHIPREPAIR YARD

**MEMBER OF
REMONTOWA
HOLDING S.A.**



**Where Technology
Meets Tradition.**



SMM

**MEET US AT STAND
B4.GF.217**