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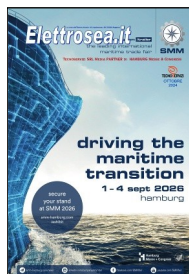
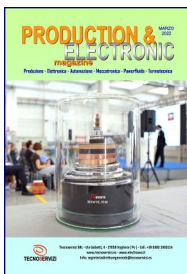


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Sommario	
Editoriale: Perché	pag 4
RS21	pag 6
NMEA a network for Yacht design	pag 8
In memory of His Majesty King Harald V of Norway	pag 16
Modern Boating	pag 17
Commercial marine diversity	pag 19
Nuova visione dell'ospitalità	pag 21
Submarine Cable Resilience	pag 23
Elcano	pag 29
SMM 2026 at glance again	pag 31
Spazio Vela	pag 40
Fincantieri day 2026 a Zagabria	pag 44
Riding the wave of fastening	pag 45
Fincantieri SubSea drone DEEP	pag 46
Italian Trade Agency at SMM 2026	pag 53



Colophon

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Il supplemento che state leggendo, è una bella (spero) novità che abbiamo deciso di dedicare all'evento che si tiene ad Amburgo, SMM 2026, che da questa edizione si arricchisce di altri eventi (All Ports, MS&D). Alla domanda perché realizzare un tale sforzo (2 numeri nel giro di una settimana) la risposta può essere semplice, ma va articolata. Essere l'unica rivista tecnica italiana presente come media partner ufficiale di Hamburg Messe & Congress GmbH, è da alcuni anni una realtà. Riuscire a gestire, in termini editoriali, una realtà di oltre 2.300 aziende che si sviluppa su una area di 90.000 metri quadrati, con varie delegazioni ufficiali presenti, non è stata solo una bella presentazione, ma di fatto una realtà cui dedicare tutte le risorse aziendali disponibili. In questi 4 giorni presenteremo, anche attraverso la nostra presenza digitale sul sito ufficiale delle manifestazioni le riviste di tecnoservi e l'evento di Ottobre 2026 (19-23) che svolgeremo a Fiume e Marina di Moschiena (Croazia). Si tratta di un evento che ha il patrocinio di Assomarinas e di Sestante Blu. La prima edizione di Blu Economy Alpe Adria Event contiene al suo interno la 12th edizione di Yacht Design Forum.

Sul ns sito www.electrosea.it trovate la agenda aggiornata dell'evento che viene realizzato con la collaborazione di 5 Università. Ecco il perché siamo qui, a presenziare a questo evento biennale, il più importante in Europa dedicato alla industria marittima. Grazie a noi molte aziende italiane e non possono avere uno strumento di comunicazione dedicato, presente ad Amburgo. Sperando di vedervi anche a Fiume e Marina di Moschiena nel nostro evento.

The supplement you're reading is (hopefully) a wonderful addition that we've decided to dedicate to the event held in Hamburg, SMM 2026, which this year will be enriched with additional events (All Ports, MS&D,). The answer to the question of why we made such an effort (two issues in the space of a week) may be simple, but it needs to be articulated. Being the only technical Italian magazine present as the official media partner of Hamburg Messe & Congress GmbH has been a reality for several years. Managing, in editorial terms, a network of over 2,300 companies spread across a 90,000-square-meter area, with various official delegations present, was not just a beautiful presentation, but a reality to which we dedicated all available corporate resources. Over the next four days, we will present, through our digital presence on the official event website, the technoservices magazines and the October 2026 event (19-23), which we will hold in Rijeka and Moschiena Marina (Croatia). This event is sponsored by Assomarinas and Sestante Blu. The first edition of the Blu Economy Alpe Adria Event includes the 12th edition of the Yacht Design Forum.

On our website www.electrosea.it, you can find the updated agenda for the event, which is organized in collaboration with five universities. This is why we are here, attending this biennial event, the most important in Europe dedicated to the maritime industry. Thanks to us, many Italian and foreign companies can have a dedicated communication tool present in Hamburg. We hope to see you in Rijeka and Moschiena Marina at our event.



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**SESTANTE
BLU**

Designed by Richard and Withouse the Rs 21 is long 6 meters and 34, 2.20 wide with a draft of 1.38, it weighs 650 kilograms and has a sail area (mainsail and jib) of almost 25 square meters. A boat designed to combine stability and ease of use management with exhilarating performances.

But how this new class will be in 2024, he will communicate it to the public of the 8th Yacht Design Forum which Tecnoservizi organized from 26 to 28 October 2023 on Lake Como, Dr. Casetti President of this Italian sailing class. The photo is about exposition of one of this beautiful boat during this event.

A bit of history

In 2023 the RS21 World Championship will be on Italy, in Marina di Puntaldia, Sardinia. The RS21 (6.67 x 2.20 m) is definitely the class of the moment, fresh from a world championship) which has brought together over 40 monotypes.

"We have set ourselves the goal of 70 participating boats", is the indication that Davide

Casetti, president of the Italian class, gave presentation of the 2023 calendar in Zibido San Giacomo (Milan) in the splendid location of Castelletto San Giovanni.

The 2023 season is, the Italian one of the RS21, of great importance both for the events and for the continuous increase in shipowners and sailors" of race". The partnership with the underwear brand Yamamay underwear has been confirmed for 2024. RS21 Cup Yamamay in 2023 is taking place on five Acts and in the name of sustainability.

The stages of 2023 carried out so far have been Alassio 5/7 May, Rimini 9/7 June, Torbole 7/9 July, Riva del Garda 24/27 August with the dispute also of the Italian Championship. The final act 2023 take place in Marina di Puntaldia 27/30 September with the World Championship.

For every stage of the class, a conference is organised about the protection of the sea by involving local administrations and schools on this important topic.

RS21

*Keelboat racing
the RS way*



The RS21 responds to the need for a progressive, simple and affordable solution for keelboat clubs that increasingly see the opportunity for fleet ownership, league competition and training. Pay-as-you-go. Team up and do it together.

The RS21 is specifically designed for fleet purchase, with attributes that will appeal to individual buyers as well. It puts close racing over ultimate performance. Convenient ownership over complexity. It maximizes low maintenance. Comfortable ergonomics. Value. And pure sailing enjoyment.

This is the boat to bring wider availability and popularity back to keelboat racing.

RS Sailing's sustainability focus has actively influenced the design, resulting in a boat built from eco-friendly materials, with multiple environmental attributes. It marks significant progress over previous generations.

Produced by the world's leading small sailboat brand, the RS21 is high quality and a sound financial proposition. Realistic costs allow appealing club charter fees – or affordable investment by syndicates of sailing friends. The RS21 is a safe purchase and assured of success.

RS21 specification

Designer	Richards/Whitehouse/RS Sailing	
Length	6.34m	20' 11"
Beam	2.20m	7' 3"
Draft	1.38m	4' 6"
Displacement	650kg	1,433lb

Mainsail – Club	16.2m ²	175ft ²
Jib – Club	8.4m ²	90ft ²
Gennaker – Club	35m ²	377ft ²
Spinnaker – Club	30m ²	323ft ²
Mainsail – Race	16.2m ²	175ft ²
Jib – Race	8.4m ²	90ft ²
Gennaker – Race	40m ²	431ft ²

Specifications are subject to change prior to delivery due to deletions, additions or revisions in quantities, brand or design at the sole discretion of RS Sailing.



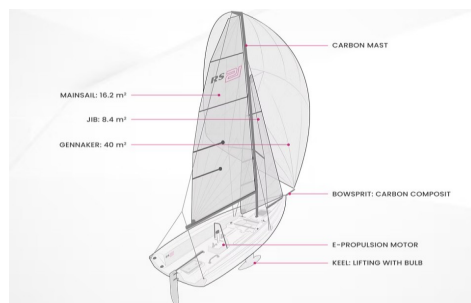
Social commitment and sponsors

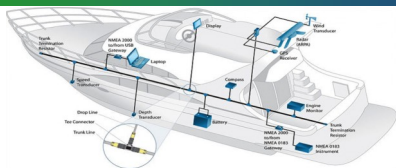
Barbara Cimmino (Head of CSR & Innovation at Yamamay) announced the launch of the line of clothing called "RS21 Cup", developed together with the class, produced with recycled fabrics and distributed throughout the brand's network; the royalty proceeds for the RS21 Cup brand by mutual agreement will be donated to Peso Positivo, which deals with eating disorders, and to Progetto Graef by Torben Graef, which has been offering free professional education for almost 25 years, including in the field of environmental protection, to 700 kids a year. It should be noted the RS21 class supports One Ocean Foundation, the foundation born in 2017 with the commitment to operate on a global level for protection of the marine ecosystem which has among the its Ambassadors Max Sirena, Vasco Vascotto, Paul Cayard, Mauro Pelaschier, Ganga Bruni, the Young Azzurra team and also the skier Federica Brignone. Attention to the environment The RS shipyard is renowned for its attention to correct environmental practices and RS21 takes a step forward in caring for this tradition. In construction there is great use of recycled plastics, the shape of the blanket is designed to be able to put one hull on top of the other in order to optimize both transport and winter storage.

The electric motor

The choice to equip the RS21 with is very interesting a retractable electric motor. It's about a

important solution to facilitate the return to dock. The integrated electric motor has a range of six nautical miles and recharges quickly. The electric powertrain is one element essential for a green strategy. The foot of engine lifts and disappears into the hull during sailing by eliminating the friction of the propeller approx. It has a power corresponding to an engine 3 HP traditional and is powered by a light lithium battery positioned in the bow peak, where there is the possibility of adding the housing for a second battery, if desired increase autonomy. The battery can be easily removed for charging operations and guarantees navigation for docking at the quay. The electric motor control console is equipped with a display that provides all the information on the battery charge status e on the residual range. A small control lever allows for easy and precise speed regulation and engagement of forward or reverse gear. The choice of electric motor is part of a broader program eco-sustainability introduced by RS Sailing Class.





Inter-

gration of on-board systems, detection and control within systems, sharing of information, attitude control systems and of propulsion and data collection is occurring at an increasing rate on board ships. This introduction of networking and data sharing technologies is revolutionizing the technological structure in many parts of ships from the engine room, to the bridge, to the administrative staff, and even outside the ship to the owner's headquarters via links of satellite communication. To varying degrees, these applications now exist on ships, coastal vessels, fishing vessels and recreational craft, and each requires data standardized, communications with different dimensions. A general onboard configuration is shown in the figure above. One of the solutions available on the market, the NMEA 2000 network is compatible with Controller Area Network Bus ("CAN Bus") used on road vehicles and petrol engines (also on some hybrid cars and electric motors for electric bars). The format of the layer protocol higher appears to be based on SAE J1939, with specific messages for the marine environment.

Some companies

Raymarine SeaTalk 2, Raymarine SeaTalkNG, Simrad Simnet and Furuno CAN, for example are effectively proprietary implementations of NMEA 2000, in some cases use physical connectors different from the standard screw connector, the DeviceNet Micro-C M12 5-pin. These versions are all electrically compatible and can be directly connected to the various standard equipment. The protocol it is used to create a network of devices electronics, mainly marine instruments, on yachts and pleasure craft. Various tools that meet the standard and are connected to a central cable, known as the backbone, via snood. The backbone powers each instrument and transmits data to all in-

struments of the network. This allows a display unit to show many different types of information. It also allows the tools to work together, as they share data. NMEA 2000 works as "plug and play" for allow devices from different manufacturers to communicate with each other. Examples of marine electronic devices to be included in a network are GPS receivers, autopilots, wind instruments, depth sounders, navigation instruments, engine instruments and nautical chart plotters. The interconnection between the networked instruments allows, for example, the GPS receiver to correct the autopilot course.

On-board networks and interfaces

Data transfer applications cover the broad spectrum from simple data buses that distribute data, such as NMEA 0183, up to local area networks (LANs) operating at scale. Each of these applications have different, and sometimes conflicting, requirements. From a general point of view, an edge application can have one or more LAN with PCs connected to printers, scanners, backup systems, etc. While these systems are important in the management of the ship and can be used for payroll, inventory and email, they are not critical systems for security nor do they have real-time requirements. They are built using commercial Ethernet-based components and use software commercial (for example Microsoft Office e others). Decisions that affect the operations of the ship and involving the safety of the ship, of the crew, passengers, cargo and of the environment are generally taken by the captain and his staff on the bridge or in one of the other vessel control centers such as in the rooms where the integrated systems are housed of the bridge and the integrated control systems of the ship. To make decisions efficiently and for completing them requires access to many of the onboard systems. These systems could include navigation, power generation, engines and machinery, fire alarm and control, and many more others. Access to these systems requires unique requirements of a maritime nature, such as safety, availability,

redundancy and latency for these connections, requirements that preclude the use of used LANs for the office. The data and speed requirements are similar. The International Electrotechnical Commission (IEC) has long had the IEC 61162-4 standard addressed these networking requirements.

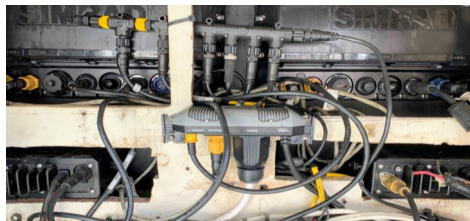
The Norwegian solution

A Norwegian initiative called MiTS (Maritime Information Technology Standard), has provided an innovative solution. This technique in fact it operates on an industrial Ethernet system, designed to operate up to 100 Mega-bit/second. The system, subjected on board a ship in various tests, proved to be effective and from time is used up placed on board ships. At a basic level, especially in yachts and watercraft. However, today the standard NMEA 0183 (IEC 61162-1) is widely used in yachts, provides serial data distribution from a single transmitter to multiple receivers. Operating a 4800 bits/second this protocol allows provide approximately ten messages, or sentences, per second. This feature is generally adequate when a single device is operating in the process of transmitting data for use by the party of other equipment. But it quickly reaches a saturation limit when the systems they start combining the data. However, its use is recommended for simple applications, redundant or backup data connections and when connections from device to are required device. Modern marine electronic equipment requires a greater quantity data from different sources to enable the myriad of features and functions that can be available for the management of the vessel. Without a network standard to provide this data integration, equipment designers require to provide multiple data inputs, fact which involves additional expenses and wiring, or the use of devices that can transmit data on a single channel. Individual systems on a ship, such as the machinery engine or navigation systems, they perform relatively dedicated functions, often they have real-time operational requirements on the order of milliseconds and require a number of connected nodes far

lower than those of a complex network. These systems tend to be small in size and autonomous in comparison to other ship nets carrying a volume of decidedly lower data. In these networks, economical sensors and actuators are integrated those used in larger systems, it follows that the cost per node must be much lower than other applications of edge. The network is called NMEA 2000 in the naval context, and in fact it is a good summary comply with the international IEC standard 61162-3.

The NMEA 2000 network

The NMEA 2000 (IEC 61162-3) network is made up of a edge of a network of low-cost tools and moderate size of transmitted data (250K bit/second), bidirectional multitransmitter multi-receiver, specific for interconnecting marine electronic devices. The standard contains the requirements for the minimum implementation of a data communication network serial to interconnect equipment marine electronics on board yachts and pleasure boating. Equipment designed to this standard is capable of share data, including commands and state, with other compatible equipment on one channel reporting. Data messages come transmitted as a series of data frames, each with robust error checking and confirmed message delivery. The data frames contain, in addition to the control and error control bits, a data field of 8 byte and a 29-bit identification field that sets the message priority and identifies the data message, source and destination. The data content of a data frame results be a maximum of 50% of the transmitted bits, this standard is mainly intended for support relatively short data messages which can be periodic, transmitted according to necessity or upon request through the use of simplified query commands.



Typical data includes discrete parameters such as latitude and longitude of the location, values of GPS status, steering (vessel) commands for autopilots, parameter lists finished as waypoints and moderate size, blocks of data such as updates of the electronic chart database. This standard does not necessarily appear intended to support wide applications high band such as radar, electronic charts or other video data or other databases or applications high-intensity file transfer. The standard defines all relevant levels of International Standards Interconnection model of the organization's open systems (ISO/OSI), from the application layer to the physical layer, necessary to implement the functions required of the NMEA 2000 network.

The components

The components of a NMEA 2000 network are divided by the standard according to ISO/OSI levels. The physical level is completely defined by standard, including signaling voltages, cables, and connectors.

The data link layer is defined by ISO 11783-3 with additional requirements specified by the marine standard. The Network Level is defined in the versions subsequent to the standard for marine applications. Network management is defined by the standard ISO 11783-5 with additional requirements for it marine standard.

The application layer is completely defined by

the standard and includes a provision for proprietary messages from the manufacturer (which they will obviously be different from each other).

Other characteristics

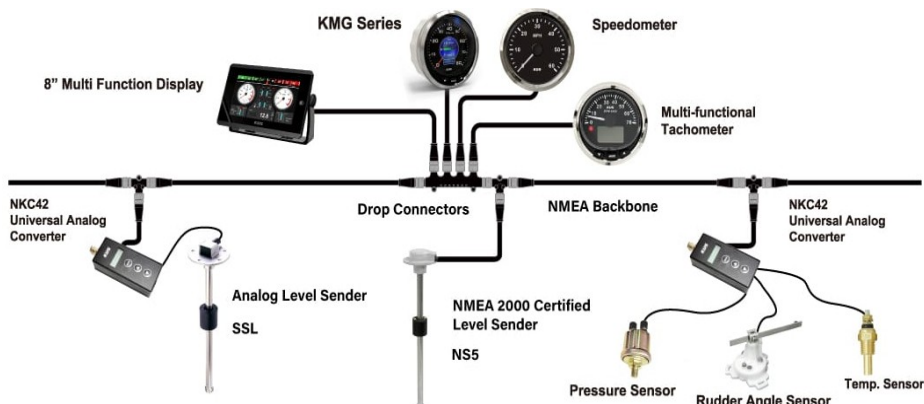
Among the important features of the NMEA network 2000 the maximum length of the network cable, now set at 200 meters.

The maximum length of the network is imposed from CAN requirement 5. This requirement imposes that all nodes in the network sample the same bits at the same time.

Theoretically this translates into a speed-length limit. For example, 1,000 kbit/second for 25 meters 500 kbit/second for 75 meters, 250 kbit/second for 200 meters, 125 kbit/second for 500 meters, 62.5 kbit/second for 1100 meters. It should be noted that problems may occur if nodes operating at transmission speed different are connected to the same one network segment.

Methods to automatically detect the bit rate sometimes they are unable, in practice, to solve this problem and in this case it could occur the condition in which a single node operates in network at a speed that does not comply with its characteristics could crash the network. The problem appears to be in the process of being resolved, e methods are being developed that allow this standard to support rates additional reporting.

NMEA 2000/J1939 Network Integration System



The physical layer

This layer defines the electrical and mechanical aspects of the physical connection between connections network and reference characteristics of the CAN devices and network interfaces to be used in NMEA 2000.

The electrical and regulatory characteristics of the physical layer are as follows: Media access uses the defined CAN regulation from ISO 11898, developed for road vehicles, Controller Area Network (CAN) for the speed of communication; it should be noted that CAN uses the dominant/recessive bit transmission (edge of bit descent). Time delays and network loading limit the bit rate and length of the network. Differential signaling improves immunity to ailments. The reference of Network single point common signal controls ground voltage levels and reduces RFI generation and disturbances. The use of differential signaling causes the interface circuits to be fed with a common reference signal to all nodes in the network.

A single common point of reference comes specified to avoid radio interference caused from ground loops and to maintain control of ground voltage levels between nodes so that remain within the common mode range (approximately ± 2.5 Volts) referring to the network transceiver circuits. This standard allows the use of 12 Volt power supply.

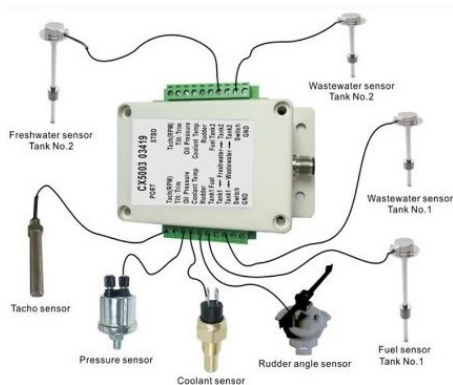
Basically the battery power supply of the yacht or ship turns out to be able to power the network, if the length of the backbone cable and the number of nodes are small enough, eliminating in case the use of an external power supply. Nutrition single point and the common reference point can be distributed via the cable of the network backbone, or in the case of higher currents, by twisted pairs dedicated to individual devices. This feature allows the equipment to draw additional operating current from mains power supply and to create a physical interface with minimal complexity. In all cases the power supply and the common reference for the Interface circuits should not be connected to another power supply or earth in a network device. This isolation must

be achieved in several ways. One through the use of circuitry integrated isolation devices (e.g. opt isolators) inside the device, at the interface or in specific points where the equipment connects to other devices.

Another way is accomplished by ensuring that no power or earth connection, other than power supply network and from the common network, is connected to the device. The latter method turns out to be suitable for equipment such as displays or sensors that have no interfaces other than the network NMEA 2000, and can take all their operating current from the mains source, and also have an insulated case. NMEA 2000/J1939 Network Integration System Figure 2 illustrates a typical interface circuit physical layer using commercially available circuits that build the transceiver and that meet the requirements of the ISO standard 11898.

Insulation from the ground, achieved with solar optoisolator.

The interface is created between the network and the CAN controller and other device circuits (e.g. microcontroller and other circuits). However, as mentioned the isolation from other circuits it is also achieved by other means. The circuit of the transceiver The meter shown requires a +5 Volt power supply regulated and supplied by the regulation and protection circuits. The purpose of the protection circuits turns out to be is to prevent damage to the regulator and interface circuits from overvoltage and reverse voltage.



In place of battery, electrically isolated, can be used power supplies in the reference case need to extend the size of the network.

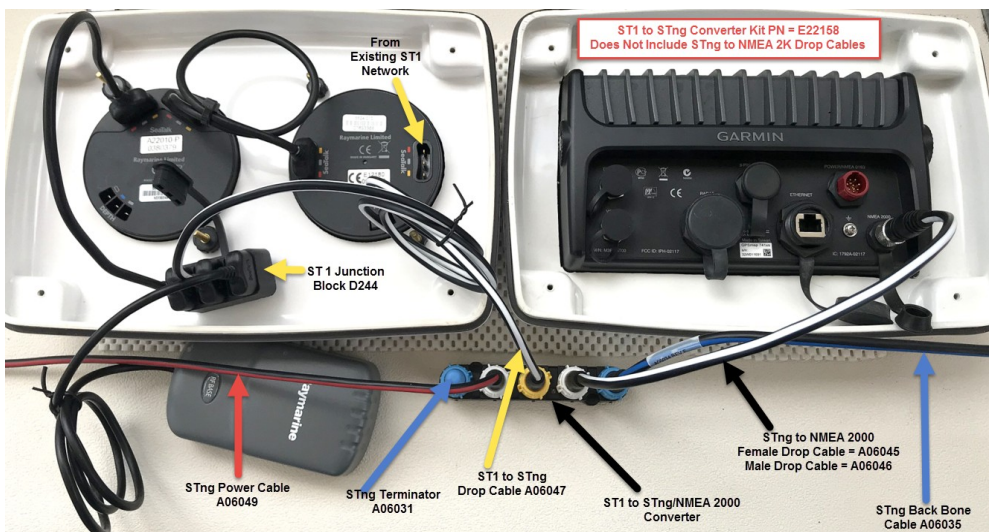
Cables and connectors

There are two methods for connecting to the network backbone cable. The first using a standard connector, the second using connection strips. These connections are used to connect segments of backbone cable together, to connect the terminations at both ends of the cable, for connection to the power supply network and for connecting nodes. There is a standard type of cable, called cable derivation. This is a short cable that goes from the backbone connection to the equipment referring to the node. This cable is connected to the various types of equipment chosen by whoever is setting up the system. The connecting strips are recommended only when the connections are carried out in a protected environment, or when the equipment are installed in one weatherproof housing, meeting requirements for resistance to conditions environmental conditions for IEC compliant equipment 60945. The locations of the connecting strips must be numbered or color-coded compliant with the definitions of the standard. The connector selected for the backbone usually of the 5 pin type used in industrial networks available on

the market from various suppliers (among which we mention Molex, Turck Inc., Methode Components and Daniel Woodhead Company). Terminal, bulkhead mount, and special configuration connectors with internal terminating resistors are available. The cable specified for the network must satisfy both the characteristic impedance that delay requirements of propagation for use as a transmission line and the wire size must also be sized according to the DC power distribution needs of the cable.

Typical Isolated Network Interface

The cable lengths, the number of connected nodes, the distribution of the nodes and the position of the connections with respect to the power supply in the cable backbone determine the actual characteristics of the installation. Two cable sizes are specified and can be used as needed in an installation. The 5-wire NMEA 2000 Heavy cable consisting of two shielded twisted pairs and a common shielded ground cable. The couples of wires are n. 16 AWG (1.33 mm²) for DC power and no. 18 AWG (0.83mm²) for signals. The NMEA 2000 indicator cable uses respectively no.22 AWG (0.38 mm²) and the no. 24 (0.24 mm²). The specified cable has a defined color code, incase these colors are not available cable must be marked according to the standard.



The data link layer

The networks dedicated to on-board instrumentation they are not exclusive to marine applications. The same characteristics of sharing information, collecting data from sensors and controlling the processes exist in the industrial environment, on land vehicles and in the production area. The technological solution was originally developed for use in vehicles and has since found its way into many other arenas. Although applications may differ, many of these networks share the same request control and management of data communications net. The Society of Automotive Engineers (SAE) developed a CAN-based network for use in trucks, buses and trailers. This standard SAE J1939 was later adopted by International Organization for Standardization (ISO) for use with agricultural machinery and implemented. Although these applications have different types of data and commands for transfer, and different requirements for the physical layer, the setting up work and managing network data communication is very similar to that needed for NMEA 2000. For the same reasons and to facilitate the acceptance of the marine standard as an international standard for maritime applications, NMEA 2000 refers to the data link layer of ISO 11783-3 which is in fact identical to the SAE J1939-21 data link level. In addition the level of data link provides advanced features and functions. These additions improve performance support electronic devices designed for be installed and operated on board yachts.

Controller Area Network (CAN)

Like the physical layer, some of the layer requirements data connection are dictated by the choice of CAN standard for media access.



Can essentially be seen as a chip specific jointly developed by Intel and Bosch. This device, what compared the UART appears to have superior characteristics, it is used to connect to the serial port (and in some cases also USB) of all PCs and laptops (and subsequent modifications), and represents the input/output mechanism that manages the standard NMEA 0183 data, in fact the standard, still used today for almost all marine electronic equipment, micro-processor or equipped with a microcontroller. There are several chip companies offering solutions for CAN network. The problem, if anything, in this last part of 2021 turns out to be that of finding physically the chips, given the general condition of recovery shortage that animates the industry.

The CAN chip

The functions of CAN are: generate the bit stream serial number that must be transmitted over the network, e gain access to the network when the equipment has data to send. The chip reads that goes network is not busy. In the event of a collision with another device you are trying to put data on the network, CAN compare automatically each bit transmitted is among its active functions that of deciding access, bit by bit, (in this case the bits sent are called dominant bits). With this method, waiting phases due to collisions are eliminated (or should be eliminated). The chip's functions include error checking and automatic retransmission of invalid messages. Always between functions that of detecting the presence of errors in a node repeated and taking a node offline to protect the rest of the network. The serial data frame used by CAN has a identification field of 29 bits and from zero to eight bytes of data. Furthermore the frame contains the bits of start of frame and end of frame, reserved bits, bits of frame control, a detection field 15-bit CRC error and acknowledgment bit.

Message size

Messages with eight bytes or less of data are sent as a single CAN frame. when more than 8 bytes need to be sent, one of two methods can be used.

Multi-packet data up to 1,785 bytes can be sent according an ISO 11783-3 protocol that places this data in a shipping "envelope" and sends it to an address global or specific. Flow control is provided so that while sending data to a specific address the recipient can start, stop and control the flow of data. Unfortunately when data are sent in this way their identity is lost until the "envelope" is opened to find out what data you are receiving. Because many of the messages intended for use with NMEA 2000 can exceed 8 bytes (most are probably less than 20 or 30 byte), the standard allows the use of Fast-packet transmission to send up to 256 byte of data with your identity. This method allows for 12 sequential frames to send; a single byte of data in the first between is used to specify the size of the message and each additional frame uses a bytes of data as a frame counter.

Requests and commands

The final capacity of the data link layer is to provide standard messages for requesting data or controlling another device e a confirmation message to use when the request or command cannot be complied with. NMEA 2000 expands the capabilities of ISO 11783-3 providing the command message that can be used to set values or cause actions to be by the recipient device. The prompt provided allows a transmission interval of the data requested by set and allows you to request messages from specified fields contained in the message. For example a message containing Waypoints. The information may contain the location, the name, number and symbol of the waypoint. The request message allows the request of Information specifying the name (or number) of the waypoint, using a field inside of the information message.

Network management

Similar to the data link layer, the procedures used in managing the network standard are aligned with ISO 11783-5 based on SAE J1939-81. Network management is responsible for network address assignment and identification of the devices connected to the network, of

the initialization of the network at power on. Every device connected to the network must have a address. There are 256 possible addresses (1 byte). And can use a total of 254 addresses, the number 255 is designated as the global address, used to send messages addressed to all nodes, the address no. 254 is used as the address null to report problems when an address cannot be found. As for addressing, the ISO 11783-5 provides several types of devices. Some are self-configurable and have the ability to request an address when turned on, take an address from another node and claim a new address if theirs is used from other devices. Other devices can be set manually, still others are characterized by addresses that they cannot be changed and generally they cannot be claimed by others. All NMEA 2000 compliant devices must be self-configurable and claim-able addresses according to the ISO 11783-5 protocol.

Address request procedure

The part of the protocol that allows one device to take the address of another, provides using the NAME functionality. NAME is the content of the data field of the Address Claim message and must be unique for each device on the network. It is made up of subfields containing codes for device function, instance numbers for multiple devices of the same type, code manufacturer and unique number assigned by producer. The latter, like a serial number, must be unique for each device produced by a manufacturer.

Some companies that produce systems related to this Standard:

MarineCraft - SAMYUNG ENC - Carling Technologies - Amphenol
LTW - Actisense - Airmar - Empirbus - Furuno - Garmin - GME
Standard Communications - Honda - Humminbird - Quark-elec
Icom Incorporated - Lowrance Electronics - Moxel - Maretron -
Navico - Raymarine - Simrad Yachting - SeaStar Solutions-
Tohatsu - VeeThree - Yacht Devices - Yamaha Marine - Hemisphere GNSS - Warwick Control Technologies - Brookes & Gatehouse - ComNav Marine - Datamarine/SEA - Furuno USA - Furuno Electric Company - JRC Nobuo Aritake - Kvaser AB - MacKay Communications - Mercury Marine - Morse Controls - Navionics - Nobeltec - Raytheon Marine - Raytheon/Anschutz - Silva Productions AB - Sperry Marine - Teleflex Electrical - Trimble Navigation



On behalf of the global sailing community, World Sailing mourns the passing of our revered President of Honour, His Majesty King Harald V of Norway and all the redaction and managing director of this magazine (Elettrosea.it) mourns too.

A sailor of international distinction

King Harald was far more than a patron of our sport; he was one of its most accomplished, passionate, and enduring figures. A sailor of international distinction, His Majesty represented Norway in three consecutive Olympic Games – Tokyo 1964, where he carried the Norwegian flag at the Opening Ceremony, Mexico City 1968, and Munich 1972 – competing in the 5.5 Metre and Soling classes. He also opened the 1994 Winter Olympics in Lillehammer. His competitive spirit and skill on the water was a constant throughout his life. Highlights of his remarkable sailing career include a silver medal at the 1982 World Championships, a gold medal at the 1987 One-Ton World Championship aboard Fram X, and a bronze at the 1988 World Championship. He also won gold at the 2005 European Championship in the Sira Class and finished sixth at the 2007 World Championships. He also finished third at the 2018 World Championships, and in 2022 – at the age of 85 – he competed against the world's finest sailors to secure a 10th-place finish in the 8 Metre World Championship in Geneva.

Spirit of seamanship

Beyond his impressive list of accolades, King Harald embodied the true spirit of seamanship: integrity, sportsmanship, and a lifelong commitment to the ocean. His leadership as President of Honour provided World Sailing – a position he took on in 1994 after succeeding his late father, King Olav V – with invaluable wisdom, guiding our organisation's efforts to promote inclusivity, youth participation, and marine conservation worldwide.

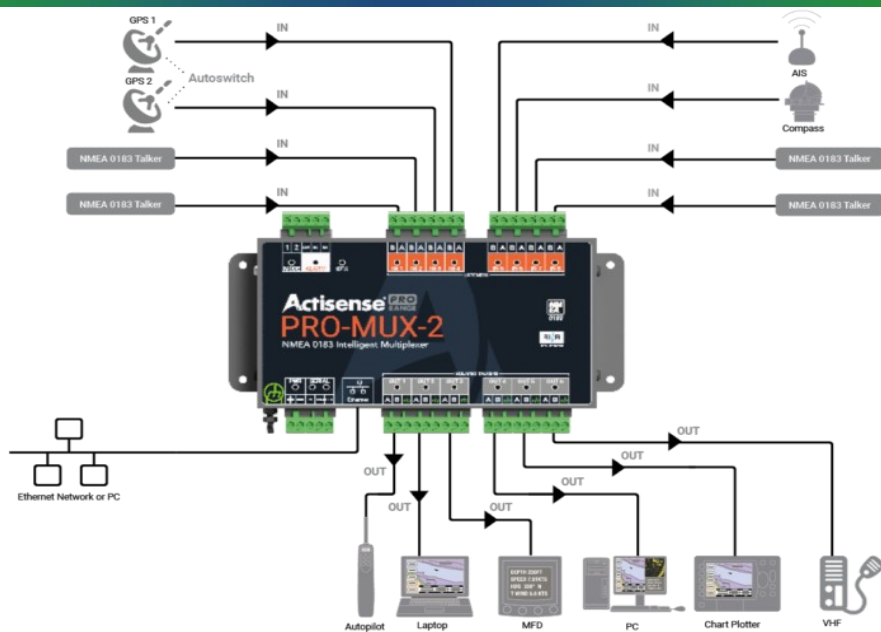
Sailing President's Statement

Quanhai Li, World Sailing President, said, "His Majesty King Harald V had a great presence on the water, where he competed alongside generations of sailors and represented both his nation and his sport with dignity and distinction. His service is a powerful reminder of the unique camaraderie that defines our sport and everyone at World Sailing is grateful to him for his support throughout his tenure as Honorary President. His Majesty's legacy will forever remain anchored to the sport and in the hearts of sailors across the globe. He will be deeply missed."

Steine's Statement

Guro Steine, President, Norwegian Sailing Federation, commented, "On behalf of the Norwegian Sailing Federation, I would like to express our deepest sorrow at the passing of His Majesty the King of Norway. Norway has lost a deeply beloved King, and the sailing community in Norway has lost one of its foremost ambassadors. Throughout his long life, King Harald was an accomplished sailor, with a true passion for the sport that inspired generations. For those of us in the sailing community, he was not only our King; he was one of our own. He shared the same joy in wind, sea and memorable sailing experiences. On the racecourse and in harbour, he met people with warmth, curiosity and respect, and we experienced him as exceptionally down-to-earth and approachable. He was a sailing King, but also one of us. His Majesty the King of Norway was the first President of the Norwegian Sailing Federation when it was founded in 1970. His importance to both the Norwegian and the international sailing community can hardly be overstated. Through his dedication, he helped elevate the sport, foster pride and fellowship, and give sailing a special place in the Norwegian national spirit. We will remember him with deep gratitude and respect. Our thoughts are with Her Majesty the Queen, the Royal Family, and all those who today mourn the loss of a remarkable King and an exceptional fellow human being." World Sailing, and this redaction extends its deepest condolences to Her Majesty Queen Sonja, Crown Prince Haakon, the Norwegian Royal Family, and the people of Norway.

(Image copyright The Royal Court of Norway).



In the world of modern boating, staying connected and informed is essential for safety, navigation, and overall enjoyment. NMEA 0183 data streaming over Ethernet has emerged as a powerful tool to achieve this. This technology allows boaters to seamlessly transfer crucial data between various onboard devices and systems, enhancing navigation, communication, and convenience. NMEA 0183 data streaming over Ethernet, is one solutions and we try to exploring its benefits and providing examples of scenarios where boaters may find it beneficial.

NMEA 0183

The National Marine Electronics Association (NMEA) established the NMEA 0183 standard as a means for marine electronics and navigation devices to communicate with each other. It primarily uses serial communication through RS-232 and RS-422, which has been a reliable method for years. However, the rise of Ethernet connectivity has introduced new possibilities.

Ethernet

Ethernet technology, widely used in computer

networks, now is into the maritime technology world. Ethernet offers several advantages over traditional serial connections, including faster data transfer rates, improved reliability, and the ability to connect multiple devices simultaneously.

Benefits of NMEA 0183

Data Streaming Over Ethernet

One of the most significant advantages of using Ethernet for NMEA 0183 data streaming is its speed. Ethernet can handle data transfer at much higher rates compared to traditional serial connections.

This means that real-time data, such as GPS coordinates, depth readings, and weather information, can be exchanged quickly between devices, resulting in more responsive and accurate navigation. Reliability is other vantage. Ethernet connections are known for their robustness and stability.

They are less susceptible to interference and signal degradation compared to serial connections. In a maritime environment where conditions can change rapidly, a reliable data connection is crucial for safety and navigation.

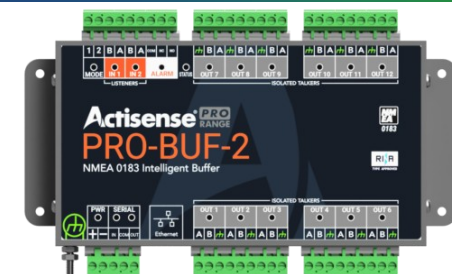
Also scalability is a vantage. Ethernet networks are highly scalable, allowing boaters to connect multiple devices easily. Whether it's integrating a new radar system, chartplotter, or an advanced sonar, Ethernet makes it straightforward to expand onboard network without the need for complex rewiring. Integration using NMEA 0183 data streaming over Ethernet facilitates seamless integration of various onboard systems. For instance, it is possible to connect GPS, radar, fishfinder, and autopilot systems to share critical information. This integration enhances situational awareness, making navigation more efficient and safe.

Example

For avid anglers, Ethernet-enabled NMEA 0183 data streaming can revolutionize fishing expeditions. By connecting your fishfinder, sonar, and navigation systems, you can identify promising fishing spots with greater accuracy, monitor underwater conditions.

Weather Monitoring

Weather conditions can change rapidly at sea. Having access to real-time weather data through NMEA 0183 data streaming over Ethernet allows boaters to make informed decisions. This includes tracking storms, moni-



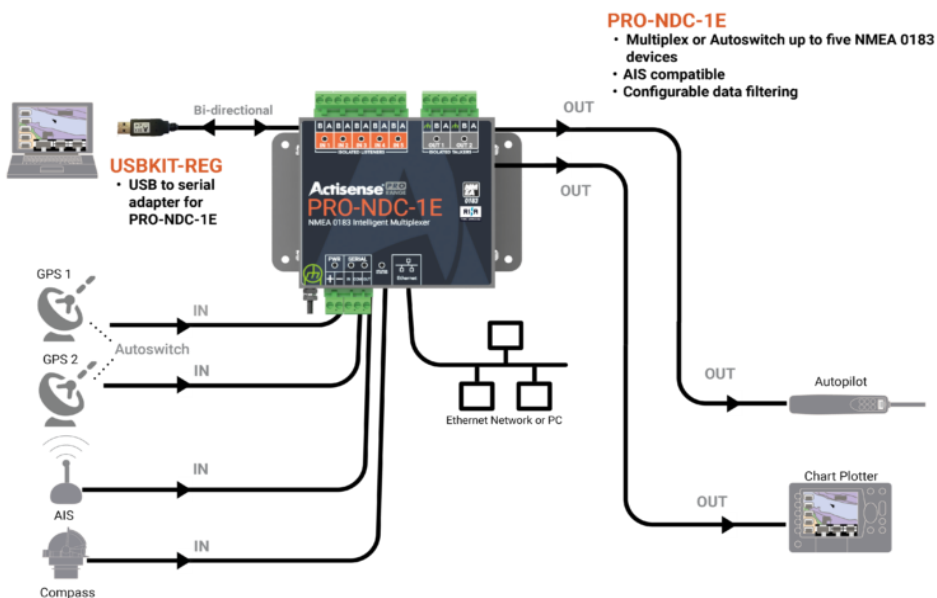
toring wind speed and direction, receiving weather alerts, ensuring safer navigation and minimizing the risk of being caught in adverse conditions.

Crew Communication

Ethernet-connected NMEA 0183 data streaming can enhance communication on board. It is possible to integrate VHF radio and chartplotter, enabling the automatic sharing of GPS coordinates when a distress call is made.

How stream NMEA 0183 data over Ethernet

The Actisense PRO Range of buffers and multiplexers have long been able to be configured via Ethernet. From many requests over the years, the ability to stream NMEA 0183 data over Ethernet has been applied to the PRO-BUF-2, PRO-NDC-1E and the PRO-MUX-2.



The commercial sector is vast, and ranges from smaller commercial craft and fishing boats, through to cargo ships and cruise liners.

With such a variety of vessels, there is no one size fits all' solution when it comes to the collection and distribution of onboard instrument data. Different vessels require different equipment on board depending on their operational requirements, and installation methods can vary dramatically.

Installation challenges on commercial vessels

Unlike leisure craft, commercial vessels are often exposed to extreme weather and water conditions, making the installation location of power supplies, equipment, and safety gear require much more consideration.

Excess vibration, impact from waves, water coming onboard, storms and high winds can all be very damaging to your electronics, so thoughtful planning and installation are required.

System complexity and vessel scale

On board systems are typically much larger, often with multiple sub-systems operating independently, or sometimes together.

On the smaller end of the scale, with fishing vessels and workboats, these may all be on one system, with a common control area at the bridge or helm.

However, when we get to the large end of the scale, various areas of the ships will have their own systems, and combining these can be challenging.

Why NMEA 0183 still thrives

in the commercial sector

This is one of the reasons we see a lot of the commercial industry still using NMEA 0183

equipment. The cable length constraints of NMEA 2000 are too short for a cargo ship, and the 50 physical device limit can sometimes be problematic, too. As NMEA 0183 devices are all independent, and RS-422 will go up to 1000m, it's much easier to collate all the individual devices' data together using multiplexers (combiners) and buffers (splitters) than it is to try and make it work with NMEA 2000, converters and bridges.

NMEA: Buffers, splitters, combiners, amplifiers, mux. There is sometimes confusion over the terms used for the DCU (Data Control Units) used to collect and route NMEA data. In a nutshell, "buffers," "splitters" and "amplifiers" are the same thing, feeding data from a small number of input devices (most often GPS) to inform a high number of output devices (AIS, gyro, autopilot, etc...). Similarly, "combiners" and multiplexers (Mux) are the same thing, doing the converse to buffers/splitters. They will collect multiple feeds of data from a high number of input devices, and output to a smaller number of output devices (ECDIS, onboard PC systems, etc...).

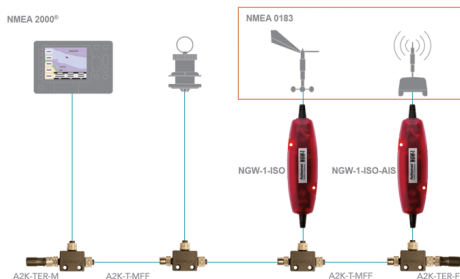
Specialist systems and installation hurdles

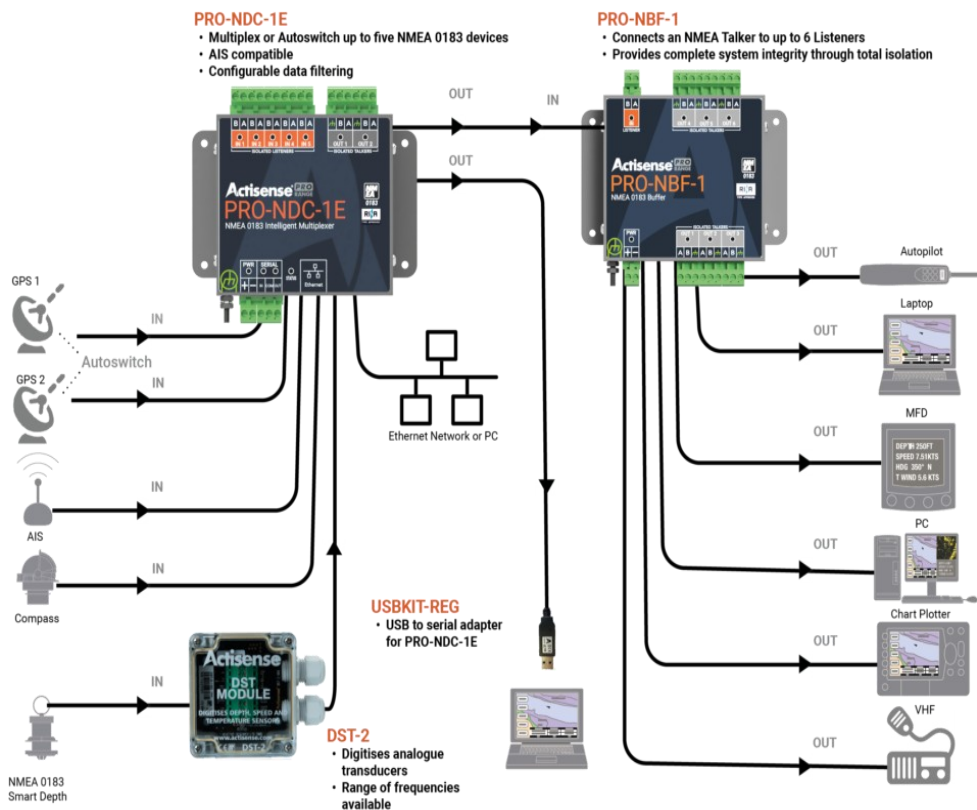
The type of vessel will also dictate any specialist equipment or systems required.

For example, a fishing vessel will operate with transducers and fish finders along with other mapping equipment to plot fish density, water temperature, etc., whilst a large cargo ship or something which falls under the SOLAS bracket may require space for one or multiple ECDIS on board.

However, NMEA 0183 systems do come with their challenges and headaches. Whilst it can be a benefit where every device is connected individually, and does add a level of redundancy, it also means a lot more wiring and careful installation are needed. Unlike NMEA 2000, where devices are powered from the bus, every piece of NMEA 0183 equipment needs its own power supply connection.

I.e Sonár in Iceland created an intricate NMEA 0183 network to ensure optimal data flow on a large commercial fishing vessel.





Cost comparisons and system trade-offs

On a ship where there are 30 instruments, that's a lot of wiring to supply points. Combine that with all of the wiring required for data inputs and outputs on devices, and you can quite easily end up with a bit of a rat's nest of wires.

This can be largely avoided by routing wiring in ducting and jackets, and labelling everything accordingly, but it doesn't overcome the issue of the amount of actual wiring that's needed. In certain scenarios and installations, using a multitude of NMEA 0183 equipment can be more expensive than NMEA 2000 as well. When NMEA 0183 devices need to be connected and buffers/multiplexers are required, the cost can increase relatively quickly, depending on how much extra equipment you need to

make it all work.

Compare this with NMEA 2000, where everything operates on one bus and there's no need for multiplexers, etc., and we can see why NMEA 2000 can quite often be a cheaper solution.

Conclusion

Commercial vessels rely on a broad mix of technologies to handle onboard data, and there is no one-size-fits-all approach. NMEA 0183 continues to serve many installations well due to its flexibility, but can become complex and costly when scaling up. NMEA 2000 offers simpler integration and can reduce costs in many scenarios. Knowing the strengths and limitations of each is essential to making informed decisions for commercial marine operations.



D-marin gruppo che opera nella gestione di marina premium, annuncia il proprio ritorno al Cannes Yachting Festival e al Salone Nautico Internazionale di Genova 2026, dove presenterà il portafoglio ampliato dei suoi 28 marina distribuiti in nove Paesi, mettendo in evidenza un'esperienza sempre più evoluta, ispirata ai principi dell'ospitalità e destinata a ridefinire il concetto di marina premium nel Mediterraneo.

Crescita

A seguito della costante crescita del gruppo, che ha recentemente accolto nel proprio portafoglio Marina di Olbia Yacht Service e Molo Brin in Sardegna, D-Marin sfrutterà i principali appuntamenti nautici dell'autunno per presentare l'evoluzione della propria esperienza offerta nei marina premium, fondata sulla combinazione di destinazioni d'eccellenza, tecnologie intelligenti e servizi personalizzati.

La società sarà presente a Cannes Yachting Festival (8–13 settembre 2026, Stand Jetée Nord 154) e al Salone Nautico Internazionale di Genova (1–6 ottobre 2026, Stand LX20). Ricordiamo che D-Marin è socio di Assomarinas, e che la Associazione patrocinia ufficialmente l'evento Yacht Design Forum che si svolgerà a Fiume e Marina di Moschiena (Croazia) dal 19 al 23 Ottobre 2026. Nei vari saloni, i visitatori potranno ricevere informazioni su come la società stia rendendo l'esperienza in marina sempre più semplice, esclusiva e fluida. Attraverso grandi touchscreen interattivi, i team regionali accompagneranno gli ospiti alla scoperta dell'intero portafoglio di marina premium del gruppo, aiutandoli a conoscere le diverse destinazioni, esplorare gli itinerari di navigazione e individuare il marina più adatto alle proprie esigenze.



D-Marin App

Sarà inoltre possibile assistere a dimostrazioni dal vivo della D-Marin App, la piattaforma che riunisce in un unico ambiente tutti i servizi digitali del gruppo. Attraverso l'applicazione, gli utenti possono cercare un marina, scegliere e prenotare un posto barca, gestire i principali servizi, monitorare la propria imbarcazione tramite la tecnologia Smart Sensor e controllare i consumi di acqua ed energia elettrica grazie alle colonnine intelligenti. Il risultato è un'esperienza in marina più semplice e connessa, che offre agli armatori maggiore controllo, visibilità e tranquillità, ovunque si trovino.

Dichiarazione di Matthias Gehring

Matthias Gehring, Chief Commercial Officer di D-Marin, ha dichiarato riferendosi ai Saloni Nautici già citati "... rappresentano occasioni fondamentali per incontrare armatori, comandanti, broker e partner del settore e mostrare come D-Marin continui a evolvere l'esperienza offerta nei marina premium. Il nostro portafoglio ampliato riunisce destinazioni straordinarie, tecnologie intelligenti e una cultura del servizio ispirata all'ospitalità, permettendo ai nostri ospiti di vivere un'esperienza sempre più fluida, personalizzata e di alto livello in tutti i nostri marina. È questo il significato della nostra filosofia 'Feels Like Yachting Should Feel'."

Visita agli stand

Nel corso delle manifestazioni, i visitatori potranno assistere a dimostrazioni dal vivo della D-Marin App per scoprire come prenotare un

posto barca, gestire i servizi, monitorare la propria imbarcazione e controllarne i consumi da un'unica piattaforma, valutare il funzionamento della tecnologia Smart Sensor e delle colonnine intelligenti, progettate per offrire agli armatori maggiore visibilità, controllo e tranquillità, esplorare l'intero portafoglio di marina del gruppo attraverso percorsi interattivi su touchscreen, ricevere indicazioni personalizzate per individuare il marina più adatto alle proprie esigenze, ottenere preventivi personalizzati sulla base delle richieste formulate durante la visita, consultare brochure regionali e materiali informativi dedicati alle diverse destinazioni, scoprire in anteprima i prossimi sviluppi e i nuovi servizi previsti nei marina del gruppo. Ogni anno D-Marin accoglie oltre 50.000 clienti e continua a investire in innovazione digitale, sostenibilità e servizi ispirati all'ospitalità all'interno di un portafoglio in costante espansione. Con oltre 14.300 posti barca, inclusi numerosi ormeggi dedicati ai superyacht, il gruppo consolida la propria posizione tra i principali operatori europei nel segmento dei marina premium.





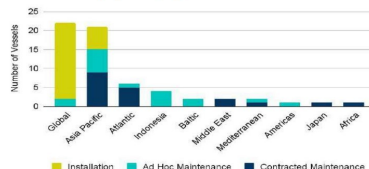
The International Advisory Body on Submarine Cable Resilience was established in 2024 by the International Telecommunication Union (ITU) – the United Nations agency for digital technologies – and the International Cable Protection Committee (ICPC), the leading industry organisation promoting submarine cable protection. ITU Deputy Secretary - General Tomas Lamanauskas and ICPC Legal Advisor Kent Bressie served as the Advisory Body's executive secretaries. The adoption of the reports marks the completion of the Advisory Body's two-year work programme and leaves a legacy of combining international efforts to strengthen submarine cable resilience, including through summits in Abuja, Nigeria in 2025 and Porto, Portugal 2026. The Advisory Body's final meeting took place on 10 July during ITU's WSIS Forum 2026, part of Geneva Digital Week, alongside the AI for Good Global Summit (7-10 July), and the first UN-mandated Global Dialogue on AI Governance (6-7 July).

The report

The International Advisory Body on Submarine Cable Resilience on 10 July 2026 approved its final report, including explanations of recommendations to strengthen the resilience of submarine telecommunication cables - the

critical infrastructure that carries more than 99 per cent of data traffic worldwide. Submarine telecommunication cables are the lifeline of the global digital economy, supporting international communication and finance among other key services. Disruptions to the cables from human activity and natural hazards can affect essential government and industry operations as well as individual access to education, healthcare and banking. Key challenges to submarine cable resilience highlighted in the report include high exposure to physical risks, increased time needed for repair, geographical concentration of infrastructure, and high dependence of many countries on a small number of cable systems - particularly small island developing states (SIDS), Least Developed Countries (LDCs) and other underserved regions.

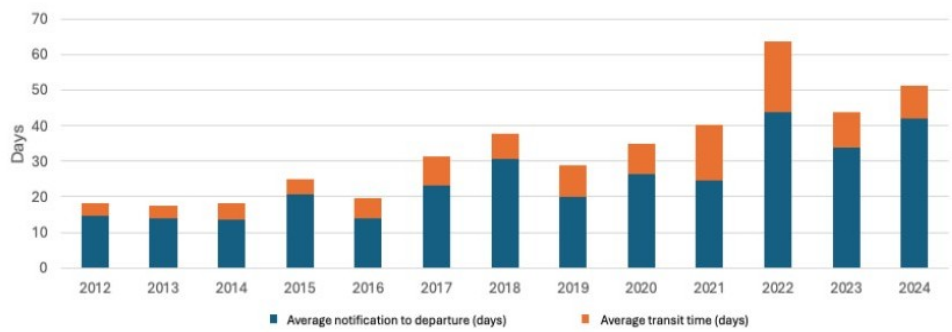
Figure 9: Vessel count by operating region and use, 2025



Sources: Infra-Analytics and TeleGeography¹⁸

Aging vessels require more frequent dry-dock maintenance, which reduces their effective annual operational availability by between 15 per cent and 20 per cent. At the same time, the high cost of new, purpose-built cable repair ships typically ranges between USD 100 million and USD 150 million. This acts as a significant barrier to fleet renewal, particularly for private

Figure 3: Global mean response time to commence repair, 2012-2024



Source: ICPC

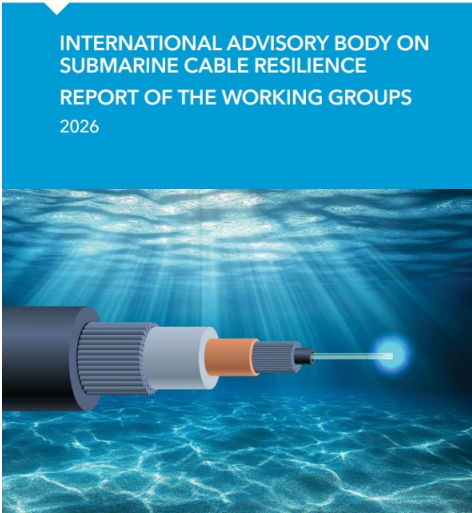
Three key areas

The report further develops Advisory Body recommendations agreed earlier this year across three key areas: timely deployment and repair; risk identification, monitoring and mitigation; and fostering connectivity and geographical diversity.

Borgen- Martin's statement

ITU Publications

International Telecommunication Union



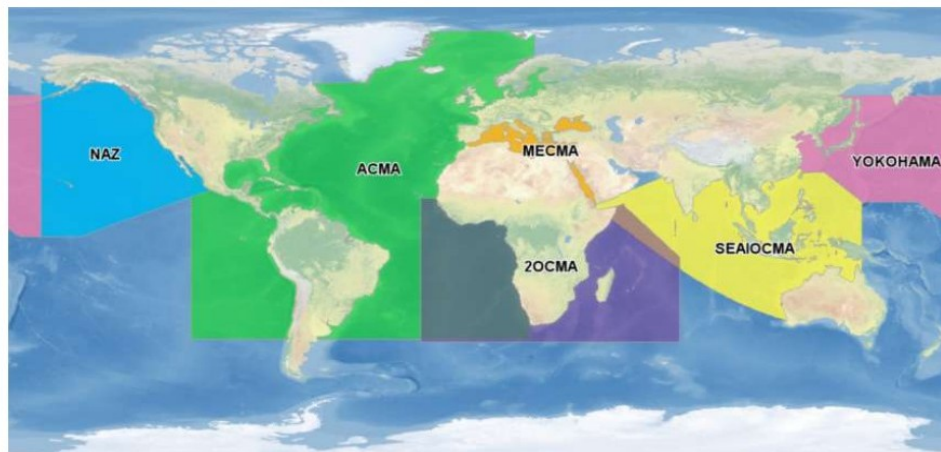
"The world relies on connectivity, and thanks to the International Advisory Body on Submarine Cable Resilience, we now have a practical roadmap to keep undersea networks reliable," said ITU Secretary-General Doreen Bogdan-Martin.

"These reports reflect a shared commitment across governments, industry, international organizations, academia and other stakeholders to safeguard this critical infrastructure that serves us all."

Submarine cable ecosystem

By bringing together diverse expertise and perspectives from across the submarine cable ecosystem, the report provides a common reference to support international cooperation, inform policy development, and strengthen the resilience of the world's most critical digital infrastructure systems. Developed by governments, international organizations, industry and academia, the report reinforces several priorities for action including: strengthening coordination between governments and industry, streamlining regulatory and permitting processes, improving risk identification and monitoring, increasing route diversity and infrastructure redundancy, enhancing preparedness and response capabilities, addressing the needs of vulnerable regions, integrating climate and environmental considerations.

Figure 5: Map of cooperative maintenance zones



Source: Global Marine Group (GMSL)

Note: ACMA = Atlantic Cable Maintenance Agreement; MECMA = Mediterranean Cable Maintenance Agreement; NAZ = North America Zone; SEAIOCMCA = South East Asia and Indian Ocean Cable Maintenance Agreement; 2OCMA = Two Oceans Cable Maintenance Agreement; YOKOHAMA = Yokohama Zone (also referred to as 'YZ').

Maximiano's statement

"What began two years ago as a debate has grown into a global movement," Sandra Maximiano, Chairwoman of Portugal's ANACOM and Co-Chair of the International Advisory Body.

"The Advisory Body and its outcomes show that, when diverse stakeholders come together with a shared purpose, global challenges can be transformed into shared solutions. Our task now is clear: to turn cooperation into lasting resilience for the infrastructure that keeps the world connected. Our legacy will be measured by the resilience the adopted recommendations help build into the world's digital infrastructure for decades to come."

Tijani's statement

"Submarine cables are the invisible infrastructure that powers our connected world, carrying the vast majority of global data traffic and underpinning everything from digital commerce and financial services to healthcare, education and government operations," said H.E. Bosun Tijani, Minister of Communications, Innovation and Digital Economy of the Federal Republic of Nigeria and Co-Chair of the Advisory Body. "The recommendations adopted by the International Advisory Body represent an important milestone in strengthening the resilience of this critical infrastructure through greater international cooperation, practical policy guidance, and shared responsibility."



Elettrosea.it

A stylized illustration of a sailboat on a blue sea. A man in a green and white striped shirt and green pants sits on the railing, pointing towards the right. A woman in a purple dress and white hat stands next to him, looking out. The sailboat has a large grey sail and a yellow sun is visible in the sky.

La rivista dell'Elettrico Navale e H2 - Supplemento a ECO DESIGN Magazine


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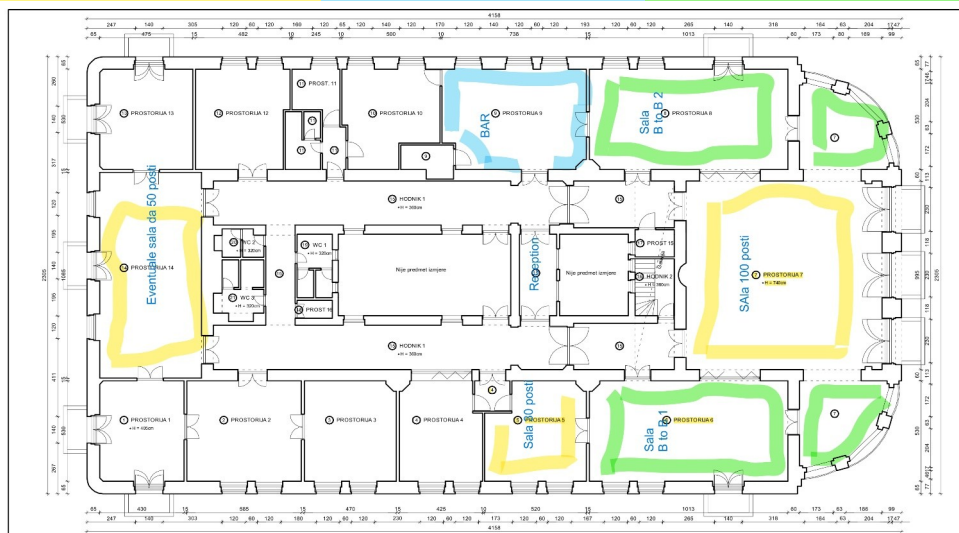
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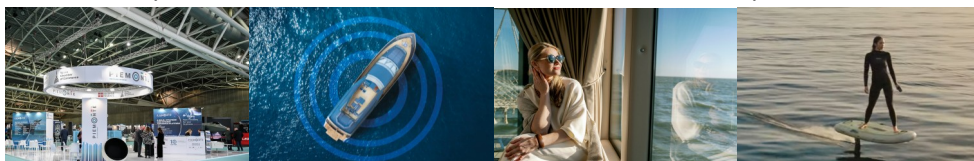


Per iscriversi all'evento (19-23 Ottobre) scaricare il modulo dal sito www.electrosea.it, compilarlo, firmarlo e inviarlo (assieme alla ricevuta del Bonifico) a segreteria.convegni@electrosea.it
Il listino prezzi dell'evento è riportato sul modulo.



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- A2 Quota di iscrizione Azienda 850 € +IVA
- C - Tavolino e 3 sedie allestimento BASE (Roll up opzionale) 350€+ IVA
- B - Hostess 450 € + IVA/giorno per persona
- D - Tavolino 3 sedie e roll up 500 € +IVA
- E - Sponsor 500 € +IVA
- F - Stand/spazio banchina approdi 2.000 € +IVA (per l'evento)
- G - Ufficio Stampa 800 € +IVA
- H - Catalogue Advertising page 250 € +IVA
- I - Workshop Aziendale (sala da 30 persone/1h) 200 € +IVA
- L - Partecipazione serata Premio MG Lombardi 100 € +IVA a persona



TARIFFE PUBBLICITARIE (ADV'S Tariff) 2026

Indicazioni Commerciali

Tecnoservizi SRL, attiva dal 2007, pubblica 6 riviste. La società è Media Partner di Hamburg Messe & Congress GmbH e di NSE Fiera Roma. Le riviste bilingui (italiano -inglese) sono:

Elettrosea.it: dedicata al settore della Nautica e della Industria Navale 10 Numeri annui (dal 2015)

ECO DESIGN MAGAZINE: settore del Design (anche nautico) e alla industria Green - 6 Numeri annui (dal 2007)

AUTOMATION DESIGN MAGAZINE: settore della Automazione (Industriale, di Processo, Navale) - 4 Numeri annui (dal 2009)

Production & Electronic Magazine: settore della microelettronica e della Produzione Industriale - 4 Numeri annui (dal 2015)

Aerospac e Subsea Design Magazine: settore Aerospaziale (Difesa compresa) e del Subsea (dal 2026) 12 Numeri annui

Sfumature e Riflessi: settore Letteratura, Restauro, Arte, Tecnologia, Sostenibilità (dal 2026) 6 Numeri annui

Gli eventi sono: **Yacht Design Forum** (giunta alla 12^a edizione). Dal 2026 l'evento è inserito all'interno della cosiddetta **Blu Economy - Alpe Adria Event** - 19-23 Ottobre 2026 Fiume - Moschiena (Croazia)

MIB (Microelettronica is Back) attualmente è una conferenza, dal 2026 diviene una nuova Mostra convegno (annuale)

Maria Grazia Lombardi Awards: è un premio dedicato a "Eco Design per Nautica da diporto" il cui regolamento è disponibile sul sito www.electrosea.it. La giuria è presieduta anche nel 2026 da Yasmine Mahmoud, nota designer internazionale.

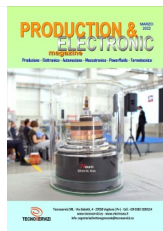
Listino prezzi pagine pubblicitarie riviste Tecnoservizi SRL

Pagine Interne

Pagina singola	500€ + IVA
Pagina doppia affiancata	850€ + IVA
½ Pagina Orizzontale	350€ + IVA
½ Pagina Verticale	350€ + IVA

Copertina

I Copertina	1.500€ + IVA
II Copertina	1.000€ + IVA
III Copertina	1.000€ + IVA
IV Copertina	1.250€ + IVA





SATLANTIS presented, in Madrid, ELCANO, its new generation of FlexSat satellites, designed to transform Earth observation by integrating multiple sensors and advanced capabilities into a single platform. The launch took place at the Spanish Navy Headquarters in Madrid, during an event attended by institutional authorities, representatives from the space and defence sectors and company executives. FlexSat technology enables a single satellite to cover up to 400 kilometres of non-linear territory in one minute and carry out missions that, using conventional Earth observation solutions, could require up to 40 satellites or 40 days of operation.

Hernani's Statement

Juan Tomás Hernani, CEO of SATLANTIS, explained that "the company aims to combine a historical perspective with a vision of the present and the future." He added that these five satellites "introduce a new technology and a new perspective from space," enabling solutions to "real-world challenges faced by both citizens and the Armed Forces."

Novoa's Statement

Captain (Navy) Carlos Posada Novoa, member of the Institute of Naval History and Culture, described SATLANTIS as "a benchmark company in the field of Earth Observation, whose activity represents an outstanding example of technological innovation, regional industrial capability and Spain's capacity to address the new challenges of the space domain."

Elcano

He also highlighted the significance of naming the new satellite generation Elcano, noting that it "is closely linked to one of the Spanish Navy's most iconic symbols," and stated that "both represent platforms through which Spain projects knowledge and capabilities into new frontiers." Rafael Echevarrieta, grandson of Horacio Echevarrieta – the shipbuilder responsible for the Juan Sebastián de Elcano training ship – also paid tribute to his grandfather with a brief address.

Company evolution

Ignacio Mares, Global Business Director of the company, together with Aitor Conde, Chief Technology Officer, presented the company's evolution and key technological milestones achieved over recent years. Alejandro Barraza, Director of International Business & Marketing, and Jon Paul Babio, Head of Space Systems, introduced the new satellite family and outlined the company's latest innovations in Earth Observation technologies.

Event conclusion

The event was concluded with remarks by Admiral Gonzalo Sanz Alisedo, Deputy Chief of Staff of the Spanish Navy, who emphasized SATLANTIS' technological capabilities, the strength of Spain's industrial ecosystem and the company's contribution to national security and defence. He stressed that, in the current geopolitical context, the project "takes on its full significance" providing enhanced situational awareness, supporting decision-making processes and ultimately helping protect national interests. The Elcano satellite family will begin deployment in 2027 with several mission configurations designed to meet the specific operational requirements of each customer.

Program

The programme takes its name from Juan Sebastián Elcano, whose first circumnavigation of the globe symbolized humanity's ability to push beyond known boundaries and open new horizons. More than five centuries later, that same pioneering spirit now extends into space as the new frontier for observation, intelligence and knowledge.



New Paradigm in Earth Observation

Elcano consolidates capabilities that traditionally required entire satellite constellations into a single spacecraft. Powered by SATLANTIS' proprietary FlexSat technology, it can image up to 400 kilometres of non-linear territory in just one minute, enabling missions equivalent to those that would currently require up to 40 satellites or 40 days of operations. Its unique multi-payload architecture enables the simultaneous integration of high-resolution imaging, video, near-infrared (NIR), thermal imaging, polarimetry and Space Domain Awareness (SDA) capabilities on a single satellite platform. These capabilities support a broad range of applications, including defence, homeland security, border surveillance, maritime domain awareness, emergency response and environmental monitoring, delivering strategic intelligence with greater speed, flexibility and operational autonomy. Elcano incorporates payloads developed in-house by SATLANTIS, including the iSIM-90 and iSIM-170 optical cameras, as well as CASPER, the company's next-generation thermal observation telescope. These technologies are backed by more than ten years of research and development, eight successful flight missions and a further twenty missions scheduled over the next two years.

Technology Enabling Strategic Autonomy

Elcano is being developed at SATLANTIS facilities in Leioa and Astrabudua, strengthening the Basque Country's industrial ecosystem while fostering highly specialized engineering talent. The company's fast-track solution integrates the space segment, ground segment, operator training and technology transfer into a single offering, enabling governments and institutional customers to rapidly develop sovereign Earth Observation capabilities and independent data exploitation capacity. The company manages an end-to-end value chain spanning optical, mechanical and electronic design, software development, data processing, system integration and on-orbit operations. Its ITAR-free architecture and fully traceable supply chain significantly reduce external dependencies and geopolitical risk. Sponsorship Agreement with the Juan Sebastián de Elcano Training Ship Following the event, the company and the Juan Sebastián de Elcano Foundation (fundación Buque Escuela de la Armada "Juan Sebastián de Elcano") signed a sponsorship agreement coinciding with the training ship's centenary celebrations, further strengthening institutional cooperation in the technological and strategic domains. The agreement was signed by Admiral Gonzalo Sanz Alisedo, Deputy Chief of Staff of the Spanish Navy, and Juan Tomás Hernani, CEO of SATLANTIS.

Hamburg becomes the “place to be” for the international maritime community, from 1 to 4 of September 2026. What the industry has developed over the past two years is now coming to Hamburg. Around 2,300 exhibitors, 50,000 participants and more than 90,000 m² of exhibition space across twelve halls will once again turn Hamburg into an international meeting place for the maritime industry. The entire exhibition grounds are fully booked. This fair means world premieres, international market leaders, exciting newcomers and the key players of the maritime industry – all in one place for four days. Many of the innovations at SMM will be on public display for the first time.

Meeting place

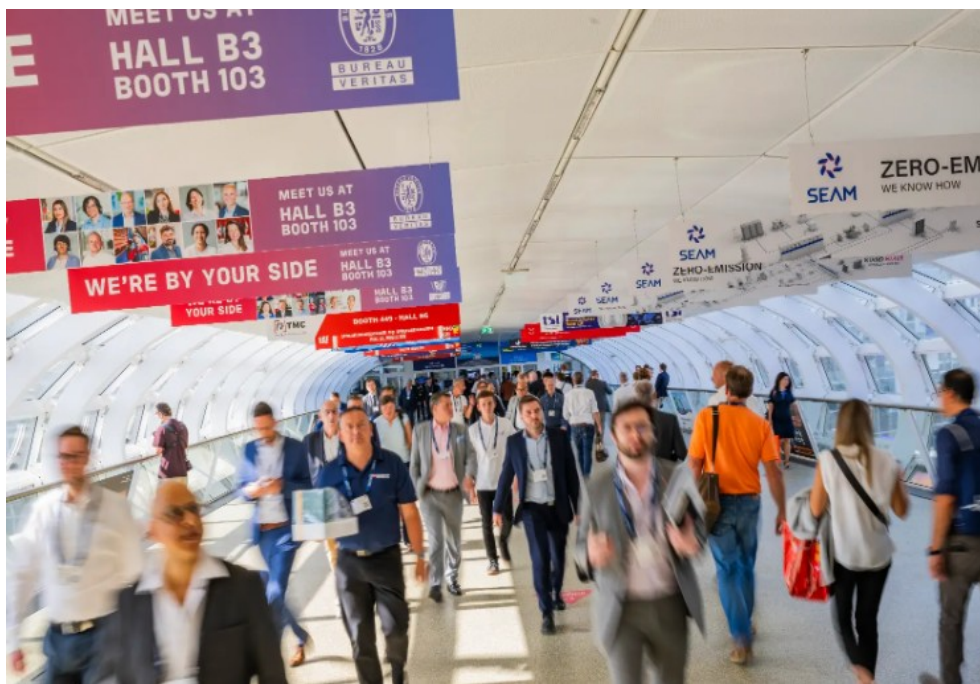
This trade show is far more than a trade fair. It is the meeting place for the international maritime community. The entire maritime world comes together here – shipyards and shipping companies, suppliers and classification societies, start-ups and research, as well as policy-makers and international organisations.

Selbach's Statement

“SMM is where the global maritime industry meets in person every two years. It is a showcase for technological and innovation leadership across the entire maritime value chain. And SMM is great fun, too. You simply meet everyone here!”, says Claus Ulrich Selbach, Vice President Exhibitions Maritime & Energy at Hamburg Messe und Congress.

Coming to Hamburg

When you read this article, I'll be in Hamburg dear reader, but i am not alone, of course. Companies from 70 countries and participants from 120 nations make SMM one of the most international meeting places for the maritime industry. Twenty-six official national pavilions, strong participation from the world's leading shipbuilding nations and high-ranking delegations from politics, business and navies will be there. China, Japan, South Korea and India are among the maritime markets with a particularly strong presence. At the same time, international participation continues to grow: Cyprus, Vietnam and Brazil, among others, will have their own national pavilions for the first time.

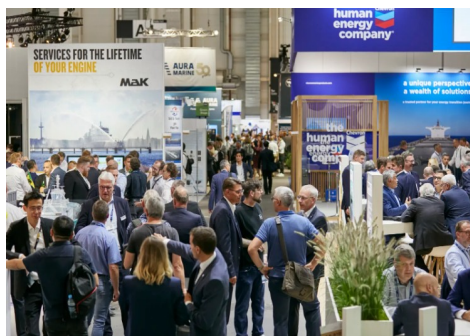




Maritime expertise concentrated in one place

Five stages and five international specialist conferences make SMM a key knowledge forum for the maritime industry. Nowhere else do so many international experts come together to shape the future of the industry. The conference programme includes the Maritime Future Summit, the global maritime environmental congress (gme), the MS&D – International Conference on Maritime Security & Defence, the Offshore Dialogue and the TradeWinds Shipowners Forum.

And that is far from all: numerous sessions,



panels and Innovation Talks bring additional expertise directly into the exhibition halls, with the programme on the Transition Stages. The new Exhibitor Innovation Stage is the fifth stage, giving exhibitors a platform to present their innovations in compact talks. Running alongside SMM, two new event formats will make their debut at the CCH – Congress Center Hamburg: ALL ABOUT PORTS and LogiNext Germany, expanding the programme to include the port industry and digital logistics.

New focus areas, more space

The new Energy Efficiency Hub gives the key topic of energy efficiency its own dedicated exhibition area for the first time, complemented by a specialist programme on the Energy Efficiency Stage. Maritime Security & Defence is also gaining more space: the established MS&D Conference is joined by the new MS&D Expo in Naval Hall B8 and the Naval Stage. The Dual Use Tech Newcomer Zone will also provide young companies developing technologies for both civilian and military applications with a dedicated platform for the first time.



The next generation in focus

The fair brings the skilled professionals of tomorrow together with the industry. The Maritime Career Market will once again take place over two full exhibition days and is aimed at students, young professionals and school pupils. Admission is free on Thursday and Friday for school pupils, students and accompanying teachers.

Open Ceremony

The Official Opening Conference will be open to all participants and will also be streamed live to the stages in the exhibition halls. Beyond the specialist programme, SMM is all

about meeting people in person. From Tuesday to Thursday, each exhibition day winds down with wine o'clock at the Transition Stages. International receptions, exhibitor events and stand parties keep the atmosphere going in the halls after the specialist programme ends. The Welcome Reception, Maritime Start-up Night, Career Happy Hour and MS&D Reception are just some of the networking events.

Theme

Six Theme Routes guide visitors across the exhibition grounds. In 2026, the former Green Route becomes the new Energy Efficiency Route. SMM TV by TradeWinds will report live from the event. The trade show is also expanding outdoors, with more exhibition space available in the outdoor area in 2026.

ALL ABOUT PORTS

ALL ABOUT PORTS, (where we are too with our magazines) and LogiNext Germany, offering additional expertise in ports, logistics and digitalisation. Charging Lounges, drinking-water dispensers and air-conditioned B halls provide additional comfort on the exhibition grounds.



The enhanced, AI-powered SMM Connect platform supports planning and matchmaking before, during and after the event.

Two Years

After two years of preparation, the time has come: the maritime community is coming together in Hamburg once again. For four days, the Hanseatic city belongs to the maritime world.

Propeller Arrives in Hamburg

Even before SMM officially opens, there a spectacular event at Fair area: On Thursday, 27 August, a ship propeller weighing around 35.5 tonnes, manufactured by Mecklenburger Metallguss (MMG), was installed in front of the Central Entrance. Measuring 7.8 metres in diameter and featuring five blades, the installation provide impressive opportunities for photography and video footage.

Maritime Security & Defence

MS&D Conference 2026 announces first topics and keynote speakers. Vice Admiral Carsten Stawitzki, Germany's National Armaments Director, and Vice Admiral Axel Deertz, Deputy Inspector of the Navy and Commander of the



Fleet. In this edition Expo and conference are closely integrated. This evolution into the MS&D Expo & Conference, Hamburg Messe und Congress is significantly expanding the format in 2026. Hall B8 will serve as the naval hub of SMM, bringing together the expo, conference and central Naval Stage. The combination of exhibition, conference and stage creates a central meeting point for international delegations, industry and naval stakeholders - in close proximity to shipyards and system providers.

Statement

"The security challenges in the maritime domain continue to grow. With MS&D, we are creating a platform where navies, industry and technology providers can jointly develop solutions, drive innovations and strengthen cooperation," says Claus Ulrich Selbach, Vice President Exhibitions Maritime and Energy at Hamburg Messe und Congress. "At the same time, we are bringing together global shipyards, naval players and dual-use innovators, creating a central platform for high-level international procurement and innovation dialogue."





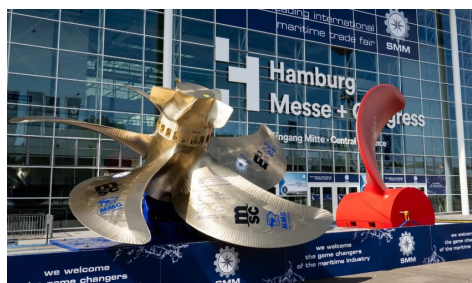
Focus on maritime security and European defence capabilities

Under the guiding theme “Maritime Security & Defence in a Rapidly Changing World”, the Conference brings together representatives from navies, industry, government and research. The focus is on the future security architecture of Europe, the capability development of European navies, as well as key issues in defence procurement and technological innovation. Key topics of the 2026 conference programme include Europe’s Maritime Capabilities, Maritime Warfare Requirements, the Underwater Domain, IT, Cyber, and Space Aspects of Maritime Security, Manned and Unmanned Systems

Keynote

The keynote speeches by Vice Admiral Carsten Stawitzki and Vice Admiral Axel Deertz will provide insights into current developments in maritime security and key challenges in defence procurement. The conference is organ-

ised in close cooperation with leading institutions from the maritime, industrial and specialist media sectors, including the German Maritime Institute (DMI), Mittler Report and the German Navy Command (Marinekommando). “The MS&D Conference brings together the key stakeholders essential for Europe’s maritime security – from military end users and political decision-makers to innovative companies,” says Rear Admiral (ret.) Karsten Schneider, President of the German Maritime Institute (DMI). “This dialogue is more important than ever.





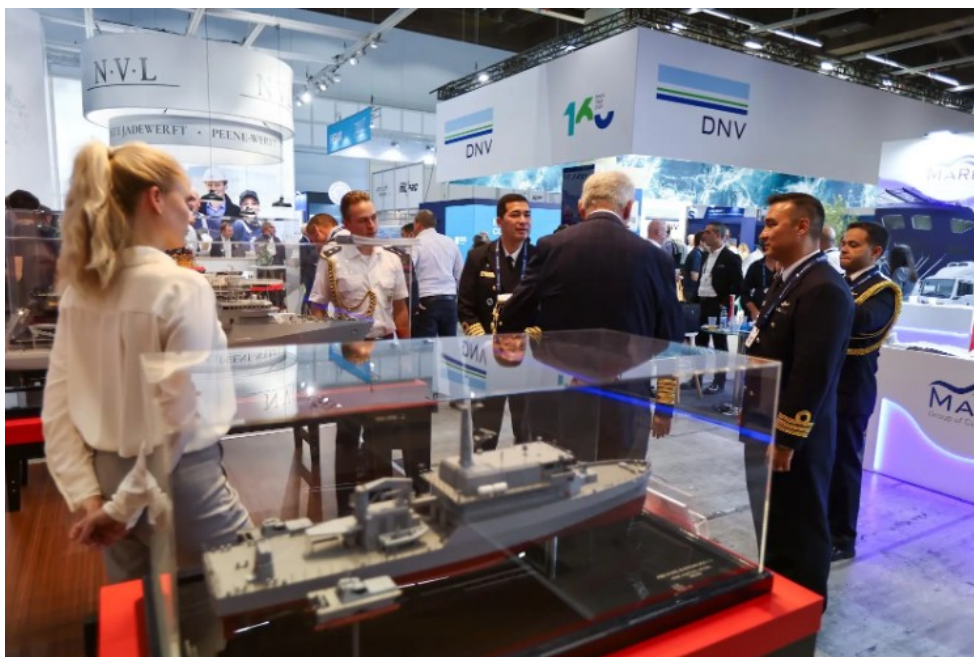
Naval defence, dual-use and innovation under one roof

The MS&D Expo in Hall B8 showcases an open naval and dual-use ecosystem covering approximately 3,000 square metres, and serves as a meeting point for international delegations, industry and navies. Exhibitors present

solutions from key areas of maritime security and defence, including cybersecurity, unmanned systems, dual-use technologies, maritime surveillance and the protection of critical infrastructure. The focus is on technology transfer and exchange between industry, navies and procurement organisations. In 2024, 29 delegations from navies, coast guards and procurement organisations worldwide attended MS&D to explore the offerings of more than 200 providers of maritime dual-use technologies.

Industry voices

Speakers at MS&D 2025 also emphasise the importance of the conference for exchange and collaboration in the maritime security sector. "Time is a decisive factor for our security. To build credible deterrence, navies, industry and policymakers must work more closely together and arrive at joint solutions more quickly. Formats like MS&D are essential, as they enable exchange on shared challenges and a common situational picture," says Flotilla Admiral Dirk Gärtner, Head of Planning and Concepts at the German Navy Command.





"In light of current security challenges, we must significantly accelerate capability development within the German Armed Forces and the Navy. At the same time, we expect industry to deliver projects reliably in terms of time,

budget and quality. Events like MS&D are essential to jointly address these challenges and advance solutions," adds Norbert Blumenthal, Head of Division 'Armaments III' at the German Federal Ministry of Defence.





ALL ABOUT PORTS

ALL ABOUT PORTS is an international conference with an accompanying exhibition dedicated to the future of the port industry. The inaugural event will take place on 2-3 September 2026 at the CCH - Congress Center Hamburg and be held in parallel with SMM It positions itself as a new platform for integrated port solutions.

The focus is on port infrastructure, terminal technology and port logistics, as well as key topics such as digitalisation, automation, sustainability and security.

LogiNext Germany

LogiNext Germany 2026 take place on 2–3 September 2026 at the Congress Center Hamburg (CCH) and is aimed at decision makers from transport, logistics, IT and supply chain

management, as well as professionals responsible for operations, digitalization and data & analytics. Jointly initiated by Royal Jaarbeurs and Hamburg Messe und Congress, the congress with accompanying exhibition presents innovations and insights in the areas of inter-modal supply chains and global supply chain connectivity, the port as a digital supply chain hub, digital logistics ecosystems and interoperability, as well as AI, automation and resilience along the supply chain.

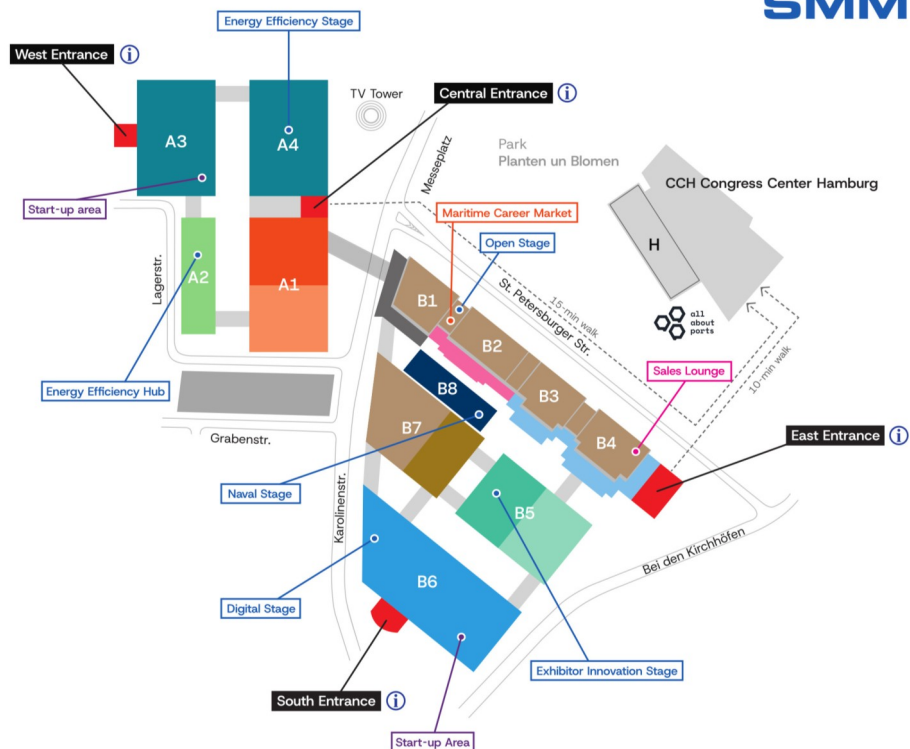
Conclusion

In my opinion 4 days of networking, congress, technical innovations. I don't drink beer and wine, and i think that i am lucky to be there. As my data we are the only SMM official media partner from Italy.

Buon vento a tutti (in italian Language).



SMM area plan



- Hall A1
 - Ship operation equipment, environmental technologies
 - Deck equipment, cargo handling systems
- Hall A2
 - Pumps, valves, compressors, energy efficiency technologies
- Hall A3/A4
 - Prime movers, propulsion systems and new fuel technologies
- Hall B1-B4 Upper Floor
 - National pavilions
- Hall B2 Ground Floor
 - Shipyards, shipbuilding industry
 - Production equipment, ship engineering and design
- Hall B3/B4 Ground Floor
 - Shipyards, shipbuilding industry

- Hall B5
 - Interior outfitting, heating, ventilation, air conditioning
 - Safety equipment, fire protection, marine coatings, corrosion protection
- Hall B6
 - Navigation and communication
 - Electrical equipment, electric drives, automation, lights, sensors and indicators, software and IT
 - Marine technology
- Hall B7
 - National pavilions
 - Shipbuilding materials
- Hall B8
 - Maritime security & defence





Port Canto ospita dal 2019 lo Spazio Vela, interamente dedicato alle barche a vela nuove di oltre 10 metri. Durante l'edizione 2026 del Salone di Cannes, saranno esposti in acqua 120 monoscafi e multiscafi, a conferma della funzione essenziale svolta dalla vela all'interno del salone. Con oltre 400 metri di banchine riservate ai monoscafi e oltre 450 metri ai multiscafi, lo spazio vela riunisce la più grande flotta al mondo di grandi velieri nuovi presentati in acqua. A terra, gli stand dei cantieri navali, dei fornitori di attrezzature e delle società di servizi completano questa offerta totalmente destinata alla vela.

Dichiarazione

«La vela riveste un ruolo di primo piano al Cannes Yachting Festival. Con 120 monoscafi e multiscafi riuniti al Port Canto, lo Spazio Vela, che è una pura meraviglia per i nostri visitatori, offre un panorama eccezionale della diversità e del dinamismo del settore. Quest'anno, quasi una barca su cinque verrà presentata in anteprima mondiale, a testimonianza della creatività e della competenza dei cantieri navali che coniugano con passione prestazioni, comfort, innovazione e il piacere di vivere in mare.» ha

dichiarato Constance Brément, Direttrice del Cannes Yachting Festival.

Le novità

Tra le numerose novità annunciate, il Festival mette in luce dieci modelli- cinque monoscafi e cinque catamarani- appena usciti dai cantieri navali di tutto il mondo, dalla Finlandia alla Francia passando per la Cina, e presentati in anteprima mondiale: AMEL 50.2, CNB 62, Grand Soleil 80 Plus Long Cruise, New Y7, Swan 80-301, Aquila 45 Sail, FP48, Lagoon 47, Leopard 43 e WINDELO 55 Sport

AMEL: AMEL50.2 (Monoscafo)

Ubicazione: SAIL 053- Dimensioni: L16,70m e l4,99m- Cantiere basato in Francia

AMEL 50.2 trasforma i canoni estetici del cantiere, preservandone al contempo le competenze storiche nel settore delle grandi imbarcazioni da crociera. Progettato dallo studio Berret - Racoupeau, si distingue per la prua rovesciata, la carena modernizzata e il pozzetto centrale profondo e particolarmente protetto. Gli spazi abitativi ampliati e la maggiore superficie dei pannelli solari ne fanno una barca a vela concepita per viaggiare lontano, nel comfort e con grande autonomia.



CNB YACHT BUILDERS: CNB62 (Monoscafo)

Ubicazione: SAIL 065- Dimensioni: L19,48m e l5,33m. Cantiere basato in Italia.

Il CNB 62 incarna una nuova visione della crociera d'altura. Immaginata per essere gestita con un equipaggio ridotto e progettata da Philippe Briand, questa barca a vela coniuga eleganza, comfort e facilità di manovra. Il suo vasto salone inondato di luce, l'arco in carbonio che libera il pozzetto e il garage longitudinale per il tender rispecchiano un design tanto raffinato quanto funzionale.

CANTIERE DEL PARDO: GRAND SOLEIL 80 PLUS LONG CRUISE (Monoscafo)

Ubicazione: SAIL 067- Dimensioni: L26,2m e l6,6m- Cantiere basato in Italia. Nuovo fiore all'occhiello della gamma Plus, il Grand Soleil 80. Long Cruise è progettato per i navigatori che sognano lunghe traversate senza rinunciare al piacere delle prestazioni. L'armamento in carbonio, il doppio timone e la chiglia telescopica gli conferiscono una grande versatilità in mare, mentre la piattaforma ibrida Torqeedo accompagna le navigazioni a lungo raggio. Firmato da Cantiere del Pardo, Matteo Polli e Nauta, questo yacht d'altura combina tecnologia, comfort e personalizzazione, con interni



luminosi e una separazione particolarmente curata tra gli spazi destinati agli ospiti e quelli riservati all'equipaggio.

YYACHTS: NEWY7 (Monoscafo)

Ubicazione: SAIL 060- Dimensioni: L21,99m e l6,1m- Cantiere basato in Germania. Riprogettato da Judel/Vrolijk & Co., il nuovo Y7 prosegue la filosofia di YYachts, fondata su prestazioni, semplicità e lusso discreto. Il suo nuovo ingresso asimmetrico libera il passaggio verso il pozzetto, mentre il pozzetto più protetto e il divano a U aumentano il comfort a bordo. Il trasferimento della sala macchine in un'area dedicata, accessibile da due punti, facilita inoltre la manutenzione e separa più chiaramente gli spazi abitativi dalle zone tecniche.

NAUTORSWAN: SWAN80 - 301 (Monoscafo)

Ubicazione: SAIL 058- Dimensioni: L25,55m e l6,4m - Cantiere basato in Finlandia. Il monoscafo Swan 80-301 apre un nuovo capitolo per Nautor Swan, associando lo spirito di un grande yacht da regata crociera con un approccio più agile alla navigazione. Concepito da Germán Frers, con un design esterno firmato Lucio Micheletti e interni ideati da Misa Poggi, unisce linee essenziali, prestazioni in mare aperto e grande libertà di allestimento.





Il suo pozzetto modulabile e le doppie postazioni di timoneria permettono di passare facilmente dalla navigazione al relax.



AQUILA: AQUILA45 SAIL (Multiscafo)

Ubicazione: SAIL 028- Dimensioni: L13,42m e l7,65m - Cantiere basato in Cina. Secondo modello della gamma a vela di Aquila, l'Aquila 45 Sail privilegia lo spazio, il comfort di crociera e la convivialità a bordo. La sua piattaforma prodiera fissa offre un'area lounge, mentre il fly-bridge aperto e il pozzetto di poppa, allestito nel prolungamento del salone, creano diversi spazi abitativi affacciati sul mare. Grazie alle vaste vetrate e alle configurazioni disponibili a tre o quattro cabine, l'Aquila 45 Sail è adatto sia all'uso privato che alle esigenze dei charter.

FOUNTAIN PAJOT: FP48 (Multiscafo)

Ubicazione: SAIL 007- Dimensioni: L14,92m e l7,9m Cantiere basato in Francia. Successore del Tanna 47, l'FP48 incarna una nuova generazione di catamarani a vela firmata Fountaine Pajot. La sua ampia vetrata crea continuità tra il pozzetto di poppa e il salone, mentre la cucina centrale, il pozzetto di prua e il Lounge Deck moltiplicano gli spazi conviviali aperti sul mare. Disponibile nelle versioni Maestro o Quatuor, coniuga comfort di vita a bordo, libertà di allestimento e autonomia energetica grazie ai pannelli solari integrati e alla soluzione OD-Sea+.



LAGOON CATAMARANS:

LAGOON4 (Multiscafo)

Ubicazione: SAIL 005- Dimensioni: L14,95m et l7,96m - Cantiere basato in Francia. Nato dalle esigenze dei suoi utilizzatori e dal know-how di Lagoon, il Lagoon 47 pone la fluidità dei movimenti e la libertà di configurazione al centro della vita a bordo. La porta che collega direttamente il pozzetto di prua al salone trasforma questo spazio in un vero ambiente aggiuntivo, mentre il flybridge offre un nuovo spazio di vita aperto sull'oceano. Grazie alla sua smart room modulare, alle diverse configurazioni delle cabine e agli ambienti interni personalizzabili, il Lagoon 47 si adatta a ogni progetto di navigazione.

LEOPARD: LEOPARD43 (Multiscafo)

Ubicazione: SAIL 009 - Dimensioni: L12,97m e l7,04m – Cantiere basato in Sudafrica. Il Leopard 43 inaugura una nuova generazione di catamarani a vela, più sportivi, più reattivi e sempre orientati al comfort di crociera. I suoi scafi con prua rovesciata e il piano velico ottimizzato favoriscono le prestazioni in mare, mentre le ampie vetrate offrono una visibilità panoramica e una luminosità eccezionale all'interno. Tra il pozzetto di poppa, il salone e l'a-

rea relax allestita sul tetto, vicino alla postazione di comando, gli spazi sono stati progettati per facilitare la circolazione e rafforzare la convivialità a bordo.

WINDELO: WINDELO55SPORT (Multiscafo)

Ubicazione: SAIL 015- Dimensioni: L16,24m e l7,98m– Cantiere basato in Francia. Windelo 55 Sport conferma il posizionamento sportivo del marchio nel settore della crociera d'altura. Pensato per le prestazioni in mare aperto, questo catamarano combina un piano velico generoso con derive in carbonio allungate, offrendo un equilibrio ottimizzato tra velocità e comfort di navigazione. Una progettazione che permette di godersi appieno le emozioni della vela, pur mantenendo la stabilità e la convivialità tipiche dei multiscafi.

Una edizione particolare

Queste dieci anteprime mondiali illustrano la ricchezza di un'edizione che riunirà, dal Vieux Port al Port Canto, tutta la varietà del mondo della nautica da diporto internazionale. Imbarcazioni a motore e a vela, nuove e usate, monoscafi e multiscafi, attrezzature, water toys, porti turistici, servizi e innovazioni compongono un panorama unico delle principali tendenze che plasmano la nautica di oggi.

Fincantieri ha recentemente ospitato un Industry Day a Zagabria, riunendo l'ecosistema industriale croato per esplorare opportunità di cooperazione nei settori della cantieristica navale, dell'ingegneria, della produzione avanzata e della difesa. L'iniziativa fa parte della più ampia strategia di Fincantieri finalizzata a consolidare partnership industriali di lungo periodo e a favorire la collaborazione lungo la catena del valore navale. Svolto con il patrocinio dell'Ambasciata d'Italia in Croazia, l'evento ha riunito esponenti del Governo, del Parlamento e delle istituzioni croate, delle principali istituzioni italiane, nonché oltre 20 aziende locali. Hanno presenziato l'Ambasciatore d'Italia in Croazia, Paolo Trichilo, il Segretario di Stato del Ministero delle Finanze della Repubblica di Croazia, Matej Bule, il Presidente della Commissione Affari Esteri del Parlamento croato, Andro Krstulović Opara, il Direttore del I Reparto DNA Politica Industriale e Relazioni Internazionali, Gen. D.A. Luigi Casali, il Responsabile Vendite della Divisione Navi Militari di Fincantieri, Mauro Manzini e il Responsabile International Institutional Affairs di Fincantieri, Carlo Romeo. L'incontro ha rappresentato un'importante occasione di dialogo e condivisione di competenze, contribuendo a individuare aree di interesse comune e potenziali ambiti di cooperazione tra Italia e Croazia.

Cooperazione industriale

L'iniziativa riflette inoltre l'impegno di Fincantieri a sostenere la cooperazione industriale in

Croazia nell'ambito del programma del Ministero della Difesa croato per l'acquisizione di due Corvette Multi-Ruolo. In tale contesto, l'evento ha offerto l'opportunità di individuare capacità e competenze industriali in grado di contribuire al programma, supportando al contempo la creazione di valore nel lungo termine per i settori della cantieristica navale e della difesa del Paese. Riunendo cantieri navali, società di ingegneria, fornitori di tecnologie e operatori industriali provenienti da tutto il Paese, l'iniziativa ha favorito il confronto su potenziali opportunità di cooperazione. Facendo leva sull'esperienza globale di Fincantieri nella cantieristica navale, nelle tecnologie marittime avanzate e nel dominio della subacquea, i partecipanti hanno discusso di come know-how industriale, tecnologie e capacità della catena di fornitura possano contribuire ai futuri programmi navali e sostenere lo sviluppo di lungo periodo della base industriale croata. Inoltre, l'iniziativa si inserisce nel percorso avviato dai 4 luglio 2026 dal Memorandum of Understanding sottoscritti recentemente con i cantieri navali croati Brodotrogir Cruise d.o.o. e Iskra Shipyard LLC.

che definiscono un quadro di cooperazione nelle attività di progettazione, ingegneria e cantieristica navale. L'evento ha esteso questo coinvolgimento a una rete più ampia di stakeholder croati, rafforzando ulteriormente le basi industriali di lungo termine tra i settori produttivi dei due Paesi.





Founded over fifty years ago in Emilia-Romagna, Rivit is now a benchmark in professional fastening solutions: from consumables to hand, hydro-pneumatic, and battery tools, to digital systems for industrial production process control. Thanks to the wide range of solutions presented in the Fasteners & Tools 11 catalog, Rivit is able to meet the needs of various sectors-from carpentry to automotive, shipbuilding to railways, sheet metal working to the mechanical industry-offering solutions that combine efficiency, safety, and ease of use.

A wide range of fastening solutions

Rivit's product range covers all fastening needs: five families of blind rivets (standard, structural, special, cartridge, and sealed), threaded rivet nuts in various materials, lock-bolts, and a wide range of accessories and components. These are complemented by a complete line of tools designed to meet every application need: from hand riveting tools to hydro-pneumatic and battery solutions, to innovative systems for digitization and process monitoring.

One of Rivit's flagship products is the RIV943, a high-performance hydro-pneumatic riveting tool, ideal for intensive use such as shipbuilding. With a pulling force of up to 32,000 N and the ability to independently adjust stroke and power, it guarantees precision and reliability. Its single-phase operation allows the deformation and unscrewing of the rivet nut to be completed in a single step, optimizing operating times and costs.

Another highlight of the range is the Controlriv GEN3, an electronic control system that allows real-time monitoring of fastening parameters,

ensuring the correct execution of each operation and automatically intervening in the event of anomalies.

The 700 Series battery riveting tools are powerful, lightweight, and versatile, designed to work with rivets up to 6.4 mm and rivet nuts up to M12. Brushless motors and high-capacity batteries ensure consistent performance even in hard-to-reach areas or where compressed air is not available. For more intensive applications, the 400 Series of hydro-pneumatic riveting tools guarantees robustness, speed, and precision on a wide variety of materials and thicknesses.

Innovation, quality, reliability. Being specialists in fasteners means not only supplying products, but also supporting customers throughout the entire purchasing process. This is why Rivit invests in a technical and commercial service capable of offering personalized advice and support at every stage of the process, from product selection to after-sales service.



Fincantieri's first "DEEP" underwater drone system was launched on October 23, 2025, at the Naval Support and Testing Center (CSSN) in La Spezia, Italy, in a demonstration mission. The event marks a milestone for Fincantieri in the field of underwater technology, confirming the group's leadership role in the underwater (subsea) sector.

The event

The event was attended by the undersecretary of State for Defense, the on. Matteo Perego di Cremonago, and the CEO and General Manager of Fincantieri, Pierroberto Folgiero.

In attendance were the Mayor of La Spezia, Pierluigi Peracchini, representing the Liguria Region; the Chief of Staff of the Liguria Region, Admiral (in aspettativa) Massimiliano Nannini; the Chief of Staff of the Italian Navy, Admiral Enrico Credendino; and the President of the Fondazione del Polo Nazionale della Dimensione Subacquea, Senator Roberta Pinotti. Representing Fincantieri were the President, Biagio Mazzotta; the Director of the Naval Vessels Division, Eugenio Santagata; and the Executive Vice President Underwater, Gabriele Maria Cafaro.

DEEP system

The DEEP system represents a cutting-edge

integrated solution for the protection, development, and maintenance of critical underwater infrastructure and port areas, while also performing environmental monitoring and protection activities.

The system was designed from the outset with a dual purpose, capable of meeting both civilian needs and defense and security applications.

This versatility allows this system to operate in heterogeneous contexts, offering high-value-added solutions for environmental and infrastructure protection, as well as operational support.

The platform consists of a network of underwater sensors for early warning (Early Warning System), a Command and Control Center for real-time operational management, a team of autonomous underwater vehicles (AUVs) capable of conducting missions at varying levels of autonomy, cooperation, and coordination, and an AI-based system dedicated to data analysis and processing.

An acoustic barrier (Early Warning System – EWS) that acts as an alarm system and is able to detect the presence of potential intruders in the monitored water volume and track their position.



The EWS is based on cutting-edge fiber-optic hydrophonic sensors and can be installed up to 100 km away from the asset to be protected. A team of autonomous underwater drones (AUVs) for the recognition of anomalies and potential threats and for mapping the seabed and infrastructure. The vehicles are equipped with acoustic, optical, and environmental sensors, as well as real-time computing capabilities. The command and control software (Underwater Management System – UMS) integrates and fuses data collected by the sensors and drones, enabling rapid and effective overall management of the solution.

An AI-based data analysis and recognition system, enabling accurate image processing and recognition of features on the seabed.

Underwater strategy

The launch of DEEP is part of the consolidation of Fincantieri's underwater strategy, where the group stands out for its ability to offer integrated, high-value-added solutions, thanks to a industrial supply chain and transversal skills brought together within the Underwater Technology Hub, which coordinates all activities related to civil, military, and dual-use systems through a single management team.

Thanks to this integrated approach, the com-

pany is able to ensure market presence and meet the most complex needs of private and institutional clients, consolidating its pioneering role and technological and industrial benchmark in the international diving landscape.

Subsea

The subsea sector today represents a key domain for security, energy, environmental observation, and underwater communications, with a global market estimated at approximately €50 billion annually and an accessible component for Fincantieri of approximately €22 billion annually.

Fincantieri intends to be a leading player in the development of this new strategic infrastructure, leveraging its ability to integrate complex skills and high-tech industrial assets.

Statement

Pierroberto Folgiero, CEO and General Manager of Fincantieri, stated: “The launch of DEEP is a concrete demonstration of our ability to increasingly push the boundaries of innovation. Today, we have validated an integrated system of unmanned underwater drones that represents an innovative and concrete solution to the protection of critical infrastructure using the best available technologies.



This achievement is the fruit of the work of an industrial supply chain of excellence, allowing us to anticipate market needs and position ourselves for the future.

We are proud to lead this transformation, which actively contributes to the security, growth, competitiveness, and technological autonomy of the country, as well as projecting us into global leadership in the underwater economy.”

The technical evolution to subsea

The new subsea technical scenario of Fincantieri is coming from some years ago with agreements and acquisition of companies, peoples, and investments. In technical aspect we can write that Fincantieri's underwater hub has already taken key strategic steps to assume the role of orchestrator through acquisitions and strategic partnerships, which have led to the creation of the new internal underwater hub to guide product and business development and offer a product portfolio capable of meeting market needs.

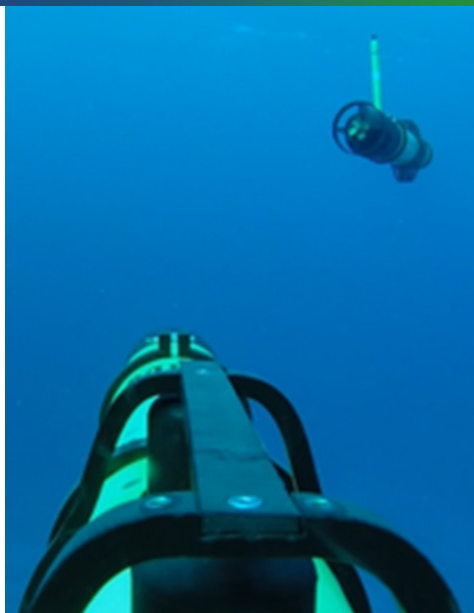
The Underwater Hub aims to act as a single point of entry for customers and promote synergistic technological development.

It brings together WASS Submarine Systems SpA, IDS – Ingegneria dei Sistemi SpA, Remazel Engineering SpA.

The Fincantieri Group, through IDS, an engineering company specializing in the development of high-tech products and services, in May 2025 announced the signing of a Memorandum of Understanding (MoU) with Graal Tech S.r.l. (Graal Tech), a company specializing in the design and construction of submarine mechatronic systems.

Through this agreement, signed by Matteo Marchiori, CEO of IDS, and Andrea Caffaz, CEO of Graal Tech, the two companies are launching a commercial collaboration on strategic objectives of mutual interest in the civil, military, and dual-use sectors.

The MoU marks the beginning of exclusive technological co-development activities for small and medium-sized unmanned underwater vehicles, as well as related control systems,



dynamic models, simulation platforms, payloads, and dedicated monitoring, measurement, and intervention equipment.

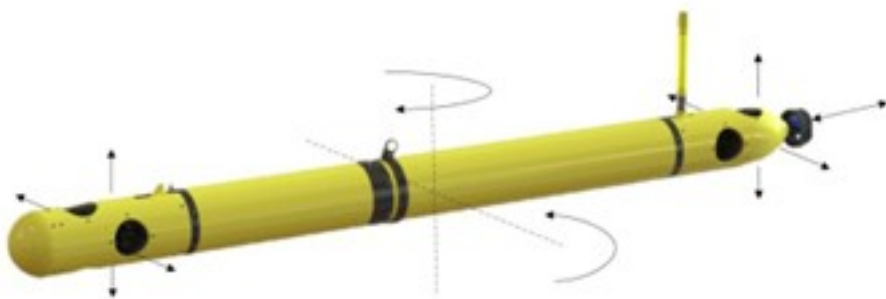
This transaction strengthens Fincantieri's capabilities in developing its underwater business, expanding its offering of technologically advanced products and consolidating its leadership in innovation for the maritime and underwater sector.

It also confirms its commitment to investing in technologies that can ensure competitiveness and safety in a business that is gaining increasing global geopolitical importance.

X-300 AUV

Presented at SeaFuture 2023 in La Spezia X-300 is a torpedo-shaped Autonomous Underwater Vehicle (AUV) designed by Graal Tech S.r.l., is capable of executing a wide variety of missions in the fields of O&G, defense and security, oceanography and environmental monitoring.

It is made up of a pair of carbon fiber cylinders connected to two terminating wet sections where steering and propelling thrusters are located, together with a bladder enabling variations of the vehicle buoyancy.



Generated from the Folaga experience, X-300 has the same payload modularity and open control system as Folaga, and exhibits the same maneuverability and the capability of multiple navigation modes, but is characterized by improved performance in terms of achievable speed, maximum operative depth and mission endurance.

Mission

The integration of a mission payload is a very simple task, thanks to the vehicle modular design. The hull is indeed constituted by two independent parts that can be easily detached, for enabling the insertion, in the middle of the vehicle, of a payload module, hosting the equipments of interest.

By designing the payload module in order to be neutrally buoyant and balanced, any sensor or underwater instrument, be it commercially available or custom-made, can be transported by this AUV without affecting its navigation parameters and without requiring any calibration operations.

Maneuverability

The control board (Arduino, Arm, x86) can be easily hosted in a payload module, with or without other equipment. A serial and a network link are available for connecting your board with the vehicle CPU.

A set of predefined libraries provides access to all the vehicle sensors and actuators and to the communication devices (the WiFi link on surface and the acoustic modem, available as an optional feature, underwater).

In this way Uapp (Underwater App) will get the

total control of the AUV and the operator will be in the condition of testing in the real underwater environment your developed GNC algorithms or your coordination strategies between multiple AUVs.

One of the main features of this AUV is its high maneuverability, obtained without any moving control surfaces.

The motion in the surge direction is produced by bi-directional rear thruster. Steering motions, in both vertical and horizontal planes, are instead made possible by 2 pairs of additional bi-directional thrusters placed, in crossed configurations, at the vehicle bow and stern. Conventional torpedo-shaped AUVs can execute maneuvers only above certain speeds, as the steering action is produced by the hydrodynamic lift given by thrusters and control surfaces.

On the contrary X-300, can rotate around its center even when the rear thruster is off and can translate, either horizontally or vertically. In addition the vehicle can also change its buoyancy, thanks to the presence of a ballast chamber in which water can be injected or ejected, and can control its hydrostatic equilibrium attitude through the internal displacement of the battery pack.

The combined use of buoyancy and attitude controls further enriches the vehicle motion possibilities, actually making X-300 a hybrid vehicle with the motion capabilities of standard self-propelled AUVs, remotely operated vehicles (ROVs), and even low power consuming oceanographic gliders.

Multiple Navigation Modes

The presence of a redundant actuation system, enable X-300 to dive, navigate and execute various manoeuvres in multiple modes, according with the mission peculiarities and needs.

Glider

If the points to be sampled are distributed on a wider volume, like what happens in many oceanographic missions, the glider mode is more convenient for prolonging the endurance. In glider mode the vertical propulsion is originated by changes of buoyancy, while the horizontal motion is produced by the hydrodynamic lift coming from wings that can be easily added in the middle of the vehicle. As a result, the vehicle moves along diagonal paths and consumes electric power only for executing changes of buoyancy and attitude. The rear thruster is never used. In addition, changes are executed only when the vehicle is at its minimum or maximum mission depth. During the whole ascending and descending phases no actuators are used. Profiler within environmental missions requiring the acquisition of samples taken from evenly spaced points of a 3D water volume, the vehicle navigates on surface with the GPS link to reach a point of interest and then it simply dives vertically with 0° pitch for profiling the water column. In this case both descending and ascending motions can be executed by using, either the vertical thrusters only (with the vehicle neutrally buoyant), or the ballast and the internal moving mass only, or a combination of the two previ-

ous ways, with the vertical propulsion provided by changes of buoyancy and the thrusters used for finely trimming the pitch angle.

Underwater navigation

Within missions requiring underwater navigation phases (like during an acoustic survey of the seabed), the vehicle moves as a standard AUV, using the rear thruster for propulsion, a combination of attitude and buoyancy controls for reaching a neutrally buoyant and balanced configuration, and the steering thrusters for maintaining the desired depth and controlling the pitch and heading angles during the navigation. Further, differing from any other AUV, the hovering capability and the possibility of translating enable X-300 to reach and maintain a predefined position, to land gently on a target on the seabed, and to take off, either with a vertical motion or with a combination of propulsion and vertical thruster. These compact AUVs (max 3 m long, under 50 kg in weight) are equipped with advanced payloads, including: Side Scan Sonar (SSS) for seabed monitoring, Forward Looking Sonar (FLS) for obstacle avoidance and target detection, optical cameras with LED systems multi-parameter probes for environmental monitoring modems and acoustic repeaters for localization and communication, Iridium/Silvus/Wi-Fi terminals for long-range data exchange. Onboard AI logic enables real-time anomaly detection, Automatic Target Recognition (ATR), and classification of potential threats, as well as environmental status monitoring (sound speed profiles, turbidity, presence of seagrass, or pollutants).



Thanks to their versatility, the X300 AUVs can be equipped with a fiber optic connection, providing real-time HD video in complex environments with precise maneuverability.

The DEEP core

As we can write DEEP concept is a evolution of X-300 AUV. The DEEP core is UMS – Underwater Management System. Developed by IDS, a Fincantieri subsidiary, the UMS is the cognitive and decision-making core of DEEP. In addition to ensuring effective and efficient mission management for unmanned vehicles, it also provides a comprehensive command and control platform for the underwater domain, capable of operating in environments without GPS

supervision through an intuitive human-machine interface. predictive logic and dynamic resource allocation further enhance mission effectiveness.

The command and control system can be integrated into a 20-foot ISO-standard container, equipped with heterogeneous communications (wired and wireless), ensuring secure connectivity (via encryption algorithms) with sensors and drones, and broadband/ low-latency satellite links to external command and control nodes.

Based on hardware redundancy and a micro-services software architecture, the UMS is reliable, scalable, and adaptable to specific

X-300 AUV



and with limited communications, integrating autonomous decision-making algorithms onboard unmanned vehicles. The modular and scalable design enables multi-domain interoperability, with real-time data exchange between naval and land-based command and control systems. The UMS supports multi-vehicle mission management, including planning, monitoring, task assignment, interaction with LARS (Launch and Recovery Systems, produced by Remazel, a Fincantieri subsidiary) for the deployment, recovery, and recharging of UUVs (Unmanned Underwater Vehicles), ensuring the effective use of fleets in extended or distributed missions. Through multi-source data fusion, the UMS compiles and maintains situational awareness, simplifying operator

operational needs.

ATR

The drones are equipped with advanced artificial intelligence algorithms, which enable accurate image processing and Automatic Target Recognition (ATR). This advanced technology uses sensors and algorithms to autonomously detect, classify, and identify specific objects (targets) in real time.

Potential

DEEP is designed for continuous evolution and scalability. In addition to underwater protection, it can integrate SAND – Surface Advanced Naval Drone, which serves as a mobile hub for AUV deployment, a communications gateway, and a soft/hard-kill drone against asymmetric threats.



DEEP can integrated also a dedicated Launch and Recovery Systems (LARS) for optimized deployment, recovery, and maintenance of the UUV fleet and the OMEGA360 radar, an advanced X-band volumetric radar with digital beamforming, capable of detecting, tracking, and classifying low-signature airborne threats, including NATO Class I drones (i.e., nano, micro, and mini types), in coastal and maritime scenarios. This adaptability makes DEEP a multi-domain protection framework, extending its effectiveness to surface and airborne threats.

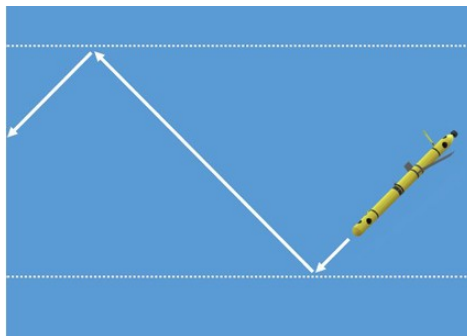
Applications

DEEP is applicable to a wide range of operational contexts, from the protection of critical infrastructure (pipelines, cables, offshore platforms, ports) to environmental monitoring. It provides 24/7 surveillance through passive detection of suspicious activity, triggering automated or operator-managed responses via UMS. Based on the rules of engagement, AUVs are used to track, identify, and neutralize intruders, or to conduct environmental and infrastructure inspections. In addition to security tasks, DEEP supports environmental resilience missions: seabed mapping, monitoring of sensitive habitats, detection of morphological changes, and pollution risk assessment. Through real-time mission adaptation, the UMS ensures operational continuity, dynamically coordinating assets, and ensuring both safety and sustainability in maritime domains.

Fincantieri in the Underwater Sector

In a world where 95% of global orders for new ships have now shifted from the West to the East, shipbuilding is once again a geopolitical priority, ensuring security and sovereignty amid a global race for defense capabilities.

Fincantieri anticipated these trends, emerging as the largest shipbuilder outside of Asia and a global leader in complex vessels. In fact, the Group is evolving its business mix to support growth and profitability, with the underwater sector doubling its annual revenues by 2027 and expecting further growth in the years thereafter, higher margins, and stronger cash conversion thanks to new technologies. In the defense market, high-probability commercial opportunities have been identified, highlighting the significant potential that Fincantieri is well-positioned to seize. The company has the flexibility to manage the allocation of production capacity across its divisions. In Europe, Fincantieri could nearly double its naval vessel production capacity by leveraging its hybrid shipyards in Italy, as well as its operations in Romania and Vietnam. In the United States, the company is able to scale up its operations to support both current programs and new opportunities (e.g., icebreakers and cable-layers) and can leverage its distinctive localization capabilities to pursue regional export opportunities. These strengths allow Fincantieri to effectively meet growing demand in the military sector thanks to its versatile global footprint. In the underwater sector, Fincantieri is leveraging its unique expertise in conventional technologies (e.g., submarines, drones, sonar) to expand into a broader underwater ecosystem, combining conventional products with innovative technologies, extending applications beyond defense into dual-use and commercial domains, and providing comprehensive and innovative solutions.



Meet Italy at SMM

Hall B3.OG,
Stand 302

Discover
the Strength
of Italian Maritime
Industry

Italy is committed to innovation and sustainability in the maritime industry. As a governmental agency for foreign trade, the Italian Trade Agency (ITA) is tasked with promoting Italy's economic and trade relations worldwide and supporting Italian manufacturers in the international marketing of 'Made in Italy' products. Twenty-two companies will showcase forward-looking solutions for the international shipbuilding industry at the Italian Trade Agency's joint stand at SMM. At the Italian Trade Agency's (ITA/ICE) joint stand at SMM (Shipbuilding, Machinery & Maritime Technology), 22 selected exhibitors will showcase innovative solutions for the maritime industry from 1 to 4 September – ranging from sustainable propulsion technologies to high-tech components for shipbuilding.

Fiore's Statement

"SMM provides us with an ideal platform to showcase the innovative strength of the Italian shipbuilding, marine technology and maritime supply industry to an international audience of industry professionals and, in particular, to further strengthen economic cooperation with our most important trading partner, Germany," said Ferdinando Fiore, Director of the Italian Trade Agency in Berlin. The participating exhibitors cover the entire value chain, ranging from long-established companies to newcomers on the international stage, and from small family-run businesses to up-and-coming medium-sized enterprises. Their portfolios include sustainable environmental and energy systems, components for navigation, communication and maritime safety, as well as innovative materials, propulsion solutions and technical equipment for modern shipbuilding.

Italy maintains its leading position in European shipbuilding

Italy's maritime sector has recorded continu-

ous growth since 2014 and has remained stable despite the pandemic. Total turnover, which stood at 2.48 billion euros in 2014, rose to around 8.6 billion euros in 2025.

The majority of total turnover comes from domestic production, with around 78 per cent of production destined for export in 2025. With more than 1.13 million employees, the maritime sector is one of Italy's key industries. The shipbuilding and maritime mechatronics sector alone employs around 180,000 people and is characterised by a large number of small and medium-sized enterprises.

Italy is Europe's leading shipbuilding centre in terms of turnover

With a net turnover of 13.6 billion euros, Italian shipyards once again generated the highest turnover in the sector in Europe in 2024.

According to Eurostat, this meant that Italy remained in first place among all EU Member States, ahead of France with 11.6 billion euros. The Italian shipbuilding industry is also among the most productive in Europe in terms of labour productivity: net turnover per employee remained above the German industry average in 2024.

Exhibitors at the italian trade agency stand

ALFA WATER S.R.L., A.T.P. - SOCIETA' PER AZIONI O A.T.P. - S.P.A., A.W.S. CORPORATION S.R.L., BI.MAR. S.R.L., BRANDONI S.P.A., CABOL FLUID ENGINEERING S.R.L., CEL COMPONENTS S.R.L., COELMO S.P.A., DAVI - PROMAU S.R.L., F.D.U.E.G. S.R.L., GAMMA DIESEL DI DELBARBA FRANCO S.R.L., GIAMPI S.R.L., GICOM S.R.L., INTERSEALS S.R.L., MASE GENERATORS S.P.A., PALAZZOLI S.P.A., PMP DI OLGATI GIUSEPPE, SAIM S.P.A., SANITRADE S.R.L., SCHIAVETTI ENZO S.R.L., SELMAR TECHNOLOGIES S.R.L., TEMPORITI S.R.L.



Il trattamento delle acque mediante la tecnologia ad osmosi inversa rappresenta una soluzione universalmente applicabile in tutte le situazioni in cui si necessita di migliorare la qualità dell'acqua rendendola adatta agli usi previsti. I dissalatori sono particolarmente usati in ambito navale e di nautica da diporto. Una delle tecnologie utilizzate per realizzare dissalatori è quella a Osmosi Inversa.

Selmar Technologies ha adottato questa tecnologia fin dagli anni '80. Con un continuo impegno nella ricerca e nello sviluppo, nella progettazione e nella produzione di impianti RO (Osmosi Inversa) la società dispone di un'esperienza specifica di grande valore, garantendo competenza e professionalità in un settore in cui l'analisi precisa delle specifiche esigenze rappresenta la chiave del successo per ottenere i migliori risultati in termini di efficienza, qualità e risparmio energetico. I dissalatori con tecnologia ad osmosi inversa sono universalmente impiegati nel settore nautico e navale per ottenere acqua dolce da quella di mare, purificando acque marine, salmastre o comunque acque grezze non direttamente fruibili per le loro caratteristiche.

Funzionamento

Indipendentemente dalle dimensioni e dalla portata dell'impianto, un dissalatore RO (Reverse Osmosis) svolge la sua funzione attraverso tre stadi fondamentali: la prefiltrazione

e/o il pretrattamento chimico dell'acqua grezza, la pressurizzazione e il flusso attraverso una membrana che realizza la cosiddetta osmosi inversa e la separazione dei sali.

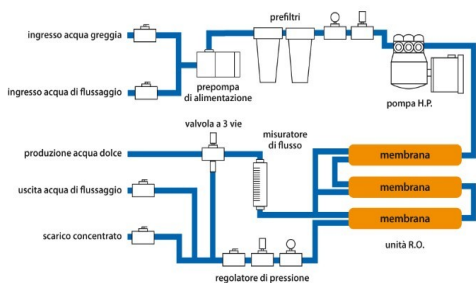
Prefiltrazione

La prefiltrazione in ingresso elimina tutte le particelle in sospensione nell'acqua e ne riduce la torbidità, mediante un passaggio attraverso dei filtri che le trattengono fisicamente. Sono generalmente utilizzati dei filtri (di plastica), si può ricorrere ai filtri a quarzite quando si deve trattare un'acqua particolarmente torbida.

Questo processo preventivo, con il quale si realizza un primo miglioramento della qualità dell'acqua, ha anche l'importante funzione di evitare che le particelle sospese, affluendo direttamente all'unità ad osmosi inversa, ne pregiudichino velocemente l'efficienza e l'efficacia.

Pretrattamento

Quando necessaria o opportuna, può essere aggiunta una sezione di pretrattamento chimico, per prevenire la formazione di incrostazioni e fouling inorganico nelle membrane dell'unità ad osmosi inversa grazie all'impiego di appropriati additivi chimici (antiprecipitanti). Tale pre-trattamento può essere realizzato con soluzioni differenti in base al tipo di acqua da trattare, avendo come obiettivo principale quello di rendere l'acqua greggia idonea al passaggio sulle membrane osmotiche.



Osmosi

Si tratta di un principio naturale secondo cui quando due soluzioni di differente concentrazione salina sono separate da una membrana semipermeabile, l'acqua passa dalla soluzione meno concentrata a quella più concentrata.

Se alla soluzione più concentrata è applicata una pressione esterna, il processo si inverte dando luogo al fenomeno dell'osmosi inversa (l'acqua passa dalla soluzione più concentrata a quella meno concentrata).

Pompa

La pompa HP (High Pressure) imprime all'acqua la pressione corretta necessaria per l'immissione nella sezione ad osmosi inversa. Questa pompa (o gruppo di pompe in impianti di medio-grandi dimensioni) ha caratteristiche e prestazioni che dipendono dal tipo di acqua da trattare (marina o salmastra) e dalla capacità di produzione richiesta.

Osmosi Inversa

L'unità ad osmosi inversa separa i sali ancora presenti nell'acqua, generando una determinata percentuale di acqua dolce – il permeato – e scaricando il rimanente concentrato.

Il rapporto tra permeato e concentrato fornisce una misura dell'efficienza dell'intero processo, che aumenta al crescere delle dimensioni dell'impianto.

La sezione RO può essere composta da una o poche membrane in un singolo vessel (il contenitore che le alloggia) nei piccoli dissalatori. L'acqua dolce così ottenuta può essere ulteriormente trattata, se necessario, con una sterilizzazione UV, che abbatte definitivamente la carica batterica e patogena in genere; con una

post-filtrazione a carboni attivi, per migliorarne le caratteristiche organolettiche; con un post-trattamento chimico (la clorazione, per esempio), per una maggiore sicurezza di conservazione nei serbatoi di stoccaggio.

Centralina elettronica

L'intero processo viene gestito da una centralina elettronica e da una strumentazione di comando e controllo manuale o automatica, in funzione della complessità della macchina o dell'impianto.

Lavaggio

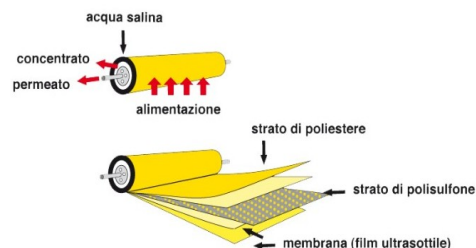
Il dissalatore ha bisogno di un sistema complementare di flussaggio (manuale o automatico), che serve per procedere a periodici "lavaggi" con acqua dolce, e garantire efficienza e durata nel tempo della macchina e dei suoi componenti.

La scelta di un dissalatore in configurazione standard o la progettazione e la produzione di un impianto specifico sono sempre subordinate alla capacità di cui si ha bisogno, alle caratteristiche dell'acqua grezza da trattare e alla qualità di acqua dolce che si vuole ottenere

Un esempio

All'interno del catalogo della società, che è molto ampio, abbiamo scelto come esempio la serie Basic, che ci sembra quella più adatta alla nautica da diporto di dimensioni contenute, quella che si definisce, magari a torto, la piccola nautica.

La serie Basic è di tipo modulare e di dimensioni molto contenute, a basso consumo energetico. È disponibile in due modelli con produzione di acqua dolce di 30 litri/h e 60 litri/h. La struttura è in acciaio inox e l'installazione è molto semplificata. La società è presente a SMM 2026.



Palazzoli permette l'evoluzione nella distribuzione dell'energia in bassa tensione e dell'illuminazione, col proposito di lasciare un'impronta nel mondo elettrotecnico e illuminotecnico. La società è altamente specializzata nel settore sia per gli impianti che dei materiali di riferimento. Chiarezza della funzione, semplicità del progetto, qualità della manifattura e eccellenza del servizio guidano le scelte Palazzoli. Le due divisioni dedicate "sistemi elettrici" e "illuminazione" realizzano prodotti anche su specifica del Cliente, per i settori Industria, ATEX, Infrastrutture e Navale. L'azienda è certificata: ISO9001, ISO14001, ISO45001. Alcuni esempi realizzativi concreti e reali, fanno capire molto della qualità e della competenza della società di Brescia anche nel settore nautico e portuale.

Porto GO Imperia

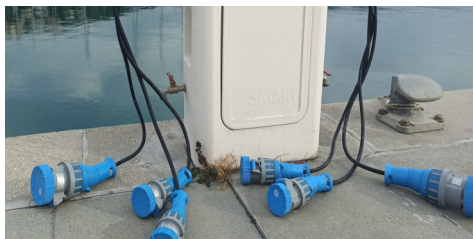
Il nuovo porto GO della cittadina del ponente ligure è ubicato nel cuore della città e accoglie fino a 1300 imbarcazioni private o commerciali tra i 5 e i 90 m, con fornitura di corrente elettrica fino a 630 ampere. Il Porto di Imperia, da anni, ottiene il riconoscimento della Bandiera Blu per la tutela ambientale.

Problematiche relative al prelievo di energia elettrica nel porto

L'impianto elettrico del porto deve assicurare l'incolumità, ovunque sul pontile, ai proprietari, ai passeggeri e al personale di bordo delle imbarcazioni, assicurare robustezza ed impermeabilità, assicurare per lungo tempo una connessione elettrica sicura ed affidabile senza soffrire le sollecitazioni del corrosivo ambiente marino.

La soluzione

Con la presa ROTOR di Palazzoli sono garantite la salute e sicurezza di chi che preleva energia,



perché i suoi alveoli sono in tensione solo a spina inserita e interruttore in posizione "1". La presa in questione è a standard IEC309 e si connette senza adattatori con qualunque spina industriale sia dotata l'imbarcazione. La presa ha una resistenza agli urti IK09 (resiste agli impatti con un'energia fino a 10J), in sostanza è anti-schiacciamento. Il grado di protezione IP66/IP67 rende la presa totalmente isolata dalla polvere e protetta dalle onde marine. ROTOR ha gli alveoli nichelati per avere un'alta resistenza ad usura e corrosione e garantire nel tempo la migliore connessione elettrica. La presa è dotata di un interruttore sezionatore che permette di ricaricare le batterie di bordo ed effettuare lavori di manutenzione in piena sicurezza e affidabilità.

Illuminazione di Porti

Il porto di Marghera (Ve) è una delle più grandi zone industriali costiere d'Europa, si estende su una superficie complessiva di oltre 2.000 ettari di cui 400 ettari occupati da attività industriali, commerciali e terziarie, 350 ettari sono occupati da canali navigabili e bacini, 130 ettari riservati al porto commerciale. In un contesto del genere gli impianti di illuminazione (zone portuali) devono tener conto di un alto rischio incidenti, di consumi energetici elevati, della presenza di sale, salsedine e umidità, che provocano la corrosione degli impianti. La società Palazzoli ha realizzato l'impianto in questione utilizzando i proiettori XTIGUA.



Porto di Marghera

I proiettori XTIGUA della società Palazzoli installati sul porto di Marghera, hanno un flusso luminoso pari a 48800 lumen, che garantisce alta visibilità, fattore che si traduce in maggiore sicurezza.

L'illuminazione corretta permette di rilevare più facilmente gli ostacoli e garantisce maggior visibilità per lo spostamento merci, attività quotidiana di un porto industriale. Tra i principali vantaggi dei proiettori installati è il ridotto consumo energetico.

Assorbimento ridotto

I proiettori installati assorbono meno energia dei tradizionali proiettori a scarica a parità di emissione luminosa.

L'illuminazione di porti con proiettori di questa tipologia garantisce efficienza di 130 lumen/watt ed una durata di 230.000 ore, fornendo un risparmio considerevole nel tempo e ad un veloce ritorno dell'investimento.

Salsedine

Per far fronte al problema della salsedine, i proiettori XTIGUA hanno classe di corrosione C5-M (la più elevata), ciò permette di illuminare nel tempo in sicurezza le aree costiere dotate di elevata salinità.

Proiettori a Led

I proiettori led di Palazzoli hanno un sistema di gestione termica ad alta dissipazione che mantiene inalterati nel tempo i semiconduttori. I proiettori sono collaudati al 100% con cicli di burn-in di 24h.

Le lenti anti-Ingiallimento proprietarie Palazzoli, sono in PMMA. I sistemi di fissaggio dedicati, consentono l'utilizzo dei proiettori Led in

ogni situazione installativa.

La varietà di ottiche impiegate consente la massima versatilità in soluzioni personalizzate. La gamma performa con apparecchi dalla durata di vita superiore alle 230.000 ore. In particolare i proiettori XTIGUA sono proiettori di illuminazione ad alto flusso luminoso, particolarmente adatti per l'illuminazione di impianti sportivi, grandi aree, svincoli e rotatorie.

La resistenza del proiettore è garantita da un corpo in pressofusione di alluminio a bassissimo contenuto di rame con trattamento anticorrosione e da un diffusore in vetro temperato extra chiaro di spessore 4 mm.

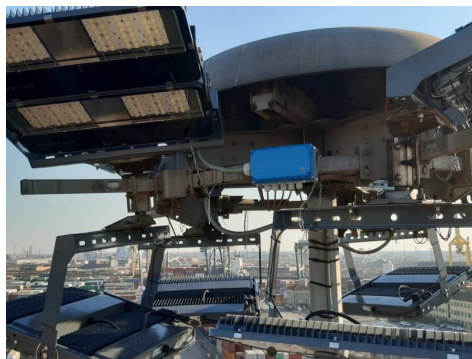
Sono disponibili 4 taglie di proiettori (M, L, XL, XXL) fino ai 120.000 lm reali in uscita.

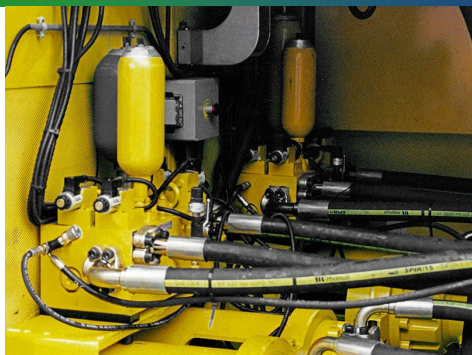
L'alimentatore garantisce un'ottima qualità della luce, con un flicker <1%, che permette di ottenere eccellenti videoriprese di sorveglianza. I Led di ultima generazione del tipo CSP (Chip Scale Package) sono in grado di mantenere il flusso luminoso nel tempo con una durata superiore alle 230.000 ore.

Nella gamma sono presenti 2 fasci simmetrici e 4 asimmetrici per realizzare soluzioni che si integrano alla perfezione nei diversi progetti illuminotecnici.

La gamma comprende versioni ad alte temperature fino a +70°C. Questi proiettori dispongono di una vasta gamma di accessori per l'installazione a parete, su palo e torre faro in modo da adattarsi facilmente alle diverse esigenze installative. È disponibile inoltre una griglia frontale di protezione dell'apparecchio.

La società Palazzoli è presente a SMM 2026.





Nata nel 1980 da precedenti esperienze nel settore oleodinamico, Cabol si è imposta all'attenzione generale per l'ideazione e la produzione di centraline e cilindri oleodinamici di alta qualità.

L'azienda opera nei principali settori industriali come gli impianti per ceramica, plastica, lamiera, legno, navi, siderurgia e movimentazione in genere.

La società di Modena ha sviluppato un notevole know-how anche nei settori dove trova applicazione una oleodinamica evoluta: nei laboratori universitari, ad esempio, o in ambito militare, o banchi test, dove vengono richiesti cilindri e servo cilindri dalle speciali caratteristiche tecniche e dalle altissime prestazioni.

Continua innovazione

Si tratta di un'azienda e all'avanguardia che è ancora oggi in fase di crescita: nelle dimensioni della sede, nel numero degli addetti ma anche nella quantità di nuove idee che continua a sviluppare.

Nei settori elencati essa è partner dei maggiori produttori e costruttori di macchine e impianti, ma anche negli altri settori di riferimento l'azienda sta ampliando le sue quote di mercato grazie a una continua ricerca volta a innovare e a rendere migliori i prodotti.

Prodotti

Citiamo alcuni esempi di prodotti. In particolare indicheremo cilindri idraulici.

Questi cilindri idraulici doppio effetto inox sono disegnati con forme e dimensioni su richiesta dei vari clienti. Sono prodotti con materiali INOX AISI 316, AISI 431, AISI, 630, SAF

2205. La resistenza in nebbia salina può arrivare a 1000 h in nebbia salina secondo ISO 9227 NSS.

Gli steli di questi cilindri idraulici sono studiati per inglobare lo snodo direttamente nello stelo senza nessuna saldatura ne sistema di fissaggio. Le flange di chiusura dei cilindri idraulici sono fissate con viti autobloccanti e sono avvitate direttamente al corpo cilindro.

Questi cilindri idraulici doppio effetto inox possono lavorare con pressioni fino a 800 BAR e hanno caratteristiche di robustezza e resistenza all'usura.

Trovano abituale impiego in ambito navale, militare.

Cilindri azionati a unità elettroidraulica

Tra gli altri prodotti presenti nel catalogo indichiamo altri cilindri idraulici che vengono azionati da un'unità elettroidraulica di potenza integrata sul cilindro. Questa soluzione prevede l'eliminazione delle tubazioni e raccordi normalmente presenti tra l'unità di potenza e il cilindro idraulico con le relative perdite potenziali di fluido. Il cilindro si comporta come un normale asse lineare elettrico unendo i vantaggi dell'enorme potenza di spinta dei cilindri oleodinamici. Le versioni base più economiche prevedono un motore trifase corrente alternata 380/50/60 Hz azionabile sia direttamente che con inverter. Sono poi disponibili cilindri idraulici speciali che azionando una cremagliera e relativo pignone trasformano il moto da lineare a rotativo.





Possono eseguire rotazioni da 0-360° con coppie fino 4000 daN. A richiesta sono equipaggiabili con valvole over-center, frenature di fine corsa ed encoder di posizionamento. Questi cilindri elettroidraulici fanno parte della gamma Evo-C3.

Attuatori rotanti

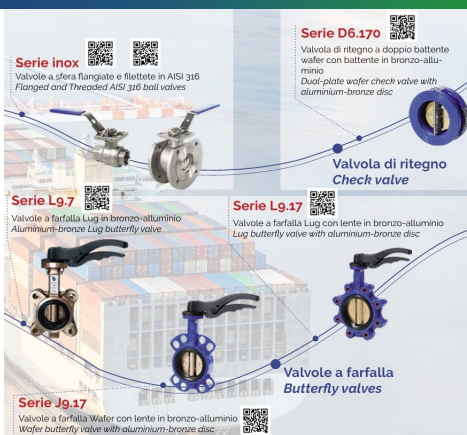
Questi attuatori rotanti sono ricavati da servocilindri idraulici speciali che azionando una cremagliera e relativo pignone trasformano il moto da lineare a rotativo. La competenza

acquisita nella costruzione di attuatori lineari ha portato la società a sviluppare attuatori rotanti che in parte utilizzano gli stessi componenti. E disponibile una serie che può eseguire rotazioni fino a 270° con 300 daN specifica per i meccanismi nei settori militari e navali.

Snodi sferici di accoppiamento

Gli attuatori rotanti idraulici Cabol possono montare frenature di fine corsa, sensori di fine corsa ed Encoder assoluti di posizione. Si tratta di snodi sferici di accoppiamento a gioco nullo che grazie alla loro struttura compatta possono essere utilizzati su tutte le tipologie di servomotori a qualunque valore di frequenza prestabilito in fase progettuale. Possono essere collegati sia allo stelo che ai corpi dei cilindri. Sono poi disponibili a catalogo blocchi personalizzati ricavati da ghisa, acciai di diversa tipologia e leghe di alluminio. Possono alloggiare valvole di varia tipologia sia a piastra che cartuccia. Le superfici sono opportunamente disegnate per il montaggio su cilindri idraulici o per il collegamento a flange SAE e relative tubazioni. La società produce anche centrali oleodinamiche di potenza per il comando dei vari attuatori. Utilizzano serbatoi fino a 2000 Lt e motori fino 100 Kw con la possibilità di integrare gruppi valvole ed unità di raffreddamento.





Brandoni Valves

Brandoni Valves offers a complete range of valves designed for marine, offshore, and sea-water applications, where corrosion resistance, strength, and reliability are essential requirements.

Each product is engineered to deliver long-lasting performance even under the most demanding conditions.

Shut-off Valves

Our range includes ball valves and butterfly valves, manufactured from high-quality materials such as bronze, aluminium bronze, stainless steel, and ductile iron.

The ball valves are available in the following series: B2.3 (bronze) and B2.7 (aluminium bronze), compliant with EN558/1-14 and ANSI B16.10#150 standards, available in full bore and reduced bore designs, with PN 6/10/16/ANSI 150 flanges and, on request, JIS drilling, in sizes DN 15-250.

The stainless steel ball valves are available in flanged, wafer, and threaded two- and three-way versions, offering maximum installation flexibility.

The J9 and L9 butterfly valve series are available in wafer and Lug types, with EN 558/1-20 face-to-face dimensions and PN 6/10/16/ANSI 150 drilling (JIS on request), covering sizes DN 40-400.

Check Valves and Rubber Joints

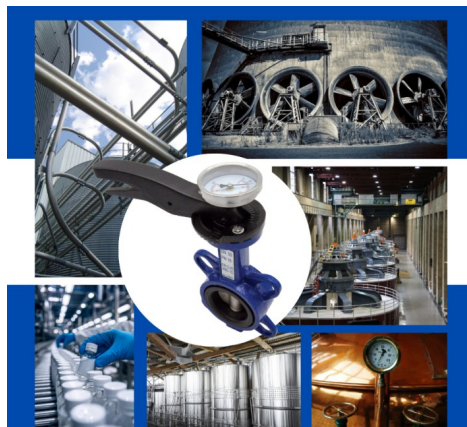
For non-return applications, the company

offers the double-door wafer check valve, featuring a ductile iron body and aluminium bronze discs, ensuring compactness and reliable backflow prevention.

The range is completed by rubber expansion joints, with flanges and aluminium bronze fittings, ideal for absorbing vibrations and compensating for thermal expansion.

Quality and Certifications

All valves are designed in compliance with the main international safety and environmental standards. The construction materials (castings) are approved according to Lloyd's Register 3.2 certification. Upon request, the finished product can be tested under the supervision of major certification bodies such as RINA, Lloyd's Register, Bureau Veritas, DNV and others. Reliability, quality, and innovation.

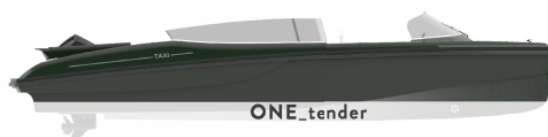
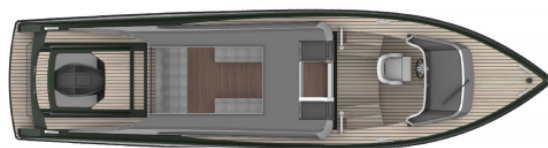


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Draft	0,37 m
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Engine	max 300 HP
Crew	12
Cat.	CE-C



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Da 30 anni la società è presente in un settore in costante evoluzione, quello dei pannelli industriali. Innumerevoli combinazioni per infinite applicazioni, un risultato raggiunto esercitando l'arte della sperimentazione.

CEL Components è un interlocutore attendibile, esperto ed efficace, con il quale affrontare gli impegni, i cambiamenti, che la naturale evoluzione del lavoro quotidiano può mettervi di fronte.

Le applicazioni sono rivolte a vari settori. I pannelli sandwich e compositi sono di utilizzo comune. Le loro caratteristiche li hanno resi essenziali in una moltitudine di applicazioni.

Sono stati, e continuano ad essere, la chiave di volta di tanti progetti negli ambiti più disparati. Uno dei settori, uno dei più importanti è quello per il settore marittimo

Il settore Marittimo

La società fornisce materiali certificati al fuoco per il settore marittimo, che abbinano leggerezza, solidità e raffinata estetica.

Paratie ed arredi per interni sono quanto più leggeri possibile ma con resistenze meccaniche di buon livello, senza trascurare la qualità estetica, la gamma delle finiture e la resistenza strutturale.

Queste in estrema sintesi le caratteristiche principali dei pannelli a nido d'ape e sandwich certificati che CEL Components può produrre su misura e fornire anche con particolari lavorazioni o finiture.

Cantieri nautici, progettisti e artigiani utilizzano i pannelli sandwich per numerose applicazioni.

Ad esempio: paratie strutturali, paratie divisorie, pannelli per l'insonorizzazione, pavimenti per locali tecnici, arredamento, pagliolati e supporti per i pannelli solari.

Compoce® ALP

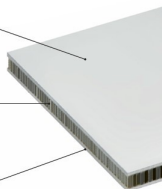
Composizione del pannello

PELLI IN ALLUMINIO

Spessore mm. 0,5 - 0,8 - 1 (standard)

ANIMA

Aleolare in polipropilene



Su richiesta: • altri spessori,
• leghe (speciali) trattamenti e preverniciatura colori RAL.

Prodotti certificati

Per meglio soddisfare le necessità del settore nautico, la società ha deciso di intraprendere la strada della certificazione di alcuni pannelli, ottenendo prodotti di alta qualità applicabili singolarmente o combinati nelle varie applicazioni nautiche.

Le normative internazionali IMO prevedono vari tipi di certificazione: dall'incombustibilità alla bassa propagazione di fiamma.

Il nido d'ape di alluminio è stato certificato incombustibile, mentre i pannelli sandwich COMPOCEL AL FR, ALUSTEP F e ALUSTEP FN hanno ottenuto la certificazione IMO MED Mod. B e D per bassa propagazione di fiamma. In aggiunta, il COMPOCEL AL FR è stato testato anche per il PARATIA C, ottenendo la certificazione grazie all'impiego di colle CEL anch'esse certificate MED.

Grandi navi da crociera

Le grandi navi da crociera, i traghetti veloci e gli aliscafi devono garantire ai passeggeri sicurezza e comfort.

Per rispondere a queste esigenze la società offre prodotti certificati dalle elevate prestazioni e di facile utilizzo, oltre che dal peso estremamente contenuto.

Questi prodotti possono avere ottimi comportamenti al fuoco, come "COMPOCEL AL FR", "ALUSTEP F" "ALUSTEP FN", o avere caratteristiche di fono assorbimento come i pannelli forati.

Nautica da diporto e design funzionale

I pannelli sandwich sono estremamente versatili e ben si sposano con le esigenze della nautica.

Leggerezza, alte prestazioni e la ricerca di comfort di bordo fanno sì che le strutture sandwich siano sempre più apprezzate ed impiegate sia nella cantieristica da diporto sia negli yacht e mega yacht di lusso.

Inoltre, da sempre impegnati nelle buone pratiche per un minore impatto ambientale proponiamo grazie alla tecnologia del PETSTEP un'opzione green senza rinunciare a proprietà meccaniche e di leggerezza.



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Founded in 2008, the family-owned Romeo Marine shipyard has been delivering exceptional superyachts to discerning clients for more than two decades, from 50-metre-plus custom new-build projects to extensive refits, rebuilds and fit-outs.

It has experience in steel and aluminium and offers an expert in-house team of 500 spanning everything from engineering design to plate-cutting, painting and interior finishing. Currently the largest shipyard of its kind in the Middle East Gulf Region.

Monaco Yacht Show 2026

The Romeo 55 meter superyacht from the Dubai-based shipyard Romeo Marine is gearing up for her global debut to Monaco Yacht Show 2026.

Striking in her profile, seductive in her interior style, and superlative in her engineering and finish, the Romeo 55 combines multifaceted deck areas with a sublime, understated ultra-luxe Italian design interior from Pulina Exclusive Interiors, while vast expanses of glass - including double-height glazing in the aft superstructure - flood the interiors with light and

ensure continuous guest connection to the environment and the sea.

The yacht, which features a steel hull and aluminium superstructure, draws on two decades of Romeo Marine's expertise in yacht fit-out, refit and rebuild, and more than 40 years of the wider Romeo Interiors Group's experience in ultra-high-end interiors and fit-out, a 780 GT yacht that has been conceived and crafted for unparalleled experiences in the world's most coveted cruising grounds.

Inspired by nature

Central to the Romeo 55's design philosophy is an appreciation of - and an homage to - the language of nature. "The inspiration behind the Romeo 55 emerged from a reflection on nature's quiet ability to shape both landscape and emotions" confirms Alessandro Pulina, Founder at Pulina Exclusive Interiors. "We were fascinated by the traces left by water, wind and time upon the shoreline. These natural gestures became the foundation of the design language, and we sought to create an environment that feels as though it has been gently shaped by nature itself."





One deck up, the upper saloon serves as the yacht's most convivial social environment, designed for entertaining and shared experiences. Seamless connection with the upper aft deck and a relaxed yet sophisticated atmosphere mean guests can enjoy conversation, dining and panoramic views at any time of the day or night. A dedicated bar, games table and a concealed TV further enrich the experience. A central feature guest stair rises through the yacht snaking around a glass guest elevator, further enhancing ease of movement between decks and creating a signature welcome statement for guests arriving on the yacht via the guest lobby.

Mediterranean influence

Pulina Exclusive Interiors developed a concept for the yacht inspired by a private residence shaped by the atmosphere of a Mediterranean coastal villa. "Rather than drawing from traditional yacht design references, the concept embraces the comfort, elegance and emotional quality of residential living," offers Alessandro Pulina. "Influences from coastal landscapes, Mediterranean light and a contemporary architectural approach are translated into a sculptural and sophisticated interior environ-

ment." The style the studio developed is defined by a sophisticated composition of wood veneers, natural stone, leather and refined metal details. Mahogany veneer plays a particularly important role throughout the yacht, bringing depth, warmth and a distinctive character, while bespoke parquet flooring reinforces the yacht's strong residential identity. The natural marbles and stones are used as sculptural elements, introducing texture, luminosity and a sense of permanence. The carefully selected leathers and metallic finishes add richness and refinement, enhancing the tactile quality of the spaces.





Nature-inspired curves and sculptural details create an immersive and harmonious guest experience, while the light, contemporary palette emphasises the colours of the sea, sky and coastlines beyond the floor-to-ceiling windows. The result is a refined and sophisticated interiors that is both authentic and timeless.

Carefully integrated design features strengthen the connection with the sea and maximise the quality of the onboard experience. From the main aft deck to the sun deck, the exterior environment unfolds as a sequence of spaces dedicated to relaxation, entertainment, well-being and contemplation.

Aside from the extensive use of glass, sculptural details in the deck-heads inspired by the movement of water ensure the eye is drawn toward the sea beyond.

The expansive outdoor areas serve a variety of needs and functions, from the private balconies of the owner's cabin to the generous alfresco dining and lounge areas on the main and upper decks.

Up top, the elevated sun deck offers an aft spa pool and sun-pads, dedicated fitness area, cinema set-up, bar, and an inside/outside panoramic sky-lounge with giant opening skylight

to augment the open-air feeling.

A private waterfront residence

The first yacht features are prodigious internal volumes, with an emphasis not only on extensive use of glass but also on creating the luxury of airy space. The full beam owner's suite forward on the main deck, for example – conceived as a private waterfront residence – features a double-height deck-head with skylight, plus a contemporary styled owner's study, extensive sleeping quarters, his-and-hers ensuite and drop-down balconies on both sides of the yacht.

Five generous VIP and guest suites on the lower deck are complemented by beautifully conceived main and upper saloons, each featuring convivial and flexible furniture arrangements that encourage social living while allowing easy transition to more formal entertaining.

The main deck also offers interior dining, with a table set forward in the saloon, connected to the aft seating area but separated by a low, curvaceous sideboard.

Indeed, circulation throughout the yacht was given particular attention, ensuring flow, visual continuity and seamless transition between interior and exterior environments.



Combined, these materials create an atmosphere of luxury where craftsmanship, materiality and architectural elegance come together in a highly personal experience.

Alessandro Pulina's statement

"At the heart of the project lies the philosophy of Dolce Vita – not as a lifestyle of excess, but as an invitation to slow down, reconnect with beauty and experience luxury through emotion, serenity and meaningful moments" Alessandro Pulina says "The Romeo 55 was conceived as a sanctuary at sea – a place where architecture, craftsmanship and nature coexist in perfect harmony, allowing guests to feel simultaneously protected, inspired and connected to the world around them."

Engineering

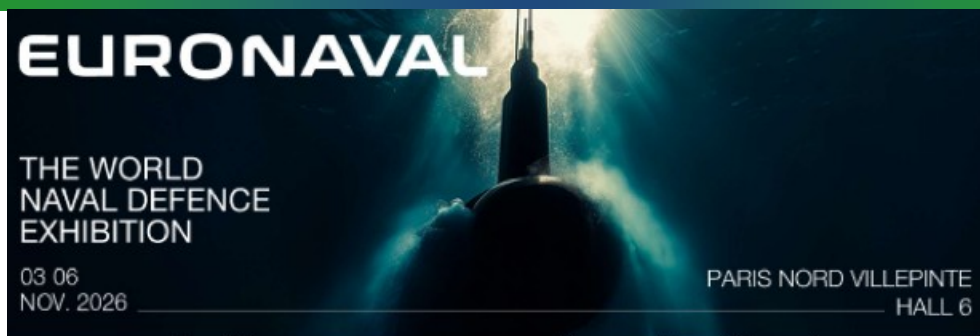
Underpinning the yacht is an advanced engineering package, developed with international expertise and realised through the exceptional regional and international talent retained by the shipyard. Twin MTU main engines drive the yacht to a maximum speed of 15 knots, while throttling back to 10 knots delivers a 5,200

nautical mile cruising range that opens up the world's oceans and cruising destinations to the yacht's owner. Fit and finish are completed to the highest international standards, while Romeo Marine's expertise in steel and aluminium construction ensures quality and attention to detail in every facet of the 55's build.

Nader Nashed's Statements

"The Romeo 55 is not just an exquisite yacht designed for discerning international owners, but also a statement of Romeo Marine's capabilities as a new-build shipyard," enthuses Nader Nashed, CEO of Romeo Marine Dubai. "The breadth of experience of our extensive team, from regional artisans to our international team of engineers, project managers and designers, has been forged across two decades of complex superyacht fit-out, refit and rebuild projects.

The Romeo 55 represents the sum of all that knowledge - a yacht of exceptional guest spaces, sophisticated interior design, and rock-solid naval architecture and engineering, born in Dubai but bound for the ocean."



PRESS RELEASE

Paris, 9 July 2026

WITH THREE MONTHS TO GO UNTIL EURONAVAL 2026, THE EURONAVAL TALKS SERIES CONTINUES TO ANALYSE THE CHANGING LANDSCAPE OF THE NAVAL DEFENCE SECTOR

For nearly sixty years, ELIFIONAVAL has been at the forefront of major developments in the naval defence sector. For its 30th edition, held from the 3rd to the 6th of November 2026 at Paris Nord Villepinte, the exhibition will take place against an unprecedented backdrop, marked by major geostrategic upheavals, the resurgence of high-intensity conflicts, and the accelerated pace of technological change.

With just a few months to go before the event opens, the key issues that will shape this edition are becoming clear: high-intensity confrontations, the return of large-scale warfare, hybrid warfare and new forms of conflict, threats to critical infrastructure, capability innovation, the proliferation of drones, artificial intelligence and the integration of emerging technologies, as well as their implications for the evolution of naval doctrines. EURONAVAL 2026 will be a showcase for a naval sector entering a new era.

True to its role as a leading international platform for strategic thinking and dialogue, EURONAVAL

03 - 06
NOV 2026

AYA
COMMUNICATION



GX42 world debut at the Monaco Yacht Show 2026

GX Superyachts was launched at the Monaco Yacht Show in 2024 by the team behind Greenline Yachts, pioneers of parallel hybrid propulsion in recreational boating. Designed for owners seeking uncompromising luxury alongside significantly lower environmental impact, the GX range combines advanced hybrid propulsion, integrated solar technology and highly efficient naval architecture across a portfolio of custom aluminium superyachts from 24 to 56 metres. Just two years after unveiling the GX Superyachts vision at the Monaco Yacht Show, the company is celebrating another defining milestone with the successful launch of the first GX42, the 42-metre flagship, which now enters final sea trials ahead of her eagerly anticipated world debut at the Monaco Yacht Show 2026. The launch marks the transformation of GX Superyachts from an ambitious concept into a tangible reality. Conceived to redefine expectations in the superyacht sector, the GX42 combines striking contemporary design, long-range capability and a radically more responsible approach to luxury yachting. Developed by the experienced team behind Greenline Yachts, the GX42 builds on more than 15 years of expertise in hybrid propulsion

and energy management. She introduces those proven technologies into the superyacht world through an advanced parallel diesel-electric hybrid propulsion system, extensive integrated solar arrays and a large-capacity lithium battery bank, dramatically reducing emissions while delivering a quieter, more comfortable onboard experience.

Zinchenko's Statement

"Today is an emotional milestone for everyone involved in GX Superyachts," said yard owner Vladimir Zinchenko. "Only two years ago we introduced a bold new vision for the future of superyachting in Monaco.

Seeing the first GX42 enter the water proves that this vision has become reality. We are now looking forward to presenting her to the world at the Monaco Yacht Show, where the journey first began."

Magri's Statement

"The GX42 demonstrates that responsible yachting and uncompromising luxury can go hand in hand," said Maurizio Magri, CCO of GX Superyachts.

"With the ability to operate in zero-emissions mode for up to 48 hours at anchor and reduce onboard electricity consumption by up to 45%, she offers a quieter, cleaner and more comfortable way to experience life on board.

By reducing reliance on generators, the GX42 lowers operational emissions and fuel consumption while enhancing onboard comfort, allowing owners to enjoy the sea with greater respect for the environment. Ultimately, this is about more than technology; it is about well-being.

The GX42 has been designed around the way people want to feel on board - with greater tranquility, improved comfort and a deeper connection with the sea. A more peaceful, healthier and more balanced onboard experience is at the heart of this new approach to responsible luxury."

Exterior and interior

The yacht's elegant exterior and sophisticated interior have been created by renowned Italian designer Marco Casali, whose seamless approach connects every onboard space through clean architectural lines, natural materials and understated luxury. The result is a yacht designed for extended cruising, relaxed family living and effortless connection with the sea.

Casali's Statement

"It is incredibly rewarding to see the GX42 exactly as we imagined her from the very first sketches," said Marco Casali, founder of Too Design. "Our ambition was to create a yacht that feels timeless rather than fashionable, where sustainability and elegance naturally complement one another. Watching her leave the shipyard for the first time is a special moment for the entire design team."

Shipyard

Built in collaboration with SES Yachts in Türkiye, the GX42 also demonstrates the strength of the partnerships established since the brand's launch. The project has brought together specialists in naval architecture, engineering, construction and design to deliver a yacht that challenges conventional expectations of efficiency without compromising luxury, performance or comfort.

Yildirim's Statement

"Bringing the ambitious vision of the GX42 to life has been a deeply gratifying milestone for

SES Yachts," said Elif Yıldırım, Managing partner at SES Yachts. "Rooted in three generations of family heritage and custom craftsmanship, our shipyard has always thrived on turning complex, forward-thinking concepts into reality. Building a vessel of such exceptional technical contents and advanced hybrid complexity was a natural evolution of our core values, and we are immensely proud to have partnered with GX Superyachts in establishing this new benchmark for responsible luxury."

Armas's statement

Andrea Armas - Specialist Marine has worked shoulder to shoulder with the GX Superyachts Board as Technical Consultant, spending the past three years at the SES shipyard facility overseeing the GX42's design, engineering and production periods on behalf of GX Superyachts, said "It has been a remarkable yacht-building experience, working alongside an exceptionally professional team and collectively pushing the boundaries of hybrid superyacht design, engineering and construction."

Following her launch, the GX42 will undergo final outfitting, and sea trials before travelling to Monaco for her official public premiere. Visitors to the Monaco Yacht Show will have the first opportunity to experience the yacht that launched a new generation of responsible superyachts. The GX42 represents the first model in a planned range extending from 24 to 56 metres. By combining advanced hybrid technology, intelligent energy management, refined Italian design and genuine long-range cruising capability, GX Superyachts continues its mission to establish a new benchmark for sustainable luxury at sea.





French wind propulsion specialist CWS arrives at SMM 2026 with a 40-metre wing sail tested at full scale, a first commercial order in the books and deliveries scheduled for 2027.

Computed Wing Sail

CWS - Computed Wing Sail designs, manufactures and markets automated rigid wing sails for merchant shipping. Based in Paris with an industrial site in Saint-Nazaire, France, the company applies aeronautical engineering to wind-assisted propulsion. Its first commercial product, Airfin350, is a 40-metre asymmetrical foldable wing sail holding an Approval in Principle from Bureau Veritas. First deliveries are scheduled for 2027.

Wind

Wind is the oldest propulsion system in shipping. The company is convinced that it is also one of the most credible answers to the decarbonisation of maritime transport, on one condition: that it is engineered with the tools available today rather than those of the past. Founded to bring aeronautical design methods into merchant shipping, the French company designs and manufactures Airfin350, an automated rigid wing sail derived directly from aircraft wing architecture. CWS is headquartered in Paris, with its factory and its test site in Saint-Nazaire, at the heart of the French shipbuilding cluster.





A full-scale wing, tested in real conditions

Earlier this year, the first full-scale Airfin350 - 40 metres tall - left the CWS factory for an on-site test campaign at the port of Nantes-Saint-Nazaire. Over several months the wing was exposed to real wind and weather, taken through its full operating envelope and monitored continuously.

The campaign was completed successfully.

The objective was not a peak performance figure obtained under ideal conditions. It was to give partners and customers hard evidence on the three things ship-owners actually buy: robustness, simplicity of operation and reliability over time - on a product whose sail perfor-

mance is deliberately set high.





An asymmetrical profile that changes tack

The Airfin350 owes its originality to its aerodynamics. Where most rigid sails rely on a symmetrical section, CWS uses a thick asymmetrical profile of 354 m², built in carbon composite and able to invert itself so that the same optimised shape works whichever side the wind comes from. The wing folds symmetrically in heavy weather and can be brought below 21 metres to clear air-draught limits and keep cargo operations unobstructed in port. The system already holds an Approval in Principle from Bureau Veritas under notations NR206 and NR467, and is designed to support compliance with IMO EEDI, EEXI and CII, the EU ETS and FuelEU Maritime.

From prototype to fleet

Backed by a funding round of 12M€ closed in 2025, CWS has moved into industrialisation. A first commercial order for Windcoop is already secured, for delivery in 2027. The technology has been validated by every third party CWS works with, and the company goes one step further: it commits contractually on performance - a guarantee that remains rare in the

wind-assisted propulsion market.

Morel's Statement

"Our customers are not buying a sail, they are buying fuel savings they can put in a business plan. That is why we tested at full scale, why we brought class societies in from day one, and why we are prepared to commit commercially on the performance we announce." said Julien Morel, Founder, CWS - Computed Wing Sail



Foto captions

Foto 1: Airfin350

The 40-metre full-scale wing on site at the port of Nantes-Saint-Nazaire. Credit: CWS

Foto 2: Airfin350

Detail of the asymmetrical carbon composite profile. Credit: CWS

Foto 3: Airfin350

Units installed on Miaraka (rendering). Credit: Windcoop

Foto 4: Airfin350

Seen from above in Asymmetrical position. Credit: Franck Badaire

Foto 5: Airfin350

Seen from above in Symmetrical position. Credit: Franck Badaire

MS&D

international
conference on
maritime security
and defence



High-level international programme featuring National Armaments Director Vice Admiral Carsten Stawitzki and international industry representatives - strong representation from European navies. Representatives of European navies, decision-makers from the maritime industry and technology experts will gather in Hamburg on 3 and 4 September for the MS&D - International Conference & Expo on Maritime Security & Defence.

Held as part of SMM, the conference will address Europe's maritime capabilities, new requirements for naval warfare, cybersecurity, and manned and unmanned systems.

MS&D as a meeting point for navies and industry

The Naval Hall B8 will serve as the central hub for maritime security and defence throughout SMM from 1 to 4 September. The MS&D Conference will take place there on 3 and 4 September on the Naval Stage.

The accompanying MS&D Expo will showcase technologies, systems and solutions for maritime security and defence throughout the four days of SMM.

In addition, the Security & Defence Route will guide visitors to companies offering security- and defence-related solutions across all SMM halls.

Keynote

A particular highlight will be the appearance of Vice Admiral Jan Christian Kaack, Chief of the German Navy.

Shortly before leaving office, Kaack delivered a keynote address on Thursday, 3 September, focusing on the current security environment and the future of the German Navy.

Afterwards, he will discuss these issues further with Dr Sarah Kirchberger, Director of the Institute for Security Policy at Kiel University (ISPK).

Perspectives

With Vice Admiral Carsten Stawitzki, National Armaments Director at the German Federal Ministry of Defence, Irina Haesler, Member of the Executive Board and Head of EU Representation at the German Shipowners' Association (VDR), and Dr Oliver Juckenhöfel, Executive Vice President, Segment Surface Vessels at TKMS, the programme brings together military, political and business perspectives.

Europe's maritime capabilities in focus

The conference programme on Thursday opens with the panel "Europe's Maritime Capabilities". Giovanni Cremonini, Head of Maritime Security Sector at the European External Action Service (EEAS), Dr Oliver Juckenhöfel and Irina Haesler talked about the requirements for Europe's maritime capabilities. The panel brings together perspectives from European security policy, industry and commercial shipping. Following Admiral Kaack's keynote address, the panel "Maritime Warfare Requirements" examined the requirements facing modern naval forces. Speakers include Rear Admiral Rémi Thomas and Rear Admiral J. F. Jeroen Hodes.

The underwater domain in focus

Against the backdrop of new threat scenarios and the need to protect critical maritime infrastructure, the underwater domain is becoming increasingly important. In the panel "The Underwater Domain", Prof. Dr May-Britt Stumbaum, Director of the SPEAR Institute, moderate a discussion with Malte Kutscher of ELAC Sonar, Dr Moritz Lehmann of Starboard Intelligence and Alice Rowlands, Product Lead Perception at Helsing, on technological developments and new applications.

Schneider's Statement

"The maritime security environment is changing at a rapid pace – and with it the requirements facing our navies. At MS&D, military decision-makers from different countries discuss with industry and technology experts which capabilities will be needed in the future

and how they can be made available more quickly. This combination of operational perspectives and technological expertise makes this year's programme particularly relevant," says Rear Admiral (ret.) Karsten Schneider, President of the German Maritime Institute and Programme Director of the MS&D Conference.

Cybersecurity, manned and unmanned systems

The second day of the conference begins with a keynote address by Vice Admiral Carsten Stawitzki. The focus will be on current requirements for equipment and procurement. The panel "Current Developments of Maritime Security" illustrates just how broad the spectrum of maritime security has become. Captain Sebastian Hamann of the German Armed Forces Operational Command, Stefan Langhammer of OHB Digital Connect, Annika Nevaste, CEO of DNV Cyber, and Haythem El Mir, CTO of Cypurge, discussed current developments with a particular focus on cyber and information security.

The conference was concluded by turning its attention to manned and unmanned systems. In the panel "Manned and Unmanned Systems", Rear Admiral Christian Bock, Head of the Bundeswehr Innovation Centre, Magnus Lunde of Kongsberg Discovery and Simon Volkmann of Eurobotics will discuss how autonomous and unmanned technologies can enable new maritime capabilities and the role of cooperation between armed forces and technology companies.

MS&D

international
conference and expo
maritime security
and defence

PRESS RELEASE

Conference programme at a glance

a cura della redazione

Thursday, 3 September 2026

Panel 1: Europe's Maritime Capabilities

Keynote address by Vice Admiral Jan Christian Kaack followed by a discussion with Dr. Sarah Kirchberger



Panel 2: Maritime Warfare Requirements

Panel 3: The Underwater Domain

Friday, 4 September 2026

Keynote address by Vice Admiral Carsten Stawitzki

Panel 4: Current Developments of Maritime Security

Panel 5: Manned and Unmanned Systems

The Hong Kong Convention as ship recycling shall be subject to clear and ambitious international regulation. Ultimately, environmental protection and worker safety at recycling facilities can only be ensured through global standards such as the Hong Kong Convention.

EU Ship Recycling Regulation

We can write that the EU Ship Recycling Regulation does not apply globally, but it has been a valuable interim step. Including South Asian recycling facilities on the EU list of approved facilities would contribute to improving conditions in the regions where most vessels are recycled.

Ship recycling market data

On a global basis, about 450 (more or less) ships are recycled annually. About 75 pct. of these ships are recycled in South Asia (Bangladesh, India, and Pakistan), where environmental protection and safe working conditions historically have not been sufficiently prioritized.

In EU, Danish Shipping finds high standards imperative within the recycling industry no matter where it takes place, and many others EU members agree with this official position.

Catalyst

The EU Ship Recycling Regulation is as catalyst for the Green Transition: responsible ship

recycling is essential to ensure the safe and environmentally sound removal of end-of-life vessels from the global fleet, protecting both people and nature during the recycling. It is also a key enabler of the shipping industry's green transition, facilitating the renewal of the fleet with more energy-efficient and alternative-fuel vessels and enhancing circularity.

The Hong Kong Convention

In June 2025 the Hong Kong Convention for the Safe and Environmentally Recycling of Ships came into force.

The convention ensures that recycling facilities comply with international standards, and that they can handle hazardous materials safely. The facilities must be approved by the local authorities. The Convention was adopted in 2009, and it is expected that the IMO will initiate a revision once sufficient experience has been gained from its initial implementation, in order to reflect the latest innovations in the industry.

EU SRR

The EU Ship Recycling Regulation (EU SRR) was adopted in December 2013. Based on the requirements of the Hong Kong Convention, the Regulation mandates that EU-flagged ships may only be dismantled at EU-approved recycling facilities.





Inside bulk carrier cargo hold

Supporting High-Standard Ship

Recycling Facilities Alang, India, is a major ship recycling area.

Many of the most advanced facilities have invested in methods and equipment ensuring that the vessel is decommissioned without steel blocks touching the intertidal zone. These facilities are now competing on high social and environmental standards and are inspiring other facility owners in the area.

This positive development should be supported, and inclusion on the EU list of approved ship recycling facilities could be a perfect instrument to incentivize these improvements.

Analysis

Typically, a ship's life expectancy is 30 years and most ships are sold for further operation, when they reach more than 10 years of age. As example i.e in total, members of Danish Shipping recycle fewer than 10 ships annually.

A recycled merchant ship has a market value of several million USD due to the large amount of reusable steel and other components in the vessel.

Selling vessels

As example Danish Shipping recommends that members carefully evaluate whether it is likely that a sold off vessel will be recycled shortly after the change of ownership.

If the likelihood is high, the owner should carefully assess the potential buyer prior to the sale and obtain assurance from the new owner guaranteeing responsible recycling of the vessel.

This could for instance be done via a clause in the sales contract stating that the new owner is obliged to ensure recycling in compliance

with the Hong Kong Convention, in case the vessel is recycled shortly after takeover.

Recycling vessels

Many Shipping association actively engages with members who wish to recycle ships, and encourages members to ensure that the requirements of the Hong Kong Convention or the EU SRR, as appropriate, are followed as well as some additional measures: ensuring that an inventory of hazardous materials (IHM) is available and up to date on the vessel prior to recycling, selecting a facility based on one or more site audits, utilizing the international shipping association BIMCO's Recyclecon - a standard contract for the sale of vessels for green recycling, when entering an agreement with the recycling facility, establishing a site team overseeing the recycling of the vessel or conducting audits during the recycling process.

EU Commission proposal

In this month is published the EU proposal to include Indian ship recycling facilities on EU list.

The European Commission has proposed adding two Indian ship recycling facilities in Alang to the European List of approved ship recycling facilities. Danish Shipping warmly welcomes the proposal, calling it an important step for responsible ship recycling. The proposal recognises ship recycling facilities that have demonstrated compliance with the EU Ship Recycling Regulation, irrespective of where they are located.

First Porst's Statement

"This is an important step. And it has been a long time coming. Facilities that meet the EU's high environmental and safety requirements should be recognised regardless of geography. Rewarding those who invest in higher standards creates incentives for further improvements across the global ship recycling industry and will lead to more ships being recycled under en-viron-men-tal-ly sound and safe conditions.

This is absolutely crucial," says Nina Porst, Executive Director of Sustainable Ships & Skills at Danish Shipping.



Green Future

Responsible ship recycling is an essential part of shipping's green transition. It enables the safe dismantling of end-of-life vessels, supports fleet renewal with more energy-efficient ships, and contributes to the circular economy through the recovery and reuse of valuable materials such as steel. This will lead to more ships being recycled under environmentally sound and safe conditions. This is absolutely crucial. The proposal also addresses a growing need for recycling capacity. According to BIMCO, more than 16,000 ships are expected

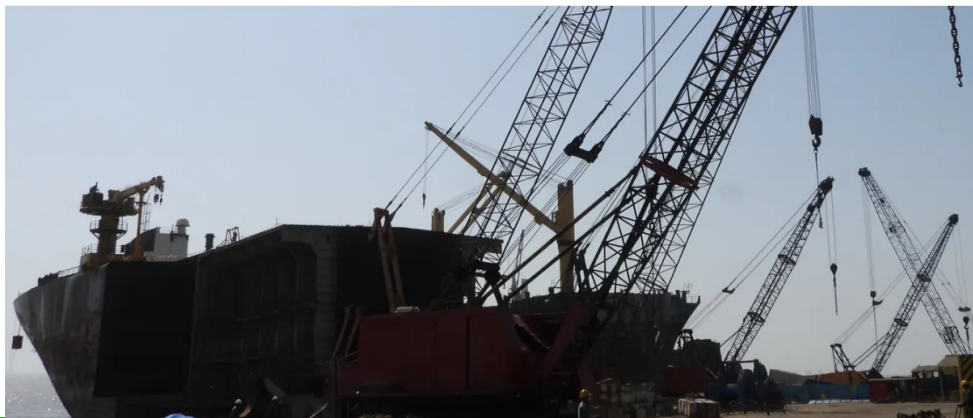
to require recycling over the next decade, which represents a significant increase compared to the previous ten years. Expanding the European list of ship recycling facilities is necessary to ensure sufficient and geographically realistic recycling capacity, particularly for larger ocean-going vessels.

Second Porst's Statement

"The improvements made by leading facilities in Alang clearly demonstrate that international regulation - the Hong Kong Convention - is delivering real progress. We need to maintain this momentum. Especially that compliant facilities on the European list continues to invest in higher environmental and safety standards while ensuring that Danish and European shipowners have access to the responsible recycling capacity, they will need in the years ahead," says Nina. Nina Porst, Executive Director of Sustainable Ships & Skills at Danish Shipping.

Danish Shipping message to EU

Danish Shipping encourages the EU Member States and the European Parliament to support the Commission's proposal and calls on the Commission to continue assessing and recognising facilities that meet the requirements of the EU Ship Recycling Regulation. A transparent and performance-based listing process will help strengthen global standards for safe and environmentally sound ship recycling while supporting the transition to a more sustainable shipping industry.



illycaffè and Barcolana presented by Generali are preparing for the 58th edition of the regatta by presenting the Manifesto designed by Serse Roma.

An artist deeply rooted in Trieste, he collaborates with illycaffè and the Barcolana, describing the spirit and values of the event, following in the footsteps of Michelangelo Pistoletto (2015), Gillo Dorfles (2016), Maurizio Galimberti (2017), Marina Abramović (2018), Olimpia Zagnoli (2019), Lorenzo Mattotti (2020), Ron Arad (2021), Matteo Thun (2022), Judy Chicago (2023), Stefan Sagmeister (2024), and Robert Wilson (2025).

Manifesto

To create the 2026 Manifesto, Serse Roma chose to explore one of the regatta's most defining elements: the sea. His interpretation conveys the evocative power of water through the use of graphite, creating a contemplative and immersive image capable of narrating the ongoing dialogue between light and surface, movement and stillness.

The relationship between Serse Roma and illycaffè dates back to 2005, when the artist collaborated on a decoration inspired by the sea of Trieste for the glass dedicated to iced coffee.

Scocchia's statement

"For over twenty years, illycaffè has supported

the Barcolana, an event that celebrates the profound bond between Trieste and the sea," says Cristina Scocchia, CEO of Illycaffè. "For this edition, we chose an artist who has always known and observed the sea. In Serse Roma's works, water is never just a landscape: it is light, movement, depth, and continuous transformation. His poster reminds us that the sea is much more than the Barcolana regatta field: it is an element of identity that unites people, cultures, and diverse stories."

Gianluz's statement

"With Serse Roma's poster," commented Mitja Gialuz, President of the Società Velica di Barcola and Grignano, "we return to our most identifying element: the sea. It is the place where Trieste was born and raised, a space that reflects its soul. Every year, on the second Sunday of October, thousands of boats cross it, giving life to a dance that renews a collective ritual unique in the world. The sea is in constant movement, just like the Barcolana. It is a metaphor for life, transformation, and constant renewal."

Conclusion

The 58th edition of the Barcolana is scheduled for Sunday, October 11th in the Gulf of Trieste, preceded by a packed calendar of events on land and at sea that will transform the city into the international capital of sailing.





The marine industry is rapidly evolving. While high-voltage propulsion systems remain the preferred choice for large commercial vessels, a new generation of applications is driving demand for powerful low-voltage solutions. Passenger boats, workboats, inland vessels, ferries, houseboats and leisure craft increasingly require propulsion systems that combine performance, safety and simplified installation. In this technical application area 48V technology is making a real difference. For many marine applications, 48V offers the ideal balance between power, efficiency and ease of integration.

Advantages

Simplified installation No high-voltage infrastructure means faster integration and reduced installation complexity. Enhanced safety low-voltage architecture simplifies handling, maintenance and onboard operations. Lower maintenance costs fewer complex components help reduce downtime and service requirements.

Higher efficiency

Perfect for vessels operating in ports, inland waterways, protected areas and urban environments where quiet, emission-free navigation is increasingly required.

Some solutions

Now I write about 3 different companies that are showed in this summer 2026 technical solutions about 48V electric engine for marine inboard and outboard solutions.

Introducing the New DriveMaster 40W

Transfluid & Bellmarine are expanding their low-voltage propulsion range with the new DriveMaster 40W. Designed for demanding

marine applications, the DriveMaster 40W delivers: 40 kW continuous power, 48V architecture, 1500 rpm nominal speed, High torque at low speed, Compact footprint, Easy integration into new builds and retrofit projects. One of its strengths is its shared mechanical architecture with the proven EM300 high-voltage motor family.

Design

This design philosophy offers some significant benefits: proven engineering, economies of scale, high component availability, simplified spare parts management reliable worldwide service support. By using a common mechanical platform, operators and shipyards benefit from both innovation and long-term reliability.

Multiple Marine Applications

The DriveMaster 40W is suitable for a wide variety of vessels, including: Passenger boats, Workboats, Inland waterway vessels, ferries, houseboats, leisure yachts, commercial support vessels.

Retrofit projects

Whether powering a new electric vessel or upgrading an existing fleet, the DriveMaster 40W provides a practical and future-ready propulsion solution.

Engineering for the Future

Innovation is driven by real operational needs. Transfluid electric and hybrid propulsion systems are designed to help shipyards and operators reduce emissions, improve onboard comfort, lower operating costs and simplify maintenance-without compromising performance. This new engine represents another step towards practical, scalable and reliable marine electrification.





Molabo Marks 10 Years of High-Power 48 V Electrification

From university research to scalable system solutions for marine, industrial, agricultural and smart energy applications the company of Ottobrunn (Germany) - marking 10 years since it was founded in 2016, celebrating a decade of innovation in safe, high-power low-voltage electrification.

Began as a research project around ISCAD (Intelligent Stator Cage Drive) technology this project has evolved into a system solutions provider for electric and hybrid applications across marine, maritime, and industrial markets. The core engineering idea was ambitious: to deliver high power at safe-to-touch low voltage levels. Molabo developed a 48 V architecture designed to combine performance, safety, and simplicity.

In 2019, Hechinger, an established manufacturer and supplier in the mobility, electrical and industrial sectors, invested in Molabo. The partnership brought industrialization experience, production know-how and quality expertise that helped accelerate product development and prepare the technology for customer applications.

Patzak's Statement

"Many people believed low-voltage systems would always be limited to auxiliary applications. Some years later, we have shown that 48 V technology can power everything from sailing yachts to large commercial vessels and high performance race boats" said Adrian Patzak, COO of Molabo.

Aries

The launch of the ARIES i50 system solution in 2020 opened the door to Molabo's highly successful marine business and brought safe, high-power low-voltage propulsion into real applications.

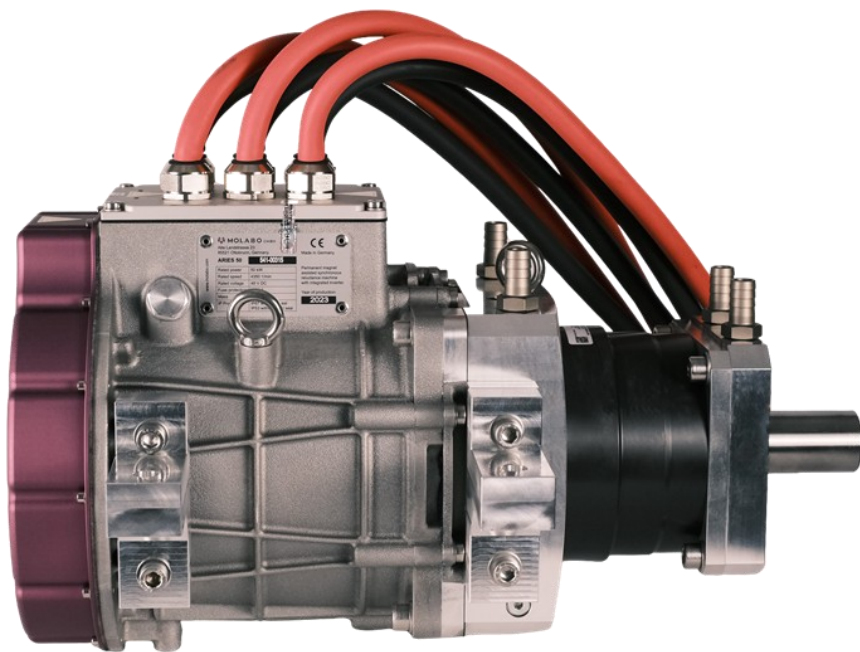
The company has since introduced a variety of drive configurations, controls, batteries, and interfaces, plus expanded system engineering and application-specific support. In 2023, Molabo launched the ARIES R50 outboard, extending its marine range from inboard system solutions into outboard propulsion. In 2024, Hechinger acquired Molabo.

Duffner's Statement

"Molabo has developed a technology platform with enormous potential, and our role is to support scaling that potential," said Markus Duffner, CEO of Hechinger. "By combining MOLABO's expertise in electric propulsion systems with Hechinger's industrial manufacturing capabilities, we support customers from prototype development through to reliable series production."

In 2025 the company introduced the ARIES Serial Hybrid System and the ARIES Jet Drive, further expanding the product portfolio and supporting more complex hybrid architectures and marine drive configurations.





New Development

The company's newest development, a steering actuator that enables precise, electronically controlled movement in a compact low-voltage package, extends Molabo's expertise from electric drive systems into electronic control and actuation. As the company enters its second decade, Molabo's direction is clear: continuing to advance 48 V technology from individual drive systems to complete high-performance electrification and electronic control platforms for the vehicles, vessels and energy systems of the future.

Baltic Yachts integrated 48-volt electric motors onboard

The Finnish builder has been working with Molabo for several years, adopting their solutions for propulsion, hydraulic sail-handling systems, and energy generation on a number of boats. ARIES motors can also power deck equipment, keel, rudder, and trim-control actuators, or bow and stern thrusters. Molabo created the first RPM-controlled version of their ARIES drive for Baltic's hydraulic electrifi-

cation project. The low-voltage, high-torque motor delivers immediate response, precise control, and significantly reduced noise and vibration, without the complexity or certification burden of installing and maintaining a high-voltage system.

Kolam's Statement

"Electric-powered auxiliary systems are a natural upgrade for oceangoing yachts," said Kim Kolam, senior electrical engineer for Baltic Yachts. "While sailing, the 48-volt motors allow us to operate essential systems while minimizing engine and generator runtime, and the high-capacity battery bank provides plenty of storage to power onboard amenities while at anchor." Baltic has also used ARIES drives for low-voltage parallel hybrid systems for anchoring or harbor maneuvering, as well as generating renewable energy while under sail. These hybrid-electric setups can also offer benefits while sailing. Running the motor at very low output can subtly increase the yacht's speed and, as a result, its apparent wind angle and pressure.

This technique can improve sail trim efficiency, maintain laminar airflow in light winds, and help keep foiling or semi-foiling yachts "on step".

Baumgardt's Statement

"Being able to apply just 200–500 W of electric thrust to maintain momentum or optimize airflow opens up entirely new possibilities for sailors," noted Andreas Baumgardt, Molabo's head of marine ecosystems and applications. "With up to 50 kW of power available at just 48 V, you can enhance performance and efficiency on even large sailing yachts."

New developments

Building on the success of its low-voltage drive platform, Molabo recently introduced a 50-kW jet drive and a 48 V serial hybrid system with Fischer Panda's lightweight AGT-series generators. Originally developed for Team Malizia's IMOCA racing program, the system delivers the endurance and reliability needed for offshore campaigns while preserving Molabo's hallmark safety and serviceability. "The spectrum of vessels that can benefit from low-voltage electrification continues to broaden," said Adrian Patzak, COO of Molabo. "These innovations allow builders to electrify onboard systems, support long-range or shorthanded cruising, and power high-demand applications without dealing with high-voltage complexity."

Damoto solutions

Damoto is a Dutch company engaged in the development, manufacturing and international distribution of electric boat motors. The team, led by founder Sander Meuwese, consists of technical specialists who work closely with renowned suppliers such as Curtis, Honeywell, Trojan, Victron, etc. A dealer network takes care of sales, installation and service. The company, in the process of developing its new eFLOW All-in-One system, was in search of a high-quality electric motor. The choice landed on these induction motors. A strong connection quickly formed between Damoto and the manufacturer, leading to the decision to establish a partnership to revive the original systems. The products are now released under

the brand name Damoto and have undergone further development, sporting a new fresh look.

Electric Boat Motor 20kW Liquid Cooling 48V

Liquid-cooled electric inboard boat motor, integrated 'full body' liquid cooling, direct drive, brushless, equipped with feedback encoder & sensor, integrated thrust bearings, and includes an adjustable motor frame. Damoto eTORQ 20kW Liquid 48V is an electric inboard motor for boat. The system is a traction AC motor technology and integrated temperature-controlled liquid cooling make system responsive, whisper-quiet, durable, and safe. The company develops and manufactures in the Netherlands.

Features

The eTORQ electric inboard boat motor provides propulsion without the need for a transmission. With Tractive AC Induction technology, known for its high peak power, it is possible a reliable powerhouse. The operating temperature of the eTORQ is electronically regulated through liquid cooling integrated into almost the entire length of the motor housing, along with the pump. This extends the lifespan, improves performance, and increases efficiency and reliability. The eTORQ is moisture- and water-resistant and constructed with corrosion-resistant stainless steel and anodized aluminum. The adjustable motor frame makes installation easy.





The eTORQ needs to be controlled by an eCONTROL series. This advanced controller is the brain behind the electric inboard boat propulsion and ensures good performance from your motor.

The integrated 'full-body' liquid cooling for higher efficiency, better performance, longer lifespan, and reliability through optimal heat dissipation, position/speed encoder & temperature sensor for optimal performance across the entire speed range and protection against overload traction AC induction motor technology for active navigation, powerful stopping, maneuvering, and evasion.

Direct drive for whisper-quiet operation, lower energy consumption, and low maintenance due to a minimal number of moving parts integrated thrust bearing for lower energy consumption, eliminating the need for an additional thrust bearing.

Brushless design for noise-free operation compact design with a low installation height due to a limited diameter.

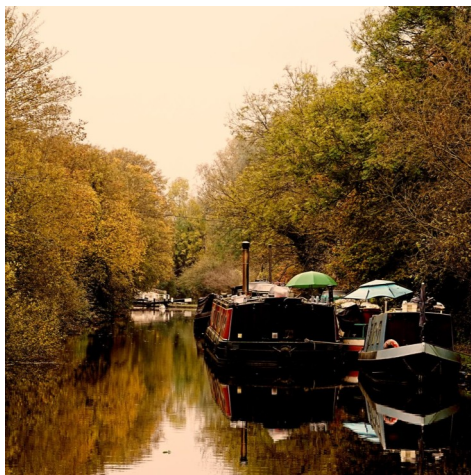
Robust and heavy-duty motor

Water- and moisture-resistant, IP66 anodized

aluminum motor housing, and AISI 316 stainless steel motor frame and fasteners. Adjustable motor frame for easy installation.

Conclusion

In this short technical article we start with 3 important 48 electric motors for marine applications. As normal market, others companies have others solutions. We like, in next issues to write about them.



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NARUČITELJ:

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MOŠČENIČKA DRAGA

IDEJNO RJEŠNJE

IZGRADNJE LUKOBRANA U LUCI MOŠČENIČKA DRAGA





Precipitation networks have faced two problems no conventional gauge could solve. Data that runs consistently low, and critical locations that remain unmonitored. RM60, is the world's first truly maintenance-free precipitation sensor, is built to change that.

Flood warnings depend on accurate precipitation data.

So do reservoir operations, hydrological models, and the climate records used to assess how rainfall patterns are shifting.

Getting that data right depends on sensors that work reliably, in the worst conditions and the difficult locations, precisely when it matters most.

Conventional

Conventional precipitation gauges have two problems. The data they produce runs consistently low, because the mechanical collection process loses precipitation to wind, evaporation, and freezing.

That bias runs through every network and every model built on it. Correction factors help, but they are inconsistent across networks and cannot fully compensate.

The second problem is coverage. In many of the locations most vulnerable to flash floods and debris flows, such as remote mountain slopes and exposed catchments, there are no gauges at all.

Conventional gauges require regular on-site maintenance, which makes remote and exposed sites too costly to equip.

When intense rainfall hits an unmonitored slope, there is no data to trigger a warning.

New research

Research published in *Weather*, the journal of the Royal Meteorological Society (Dunn et al., 2025), confirms that losses range from a few percent under favorable conditions to nearly half of actual precipitation in demanding ones, and for snow or exposed sites, recorded amounts can fall below one-third of what actually fell.

As the frequency and intensity of extreme precipitation events increases, the cost of that gap grows with it.

Jalkala's statement

"For over a century, precipitation gauges have measured too low. Not because of how networks were designed or operated.

Because of a physical limitation built into the technology itself, one that the entire field had learned to work around.

Our engineers thought differently, and proved it with RM60," says Anne Jalkala, EVP, Weather, Energy, and Environment at Vaisala.

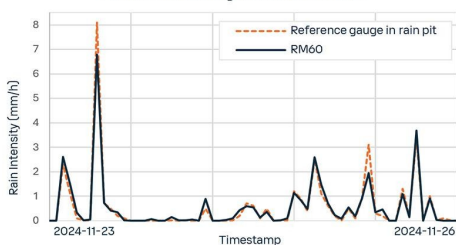
A different approach to measurement

Vaisala launches PRECIPAP Radar Precipitation Sensor RM60, the first precipitation sensor built to solve both problems at network scale. Where conventional gauges collect and count rainfall mechanically, RM60 uses patented radar technology to measure each falling raindrop, snowflake, and hailstone individually as it passes through the air.

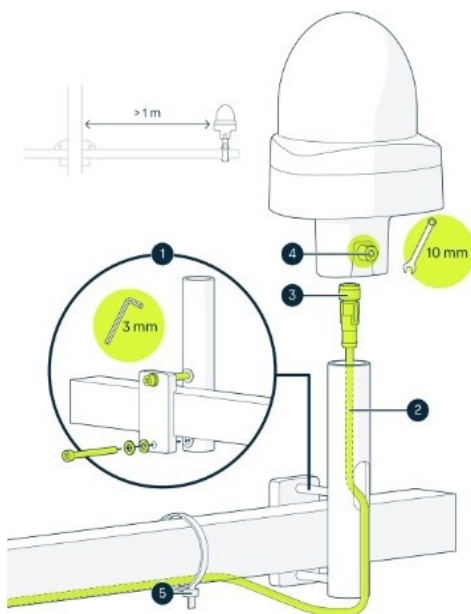
Because this new sensor does not rely on catchment, it is not subject to the physical losses that affect conventional gauges.

That means more detailed data: not just how much rain fell, but how hard it was raining, what type of precipitation it was, and the size distribution of the drops.

Performance during Atlantic Storm Bert



Installing RM60 on support arm



It requires no cleaning, no calibration, and no field visits throughout its service life, and its design eliminates the wind errors that affect conventional gauges without any additional infrastructure.

Better

The new sensor delivers better ground truth for weather radar networks, and richer inputs for forecast models and hydrological simulations.

The result is more complete, more trustworthy data for the forecasters, hydrologists, and infrastructure operators who depend on it, and ultimately for the communities whose safety depends on their work.

Proven in the field,

RM60 has been field-deployed since 2020, with dozens of units operating across a range of climates and environments.

More than 700,000 hours of field data cover conditions from subarctic winters to tropical rainfall and high-wind Atlantic conditions. Over its lifecycle, RM60's total cost of owner-

ship is substantially lower than a conventional tipping-bucket station, due to the elimination of maintenance visits, infrastructure requirements, and consumables.

A tipping-bucket gauge typically requires at least four maintenance visits per year.

The sensor requires none. It can run on a compact solar panel and battery and mounts on a standard mast, making it practical across the full network, including sites that have historically been too costly or difficult to equip.

The sensor serves professional precipitation networks across meteorology, hydrology, hydropower, and solar energy applications.

*Sources: Dunn, R.E., Fowler, H.J., Green, A.C., Lewis, E. et al. (2025). Tipping-bucket rain gauges: a review of the undercatch phenomenon, and methods for its reduction and correction. Weather, Royal Meteorological Society.

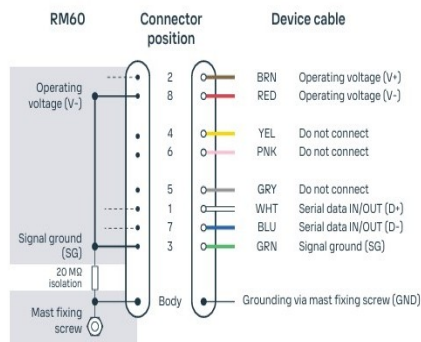


Table 7 RM60 wiring

Position	Wire color	Signal	Description
1	White	D+	Serial data +
7	Blue	D-	Serial data -
3	Green	SG	Signal ground
2	Brown	V+	Operating voltage V+
8	Red	V-	Operating voltage V-
4	Yellow		Do not connect.
6	Pink		Do not connect.
5	Gray		Do not connect.
Body	Shield	GND	Grounding via mast fixing screw

2. Leave the yellow, pink, and gray wires unconnected. Depending on the output usage, isolate the signal wires that are not used from each other and leave them unconnected.
3. Switch on power.



This article write about some new innovations exposed at SMM 2026.

AYK was founded in 2018 by Chris Kruger with the goal of producing a low-cost battery that offered superior performance and safety, and that exceeded class and industry standards. Already a pioneer in the marine battery sector, having developed the very first marine type approved battery, Chris and his team have drawn on more than 15 years of industry experience to continue to drive development and safety in the marine battery industry.

Swappable container

Marine battery manufacturer AYK Energy is set to unveil what it describes as the world's first swappable containerized marine battery system at the SMM trade fair in Hamburg.

The company said it is already receiving orders for the battery while it progresses through the class approval process, having completed the new technology qualification (TQ) stage, a structured process for demonstrating that a new technology is sufficiently mature before advancing to full class approval.

Kruger's Statement

AYK Energy founder Chris Kruger said the containerized battery technology changes how marine batteries can be installed, deployed

and operated. "A vast amount of engineering time and investment has gone into this," he commented.

"The AYK Cosmos Marine Battery Container will simplify installation, reduce engineering complexity, lower project costs and speed up implementation. The system also removes the need for a dedicated battery room which can be a highly complex engineering job and significant cost." Kruger said the system's flexibility allows batteries to be swapped or permanently installed depending on operational needs.

"Our containerized batteries can be stacked onshore and charged off-site to be transported to ports when required," he said. "They can then be loaded onto vessels at speed and tailored to voyage energy requirements ... perhaps loading dozens of batteries at a time to meet short sea fully electric requirements in the EU, for example to help meet ETS standards."

Features

He added that the system can also deliver temporary hotel-load power while vessels are in port, be exchanged between voyages as a swappable system, or be permanently installed for hybrid or fully electric vessels.



According to Kruger, the battery features eight independent levels of safety, with IP67 protection and an A60 fire rating.

AYK Energy

AYK Energy is primarily targeting the ferry, ro-pax and passenger vessel market, though the battery is also suitable for tugboats, feeder vessels, hybrid commercial craft, fully electric vessels and other workboats requiring battery power.

“We firmly believe our technology will remove the barriers to electrification, make battery technology easier to adopt, and as a result accelerate maritime decarbonization,” Kruger said.

“The system we have developed combines safety, flexibility and cost-effectiveness, which we believe are the three pillars that will support the accelerated electrification of the sector.” AYK Energy said it has previously pioneered LFP battery chemistry for marine use and was the first company to secure marine certification for LFP batteries with DNV.

Damen

The Container Feeder (CFE) 1100 is a fully cellular container feeder designed for efficient worldwide feeder trades with a strong focus on cargo flexibility, operational efficiency and future readiness. Its cargo arrangement is optimised for 45-foot containers while offering flexible intake for 20, 30, 40 and 45-foot units. A two-stroke main engine, hybrid PTO/PTI system and shore power capability contribute to efficient performance, while Ice Class 1A and pivoting hatch covers ensure operational flexibility across a wide range of routes and

operating environments. Future-ready by design, the vessel offers methanol readiness and provisions for an energy storage system and scrubber installation, enabling shipowners to meet evolving sustainability requirements.

Features

Two-stroke main engine

Hybrid PTO/PTI system

Ice class 1A

Flexible container intake (20, 30, 40, 45 ft)

Optimised for 45 ft container

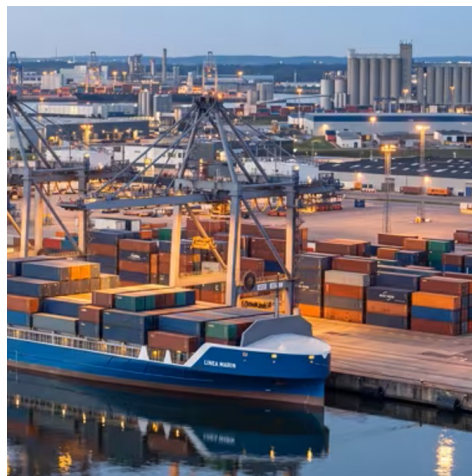
Shorepower connection

Pivoting hatch covers

Together in Every Water

At SMM 2026, ZF strengthens position as partner for the maritime industry, the company presents 9200 A/V PTI. It is the newest addition to hybrid transmission series can be tailored to a wide range of vessel types and propulsion layouts.

At this year's SMM the company is showcasing its full range of propulsion and control technologies for maritime applications under the theme “Together in Every Water”. With a focus on powerful driveline technology, advanced hybrid solutions, new digital services and more, the company strengthens its position as trusted partner for the global maritime industry. Visitors to SMM 2026 can learn more about the full range of ZF's portfolio in hall A3, booth 219.

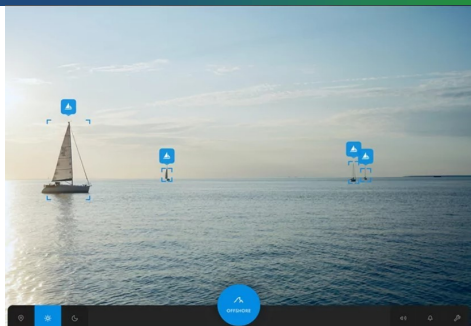


Across all segments, marine operators and shipbuilders are facing the same challenges: larger vessels, tighter schedules, increasing regulatory requirements and rising pressure to improve operational efficiency and availability. At this year's SMM, ZF demonstrates technologies designed to support mastering these challenges. The company helps reduce operational complexity and ensure reliable performance over the entire lifecycle of ships and fleets.

Shipping is evolving fast

Vessels are becoming larger, more complex and, due to new regulations, increasingly hybridized. . Against this backdrop, ZF continues to expand and refine its product portfolio to support future vessel generations – and to underline that the company is “Together in Every Water” with its customers. Scaling up for future vessel sizes with the ZF 9200 A/V PTI transmission and ZF AT 110 thruster, ZF is extending its driveline portfolio into higher power classes.

The ZF 9200 A/V PTI is the latest variant of the company's established ZF 9000 transmission series. The transmission can be installed in both V and A (down angle) positions, which grants shipbuilders additional design freedom. It accommodates a maximum main drive power of up to 3,903 kW, while the integrated



power take-in (PTI) supports hybrid operation with up to approximately 700 kW. This enables electric locally exhaust emission free boosts in dynamic situations and low-noise maneuvering, e.g. during nighttime or in harbors.

The ZF 9200 A/V PTI features a modular design and wide ratio spread (main engine: $i=2,300$ to $i=4,241$; PTI: $i=2,085$ to $i=16,103$), allowing it to be tailored to different vessel types, electric motor sizes and thus, hybrid propulsion concepts.

Its lightweight aluminum housing contributes to a compact overall design, while full classification approval ensures integration into a wide range of vessel classes. Optional accessories such as PTO units, an integrated shaft brake and flexible mounting solutions further increase adaptability.





Thruster

Meanwhile, the ZF AT 110 represents the largest thruster ZF has developed to date. Compatible with engine outputs of up to 2,944 kW, it extends the portfolio into more powerful vessel segments beyond today's standards, in line with ongoing trends toward more demanding offshore and harbor operations. Designed for applications such as modern tugboats, the unit enables bollard pull values of around 100 tons, meeting current market requirements in this power class and allowing operators to handle increasingly large merchant vessels.

At the same time, the ZF AT 110 is designed with installation efficiency in mind. With center-to-center dimensions of around 3,700 mm (3,825 mm with optional seal monitoring), the thruster features a more compact design compared to many current market alternatives. This allows easier integration into vessel designs where available space is limited and supports more flexible ship layouts.

New concept

A revised lubrication concept reduces the overall oil volume by supplying critical components in a targeted manner rather than using fully oil-filled housing. This improves efficiency and reduces operating costs while maintaining reliable performance. Optional features such as a tilted nozzle further enhance propulsion

efficiency and allow shipbuilders more flexibility in hull designs.

MMG The driving force on all seas.

MMG provides the right solution for every requirement profile about propellers. Whether cargo ships, naval ships or cruise ships the company is able to do the design and manufacture of ship propellers up to a weight of 160 tons and a diameter of over 11 meters.

Espro

Espro is individual propellers for more efficient propulsion. Each MMG espro (Energy Saving Propeller) is individually adapted to the specific mission profile of the ship.

The design is not only determined by the speed and draught of the ship. The planned route, weather conditions and requirements for comfort on board also play an essential role in the design of the propeller.

Benefits

Economical ship operation, Highest fuel efficiency, individual adaptation to the application profile, integration into the drive system.

Quiet drive for a quiet ocean

MMG espro silent is an extension of high-efficiency propellers, which is specially designed for low cavitation, vibration and noise. Using modern simulation methods, the company adapts the design optimally to the operating profile and thus ensures a low-noise drive solution.



Redesign

The savings possibilities through pure "slow steaming" are fully exhausted with the existing technology. The regulations of EEXI and CII now require even more efficient ship operation. Additional savings can be achieved with the MMG redesign. A retrofit of the ship's propeller in accordance with the changed application profile increases efficiency and significantly reduces fuel consumption.

Benefits

Average fuel savings between 6% and 10%, low ROI, Contribution to EEXI and CII compliance, quick and easy changeover, high propeller quality, service over the entire product life cycle

RealTime object and Hazard detection

SEA.AI calculates data from onboard thermal and low-light cameras to create a digital landscape of the vessel's surroundings. The high-performance cameras record the sea in all directions, from the vessel to the horizon, seamlessly. Artificial intelligence processes the images in real time, detecting floating dangers

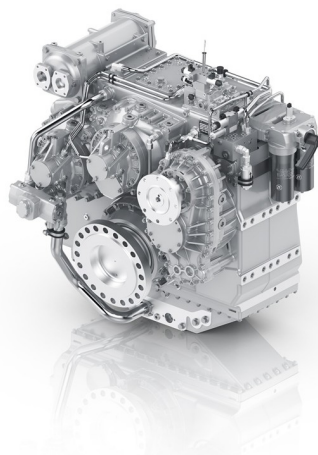
and alerting the crew.

Detection, identification and monitoring of floating obstacles of any size and type, day or night, even in the most adverse conditions. Onboard cameras, with integrated image processing and an intuitive interface, provide a unique digital understanding of the vessel's surroundings on the water.

The system provides crews with timely and reliable alerts about objects on the water's surface. By combining the latest camera technology with artificial intelligence, the system improves detection capabilities beyond conventional systems like radar or AIS. It identifies and classifies a wide range of objects—including floating debris, rafts, buoys, non-AIS-equipped vessels, and people at sea—that traditional systems might miss. The SEA.AI system integrates seamlessly with any modern chart plotter, on-board computer, tablet, or smartphone.

Experience this app as if were on board, navigating between three distinct viewing modes: low-light augmented reality (AR), thermal AR, and map view.

It is also possible to switch between these modes by clicking the "Change Sample" button at the top to see how we detect containers during the day, man-overboard incidents, and nighttime scenarios. The company is present at SMM 2026.



Conoship

The Dutch design and engineering company Conoship International is expanding its CIP series to include a fully electric version of the CIP3800 multi-purpose cargo vessel. The design is fitted with a 40 MWh battery system and is expected to achieve a range of up to 650 nautical miles with a payload of 3,200 tonnes. Conoship International, w offer a full spectrum of maritime services designed to support our clients from the earliest spark of an idea to final delivery and integrated expertise that ensures continuity, efficiency, and innovation at every step. Conoship is targeting this concept primarily at short-sea services, green shipping corridors and operating areas with strict emissions regulations. According to Conoship, there are no direct CO₂, NO_x, SO_x or particulate emissions when operating in pure battery-electric mode.

Design

The design is based on the existing CIP3800 platform, which has a deadweight tonnage of around 3,800 dwt. Conoship is therefore not relying on a newly developed hull form, but on a geometry which, according to the company, has already been tested in model trials, sea trials and in commercial operation. Low hydrodynamic drag is expected to reduce energy consumption accordingly.

Sickler's Statement

"Shipowners looking to transition to zero-emission operation do not need to take unnecessary risks with untested hull designs," explains Maarten Sickler, Sales Director at Conoship International.

Design and batteries

The newbuild design is 89.43 m long and 13.20

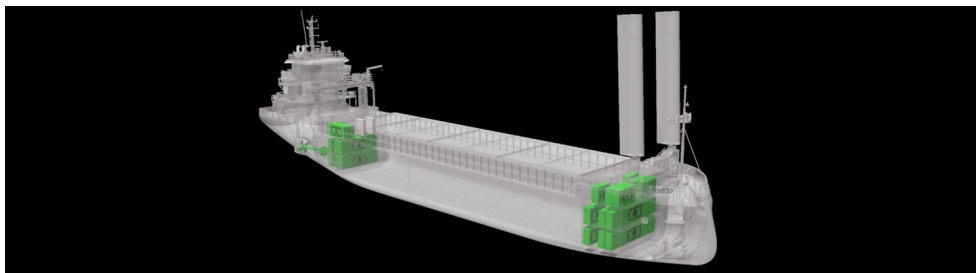
m wide. With a draught of 5.20 m, the deadweight tonnage is 3,200 t. The box-shaped cargo hold has a capacity of 4,737 m³ and is designed for general cargo, bulk cargo and project cargo. The Vessel has 40 MWh battery capacity. The 40 MWh battery system is expected to provide a range of around 350 nautical miles at 10 knots. At a speed of 8 knots, Conoship quotes a range of up to around 650 nautical miles.

This figure already takes into account reserves for rough seas and the energy consumption of the on-board systems. The batteries are distributed across separate compartments in the fore and aft sections.

This is intended to ensure that the weight distribution is such that no additional water ballast is required. According to the company, the weight of the batteries is also partly offset by the elimination of conventional fuel, lubricating oil and sludge tanks. As an option, the CIP3800 can be fitted with a smaller generator set to act as a range extender or backup system. Conoship lists HVO and biodiesel, amongst others, as possible fuels. This variant is aimed in particular at operating areas where the necessary charging infrastructure is not yet widely available.

Platform for various powertrain concepts

The all-electric version complements the already modular CIP3800 series. Depending on the operational profile, the platform can be configured, amongst other things, as diesel-electric, prepared for methanol, with wind assistance or fully battery-electric. According to Conoship, more than 2,000 vessels have been built to the company's own designs since its foundation in 1952.





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GNSS News » DLR Advances GALANT GNSS Receiver to Counter Jamming and Spoofing

Monitoring of Vessel

SES, a leading space solutions company, and Tototheo Global, a leading provider of advanced connectivity and technology solutions for the maritime, enterprise and government sectors, today announced an expanded collaboration to deploy SES FlexMaritime across global markets.

Under the multi-year agreement, SES FlexMaritime will provide Tototheo Global with high-performance multi-orbit satellite and terrestrial connectivity. Combined with Tototheo Global's deep industry expertise and global service capabilities, this will enable maritime customers worldwide to benefit from consistent, reliable connectivity that supports critical vessel operations while accelerating the adoption of data-driven and digitally enabled onboard services.

Flex Maritime

FlexMaritime is a global connectivity solution powered by SES' secure, high-throughput satellite network and integrated terrestrial infrastructure. It supports merchant shipping owners and operators by enabling operational excellence, simplifying service management,

and enhancing crew welfare through seamless, high-performance connectivity.

Maher's Statement

"This agreement with Tototheo Global underscores how SES enables global partners with scalable, future-ready maritime connectivity. FlexMaritime provides a robust operational foundation today while offering a seamless path to integrate multi-orbit networks and emerging technologies within a unified platform," said Simon Maher, Senior Vice President Maritime, SES.

Connectivity

This reliable, high-performance connectivity unlocks critical use cases for Tototheo Global customers that rely on consistent, predictable bandwidth—including real-time vessel monitoring, route optimization, remote maintenance support, and enhanced crew welfare. Through its global service organization and technical expertise, Tototheo Global will provide solution design, deployment, integration, network management, technical support and ongoing optimization services, helping customers maximize performance and operational value from their connectivity infrastructure.

These capabilities empower ship owners and operators to drive greater efficiency, sustainability, and safety across their fleets.

Theodosiou's statement

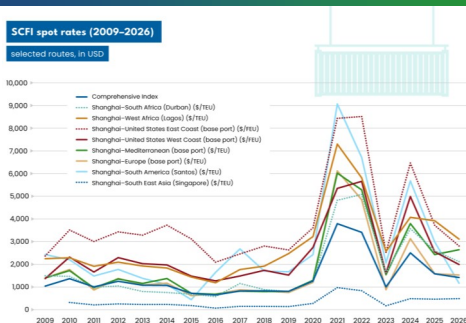
"Connectivity is increasingly becoming critical infrastructure for modern maritime operations," said Ms. Despina Panayiotou Theodosiou, Co-CEO of Tototheo Global. "Through our expanded collaboration with SES, we are strengthening our ability to provide customers with flexible, high-performance connectivity solutions that support operational continuity, enable digital transformation, and help unlock greater value across their fleets."

Interference resistance

The German Aerospace Center, DLR, is present at SMM 2026. DLR has developed an interference-resistant GNSS receiver prototype designed to keep positioning and timing available when satellite navigation signals are disrupted by jamming, spoofing or other radio-frequency interference. Updating Navigation Maps Known as GALANT, the system was developed by the DLR Institute of Communications and Navigation and uses an adaptive multi-element antenna array rather than relying on a conventional single GNSS antenna. Its key capability is spatial filtering: the receiver can electronically reshape its antenna reception pattern to strengthen useful satellite signals while creating deep reception nulls in the direction of interfering transmitters.

The technology is particularly relevant to maritime navigation, where GPS, Galileo and other GNSS constellations provide positioning and timing for vessel navigation, traffic management and port operations.

In these environments, even relatively local-



ized interference can become operationally significant because GNSS signals reaching Earth are inherently weak compared with nearby terrestrial radio transmissions. Adaptive GNSS Antenna Array GALANT attacks interference before conventional GNSS positioning becomes the main problem. Instead of treating every signal arriving at the antenna as equally useful, an antenna array gives the receiver spatial information. By comparing the phase and amplitude of signals received through multiple antenna elements, the processing system can estimate where signals are arriving from and dynamically alter the combined antenna pattern. When an interferer is detected, GALANT can place a null toward that direction while preserving reception from GNSS satellites elsewhere in the sky. DLR says this approach significantly reduces the effect of both jamming and spoofing on positioning and timing availability.

Commercial satellites

Launching Commercial Satellites there is a distinction from purely software-based interference detection. Detecting that a GNSS signal is suspicious is useful, but a spatially adaptive receiver can also physically suppress energy arriving from the offending direction.

The concept is closely related to Controlled Reception Pattern Antenna, or CRPA, technology, which has long been associated with resilient navigation systems but is increasingly moving into civilian and critical-infrastructure applications. Jamming and Spoofing Defense Jamming and spoofing require different defensive strategies.



A jammer normally attempts to overpower extremely weak satellite signals with stronger RF energy. Spatial nulling can reduce that energy before it dominates the GNSS processing chain. Spoofing is more complicated because the unwanted signal is designed to resemble a legitimate satellite transmission. An antenna array adds another layer of information that a conventional receiver does not have: direction of arrival. Signals from genuine GNSS satellites should arrive from different locations across the sky. A terrestrial spoofing transmitter attempting to imitate several satellites may instead cause multiple apparently independent signals to arrive from the same physical direction. GALANT can use its antenna array not only for interference suppression but also to estimate the direction from which interfering signals originate. DLR has been studying array-based GNSS interference detection for years. Its researchers published work on interference detection and characterization using conformal GNSS antenna arrays in maritime environments as far back as 2017, while more recent research has examined calibration methods for antenna arrays used in spatial GNSS signal processing.

GALANT Reaches TRL 4-5 Several versions of the GALANT receiver have reached Technology Readiness Level 4 to 5, according to DLR. That places the technology beyond a purely theoretical or laboratory concept. TRL 4 generally represents validation of components or systems in a laboratory environment, while TRL 5 moves toward validation in a relevant environment. DLR says multiple receiver versions and

several internally developed antenna-array designs are available for real-world technology validation. The institute has also developed arrays with different levels of miniaturization, an important consideration if CRPA-type protection is ultimately expected to move from specialized installations into commercial vessels, autonomous platforms and other space-constrained applications.

Technology Center

On 18 August 2026, the Federal Ministry of the Interior, the Federal Ministry of Research, Technology and Space and DLR opened the new Technology Center for Drone Security.

At DLR's sites in Braunschweig and Cochstedt, technologies for the safe use of drones, as well as for their detection and defence against them, are being researched and tested under realistic conditions. The centre brings together research, security authorities and industry, and aims to accelerate the transfer of new technologies into practical application.

Aviation, security, drones

Uncrewed aircraft systems (UAS) – drones – open up a wide range of opportunities for business, science and public authorities. At the same time, the requirements for their safe operation are increasing, as is the need to protect airports, critical infrastructure and public facilities from their misuse. The Technology Center is based primarily at the DLR sites in Cochstedt and Braunschweig, bringing together DLR's expertise and research infrastructure, closely linking these to the practical requirements of security authorities and industry. Following the official opening ceremony, DLR and specialist police forces demonstrated the latest technologies and findings in the field of safe and secure drone operations to guests from the worlds of politics, business and research.

Anke Kaysser-Pyzalla's statement

"Drones open up enormous opportunities, but they also pose a challenge. This is where the Technology Center for Drone Security at the DLR sites in Cochstedt and Braunschweig is set to play an active role, as a logical continuation



Opening of the Technology Center for Drone Security at the DLR site in Cochstedt

From left: Alexander Dobrindt, Federal Minister of the Interior; Dorothee Bär, Federal Minister of Research, Technology and Space; Sven Schulze, Minister President of Saxony-Anhalt; and Anke Kaysser-Pyzalla, Chair of the DLR Executive Board.



of the successful cooperation between the Federal Ministry of the Interior, the federal and state police authorities and the Federal Criminal Police Office (Bundeskriminalamt; BKA). We need the technical expertise of research, the innovative strength and implementation skills of industry and, above all, the perspective of those who are responsible for our security in real operational situations," explains Anke Kaysser-Pyzalla, Chair of the DLR Executive Board. "Through technology transfer and the exchange of knowledge, new approaches from research can be rapidly and effectively translated into practical solutions. After all, we do not develop technology for its own sake – we solve specific problems and meet specific needs.

Research must have an impact – particularly where the security of our country is at stake. The Technology Center for Drone Security is being established at two DLR sites, which we have upgraded over the past ten years for this type of use, with funding from the BMFTR and formerly the BMW (Bundesministerium für Wirtschaft und Energie; Federal Ministry for Economic Affairs and Energy). The state of Saxony-Anhalt is also a strong supporter of the Cochstedt site. Together, we share the vision of a technology hub. The result is unique facilities for testing and validating innovative drone safety and security solutions under realistic conditions."

Alexander Dobrindt's statement

Federal Minister of the Interior, Alexander Dobrindt: "With the Drone Safety and Security

Technology Center at the German Aerospace Center, we are researching, developing and testing state-of-the-art counter-drone technology under real-world conditions. Here in Cochstedt, we are researching and testing new technologies directly at an airport – exactly where the threat situation is most sensitive. We are pooling the expertise of the scientific community, start-ups and our security authorities to protect our country even more effectively against hybrid threats."

Dorothee Bär's statement

Dorothee Bär, Federal Minister of Research, Technology and Space: "DLR's Cochstedt site is a flagship for drone research. The BMFTR already funds the existing National Experimental Test Center for Unmanned Aircraft Systems and the Unmanned Aircraft Systems Competence Center. With today's opening of the Drone Safety and Security Technology Center, the BMFTR and BMI are working hand in hand. It is a powerful demonstration of how the Federal Ministry of the Interior can build on existing expertise to tackle the threat posed by drones head-on.

New applications and technologies are being tested here – for business, for public authorities, and now increasingly for our security as well. We all need to pull together – the Federal Government alongside the states, the scientific community, business, security authorities and public administration – for Germany's future: a future of freedom, security and prosperity."

Mare

German hardware contributes to continuous measurements of space radiation on Artemis mission between Earth and the Moon.

Mare looked at radiation exposure in fabricated models and realistic analogues of the female body, making it the first study in space radiation research beyond low Earth orbit.

This is particularly significant for human space-flight, since women statistically have a higher risk of radiation-induced cancer, and cancer – alongside radiation sickness – is among the greatest health risks associated with radiation exposure in space.

The twin phantoms, Helga and Zohar, are made of tissue-equivalent plastic materials. Each twin is built up from 38 individual discs that replicate the varying densities of bones, soft tissue and organs in the torso of an adult woman. The team integrated several thousand passive dosimeters, as well as 16 M-42 active radiation measuring devices developed by DLR, onto and inside them. NASA provided 18 additional active radiation detectors, the Crew Active Dosimeters (CAD), as well as several thousand Thermo luminescent Dosimeters. While Helga flew unprotected, Zohar wore the AstroRad radiation protection vest developed by the Israeli company StemRad. As the phantoms set off on their lunar journey, the DLR detectors in the 'Luna Twins' recorded the radiation doses received by their bodies. The results allowed scientists to extrapolate the doses recorded throughout the phantoms to estimate the doses that human bodies' most radiation-sensitive parts would have received, had humans flown on the same mission. During Orion's 25.5-day lunar mission, the radiation detectors on the phantoms and throughout the spacecraft continuously collected measurement data which, for the first time in a heavily shielded crew-rated spacecraft, produced a continuous dataset of the radiation environment between Earth and the Moon. From this, the research team created a detailed three-dimensional image of the radiation exposure in various organs and tissues. A direct comparison of the radiation exposure experienced by Helga and Zohar then made it possible to assess the potential effectiveness of the vest on sensitive organs. However, this assessment was not based solely on measurement data from the Artemis I flight itself. Although there was no significant increase in solar activity during the flight, Orion did fly through Earth's Van Allen radiation belts. As part of the evaluation and analysis, the MARE team then extrapolated these radiation belt measurements to the scale of known historical solar storms – for which data also exists – to assess the vest's protective effect even during

periods of strong solar activity.

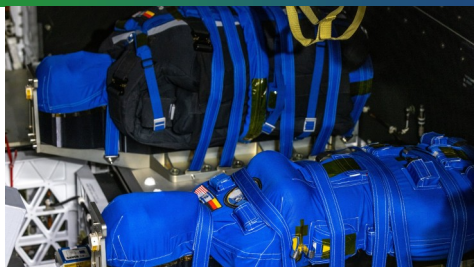
VDR and the Tonnage Tax

Since its introduction in 1999, the tonnage tax has been a key factor ensuring the competitiveness of German maritime shipping. It creates reliable, internationally comparable operating conditions while contributing significantly to the strength of Germany as a shipping nation. The introduction of the so-called tonnage tax (flat-rate profit calculation based on tonnage, regulated in Section 5a of the German Income Tax Act, EStG) in 1999, which the German Shipowners' Association (VDR) had long campaigned for, was a milestone in building the tax framework for shipping companies based in Germany. Similar tax legislation has been adopted by many countries in Europe (21 EU states have introduced tonnage taxation) and worldwide. It has been a success story in Germany due to its considerable positive economic effects. As early as 2009, a study commissioned by the Federal Ministry of Finance to evaluate the tonnage tax came to the conclusion that it was central to Germany as a maritime location and therefore had no alternative. This continues to apply today. The tonnage tax according to EStG Section 5a is not a tax in the strict sense, but an alternative method of determining profits that a shipping company can opt for if it meets certain conditions. It is then bound to this decision for a period of at least ten years. The profit is calculated as a lump sum based on the size (net tonnage) of the ship instead of the actual profit or loss. The tonnage tax offers shipping companies a reliable, calculable tax framework while limiting the potential tax burden to an internationally adequate, competitive level.

Annual growth of commercial fleet (1980–2025)

Per cent of tonnage, vessels above 100 GT





VDR and Refit

Every year, hundreds of seagoing vessels are decommissioned worldwide. A large portion of these ships are recycled – mainly in South Asia, particularly in India, Bangladesh and Pakistan. The scrap metal recovered there, primarily steel, is an important raw material. Ship recycling not only contributes to the reutilisation of valuable materials, but also secures numerous jobs. When modern merchant ships are scrapped today, over 90 per cent of the materials are recycled. In addition to the steel, many components such as anchors, lamps and machinery can be reused. Only a small portion has to be disposed of – in a responsible way. The aim of the international shipping industry is to make ship recycling not only efficient, but also environmentally and socially responsible. The Hong Kong Convention of the International Maritime Organisation (IMO) provides an important framework for this. It lays down globally applicable standards for safety, environmental protection and transparency when scrapping ships – from the proper disposal of hazardous substances to the certification of recycling yards. Ratification by Bangladesh and Liberia in 2023 paved the way for the agreement to enter into force in 2025. VDR expressly welcomes this important step. A large piece of a dismantled ship's hull stands upright on a shipyard site. Workers with protective equipment and a yellow crane can be seen in the foreground. Two thirds of the recycling yards in Alang, India, now look like this. Long before the Convention came into force, numerous shipyards, particularly in India, had already begun to adopt the international standards voluntarily. Investments in modern

infrastructure, extensive employee training, improved labour and environmental standards, and methodical handling of hazardous substances show that ship recycling is on the right track in many regions. This development deserves recognition and active support.

EU Regulations

An important step towards promoting high standards has also been taken at the European level by adopting the EU regulation on the recycling of ships. However, the challenge lies in international harmonisation. The restriction to certain locations provided for in the regulation means that considerable recycling capacities in third-party countries remain unutilised – even if these shipyards already demonstrably meet international requirements. This can lead to considerable bottlenecks for ships flying the European flag, as the capacities available worldwide cannot be fully utilised. Better international coordination is therefore necessary to combine sustainability, availability and environment protection in ship recycling in an effective way. VDR is therefore campaigning actively for international harmonisation of the regulations. The involvement of recognised and certified shipyards worldwide not only strengthens environment protection and social responsibility, but also creates predictability for shipping companies and shipyards alike. The aim is to establish responsible ship recycling practices globally and improve them steadily.



Yacht Design

Shipping

Marina

Terminal

Charter

New Tech

New Materials

Refit

Non Solo Legno

Area B to B

Second Wave Boats

Renewable Energies

5 giorni di

Convegni,

Conferenze,

Glamour,

Escursioni

in vela

nel lungomare

storico

europeo



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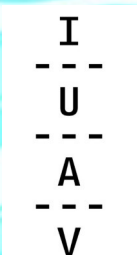
Marina di Moschiena

**Second wave
boats
market event**



CAMERA DI COMMERCIO
ITALO CROATA
CAMERE DI COMMERCIO ITALIANE ALL'ESTERO

Comunità degli Italiani di Fiume
Zajednica Talijana Rijeka

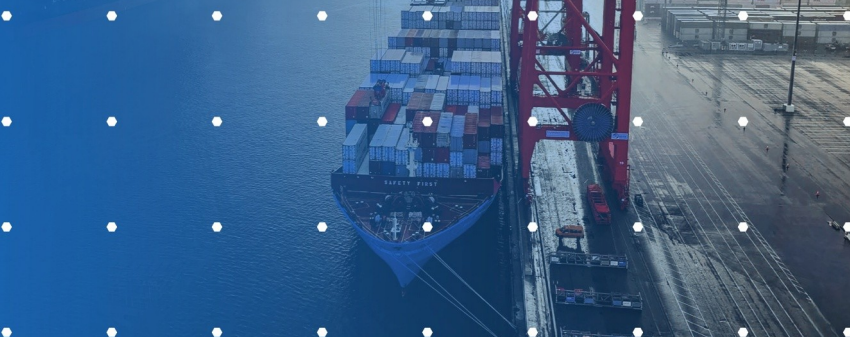




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A stylized illustration of a sailboat on a blue sea under a blue sky with a yellow sun. A man in a green and white striped shirt and green pants sits on the deck, pointing towards the horizon. A woman in a purple dress and white hat stands next to him, looking out. The sailboat has a large grey sail with dark horizontal stripes.

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