INTERFERRY

46th ANNUAL INTERFERRY CONFERENCE

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SEATTLE • OCTOBER 1-5, 2022 • BELL HARBOR CENTER

POWER *and* PEOPLE

CONFERENCE GUIDE

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MATTHIAS PAHNKE
CEO, FRS Clipper

PATTY RUBSTELLO
Asst. Secretary, Washington State Ferries (WSDOT)

WELCOME TO SEATTLE

Dear friends, colleagues and industry partners,

We are excited to welcome you to Seattle for the 46th Annual Interferry Conference. Seattle and the Puget Sound is a region defined by water with over 1,300 miles of coastline home to everything from a major metropolitan city to small island communities all separated by interconnected marine waterways. It's home to the largest ferry system in the United States and one of the largest container ports on the west coast. The original home of the Coast Salish peoples, this is a region with a strong history and a bright future. There are so many exciting things happening here to apply our maritime heritage with the new ideas around powering ferry travel for the future.

This year's conference, built around the theme of "Power and People," will be full of interesting speakers and sessions. We are excited to join you to share the best of Seattle and to meet old colleagues and new friends face-to-face. This is where the majestic beauty of Puget Sound meets economic prosperity, a proud maritime tradition, innovative transportation solutions and "green" technology.

Whether you ride one of our iconic green and white Washington State ferries, set out on an FRS Clipper adventure, or simply admire the view over Elliott Bay and the Olympic Mountains as you stroll around Pike Place Market, we are so glad you've joined us in Seattle. Here's to a great conference!

MATTHIAS PAHNKE
Co-President – Interferry

PATTY RUBSTELLO
Co-President – Interferry

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Lose the IT hassle – Choose Carus!

These days all modern systems are stored in the Cloud. But do you know what is actually included in a Cloud service? Carus provides a 'Managed Service' – an extended form of Cloud service – and here we aim to explain the difference between the two and demonstrate the benefits of a fully managed service.

Managed Service vs Cloud

A Cloud service is not a Managed Service, but a Managed Service always includes a Cloud service.

A Cloud service provides only the server hosting component. The Cloud supplier has no expertise or knowledge of the software you will be using, leaving you on your own to maintain the full desired service, for which you may need to employ especially skilled staff or various third parties.

In contrast, a Managed Service provides a one-stop-shop where the entire system is managed for you including software, platform, monitoring, security updates, back-up (including disaster recovery) and cyber security management.

To explain, using just a Cloud service is a little bit like cooking at home. You still need to purchase the ingredients from the store and then prepare, cook and serve the meal yourself. Meanwhile, the Managed Service equates to eating in a restaurant; You choose your preferred meal from the menu and the chef prepares it exactly as you like it.

Whilst the cost of a simple Cloud hosting environment may seem more attractive on the face of it, once the expense of the various components required to support a Cloud solution are considered, along with the convenience of knowing the responsibility for the Managed Service lies with a single expert provider, then the latter becomes a much more interesting proposition.

Cyber Security

In terms of Cyber Security, attacks and breaches are increasing, and the perpetrators are getting smarter. Within our own industry we have all heard of, if not experienced personally, frightening instances of security threats, data breaches and ransomware attacks.

Carus understands that as well as your service, data is your most valuable asset which is why, with our Managed Service, we put in place KPIs to restore your system within the shortest possible time according to our agreements. Having a Carus Managed Service provides you with the peace of mind that should your internal networks be compromised, restoration is in the hands of experts and the impact to your service and data will be minimal.

A New Level of IT Services

Carus' Managed Service provides Carus' clients with a one-stop-shop for their IT system requirements, providing peace of mind and freeing up resources to provide greater service in their own field of expertise.

carus.com

carus

Going beyond machinery maintenance surveys with DNV's Machinery Maintenance Connect

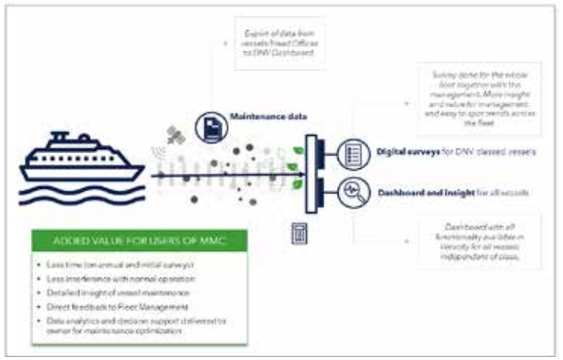
An innovative approach to machinery maintenance surveys from DNV utilizes the customer's machinery planned maintenance system data to improve efficiency, save time, and reduce cost, while providing operators with increased transparency and insight to their fleet.

Amidst the rising cost of operations and the increasingly complex regulatory landscape, the ferry industry is under immense pressure to reduce costs while maintaining safe and reliable operations. Supporting these efforts, DNV has digitalized it's machinery planned maintenance system (MPMS) surveys with Machinery Maintenance Connect (MMC) and helped operators to unlock new insights into their vessel and fleet performance.

The better way to survey

Many ferry operators today have planned maintenance systems (PMS) implemented to support their operational and maintenance goals, as well as their efforts to maintain compliance with all applicable classification and manufacturer requirements. For decades traditional onboard surveys of these vessels, that are subject to DNV's MPMS survey arrangement, have been the standard and involve verifying each vessel in the fleet and recording of the information related to each vessel separately. Carrying out a traditional MPMS survey for a fleet takes time and can be disruptive to on board personnel.

DNV's innovative MMC survey approach leverages the PMS. An integration of the company's PMS software and MMC, provides DNV with access to the shared MPMS data on the relevant machinery class component to conduct the survey digitally and remotely. The digital approach includes a dashboard displaying information about the machinery maintenance status for each individual vessel in real-time, while also allowing DNV to perform the MPMS survey for the entire fleet at once. For the vessel owner, using MMC provides increased transparency and a full overview of the progress of on-board maintenance.



Welcome benefits

DNV has received overwhelmingly positive feedback since the new survey approach became available. "The market's reception of the new survey approach has been really positive," said Rolf Petter Hancke, Principal Engineer at DNV and a leading expert for MMC. "With MMC, we can survey an entire fleet for a client in one go, saving time and reducing the disruption to daily operations. With the management of the customer also being involved in the process, our clients have access to direct feedback on the status and improvement of their fleet performance."

The MMC survey approach means all vessels in a fleet are surveyed in the same way, by the same team, and at the same time, meaning the survey results are more objective, and provide a better basis for comparisons and benchmarking within the fleet. "Advanced analytics of machinery maintenance are available on request; using MMC, operators can easily provide third parties an update on the status and performance of their machinery maintenance," added Hancke.

In many ways, the ferry segment is at a crossroads between its past and its future. DNV sees that MMC is one tool that ferry operators can use to better position themselves at this crossroads. "Safe, reliable, affordable, and regular ferry service is what passengers have grown accustomed to, but meeting those expectations today is more challenging than it was in the past," said Hans Eivind Siewers, Segment Director Passenger Ships & RoRo at DNV. "Operators today need to be having more strategic decisions, not just about the day-to-day operations. Using MMC, it is our hope that we can elevate the value of the day-to-day operations to fuel those conversations and cultivate meaningful action for the future."

Scan to access more information about Machinery Maintenance Connect

DNV

Get On Board, Get Away with FRS Clipper

Victoria Clipper V in Victoria's Inner Harbour

From Iconic Local Roots…

Sailing between Seattle, WA and Victoria, BC, FRS Clipper operates fast ferry services in what is unarguably one of the most beautiful regions of the world. The company's roots stem back to 1986 when FRS Clipper pioneered high-speed international fast ferry service between two of the Pacific Northwest's pinnacle cities.

The sleek, striking high-speed catamarans quickly grew to an iconic waterfront brand for both Seattle and Victoria with a reputation for fast, convenient and reliable year-round travel. Since starting service, FRS Clipper has provided fast ferry transportation and whale watching tours as well as grown into a full-fledged travel company providing tours, accommodation and multi-modal transportation packages for more than 8 million guests to destinations across the Pacific Northwest. FRS Clipper's expert Pacific Northwest agents help guests customize unique travel experiences from beginning to end.

To Global Partnership…

In 2016, FRS Clipper became a subsidiary of FRS, the global fast-ferry shipping company based in Flensburg, Germany. The FRS Group consists of 21 subsidiaries located across Europe, Northern Africa and North America and encompasses 70 vessels with more than 1,500 employees from countries across the globe.

Comfort Class seating

The FRS partnership brought about the introduction of the *Victoria Clipper V* fast-ferry in 2018. The 525-passenger vessel features three classes of reserved seating service with each class offering additional upgrade seating options. Paired with an outdoor viewing deck, locally-sourced food and beverage options and in-seat service attendance, the *Victoria Clipper V* offers a premier option for those looking for quick and easy international travel between Seattle and Victoria.

Vista Class seating

Full-Speed Ahead

Following two years of pandemic-forced service restrictions, FRS Clipper has returned to full operations and is poised to continue its growth in the Pacific Northwest. The company will continue forth with its focus on regional expansion as well as reduced vessel emissions initiatives. According to Matthias Pahnke, CEO of FRS Clipper, "Our employees demonstrated incredible dedication and resilience throughout the height of the pandemic. We are now more confident than ever that we can tackle any challenge ahead as we move forth to further develop our fast ferry services and product offerings our guests cherish."

To learn more, please visit ClipperVacations.com and FRS.world.

FRS CLIPPER

Washington State Ferries' Journey to Hybrid Electric

Washington State Ferries

Washington State Ferries (WSF) is embarking on an ambitious initiative to transition to a hybrid electric ferry system with support from the governor and state legislature.

Operating the largest ferry system in the United States, WSF is the biggest contributor of greenhouse gas emissions from a state agency in Washington – burning 19 million gallons of diesel fuel to support 24 million passengers each year. This puts WSF in a unique position to reduce airborne pollution and greenhouse gas emissions by electrifying its ferry fleet. To transition to a hybrid electric fleet, WSF will:

- Build 16 new hybrid vessels
- Retrofit 6 current diesel vessels to hybrid
- Retire 13 diesel vessels
- Electrify 16 terminals

Program benefits

Electrification of the WSF ferry system will significantly reduce state greenhouse gas emissions and improve local air quality. By 2040, emission reductions will:

- Reduce carbon dioxide emissions by 76%
- Reduce sulfur oxide emissions by 75%
- Reduce nitrous oxide emissions by 94%
- Reduce particulate matter emissions by 90%

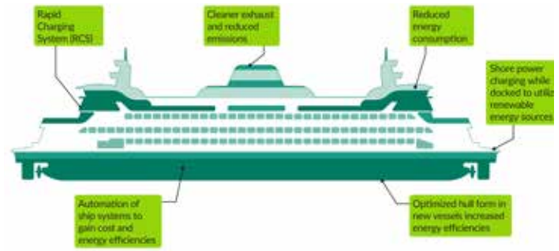
WSF will also save a significant amount by electrifying its fleet, particularly given rising fuel costs. Based on a conservative projection of $5/gallon, converting just three Jumbo Mark II vessels to hybrid electric without terminal improvements will save approximately $5 million/year. Once the terminals are electrified, WSF anticipates saving over $23.7 million/year.

Costs and funding

Estimates in the 2020 System Electrification Plan show that it will cost a total of $3.98 billion to fund the electrification program. The program is currently funded at $1.33 billion from grants, state, and federal funding.

Why hybrid electric?

A hybrid model fits the WSF system best as it provides system resiliency, allowing a vessel to continue service on a route and within the system even if there is not electricity available to charge. In addition, having diesel as a secondary power source allows WSF to manage utility costs in a way that is most cost-effective while still providing greenhouse gas emission reductions. This model also facilitates an earlier transition to electrification, with the first vessels operating as hybrids prior to full terminal electrification.



Program implementation

Building five new vessels: WSF is developing the Request for Proposal (RFP) for the construction of five new hybrid electric Olympic Class (HEOC) vessels. These new vessels, along with plans for 11 additional new vessels and six converted vessels, are required by state law to be built in Washington.

Vessel conversions: WSF will solicit competitive bids in March 2023 to convert the three Jumbo Mark II vessels to hybrid electric. Our team estimates that the converted Wenatchee will begin service in 2024, with conversions of the Tacoma and the Puyallup to follow.

Terminal electrification: WSF is working with several utilities to ensure that adequate electricity supply and energy storage will be available at the 16 terminals that will be electrified through this program.

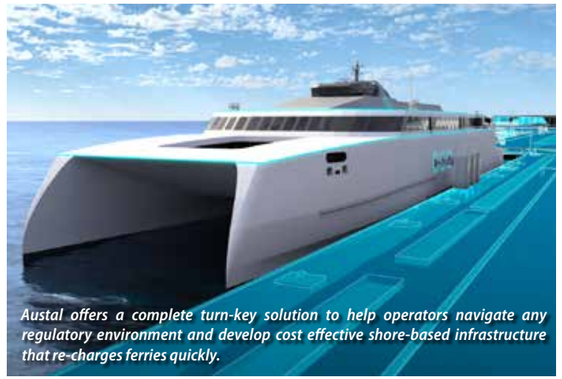
In reflecting on WSF's budding electrification program, Matt von Ruden, WSF's Electrification Program System Administrator, commented "The development of this RFP, and future selection of a shipbuilder for these five new vessels, is an exciting milestone not only for our electrification efforts, but for the maritime industry as a whole. We look forward to working with new partners to support the development of a greener maritime industry here in Washington state."

To learn more about the WSF electrification program, visit https://wsdot.wa.gov/construction-planning/major-projects/ferry-system-electrification.

Power On.

Austal introduces the VOLTA Auto Express range of electric-powered vehicle passenger ferries, offering pathways to Net Zero Emissions.

Adding to the original VOLTA Passenger Express range of electric-powered ferries launched in 2021, Austal has announced the immediate availability of large vehicle-passenger ferries, in catamaran or trimaran hull designs, powered by all-electric powerplants.



Austal offers a complete turn-key solution to help operators navigate any regulatory environment and develop cost effective shore-based infrastructure that re-charges ferries quickly.

Drawing upon the detailed research and development that created the VOLTA Passenger Express ferry solutions and going well beyond the installation of an electric powerplant, Austal has optimised their proven vehicle-passenger ferry designs for both weight and efficiency to achieve additional solutions for operators on the pathway to net zero emissions.

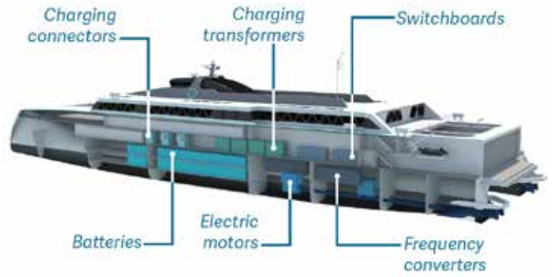
Austal's VOLTA Auto Express range of all-electric vehicle passenger ferries is available now.

Customised vehicle-passenger ferry designs featuring an all-electric powerplant, in catamaran and trimaran hull form (up to 130 metres LOA) are available, with flexible interior layouts allowing both vehicle and passenger carrying capacities to be maintained with an all-electric powerplant fitted.

Crew can constantly monitor and control the electrical powerplant using Austal's proven MARINELINK suite of products, ensuring the vessel runs smoothly, efficiently, and economically.

Powerful new battery technologies continue to emerge in the global marketplace that not only compliment Austal's lightweight and efficient hull forms but ensure fast-ferry performance and capability is maintained. Passenger comfort and customer satisfaction is also improved through lower noise and vibration while underway.

Recognising that a fully customised, electric-powered vessel is only half of the solution when it comes to introducing an all-electric ferry service, Austal is offering a complete on-shore development package that helps operators navigate any regulatory environment and develop cost effective shore-based infrastructure.



Austal has optimised proven vehicle-passenger ferry designs for both weight and efficiency to achieve additional solutions for operators on the pathway to net zero emissions.

Working closely with ferry operator's stakeholders, including government and port authorities, electricity generators and distributors, technology developers and original equipment manufacturers – and partnering with the world's leading electric charging infrastructure and storage providers – Austal can project manage bespoke installations to suit any requirements.

Battery charging infrastructure is available now that can re-charge large vehicle-passenger ferries quickly – while vehicle and passengers are unloaded and loaded – minimising turnaround times and seamlessly integrating into existing schedules.

Find out more about Austal's VOLTA Auto Express range, and complete turn-key solutions available, at Interferry 2022 (Exhibition Stand #22), watch our video on the Interferry46 conference app, email sales@austal.com, or visit https://volta.austal.com/

AUSTAL

Hybrid Shuttle Ferry powered by Cummins

Twin Cummins QSL9 diesels power hybrid ferry

A more environmentally conscious passenger vessel is set to cruise Western France's famed tourist destinations. *M/V Askea*, a hybrid coastal shuttle and sightseeing ferry for Arcacon Bay, is a hybrid propulsion vessel with Cummins QSL9 diesel engines.

Designed by Mer et Design, the new passenger vessel was built by ODC Marine for Compagnie Maritime Seaway (CMS) as a ferry shuttle that will also offer private, coastal excursions.

The 30-ton ferry is 19.89-meters by 4.8-meters and accommodates 98 passengers with two crew. *Askea* benefits from a new generation of propulsion batteries for increased range and reduced charging time, combining passenger-carrying capability with lowering operating costs as well as reduced noise and vibrations minimizing environmental impact.

With a maximum speed of 20 knots, the hybrid propulsion includes an all-electric mode, enabling zero-emission sailings for more than two hours at six knots when navigating in harbors and near protected areas. Twin Cummins QSL9 main diesel engines each producing 335 kW at 2,100 rpm drive a ZF arrangement with four-bladed S-class propellers connected to gearboxes.

The electric propulsion consists of two 80kW brushless motors powered by 88kWh lithium-iron phosphate batteries. The batteries feature 60-percent improved energy density and a charging time of only four hours.

Count on Cummins

Cummins QSL9 diesel engines provide dependability and long life. Proven through thousands of hours of reliable commercial and trawler operation with clean, quiet operation with virtually no startup smoke from the high-pressure common-rail fuel system for strong performance, QSL9 marine engines offer outstanding power performance in the toughest work conditions, delivering better fuel economy, better cold-starting capability and lower operational noise.

With full authority electronic control for precise engine manipulation, a low-maintenance filter assembly to minimize downtime and excellent fuel economy for long range cruising, captains count on Cummins global service network for peace of mind.

A 10kW bow thruster from Side Power provides added maneuverability for navigating restrictive waters and harbors. An electro-hydraulic system from Lecomble and Schmitt aids steering. With a modular deck arrangement offering adjustable seats and tables accommodating passengers with limited mobility, *Askea*'s foldable aft platform is configured to carry bicycles. The interior spaces have Flexiteek synthetic teak decking, aluminum seats and aluminum honeycomb panel tables.

HULL	Aluminium
SUPERSTRUCTURE	Aluminium
DECK	Aluminium
LOA	19.89 m
LWL	17.99 m
BEAM	4.8 m
DISPLACEMENT	30 T
MAIN ENGINES	2 x Cummins QSL9-M, 335 kW at 2,100 rpm
GEARBOXES	2 x ZF 325-1A
PROPULSION	2 x ZF S-Class propellers
MAX SPEED	20 knots
CRUISING SPEED	17 knots
BATTERIES	Lithium-iron phosphate, 88 kWh
FUEL CAPACITY	2,300 liters
CONSUMPTION	110 liters per hour at 17 knots
CREW	2
PASSENGERS	98
CLASSIFICATION	French Rules 223b, Bureau Veritas
DESIGNER	Mer et Design, France
BUILDER	ODC Marine, China

Ferry Digitalisation Brings Enhanced Vessel Operations, Crew Welfare And Passenger Experience

Ferry digitalisation yields savings and increased profits by optimising vessel operations, supporting crew welfare – and thereby facilitating the recruitment and retention of staff – and establishing a new revenue stream through the sale of digital services to passengers.

To allow operators to access these benefits, Inmarsat, the world leader in global, mobile satellite communications, has teamed up with Pivotel, an international satellite communications company with offices in key markets across Europe, the Americas and Asia Pacific.

Providing more than just a data connection, Pivotel delivers regional and global satellite connectivity with built-in network security features including Pulsar firewall alerts, barring firewalls and content filtering. Value-added services include a platform for email, weather, file transfer, chat filtering and vessel tracking; a satellite-optimised social-networking and chat function for crew; and social media and entertainment access for passengers.

As Pivotel's satellite communications partner, Inmarsat provides the connectivity enabling ferry operators to utilise these services. Depending on the size of the vessel and its data demands, customers can choose between the simpler, more cost-effective Fleet One and the more powerful Fleet Xpress, which combines the best of Inmarsat's connectivity solutions.

Together, Pivotel and Inmarsat provide ferry companies with the tools to improve business operations for a better working environment and, through advanced crew welfare solutions, keep personnel connected with their lives onshore. This in turn supports employee recruitment and retention, ultimately minimising staffing costs. In addition, by offering a platform to sell internet connectivity and entertainment through social media, along with enhanced point-of-sale systems, Pivotel and Inmarsat help operators to boost revenue while maximising customer satisfaction and encouraging repeat business.

Pivotel is currently working with a leading ferry operator in Southeast Asia to implement a complete connectivity package combining secure, high-bandwidth satellite connectivity with a suite of digital services. The integrated solution optimises vessel operations by streamlining staff communications and data access for satellite email, weather forecasts, navigation and vessel tracking.

Business operations are also enhanced, with the solution offering onboard point of sale at the ferry shop as well as access to sales and ticketing information. For crew, a communication and media portal offers news, chat, text, gaming, e-learning and training videos, and includes the usage and cost controls required by operators. Finally, a new profit centre improves the passenger experience by providing access to low-cost, basic connectivity to support instant messaging through Facebook, Messenger and WhatsApp.

inmarsat pivotel

Rauma Marine Constructions

Always at the forefront of innovation

Thanks to the innovative fuel solution, the Spirit of Tasmania vessels will be ready to use bio-based fuels.

Thanks to its long heritage in shipbuilding, Rauma shipyard knows how to create advanced vessels for challenging conditions and future demands. In early 2022, the shipyard began the construction of two car and passenger ferries that mark a new chapter in future-proof solutions. At Rauma Marine Constructions, every new ship adds to the innovations of its predecessor, contributing to an ongoing evolution.

Drawing from centuries of heritage in shipbuilding in Rauma, Finland, Rauma Marine Constructions (RMC) knows what challenging sea conditions demand from ships. Extensive experience combined with utilising the latest technology results in individually tailored and advanced world-class vessels that stand the test of time.

Next-generation RoPax ferries

In February 2022, the shipyard began the construction of two next-generation car and passenger ferries for Spirit of Tasmania. When finished, the ferries will be equipped to operate with liquefied natural gas (LNG). The ferries are specifically designed to undertake an extremely challenging open sea route across the Bass Strait from mainland Australia to Tasmania.

The ships continue the line of RMC's environmentally friendly ferries such as Aurora Botnia. Handed over to Wasaline in 2021, Aurora Botnia was the first car and passenger ferry in the world to meet the criteria of the Clean Design class notation.

In addition to the Spirit of Tasmania vessels, RMC is finishing the construction of MyStar, another eco-friendly ferry that will operate between Helsinki, Finland, and Tallinn, Estonia. The shipyard will also build four multipurpose corvettes for the Finnish Navy. For this, RMC has invested in a new construction hall.

Fuel solutions that meet the demands of the future

Ships constructed at Rauma shipyard will be sailing the seven seas for decades. Therefore, the vessels built today must comply with not only current but also future regulations. Fuel efficiency, green transition and alternative fuels are crucial to reaching zero emissions in seafaring.

RMC designs and engineers each vessel to be environmentally friendly, energy-efficient and equipped with the latest, high-performance technology. The Spirit of Tasmania ferries will have a dual fuel solution and are designed to be compatible with future e-fuels. Additionally, an improved data collection system will allow the crew to optimise energy use. Moreover, all ships constructed at Rauma shipyard are individually tailored to meet the Buyer's needs.

Fuel efficiency and alternative fuels are crucial to reaching zero emissions in seafaring.

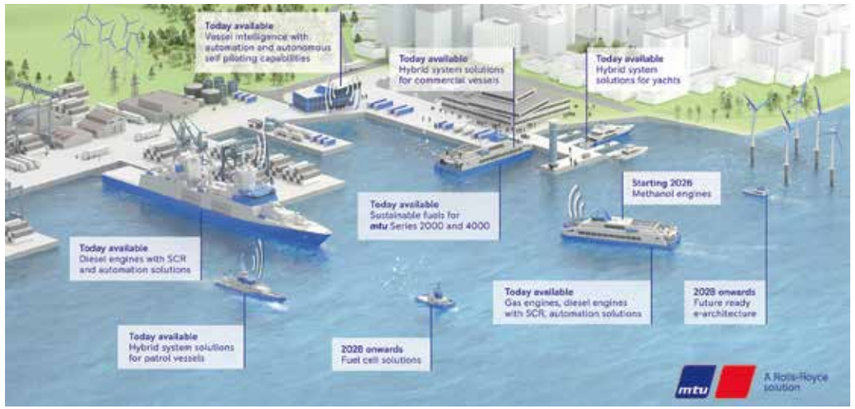
Continuous improvement has always been the guiding light at RMC. One of the shipyard's strengths is the ability to create and adopt innovations. Every vessel the company has built has added to the sustainability trajectory of the next one. RMC is always in the process of building the best ship of all time.

A true network locomotive

Instead of viewing the maritime industry as a collection of single operators, RMC sees it as a value chain – an ecosystem where different players benefit from collaboration. This is reflected in the company's networked business model, based on long-term strategic partnerships in the maritime and other industry chains. An organisation of top experts, RMC acts as the prime contractor responsible for project management, functionality, and the top-level quality of the finished product.

The total value of RMC's orders is currently EUR 1 billion. The order book extends all the way to the end of the decade.

mtu solutions from Rolls-Royce pioneer the journey to Net Zero



Rolls-Royce business unit Power Systems, with its product and solution brand ***mtu***, is pioneering climate-friendly propulsion and power solutions in the marine application. It is currently transforming from propulsion manufacturer to provider of integrated sustainable solutions. With the sustainability program "Net Zero at Power Systems", Rolls-Royce Power Systems is taking concrete steps towards climate-neutral solutions. Rolls-Royce Power Systems has committed to cutting Green House Gas emissions of its new products by 35% until 2030 compared to 2019. To achieve this, the company is pursuing a multi-pillar strategy to reducing emissions: For example, the company is releasing its ***mtu*** Series 2000 and 4000 engines for sustainable fuels such as e-diesel and second-generation biofuels, thus enabling climate-neutral operation in all applications from 2023. In addition to using sustainable fuels, Rolls-Royce is building on new technologies:

Available today: *mtu* Hybrid PropulsionPack for *mtu* Series 2000 and 4000

The ***mtu*** hybrid portfolio offers flexible propulsion solutions for ferries, tugs, yachts and windfarm vessels. The system intelligently combines diesel engines with electric propulsion modules, batteries, gearboxes, control and monitoring systems and other electronic components to provide speed, comfort, efficiency and local emission-free cruising as required. The ***mtu*** Hybrid PropulsionPack is offered in a power range from 1,119 kW to 4,300 kW by the diesel engines plus 165 kW to 743 kW by the electric motors per powertrain. The maximum propulsion power is 10,000 kW per vessel. To ensure the optimum propulsion solution for each type of ship, Rolls-Royce offers a modular kit with standardized components. Italian high-speed maritime passenger transport company Liberty Lines is the first ferry customer for these ***mtu*** hybrid solutions, having ordered nine ***mtu*** Hybrid PropulsionPacks with Series 4000 engines for nine new fast ferries.

Market launch from 2026: Methanol engines based on *mtu* Series 4000

Rolls-Royce Power Systems is committed to methanol as a marine fuel for the future and wants to be a pioneer in that regard. The company is initially developing methanol engines based on the ***mtu*** Series 4000 and will launch them on the market from 2026.

Market launch from 2028: *mtu* fuel cell systems

Rolls-Royce Power Systems is also already working on the development of fuel cell systems for marine applications and will launch its own ***mtu*** fuel cell systems for main propulsion and on-board power generation from 2028.

It is the strategic mission of Rolls-Royce to rise to today's challenges by developing sustainable, climate-neutral solutions.

For more information, visit Rolls-Royce's experts at Interferry booth 4.

mtu A Rolls-Royce solution

Creating a unique ferry experience for every passenger

LUXForm Journey as seen on Brittany Ferries' MV Galicia and MV Salamanca

The aim of every passenger ferry operator is to create a positive and safe experience for every passenger, every time. UES Marine creates seating and marine furniture solutions that helps operators deliver a seamless, comfortable experience to their passengers. "When passengers are comfortable, they can sit back and make the most of their journey," says UES Marine General Manager Wendy Lawrence. She says UES Marine has been a strategic supply partner to the global maritime industry for more than two decades, and the focus has always been on finding the balance between passenger experience and commercial viability.

Your customer is our priority

Every ferry operator, public or private, needs to meet the needs of a wide range of stakeholders, but ultimately the passenger experience is what sets a service apart, and is the realisation of the collective goals of each of the vessel's stakeholders.

"In this sector, every part of the supply chain needs to be focused on creating an environment conducive to an enjoyable, comfortable, and individualised experience for every single commuter – without exception," Wendy says.

> *"Ultimately the passenger experience is what sets a service apart."*

It's no small feat. "The scale of the maritime commuter market is similar to that of aviation, which often surprises those outside the industry. We, collectively, service 4.27 billion commuters annually, and we aim to create a positive passenger experience for each individual commuter."

"At UES Marine, we listen to customers, and we listen to those who care about the passenger experience."

Matching needs to solutions

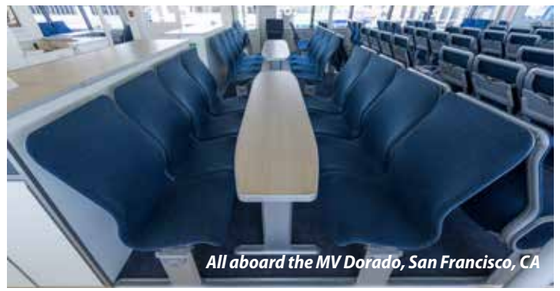
Putting the rider at the centre of the design process doesn't mean forgetting about the ferry operator's needs. "We deliver commercially sound maritime furniture that places the passenger at the centre of the design and decision-making process. Our solutions are driven by passenger experience, but we know we need to marry customer delight with commercial viability. From fabric selection to design and product variations, we work with designers, ship builders and other stakeholders to deliver a project that creates positive outcomes all round."

This understanding of commercial drivers has shaped UES Marine's range to cater for all commuters. These solutions have pride of place

> *"Our solutions are driven by passenger experience, but we know we need to marry customer delight with commercial viability."*

on some of the world's most iconic vessels. Across the range, from the simplest seats for short trips to the most luxurious lie-flat sleeper seats, the range is lightweight, strong and modular for design flexibility and lower costs – which means a more affordable service for the end-user. Lighter components also deliver a better environmental profile, which is critical as the focus on sustainability continues to intensify.

Popular product families include the Seaforce, a lightweight, ergonomic, indoor and outdoor commuter seat with suspension mesh; as seen on the *ICAT* (Croatia), *Amherst Islander II* and *Wolf Islander IV* (Canada) and several San Francisco Bay Ferries (USA). Its brother seat, G-Force, is available as a static or reclining seat with inbuilt headrest, which has featured on Batam Fast Ferries (Singapore) and Golden Gate Ferries (USA).



All aboard the MV Dorado, San Francisco, CA

The LUXForm has a versatile range of passenger options, including a comfortable, static commuter seat through to a lie flat premium option with creature comforts like inbuilt ambient lighting, extending footrests, meal trays and charging points and is often heralded the ultimate in luxury passenger seating.

Increasing in popularity, UES Marine barstools are an ergonomic, comfortable and space optimising option in entertaining and general commuter zones.

Global reach, local support

UES Marine is headquartered in Australia, with manufacturing facilities in Australia (which also services the European market) and the US. Unlike most marine furniture suppliers, UES Marine also offers installation and post sales service plans, to ensure the provision of a comfortable passenger experience for the life of the product.

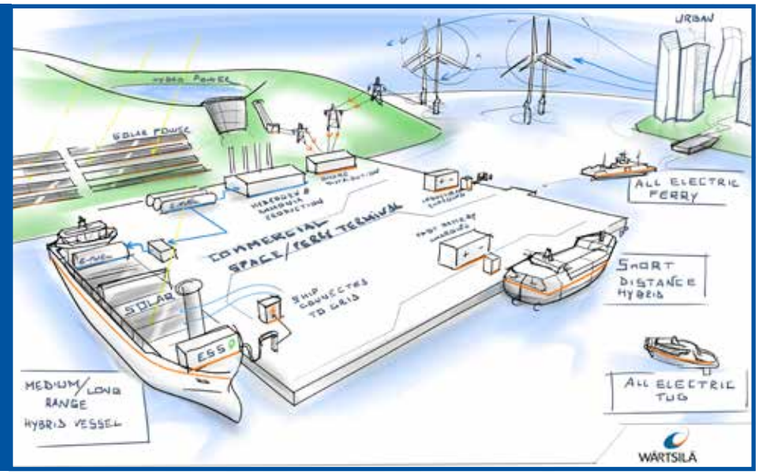
ues-marine.com

UES marine

Future-Proof Ferry Design

WÄRTSILÄ

Wärtsilä's purpose is enabling sustainable societies through innovation in technology and services, and this drives us in everything we do.



The design and build of a new ferry is a critical time in its lifecycle. Failing to include flexibility in the vessel design means that predicted future technologies cannot be feasibly implemented. Technology has changed a lot over the last 40 years and the next 40 will see even greater change – an important consideration when ferries in North America generally operate for over 30 years. Major retrofits to older vessels need to be anticipated as part of the design philosophy. The opportunity to upgrade to new technologies – particularly decarbonizing technologies – can only be met by designing the vessel with this in mind.

Planning for the Future

There are some very good examples of forward thinking in new ferries being delivered to North America, even if the need for future-proof technology has not yet been universally accepted. A common refrain is that the jetty shore charging infrastructure and electrical utility connections still don't exist to leverage energy from shore. As a result, diesel-powered ferries are still being built that are not designed for easy conversion to take advantage of eventual shore charging solutions. Another reason given for not making hybrid or all-electric investments in the initial vessel design is that shore energy is not green. This, however, is short-term thinking that ignores the initiatives being taken to add renewable energy to our grids.

One solution that is growing in popularity is to design diesel-electric hybrid ferries with an electrical system that allows for future additional battery capacity, integration of energy sources such as fuel cells, and connections to shore charging. A hybrid system delivered today brings optimization benefits for best operational efficiency across an engine's lifetime. Battery replacement can be expected after approximately 10 years. Battery technologies are evolving quickly and it is not known today what battery chemistry will be used in the future and what will the costs be. Potentially more efficient, more power dense, and less costly battery solutions will exist, and flexibility in the design of the electrical system allows the battery to be upgraded to new technologies as part of the battery replacement cycle.

The choice of internal combustion engine and fuel type is also critical in the initial design of the vessel. Choosing diesel engines gives the flexibility to use biodiesel, methanol, and even ammonia. Choosing dual fuel engines in the initial design opens the door to gaseous fuels such as LNG, synthetic methane, ammonia, and hydrogen. The latest generation of engines allow for conversion between liquid and gaseous fuels with only a moderate investment. To be truly flexible in the adoption of future fuels, ferry designs need to allow for different fuel storage and handling systems.

Ensuring Efficiency

For ferry operators, staying on schedule is crucial. If a ferry sails a couple of hours late, the impact on passengers is significant. Ferry operators demand exceptional reliability from their installed equipment and integrity of energy sources, with the assurance of guaranteed fuel supplies. If there is even the slightest question about reliability, availability, or cost effectiveness then operators will want alternative energy options – back-up generators, energy storage at terminals, hybrid engines that burn clean fuels, and so on.

Regardless of the fuel types and energy sources selected, the vessel design must be as efficient as possible. Improving efficiency reduces the amount of energy used. Energy is expensive, whether onshore electrical energy or fuels for engines or fuel cells, and energy availability and storage impact the operational profile of the vessel. Most recent advances in efficiency technologies are now available for design integration, such as propeller technologies, advanced hull designs, air lubrication systems, and high-efficiency rudders and thrusters. Investing in these technologies brings operational benefits but also allows the adoption of future fuels and energy sources that may be constrained by available fuel space or shore charging times.

Wärtsilä's purpose is enabling sustainable societies through innovation in technology and services, and this drives us in everything we do. We have developed, or are developing, flexible technologies that support the design and build of future-proof ferries. For those looking to build a new ferry, hybrid electrical systems incorporating true multifuel engines are the best path forward when the future is unpredictable and certainty is needed today.

Interferry Regulatory Affairs

Carbon intensity regulation: a cause for concern

Regulatory affairs director Johan Roos explains why Interferry is calling for sector-specific adjustments to a crucial requirement on reducing GHG emissions

The targets for reducing maritime greenhouse gas (GHG) emissions stipulate interim reductions of some 50% by 2030 and 'net zero' status by 2050. Driven to a large degree by the European Commission's Green Deal, the IMO has developed short-term measures for implementation between 2023 and 2030.

Stakeholders including Member States, ship owners, ship operators and green NGOs have embraced the environmental imperative in good faith, but for the ferry sector there is major concern over a key element of the regulations due in force from 1 January 2023 – the Carbon Intensity Indicator (CII).

Some appropriate amendments will be essential to facilitate realistic compliance by ferries. This was evident in 2010 when Member States set about producing the Energy Efficiency Design Index (EEDI). They applied a continuous 'fair and robust' litmus test ensuring the instrument rewarded doing what was right and left no room to be circumvented.

So far as the ferry community is concerned, there are no such checks and balances in the well-intentioned but ill-informed CII, which compares annual fuel consumption and nautical miles sailed for a ship of given size with the average for others in the same category. Ships are then rated on a scale ranging from the top 'A' and through mid-rank 'C' to the alarm bells 'E' grade – in which case a remedial plan must be presented to Class and Flag within months. However, using a ship's performance in the previous year as the basis for improvements in the next year is extremely problematic.

Firstly, the regulation fails to recognise actual utilisation of the ship – the essence of any efficiency metric – in relation to its carrying capacity, per nautical mile sailed. Whether fully loaded or completely empty, ships of the same size covering the same distance would get equal 'miles sailed' performance scores, but the empty and lighter ships will earn a better CII rank by consuming less fuel.

Secondly, the CII formula is biased towards favouring maximum time spent sailing at the design speed. Every port call and berthing manoeuvre, every deceleration/acceleration to navigate safely in populated waters, every hour at berth and every in-port transfer will worsen the ship's CII - and this is particularly so given the typically diverse idiosyncrasies of ferry designs and operations. Similarly, imagine two sister ships, one operating in sheltered waters and the other on the North Sea. Under the same operational profile, the former will always get a better CII. Resolving the disparity by swapping them every other year doesn't make any sense!

Finally, the measure poses a potential 'paying for the sins of others' threat. A vessel that changes hands through purchase or bareboat charter might require the new operator to find 50% fuel savings in the aftermath of a less-than-careful predecessor; or a previously efficient out-chartered ship could be returned needing rectification due a client's overstretched itinerary.

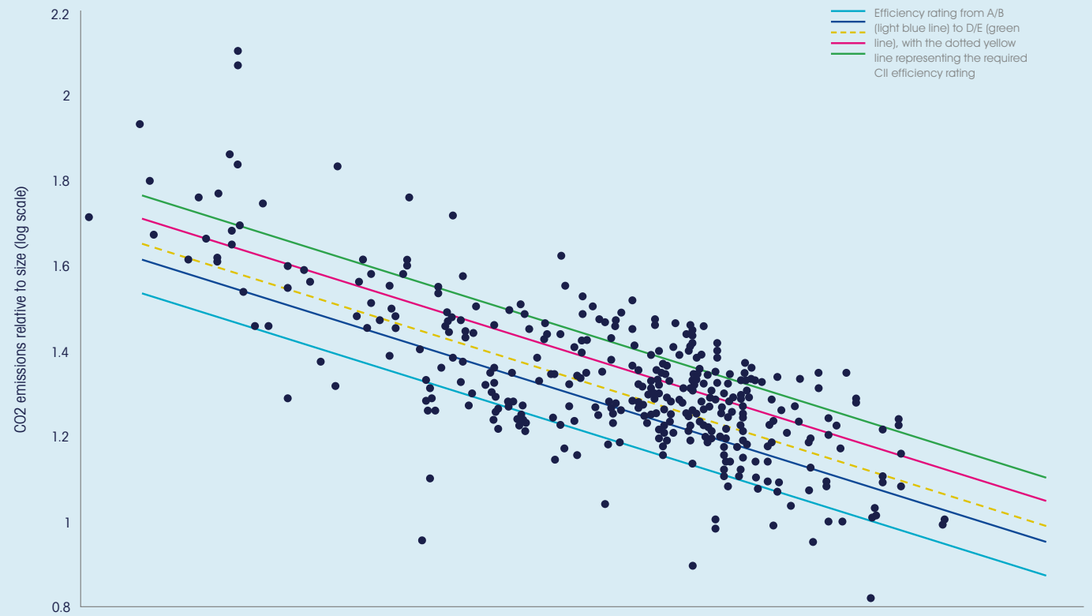
CII scatter – non-conformity to the imagined true average – is widespread within the ro-pax fleet. The number of ships falling below the tentative 2030 targets is very worrying because the necessary corrective action is unlikely to be an economic proposition for such vessels.

The CII was approved by the IMO's Marine Environment Protection Committee in June this year ((MEPC 78) despite obvious misgivings about a narrow template that over-simplifies the optimum fuel consumption equation and imposes retroactive penalties. Many Member States seem set to take a soft approach to ships that make reasonable efforts to comply pending a review of the system due in 2026.

Meanwhile, during the CII's first three-year phase, Interferry urges members to clarify the expectations of their Classification Societies and Flag States. We are also calling upon the membership to provide the data and feedback that will demonstrate how inadequately the regulation reflects the true performance of ferries. It is our sincere belief that helping the IMO to shape meaningful adjustments will maximise the ferry sector's role in reducing GHG emissions for the greater environmental and commercial good.

Is the Carbon Intensity Indicator a good measure of ro-pax efficiency?

CII efficiency ratings for 358 ro-pax ships show a large scatter of data that Interferry believes does not accurately reflect the real-world situation



46th ANNUAL INTERFERRY CONFERENCE

SEATTLE • OCTOBER 1-5, 2022

POWER *and* PEOPLE

PLATINUM SPONSORS: carus, DNV

SATURDAY • OCTOBER 1

9:45am – 4:00pm*
PRETOUR • SEATTLE BY LAND AND SEA

SUNDAY • OCTOBER 2

8:30am – 4:30pm*
THE CARUS CUP • THE GOLF CLUB AT NEWCASTLE

9:00am – 4:00pm*
PRETOUR • SNOQUALMIE FALLS & WOODINVILLE WINE TASTING

6:00pm – 10:00pm*
SUNDAY EVENING WELCOME RECEPTION AT CHIHULY GARDEN & GLASS

CONFERENCE DAY 1 • MONDAY • OCTOBER 3

9:00am – 9:30am
SESSION 1 • OPENING CEREMONIES
Mike Corrigan – Interferry, Canada
Matthias Pahnke – FRS Clipper, USA
Patty Rubstello – Washington State Ferries, USA
Marko Liias – Washington State's 21st Legislative District, USA

9:30am – 10:00am
SESSION 2 • KEYNOTE: GETTING YOUTH ONBOARD – ENGAGING YOUNG PEOPLE IN A MARITIME CAREER
Tremain Holloway – Highline Maritime High School, Washington, USA

10:00am – 10:20am
SESSION 3 • BOOMERS AND BEYOND – WORKFORCE OUTLOOK AND TRENDS
Parm Hari – Vancouver Fraser Port Authority, Canada

10:20am – 10:40am
SESSION 4 • DUAL COURSE OF STUDY
Nina Teggatz – FRS, Germany

FLASH PRESENTATION • CARUS

10:40am – 11:10am
COFFEE BREAK

11:10am –11:40am
SESSION 5 • KEYNOTE: A VIEW FROM CRUISE
Kelly Craighead – Cruise Lines International Association, USA (CLIA)

11:40am – 12:10pm
SESSION 6 • REGULATORY UPDATE
Mike Corrigan – Interferry, Canada
John Garner – JG Maritime Solutions / Interferry, UK

FLASH PRESENTATION • DNV

12:10pm – 1:15pm
LUNCH

FLASH PRESENTATION • AUSTAL

1:15pm – 2:00pm
SESSION 7 • BRIDGING THE GAP THROUGH AUTOMATION
Fully Automated Ferry Experience
Anders Rundberg – Carus, Finland
John Bertell – Carus, Finland
Peter Ståhlberg – Wasaline, Finland

Overcoming Labour Shortages with Automation
Alex Peirce – Brock Solutions, Canada
Travis Raines – Brock Solutions, Canada

2:00pm – 3:00pm
SESSION 8 • VESSEL PROJECT FEATURES
Unlocking Potential of Urban Water Transport – Long-range, Fast Electric Ships
Erik Eklund – Candela Technology, Sweden

Preliminary Design for an Electric Fast Foil Ferry and Shoreside Battery Charging Infrastructure Assessment
Simon Mockler – DNV, USA
Paul Bieker – Bieker Boats, USA

BC Ferries Major Vessel Project – Finding a Path for Environmental Sustainability
Ed Hooper – BC Ferries, Canada
Bruce Paterson – BC Ferries, Canada

FLASH PRESENTATION • CUMMINS

3:00pm – 3:30pm
COFFEE BREAK

3:30pm to 3:45pm
SESSION 9 • GREEN MARINE: ADVANCING ENVIRONMENTAL EXCELLENCE – A TRUSTED ENVIRONMENTAL IMPROVEMENT FRAMEWORK FOR FERRY OPERATORS
David Bolduc – Green Marine, Canada

3:45pm – 4:00pm
SESSION 10 • BLACK SEA OPERATIONS
Joe Lindblom – Sea Lines, Finland

4:00pm – 5:00pm
SESSION 11 • FERRY LEADERS PANEL – POWER AND PEOPLE
Håkan Agnevall – Wärtsilä, Finland
Chris Briggs – SeaLink, Australia
Sean Collins – Thames Clippers, UK
Niclas Mårtensson – Stena Line Group, Sweden
Mary Ann Pastrana – Archipelago Philippine Ferries, Philippines

FLASH PRESENTATION • UES MARINE

5:00pm – 6:00pm
HAPPY HOUR

6:00pm – 10:00pm*
MONDAY EVENING NETWORKING RECEPTION AT THE MUSEUM OF FLIGHT

CONFERENCE DAY 2 • TUESDAY • OCTOBER 4

8:15am – 8:30am
SESSION 12 • INTERFERRY AGM
Mike Corrigan – Interferry, Canada
Christophe Mathieu – Brittany Ferries and Interferry, France
Tim Mooney – Fire Island Ferries and Interferry, USA

FLASH PRESENTATION • INMARSAT

8:30am – 9:45am
SESSION 13 • MAKING ONSHORE POWER SUPPLY A REALITY
Moderator: Philippe Holthof – C&More, Belgium

Charting A Course for an Equitable and Sustainable Future
Stephen Metruck – Port of Seattle, USA

Designing and Planning Onshore Power Supply
Paul Singh – SNC Lavalin, Canada

Beyond the Plug
Palemia Field – ABB Marine & Ports, Finland

Ways to Enable a Long Term Sustainable Energy Transition in the Ferry Industry
Geert de Jong – Damen, The Netherlands
Bastiaan Vink – Damen Ferries, The Netherlands

FLASH PRESENTATION • DAMEN

9:45am – 10:15am
COFFEE BREAK

10:15am – 11:30am
SESSION 14: FUELING THE FUTURE
Moderator: Philippe Holthof – C&More, Belgium

Pathways to Zero Emission Ferry Propulsion – A Decarbonization Case Study
Andrew Packer – Rolls Royce / MTU, USA

The Future of Zero Emission Marine Propulsion
Alan Mace – Ballard, Canada

Hydrogen and CSS as a Solution for Meeting IMO 2050
Maria Garbarini – RINA, Italy

Stimulating Renewable Maritime Ecosystems through Green Hydrogen Production
Anastasija Kuprijanova – Hornblower, USA
Sean Caughlan – Glosten, USA

11:30am – 12:00pm
SESSION 15 • PROPELLING EFFICIENCY
Moderator: Philippe Holthof – C&More, Belgium

Optimizing The Total Cost of Ownership of Ferry Propulsion: Case Study
Markku Miinala – Steerprop, Finland

Insights on Optimizing Propulsion for Efficient Ferry Operation
Per Nahnfeldt – Kongsberg Maritime, Sweden

FLASH PRESENTATION • WÄRTSILÄ

12:00pm – 1:00pm
LUNCH

FLASH PRESENTATION • RAUMA MARINE CONSTRUCTIONS

1:00pm – 2:00pm
SESSION 16 • VESSEL PROJECT FEATURES
Construction and Certification of the First Hydrogen Fuel Cell Powered Passenger Vessel
Tony Thomas – Cummins, USA
Terry Federer – All American Marine, USA

Gotland Horizon Concept – Towards Destination Zero
Christer Bruzelius – Gotland Tech Development AB, Sweden

Green Initiatives in Large RoPax Ferries
Håkan Enlund – Rauma Marine Constructions, Finland

2:00pm – 2:45pm
SESSION 17 • LEADING THE CHARGE: BATTERIES
Designer Perspective on Energy Storage
Luke Pretlove – Austal, UK

PwrSwap | Pay-as-you-go Energy Ecosystem
Brent Perry – Shift Clean Energy, Canada

The "Big Picture" of Batteries
Ole Jacob Irgens – Corvus Energy, USA

FLASH PRESENTATION • ROLLS-ROYCE POWER SYSTEMS / MTU

2:45pm – 3:15pm
COFFEE BREAK

3:15pm – 4:15pm
SESSION 18 • FERRY LEADERS PANEL – INNOVATION AND DISRUPTION
Bob Clifford – Incat, Australia
Seamus Murphy – SF Bay Area Water Emergency Transport Authority (WETA), USA
Max Olson – Seachange, New Zealand
Billy Thalheimer – REGENT, USA
Heidi Wolden – Norled, Norway

FLASH PRESENTATION • MERCY SHIPS

4:15pm – 4:30pm
SESSION 19 • CLOSING CEREMONIES
Mike Corrigan – Interferry, Canada
Patty Rubstello – Washington State Ferries, USA
Matthias Pahnke – FRS Clipper, USA
Bernard Dwyer – Spirit of Tasmania, Australia

5:00pm – 11:00pm
FAREWELL DINNER AT KIANA LODGE

WEDNESDAY • OCTOBER 5

10:00am – 1:00pm
TECHNICAL TOUR • HARBOR TOUR ON FRS CLIPPERS' *SAN JUAN CLIPPER* INCLUDING WSF & PORT OF SEATTLE FACILITIES TOURS

*Check the conference app for complete event times, transportation information and conference updates.

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AUSTAL, Cummins, DAMEN, inmarsat

GOLD: mtu A Rolls-Royce solution, Rauma Marine Constructions, UES marine, WÄRTSILÄ

AYRES Lightweight Panel Systems, Boundary Layer Technologies, edea Transport Technology, Green Marine, HamiltonJet, Hogia, KONGSBERG, LSA Liferaft Systems Australia, REGENT, RINA, SEACHANGE

SILVER: SHIFT, Stena RoRo, VOLVO PENTA

DELEGATE TRANSPORTATION: CROWLEY, Hornblower

EXPORT DEVELOPMENT: Port of Seattle, CHOOSE Washington Washington State Department of Commerce

BRONZE: ABB, BEURTEAUX, Corvus Energy, Elliott Bay Design Group, GRIMALDI GROUP, Jacobs, METAL SHARK METALSHARKBOATS.COM, YANMAR

HAPPY HOUR: Imeat, STEEN FRIIS DESIGN MARITIME INTERIOR & ARCHITECTURE, Victaulic

LANYARDS: NAIAD DYNAMICS

DIGITAL GUIDE: pressreader

MEETING ROOM: GREEN MARINE

RUN CREW: IMS. Always delivering

SPEAKER GIFTS: GLADDING-HEARN SHIPBUILDING

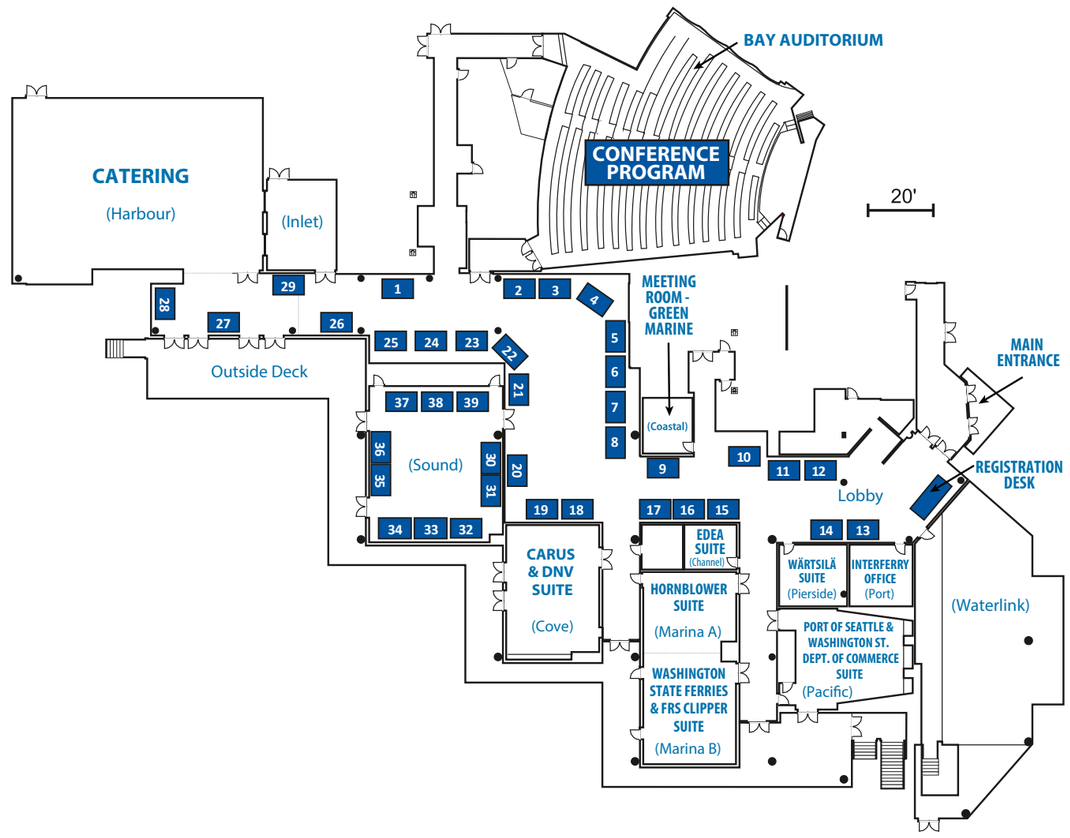
AUSTRALIAN MARINE EXPORTS, Cruise&Ferry, Maritime Reporter & Engineering News, Maritime Mariner, PACIFIC PORTS

PASSENGER SHIP TECHNOLOGY, SHIPPAX

MEDIA PARTNERS

Conference Venue Map
with Sponsor Exhibit Locations

1. Damen
2. Inmarsat
3. REGENT
4. Rolls-Royce Power Systems
5. Liferaft Systems Australia
6. Rauma Marine Constructions
7. Volvo Penta
8. Incat
9. Green Marine
10. Shift Clean Energy
11. Seachange
12. CITA Design
13. Alu Design AS
14. Wärtsilä
15. Beurteaux
16. Boundary Layer Technologies
17. Kongsberg Maritime
18. UES Marine
19. UES Marine
20. UES Marine
21. AYRES Composite Panels
22. Austal
23. Hogia
24. Cummins
25. Hamilton Jet
26. Stena RoRo
27. Trelleborg
28. Mercy Ships
29. BRIX Marine / All American Marine
30. H3X Technologies
31.
32.
33. Crowley Engineering Services
34. TECO2030
35. Elkon
36.
37. Shippax
38. Current Scientific Corp.
39. Victaulic



Speakers and Moderators

HÅKAN AGNEVALL • WÄRTSILÄ, FINLAND
Session 11 • Ferry Leaders Panel – Power and People
Håkan Agnevall is President and CEO of Wärtsilä Corporation. His most recent role was President of Volvo Buses and member of the Volvo Group Management. In his earlier career Håkan has held senior management positions with ABB and Bombardier in the fields of power systems, robotics and industrial automation. He has extensive international experience, having worked and lived in the U.S., Canada, Thailand, Brazil, Switzerland and Sweden. Håkan holds an MSc in Engineering Physics from the Lund Institute of Technology, Sweden paralleled with a BSc in Business Administration at the University of Lund, Sweden. He also holds an MBA from IMD, Switzerland.

JOHN BERTELL • CARUS, FINLAND
Session 7 • Bridging the Gap Through Automation: Fully Automated Ferry Experience
With a background in the shipping industry working with cargo shipping operations as well as cruise and port operations, John Bertell has spent the last 20 years with IT solutions for the ferry industry. Being involved both from the sales perspective and practical system implementations as project manager and implementation expert, he has gained experience of a wide range of ferry operations in detail. In 2010 he joined Carus as Sales Manager and is now Director of Sales, with the responsibility for new clients as well as for client relationships and business development.

PAUL BIEKER • BIEKER BOATS, USA
Session 8 • Vessel Project Features: Preliminary Design for an Electric Fast Foil Ferry and Shoreside Battery Charging Infrastructure Assessment
Paul Bieker is a Naval Architect from the Seattle area. Although he started his professional career working for commercial naval architecture firms such as Guido Perla & Associates and Elliott Bay Design Group, he has spent most of his career in the world of high-performance composite craft – mostly sailboats. He started this work by designing and building successful carbon fiber International 14 sailboats in his own shop leading to design and engineering for six different Americas Cup Teams over the past twenty years, winning the Cup twice. His latest three Americas Cups have included a deep involvement in many aspects of high performance hydrofoiling. Over the past thirty years Bieker Boats has produced an impressive variety of designs.

DAVID BOLDUC • GREEN MARINE, CANADA
Session 9 • Green Marine and Green Marine Europe: Advancing Environmental Excellence – A Trusted Environmental Improvement Framework for Ferry Operators
As President, David Bolduc is responsible for overseeing the administration, programs and strategic planning of the Green Marine organization. He leads a team of seven employees based in Quebec City, Halifax and Seattle. Reporting directly to the Board of Directors, he is Green Marine's leading representative and outreach agent. His appointment as Green Marine's executive director in January 2010 followed his active participation in creating the environmental certification program while employed at the St. Lawrence Economic Development Council (SODES), a founding member association.

CHRIS BRIGGS • SEALINK, AUSTRALIA
Session 11 • Ferry Leaders Panel – Power and People
Chris is responsible for the development and execution of SeaLink's fleet strategy including oversight of fleet maintenance, renewal and the of adoption of new technology to improve operational efficiency and reduce emissions across the national fleet of 120 vessels. He joined the SeaLink Travel Group, now the Kelsian Group, as Head of Operations for North Queensland and the Northern Territory in 2014 and in 2016 became the General Manager of SeaLink North Queensland. In his time with SeaLink he has successfully managed the delivery of public transport passenger ferry contracts, building of new vessels, introduction of new tourism products, improved operating and safety standards, negotiated national purchasing arrangements and has increased the profitability of the business.

CHRISTER BRUZELIUS • GOTLAND TECH DEVELOPMENT AB, SWEDEN
Session 16 • Vessel Project Features: Gotland Horizon Concept – Towards Destination Zero
As a senior partner with Gotland Tech Development, Christer drives innovation in shipping, enabling the industry to become more sustainable by advancing the technical solutions of tomorrow. Christer Bruzelius has more than 20 years of experience in senior management positions, as CEO and MD, for shipping companies in Sweden, Finland, and Denmark. For 9 years, Christer was the CEO of Destination Gotland (part of the Rederi Gotland Group), which operates the RoPax ferry traffic between the island Gotland and mainland Sweden. During his time as a CEO, Christer led several initiatives to place the company at the forefront in sustainability, including adding two RoPax-ferries powered by natural gas and biogas to the fleet.

SEAN CAUGHLAN • GLOSTEN, USA

Session 14 • Fueling the Future: Stimulating Renewable Maritime Ecosystems through Green Hydrogen Production

Sean Caughlan has been a leader in Glosten's design of alternative-fueled and battery-hybrid powered vessels for more than a decade. A Senior Marine Engineer at Glosten, Sean worked on design and conversion of several LNG fueled vessels early in the last decade. With the growing interest in hydrogen and with funding support from the US Maritime Administration, Sean worked with Sandia National Laboratory and Scripps Institution of Oceanography as Project Manager for the design of the Zero V, a hydrogen fueled research vessel concept. He is currently serving as Project Manager for the conversion of Washington State Ferries' largest vessels, the Jumbo Mark II class, from diesel electric to plug-in hybrid.

ROBERT CLIFFORD • INCAT, AUSTRALIA

Session 18 • Innovators Panel – Innovation and Disruption

Robert Clifford is the founder and Chairman of the Incat group of companies. The Incat Tasmania shipbuilding business has developed over five decades, now building a range from small commercial ferries through to very large vehicle carrying wave piercing catamarans. Robert is still very actively involved with the design and production of the Incat product. The Incat shipyard is renowned for producing large high speed wavepiercing catamarans with the focus now as much on operating efficiency as speed. Incat vessels operate around the world, Incat built vessels have now held the Hales Trophy continuously since 1990, and LNG powered Francisco operating in Argentina is the world's fastest large passenger Ro-Ro.

SEAN COLLINS • THAMES CLIPPERS, UK

Session 11 • Ferry Leaders Panel – Power and People

Sean Collins co-founded Thames Clippers in 1999. Having spent his early career working on the Thames as a captain, he saw the opportunity to build a professionally run high-speed passenger ferry service. Sean has built up Thames Clippers from a single catamaran to a fleet of 13 vessels with a total capacity of 2,127 passengers. Annual traffic is in excess of 3.3 million passengers. Sean was apprenticed to the Company of Watermen and Lightermen in 1984 by his father as a third generation Waterman. Sean was also appointed Waterman to Her Majesty the Queen in February 2008.

MIKE CORRIGAN • INTERFERRY, CANADA

Sessions 1 • Opening Ceremonies; 6: Regulatory Affairs Update; 12 • AGM; 19 • Closing Ceremonies

Mike Corrigan is CEO of Interferry, the trade association that represents the worldwide ferry industry. Mike's focus leading Interferry is to ensure that it continues to be the voice of the worldwide ferry industry in matters of safety and operational best practices, is the industry's voice with regulatory agencies such as IMO, and that the trade association's value continues to grow for existing and new members. Mike brings to his position of CEO of Interferry extensive executive experience in the ferry industry, most recently as the CEO of BC Ferries, one of the world's largest ferry operators.

KELLY CRAIGHEAD • CRUISE LINES INTERNATIONAL ASSOCIATION (CLIA), USA

Session 5 • KEYNOTE: A View From Cruise

Kelly Craighead is the president and CEO of Cruise Lines International Association (CLIA), representing a vast community of ocean-going cruise lines, as well as river cruise marketing affiliates, a highly trained and certified travel agent community, and cruise industry partners ranging from ports and destinations to shipbuilders, developers, and other maritime business services. In her capacity as President and CEO of CLIA, Kelly is responsible for the development and execution of the organization's advocacy initiatives, which are designed to support the broad international business coalition that comprises the global cruise industry.

GEERT DE JONG • DAMEN, THE NETHERLANDS

Session 13 • Making Onshore Power Supply a Reality: Ways to Enable a Long Term Sustainable Energy Transition in the Ferry Industry

Geert de Jong is Commercial Director of Damen Financial Services (30 fte). Damen Financial Services is one of Damen Shipyards entities which manages over EUR 400 mio of assets. In his role he is responsible to catalyze green and innovative new build projects to target company's objectives. For the development and roll out of urban ferries projects, DFS invests in assets for leasing purposes and if needed participates to secure operations. He joined Damen 8 years ago. In his previous roles he has been working as Group Corporate Finance Manager (focused on working capital facilities and particular corporate loans) and Customer Finance Manager in respect to trade finance, project finance and leasing in large export finance deals (EU-based, Africa and Eastern Europe).

BERNARD DWYER • TT-LINE COMPANY PTY. LTD./SPIRIT OF TASMANIA, AUSTRALIA

Session 19 • Closing Ceremonies

Mr. Bernard Dwyer has been the Chief Executive Officer TT-Line Company Pty. Ltd. since November 3, 2014. Mr. Dwyer serves as a Director of the Tourism Industry Council Tasmania, a member of the Brand Tasmanian Board and a member of the Tasmanian State Government's Access Working Group. Mr. Dwyer has significant experience in the Tasmanian tourism sector, working prior to TT-Line for 14 years in various senior management positions with the Federal Group, including nearly nine years as its Director of Tourism. During his tenure at Federal Group, Mr. Dwyer oversaw the development of the Saffire property on the east coast and assisted in developing the Federal Group's tourism portfolio under the nationally awarded Pure Tasmania brand.

ERIK EKLUND • CANDELA TECHNOLOGY, SWEDEN

Session 8 • Vessel Project Features: Unlocking Potential of Urban Water Transport – Long-range, Fast Electric Ships

Erik is Director, Public Transport at Candela Technology, leading the waterborne Public Transport sector towards fossil free and super energy efficient future by developing 100% electrical hydro foiling vessels. Erik is an experienced leader and change manager with vast experience of governmental and intergovernmental relations, building results through a transparent, fair, team centric and diplomatic approach. He works on strategic level driving business development and innovation.

HÅKAN ENLUND • RAUMA MARINE CONSTRUCTIONS, FINLAND

Session 16 • Vessel Project Features: Green Initiatives in Large RoPax Ferries

Håkan Enlund holds a Master of Science degree in Applied Mechanics from the University of Oulu, Finland. His career started in 1981 with the performance super yacht builder Baltic Yachts. Within the Hollming Group he was the key person in establishing the new Materials Technology Division, where he took on the management responsibility for the fairing hulls of the MIR I and II deep-sea submersible research vessels project. Håkan has in his 41-year carrier in the Ferry and Shipbuilding Industry carried management responsibilities for car and passenger ferries as well as special vessels, front-end technology development and sales.

TERRY FEDERER • ALL AMERICAN MARINE, USA

Session 16 • Vessel Project Features: Construction and Certification of the First Hydrogen Fuel Cell Powered Passenger Vessel

Terry Federer was appointed as All American Marine's (AAM) Business Development Manager in May of 2021. As BDM, Terry oversees such roles as sales and marketing, contract negotiations and administration, project technical management, warranty/guarantees, and the sales bidding process, among many other duties. Prior to joining at AAM, Terry has had over a decade of experience operating AAM constructed Teknicraft catamarans in Alaska. In addition, his maritime career also includes experience on research ships, fast ferries and tugboats. Terry's role as Business Development Manager at AAM is focused on the continued expansion of All American Marine's presence in a variety of maritime markets, from offshore windfarm support vessels, survey vessels, and innovative passenger ferries.

PALEMIA FIELD • ABB MARINE & PORTS, FINLAND

Session 13 • Making Onshore Power Supply a Reality: Beyond The Plug

Palemia Field is responsible for the large ferry & RoPax segment at ABB Marine & Ports. Previously a part of the global Marketing & Communications team, he started up the Marine Digital Services unit in Finland and lead the Marine Academy team where he also trained customers in the operation and maintenance of Azipod® propulsion units. Palemia is a member of the Institute of Marine Engineering, Science and Technology and sits on its Technical Leadership Board. With experience as an engineer on board large cruise ships and global deployments as a marine engineer officer with the Royal New Zealand Navy, Palemia brings an operational context as we shift to an industry that features more electrification, digitalization and connectivity.

MARIA GARBARINI • RINA, ITALY

Session 14 • Fueling the Future: Hydrogen and CSS as a Solution for Meeting IMO 2050

Maria Garbarini is a naval architect and is currently the Ro-Ro Passenger Ships Manager within RINA in the Global Passenger Ships Excellence Centre. She spent ten years in a shipping company taking care of new building, conversion and engineering projects for Ro-Ro ships and funding innovative projects. In 2018 she moved to RINA to implement innovative products and value-added services for cruise and ferry industry with a focus on environmental issues and safety aspects related to passenger ships.

JOHN GARNER • JG MARITIME SOLUTIONS, UK

Session 6 • Regulatory Update: LASH FIRE Project

As founding director of JG Maritime Solutions Ltd, John has provided advice to three ferry newbuild projects, new business development projects as well as conducting the surveys of ten ferry operators for the Inmarsat report. John is a former Interferry Director, the current chair of the Interferry Regulatory Committee and provides regulatory liaison on behalf of Interferry in the LASH FIRE project. John is chair of Lloyds Register Technical Committee, a member of the Supervisory Board of the UK Chamber of Shipping, a Fellow of the Nautical Institute, a Chartered Master Mariner, a Fellow of IMarEST and a Chartered Marine Technologist

PARM HARI • VANCOUVER FRASER PORT AUTHORITY, CANADA

Session 3 • Boomers and Beyond – Workforce Outlook and Forecast

Parm brings 20+ years of HR, change management, and business optimization experience at a global level within highly complex, large-scale public and private organizations. Most recently, she was Executive Director People & Culture at Vancouver Coastal Health Authority, where she led VCH's transformation into a values-based organization by developing impactful and engaged teams and implementing systems, structures, processes and multiple award-winning HR programs. Parm was also the people strategy lead for the largest-ever vaccination campaign in history.

TREMAIN HOLLOWAY • HIGHLINE MARITIME HIGH SCHOOL, USA

Session 2 • KEYNOTE: Getting Youth Onboard: Engaging Young People in a Maritime Career

As a 6th-year administrator in the Highline Public School district, Tremain Holloway previously served as assistant principal at Raisbeck Aviation High School and co-principal at Highline High School. Tremain completed his principal internship in Boston Public Schools and taught mathematics in Durham Public Schools in Durham, NC. As a former College Division 1 athlete, Tremain earned his bachelor's degree at North Carolina Central University, and master's degree from the School of Leadership at Harvard Graduate School of Education. As an equity-driven leader, Tremain is committed to academic excellence and innovative opportunities that ALL students deserve.

PHILIPPE HOLTHOF • C&MORE, BELGIUM

Moderator: Sessions 13, 14 and 15

A Belgian native born the son of a master mariner who captained ferries of the now defunct Ostend-Dover Line, 53-year-old Philippe has been passionate about "everything maritime" in general and ferries in particular since childhood. Following an education in logistics management, Philippe started as a free-lance journalist, quite early on writing for the Swedish publishing house Shippax. From the early 2000s, Philippe became one of Shippax's key contributors, a stepping stone to the function of editor-in-chief, a job which he quit in September 2021 to focus on his own consultancy business C&MORE. Through C&MORE, Philippe is providing consultancy services and business intelligence to international key players that have a strong connection to the ro-pax and ro-ro industries.

ED HOOPER • BC FERRIES, CANADA

Session 8 • Vessel Project Features: BC Ferries New Major Vessel Project – Finding a Path for Environmental Sustainability

Ed joined BC Ferries in 2019 where he works as the Executive Director, Shipbuilding. In this role he is responsible for providing strategic leadership and operational oversight for all activities related to the acquisition of new and replacement vessels for BC Ferries. Previously, Ed served for almost 28 years as an Officer with the Royal Canadian Navy (RCN) where he held a variety of positions, ending his Navy career as Commanding Officer of Fleet Maintenance Facility "Cape Breton" – the largest fully capable ship repair facility in Western Canada.

OLE JACOB IRGENS • CORVUS ENERGY, USA

Session 17 • Leading the Charge – Batteries: The "Big Picture" of Batteries

Ole Jacob joined Corvus Energy earlier this year as President of the Americas region.. In this role he is responsible for providing strategic leadership and operational oversight for all activities in the US as well as the overall sales responsibility for North and South America. Previously, Ole Jacob served more than 25 years in the Marine Industries working in various positions for major OEMs such as Ulstein, Rolls-Royce and ABB. His last role before joining Corvus was global responsibility for the ABB Azipod product line., the market leader in electrical podded propulsion systems.

ANASTASIJA KUPRIJANOVA • HORNBLOWER, USA

Session 14 • Fueling the Future: Stimulating Renewable Maritime Ecosystems through Green Hydrogen Production

A California Maritime Academy graduate, Anastasija managed contract, regulatory compliance and was an integral member of the startup team who launched NYC Ferry – a service initially contemplated to be comprised of a fleet of 16 vessels servicing 4 routes that has grown into a 38-fleet system now serving all boroughs of New York City on seven ferry routes, with a scheduled capacity of more than 9 million annual riders. Today, as Director of Business Development for Hornblower Group, Inc. Anastasija works to expand upon Hornblowers portfolio of turnkey maritime services by building strategic partnerships, diversifying operations and bringing innovative solutions to the marine transportation sector and rapidly growing domestic offshore wind industry.

MARKO LIIAS • WASHINGTON STATE'S 21ST LEGISLATIVE DISTRICT, WASHINGTON, USA

Session 1 • Opening Ceremonies

Senator Marko Liias represents the communities of Washington State's 21st Legislative District, which includes neighborhoods in Edmonds, Everett, Lynnwood, and Mukilteo along the east side of Puget Sound, including two ferry routes. Marko was appointed to the House of Representatives in 2008 and won re-election three times. He was appointed to the Senate in 2014 and is currently serving his third term as a senator. As chair of the Senate Transportation Committee, Marko championed the 2022 Move Ahead Washington transportation package which will invest nearly $17 billion in transportation resources across the state over the next 16 years including funding for new hybrid-electric ferries.

JOE LINDBLOM • SEA LINES, FINLAND

Session 9 • Black Sea Operation

Joe Lindblom is currently the CEO of Sea Lines. Until April 2017, Lindblom served as General Manager and member of the board of Stena SeaLines, a joint venture between Sea Lines and Stena Ab. Before that, Lindblom served as Operations Manager of Stena SeaLines. Lindblom has also served as one of the members of Stena Line Freight Group Management between 2013-2017. Before joining the Stena SeaLine management team in August 2012, Lindblom served as CEO/Co-owner of a Finnish retail group. Joe Lindblom performed studies at the School of Business, Economics, and Law at the University of Gothenburg with the central Logistics.

ALAN MACE • BALLARD, CANADA

Session 14 • Fueling the Future: The Future of Zero Emission Marine Propulsion

Alan Mace has over 15 years' experience within the fuel cell industry in engineering, service and product management roles. In his current position as Product Manager, he is responsible for product development activities for the FCveloCity® power module including definition of customer requirements and value analysis, along with market analysis. Mr. Mace has held a broad range of roles in engineering, customer relationship management and marketing during his years of service at Ballard and IdaTech. His experience includes a strong technical background on fuel cell products and applications. Mr. Mace holds Bachelor of Science in Agricultural Engineering from Washington State University.

NICLAS MÅRTENSSON • STENA LINE GROUP, SWEDEN

Session 11 • Ferry Leaders Panel: Power and People

Niclas Mårtensson has held the position as CEO of the Stena Line group since 2016. He has over 13 years' experience of working in different senior positions within Stena Line, including responsibility for commercial and operational activities in both Germany, Poland and Sweden. 2013 he became the Chief Operation Officer and later heading the position as Deputy CEO. As the CEO, the focus is on customers- and employees experiences, digitalization and sustainability.

CHRISTOPHE MATHIEU • BRITTANY FERRIES, FRANCE

Session 12 • AGM: Chairman's Report

Christophe Mathieu was appointed as Chief Executive Officer of Brittany Ferries in April 2016. He has worked with Brittany Ferries since 1992 in various roles including work in the Finance, Operation, Marketing and Revenue Management Departments, Group Business Controller, Strategic Development Director, Group Strategy & Commercial Director and Member of the Executive Board. Christophe has a Master in Management Science from Paris 1 University, and has completed the International Executive Program through INSEAD. Christophe has been an Interferry Board Member since 2010.

STEPHEN METRUCK • PORT OF SEATTLE, USA

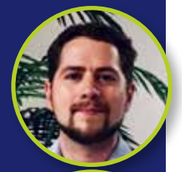
Session 13 • Charting A Course for an Equitable and Sustainable Future

As executive director of the Port of Seattle, Steve Metruck leads a county-wide special purpose government responsible for providing world-class trade, travel, and logistics services to one of the nation's most dynamic and fastest growing regions. As executive director, Metruck leads 1,900 employees who deliver safe, efficient, and high-quality services to the region while improving local economic opportunities and safeguarding our environment. The Port of Seattle is one of the Pacific Northwest's leading economic engines, generating over 216,000 jobs and $894 million in state and local taxes.

MARKKU MIINALA • STEERPROP, FINLAND

Session 15 • Propelling Efficiency: Optimizing The Total Cost of Ownership of Ferry Propulsion: Case Study

Markku Miinala is a seasoned vessel engineering expert working as a Sales Manager at Steerprop since August 2020. After graduating in Naval Architecture and Marine Engineering from the Helsinki University of Technology in 1999 Mr Miinala worked close to 20 years in the field of ship design. His main focus has been on conceptual ship design and focusing mainly on cruise, ferry and merchant segments. In his current position at Steerprop, Mr Miinala is in charge of the long-term development and sales of Steerprop products and services for Cruise & Ferry market.



SIMON MOCKLER • DNV, USA

Session 8 • Vessel Project Features: Preliminary Design for an Electric Fast Foil Ferry and Shoreside Battery Charging Infrastructure Assessment

Simon Mockler is Regional Director for Decarbonization at DNV, leading DNV's decarbonisation efforts in the Americas to share key insights with customers, set joint strategic goals and leverage DNV's advisory, classification and research expertise.

TIM MOONEY • FIRE ISLAND FERRIES, USA

Session 12 • AGM: Nominating Committee Report

Tim Mooney is president of Fire Island Ferries, Fire Island Water Taxi and Fire Island Terminal, responsible for providing ferry, water taxi, freight and parking services originating from their Long Island, New York facility and servicing the communities of Fire Island, a 32 mile-long barrier beach. With a fleet of 25 vessels they provide transportation and related services to over 1 million passengers a year. Since joining his father to help run Fire Island Ferries, Tim and his staff have worked to implement many new systems in support of websites, ticketing, freight billing, parking and advertising creating numerous incremental ridership and revenue opportunities for the organization. Tim has served on the Interferry Board since 2013.

SEAMUS MURPHY • SAN FRANCISCO BAY AREA WATER EMERGENCY TRANSPORTATION AUTHORITY (WETA), USA

Session 18 • Ferry Leaders Panel: Innovation and Disruption

Seamus Murphy is the Executive Director of the San Francisco Bay Area Water Emergency Transportation Authority (WETA), which operates SF Bay Ferry service throughout the region. Murphy has been recognized as a leader focused on building strong coalitions that can effectively advocate for solutions to the industry's most pressing challenges. He is a recipient of Mass Transit Magazine's "Top 40 Under 40" award and is a key player in local, regional, state and national efforts to sustain, improve, and expand public transportation for all who depend on it.

PER NAHNFELDT • KONGSBERG MARITIME, SWEDEN

Session 15 • Propelling Efficiency: Insights on Optimizing Propulsion for Efficient Ferry Operation

Per Nahnfeldt has his origin from the Royal Institute of Technology in Stockholm, Sweden. Over the last two decades he has been devoted to electric propulsion in Kongsberg Maritime and now heads the development of advanced electric thruster solutions for the future.

MAX OLSON • SEACHANGE, NEW ZEALAND

Session 18 • Innovators Panel – Innovation and Disruption

Max is the CEO and founder of electric hydrofoil builder, Seachange, and here he leads the build of the world's first hydrofoiling RoPax ferry in New Zealand. This build is currently underway and represents a new era of sea crossing, as it enables emission free high-speed sailing in open water conditions over range. Max is passionate about environmental sustainability and has a natural affinity with the ocean. His role also encompasses CTO responsibilities at Seachange, and he is a leader in practical engineering solutions to decarbonise the maritime industry which are both economical and sustainable.

ANDREW PACKER • ROLLS-ROYCE SOLUTIONS AMERICA, USA

Session 14 • Fueling the Future: Pathways to Zero Emission Fast Ferry Propulsion – A Decarbonization Case Study

Since joining Rolls-Royce Solutions America in 2000, Andrew Packer has served in several engineering positions including generator set applications, engine development and marine applications. In October 2008, he was appointed Senior Manager of the Marine Application Engineering Department, overseeing the Commercial Marine and Pleasure Craft markets. He is also responsible for supporting sales and service partners on regulatory issues for the North American marine market. Andrew and his team provide Application Engineering support for all mtu marine products sold into the North and Latin America region, which includes product configuration, system layout, installation, integration and commissioning.

MATTHIAS PAHNKE • FRS CLIPPER, USA

Session 1 • Opening Ceremonies; Session 19 • Closing Ceremonies

Matthias Pahnke is the CEO for FRS Clipper, a member of the FRS group of companies. FRS Clipper is based in Seattle and Victoria and is best known for its international service between Seattle and Victoria, whale watching tours and the domestic service from Seattle to Friday Harbor. FRS Clipper is successfully offering vacation packages that combine transportation with accommodation, tours or a combination of both.Matthias is a lawyer by profession and has worked as external & inhouse counsel for law firms and companies. He joined FRS at its HQ in Flensburg as Director Legal, Tax and Insurance in 2017, joined FRS Clipper in 2019 and became its CEO in 2022.

MARY ANN PASTRANA • ARCHIPELAGO PHILIPPINE FERRIES, PHILIPPINES

Session 11 • Ferry Leaders Panel – Power and People

Mary Ann Ibuna Pastrana is the Chairperson of APFC, owner and operator of the Fastcat fleet and CAPP Industries Inc., a bulk material trader. She is also the President of Archipelago Philippine Seafarers Training Institute, a maritime training center to educate, train and upgrade the skills of seafarers, Scorpio Transport and Manning Services, an overseas manning agency. Ms. Pastrana has a post-graduate diploma in Executive Maritime Management from the World Maritime University, is currently enrolled in Masters in Maritime Education & Training at the Philippine Merchant Marine Academy of the Philippines, Vice President of Women In Maritime Philippines. She sits on the advisory council of Philippine National Police Maritime Group and the World Ferry Safety Association.

BRUCE PATERSON • BC FERRIES, CANADA

Session 8 • Vessel Project Features: BC Ferries New Major Vessel Project – Finding a Path for Environmental Sustainability

Bruce joined BC Ferries in 2003 where he is the Director, Naval Architecture. In this role he manages BC Ferries Fleet Technical group, which provides technical support to the BC Ferries Fleet and the new vessel construction program. Since joining BC Ferries, he has been involved with every new construction project including the Coastal Class double-ended ferries, the recent Salish Class LNG ferries and the Island Class hybrid ferry programs, providing technical leadership and support to the project teams. Bruce has a Master's degree in Ocean Engineering from Memorial University of Newfoundland, and a Bachelor of Applied Sciences (Mechanical) from University of British Columbia (UBC).

ALEX PEIRCE • BROCK SOLUTIONS, CANADA

Session 7 • Bridging the Gap through Automation: Overcoming Labour Shortages with Automation

Alex Peirce has over 15 years of experience in software and automation in oil & gas, aviation, and marine industries as a developer, project manager, product manager, and consultant. He has helped lead process automation programs with Air Canada, Southwest Airlines, Toronto Pearson airport, Rosslare Europort, and many others, as well as leading product development at Brock Solutions for both aviation and maritime solutions. He has been an active participant in developing aviation industry standards with IATA and has presented at various aviation and maritime industry events.

BRENT PERRY • SHIFT CLEAN ENERGY, CANADA

Session 17 • Leading the Charge – Batteries: PwrSwap | Pay-as-you-go Energy Ecosystem

Brent Perry is the CEO of Shift Clean Energy and a marine battery industry pioneer. Perry defined an industry when he oversaw development of the world's first battery for marine propulsion. Energy storage systems are now a major – and increasingly important – player on the global marine energy scene. In the years since that first battery, he has become a world expert on lithium energy storage in marine applications. His 30-year history in commercial shipbuilding and deep knowledge of energy systems gives him a unique perspective on the hybrid and electric marine industry.

LUKE PRETLOVE • AUSTAL, UK

Session 17 • Leading the Charge – Batteries: Energy Storage – A Designer's Perspective

Luke Pretlove (Austal) is a naval architect with over 16 years' experience in high speed ferry design and aluminium shipbuilding. He is based in the UK, and is a senior member of Austal's R&D department, which is focused on decarbonisation, advanced hull forms, motion control, manufacturing efficiency, autonomy and data science.

TRAVIS RAINES • BROCK SOLUTIONS, CANADA

Session 7 • Bridging the Gap through Automation: Overcoming Labour Shortages with Automation

Travis Raines has over 7 years experience in process control and automation in the aviation and maritime sectors. He has worked as a senior control systems engineer overseeing the development and deployment of large-scale automation programs in major airports down the west coast of the US from Sea-Tac, San Francisco International, and LAX. Currently Travis is bringing his experiences delivering automation and digital transformations to the maritime industry as a consultant and project manager in the container terminal and ferry sectors.

JOHAN ROOS • INTERFERRY, SWEDEN

Session 6 • Regulatory Update: IMO/EU Regulatory Update

Johan Roos is the Executive Director of EU and IMO Affairs for Interferry, based in Sweden. Previously he was Director of Sustainability with Stena Rederi AB. He holds a Masters Degree in Environmental Sciences from the University of Gothenburg, Sweden. In the year 2000, Johan left DNV to join Stena Line, the ferry operator, to develop environmental management systems internally. From 2006-2011 he was in charge of sustainability issues for all of Stena's shipping activities. Johan works in close relation with the European Community Shipowners Association and the International Chamber of Shipping and represents Interferry at the International Maritime Organization.

PATTY RUBSTELLO • WASHINGTON STATE FERRIES, USA

Session 1 • Opening Ceremonies; Session 19 • Closing Ceremonies

Patty Rubstello serves as the head of the largest ferry system in North America. With 30 years at the Washington State Department of Transportation, Patty oversees a fleet of 21 vessels and ten routes which normally serve around 24-million customers a year. Commuters in the Seattle area and tourists and locals in isolated island communities all depend on the economic lifeline the system provides. Patty's experience in design, construction, planning, traffic operations and tolling help ensure this critical marine highway continues to serve the people of Washington State.

ANDERS RUNDBERG • CARUS, FINLAND

Session 7 • Bridging the Gap Through Automation: Fully Automated Ferry Experience

Anders Rundberg is the founder and CEO of Carus, the world leading commercial IT solution provider of consumer facing solutions to the passenger shipping industry. Anders has been part of the passenger shipping industry for his whole life and it is his vision that has guided the evolution of the company's core Reservations, Departure Control and Administration solution to todays integrated Passenger Experience Platform, that can manage all aspects of the Customer Journey to maximize the revenue and customer satisfaction.

PAUL SINGH • SNC LAVALIN, CANADA

Session 13 • Making Onshore Power Supply a Reality: Designing and Planning Onshore Power Supply

Paul Singh is a Professional Engineer registered in the provinces of British Columbia and Ontario and is the Electrical Team Lead for SNC-Lavalin in Western Canada. Paul is passionate about participating in the development and execution of projects that result in a reduction in green house gas emissions and ultimately lead to a net zero carbon future. Paul's experience includes design and management roles in a variety of electric transportation projects and modes including ro-pax and passenger-only ferries, light rail, heavy rail, passenger and fleet vehicles and public transit buses.

PETER STÅHLBERG • WASALINE, FINLAND

Session 7 • Bridging the Gap Through Automation: Fully Automated Ferry Experience

Peter Ståhlberg is a master mariner with a long background in the marine industry. He graduated from Maritime School in 1986, combining his studies in Merchant School and got his Maritime Officers license and Diploma in Business and Administration the same year. He was appointed as Fleet Manager at Wasaline in April 2013 and became Managing Director in December 2014. Peter led the procurement process and design of the newbuild Aurora Botnia, delivered in August 2021 from RMC, and acted as Project Director for the whole newbuilding process. Aurora Botnia has been designed especially for the Wasaline traffic in the Gulf of Botnia and is one of the most environmentally friendly RoPax ferries in the world.

NINA TEGGATZ • FRS, GERMANY

Session 4 • Dual Course of Study

Nina Teggatz is Director Human Resources, FRS GmbH & Co. KG, Flensburg, heading the group wide human resources of FRS in a matrix organization with four direct reports and 10 indirect reports. She is involved in the operational and strategic responsibility for the full spectrum of human resources (personal planning, recruitment, personal development, training programs, marketing, payroll, etc.). She supports and advises the management team on all operational, labor law and social law issues on a national and international level.

BILLY THALHEIMER • REGENT, USA

Session 18 • Ferry Leaders Panel – Innovation and Disruption

Billy founded REGENT after years spent as an aerospace program manager, business development leader, and multidisciplinary aerospace engineer. During his time at Aurora Flight Sciences, Billy was responsible for developing new programs in vehicle design and technology maturation to support Boeing's portfolio of future air mobility solutions. He additionally led technical program execution, financial management, and strategy for electric aircraft programs; and worked as an air vehicle conceptual design engineer, leading design and performance modeling for Boeing's electric air taxi vehicle.

TONY THOMAS • CUMMINS, USA

Session 16 • Vessel Project Features: Construction and Certification of the First Hydrogen Fuel Cell Powered Passenger Vessel

Tony Thomas, a marine account executive, is celebrating his 36th year at Cummins, Inc. Prior to joining the marine team in 2004, he managed Cummins Service Centers. He is a graduate of Oregon Institute of Technology with bachelor's degrees in Industrial Management and Diesel Power Technologies.

BASTIAAN VINK • DAMEN FERRIES, THE NETHERLANDS

Session 13 • Making Onshore Power Supply a Reality: Ways to Enable a Long-term Sustainable Energy Transition in the Ferry Industry

Bastiaan is a naval architect working as Product Specialist Ferries for Damen. Damen is one of the leading international shipyards with facilities worldwide. It designs and develops vessels in many different applications and delivers more than 100 vessels per year including ferries. Before Damen, Bastiaan worked in an offshore company developing digital monitoring solutions and at the Netherlands marine institute MARIN researching the hydrodynamic behavior of Tug boats. He joined Damen 5 years ago and has been leading the development of different electrical Ferry solutions in Europe and North America. These solutions include the vessel(s), shore infrastructure, digital solutions and increasing focus on financing. Examples are the electrification of existing ferries in Canada, BC and electrical city ferries with automated charging stations in Copenhagen.

HEIDI WOLDEN • NORLED, NORWAY

Session 18 • Ferry Leaders Panel – Innovation and Disruption

Heidi Wolden is CEO of Norled AS, one of Norway's largest ferry and express boat companies in Norway. Wolden joined Norled in 2020, after three years as CEO of Kruse Smith. She has previously worked for Equinor where she held several management positions along most of the value chain within oil and gas, primarily within strategy, business development and finance. Heidi Wolden holds a Master's degree in science from Nord University Business School, an MBA from NHH and executive education from the University of Berkeley in California and London Business School.

Interferry Member List

FERRY OWNERS & OPERATORS
AG Reederei Norden-Frisia, GERMANY
Alkahera Company for Ferries & Maritime Transport, EG
Archipelago Philippine Ferries Corporation, PHILIPPINES
Attica Group, GREECE
Bahamas Ferries Ltd., BAHAMAS
Baleària Eurolíneas Marítimas S.A., SPAIN
Batamfast, SINGAPORE
BC Ferry Services Inc., CANADA
Black Ball Transport Inc., USA
Bridgeport & Port Jefferson Steamboat Company, USA
Brittany Ferries, FRANCE
Buquebus Los Cipreses SA, ARGENTINA
Caledonian Maritime Assets Ltd., UK
Catalina Express, USA
Chao Phraya Express Boat Co., Ltd., THAILAND
CLdN ro-ro SA, LUXEMBORG
Colonia Express, ARGENTINA
Color Line Marine AS, NORWAY
Condor Ferries, UK
David MacBrayne Ltd., UK
Delaware River & Bay Authority, USA
DFDS A/S, DENMARK
E Smart Transportation Company, THAILAND
Fire Island Ferries Inc., USA
FjordLine A/S, NORWAY
ForSea Ferries, SWEDEN
FRS, GERMANY
FRS Clipper, USA
Grandi Navi Veloci, ITALY
Grimaldi Group S.p.A., ITALY
Groupe CTMA, CANADA
HADAG Seetouristik und Fährdienst AG, GERMANY
Hornblower Group, Inc., USA
IDO – Instanbul Fast Ferries, TURKEY
Interislander (Kiwirail), NEW ZEALAND
Irish Continental Group, IRELAND
Island Ferry SA, HONDURAS
Jadrolinija, CROATIA
Marine Atlantic Inc., CANADA
Massachusetts Bay Lines Inc., USA
MF Shipping Group, NETHERLANDS
Moreton Island Adventures, AUSTRALIA
National Ferries Company (MWASALAT), OMAN
Naviera Armas, SPAIN
NRMA Marine, AUSTRALIA
Norled, NORWAY
Northumberland/Bay Ferries, CANADA
Onorato Armatori – Moby Lines, Cin Terrenia, Toremar, IT
Owen Sound Transportation Company Ltd., CANADA
P&O Ferries Holdings Ltd, UK
PROP, USA
Red Funnel Group, UK
Rederi AB Gotland, SWEDEN
Riverside Marine, AUSTRALIA
Roads and Transport Authority of Dubai, UAE
Royal Doeksen – Rederij Doeksen, NETHERLANDS
Samsø-Linien A/S, DENMARK
San Francisco Bay Ferry, USA
Scandlines, DENMARK
SeaLink Travel Group, AUSTRALIA
Sea Lines, TURKEY
Searoad Ferries, AUSTRALIA
Seaspan Ferries Corporation, CANADA
SeaStreak, LLC, USA
Seatruck Ferries, UK
Shun Tak – China Travel Ship Management Ltd., HK
Societe des Traversiers du Quebec, CANADA
Spirit of Tasmania (TT-Line Pty Ltd), AUSTRALIA
Staten Island Ferry, NYCDOT, USA
Stena Line Scandinavia AB, SWEDEN
Stena RoRo, SWEDEN
StraitNZ Bluebridge Cook Strait Ferries, NEW ZEALAND
Sudiles (Betico), FRANCE
Thames Clippers, UK
The Isle of Man Steam Packet Company Limited, UK
The Maritime Company For Navigation, SAUDI ARABIA
Trasmapi-Sercomisa, SPAIN
TT Line GMBH & Co., GERMANY
Twin City Liner, AUSTRIA
Ultramar / Naviera Ocean, MEXICO
United Marine Egypt (UME), EGYPT
Viking Line ABP, FINLAND
Virtu Ferries Limited, MALTA
Wagenborg Passenger Services, NETHERLANDS
Wasaline, FINLAND
Washington State Ferries, USA
Western Ferries (Clyde) Ltd., UK
Wightlink, UK
Woods Hole Martha's Vineyard Nantucket Steamship Co., USA
Wyker Dampfschiffs, GERMANY

CREWING & TRAINING
Anglo-Eastern Ship Mgmt., NETHERLANDS
Euro Work Group, FINLAND
RelyOn Nutec, NETHERLANDS
Simwave B.V., NETHERLANDS
Viking Maritime Group, ENGLAND

SHIPBUILDERS
Asian Marine Transport Corporation, PHILIPPINES
Aus Ships, AUSTRALIA
Austal Limited, AUSTRALIA
Brix Marine, USA
Brodrene AA, NORWAY
Damen Shipyards, NETHERLANDS
Flensburger Schiffbau Gesellschaft mbH & Co. KG, DE
Gladding-Hearn Shipbuilding, USA
Guangzhou Shipyard International Company Limited, CH
INCAT Australia Pty. Ltd., AUSTRALIA
Incat Crowther, AUSTRALIA
Metal Shark Boats, USA
Meyer Turku Oy, FINLAND
Rauma Marine Constructions Oy, FINLAND
Remontowa Shipbuilding S.A., POLAND
Wight Shipyard Company Ltd, UK

DESIGNERS, NAVAL ARCHITECTS & MARINE ENGINEERS
Arup, USA
as2con, CROATIA
Aurora Marine Design, USA
Boundary Layer Technologies, USA
BMT Defence and Security UK Ltd., UK
C-Job Naval Architects, NETHERLANDS
Crowley Engineering Services, USA
Danfoss, FINLAND
Deltamarin Ltd., FINLAND
Elliott Bay Design Group, USA
Foreship Ltd., FINLAND
Herbert Engineering Corp., USA
Houlder Limited, UK
INMEL, Croatia
JTC, PANAMA
Knud E. Hansen A/S, DENMARK
Leadship Hellas IKE, GREECE
LMG Marin, FRANCE
Naos Ship & Boat Design SRL, ITALY
navalue Custom Ferry Design and Consultancy, DE
One 2 Three Naval Architects, AUSTRALIA
OSK-ShipTech A/S, DENMARK
REGENT, USA
Seachange, NEW ZEALAND
SimFWD P.C., GREECE
Spear Green Design, AUSTRALIA

EQUIPMENT SUPPLIERS & MANUFACTURERS
AB Volvo Penta, SWEDEN
ABB Oy, Marine and Ports, FINLAND
Adelte Ports & Maritime, S.L.U., SPAIN
Alucoil.com, SPAIN
Ayres Composite Panels, AUSTRALIA
Ballard Power Systems, CANADA
Brunvoll Mar-El AS, NORWAY
Caterpillar Motoren GmbH & Co.KG, GERMANY
CBG Systems, AUSTRALIA
ComNav, CANADA
Consilium Safety, USA
Corvus Energy, CANADA
Cummins, UK
Current Scientific Corporation, CANADA
CWF Hamilton & Co. Ltd., NEW ZEALAND
Eligroup, ITALY
Elkon Elektrik San.ve Tic. A.S., TURKEY
EMCS Industries, Ltd., CANADA
European Diesel Services Ltd., UK
GPLINK LLC, USA
H3X, USA
Inmarsat, UK
Kongsberg Maritime, NORWAY
Liferaft Systems Australia, AUSTRALIA
MacGregor, SWEDEN
MAN Energy Solutions, GERMANY
Marioff Corporation Oy, FINLAND
MTU Friedrichshafen GmbH, GERMANY
Naiad Dynamics, USA
SHIFT, CANADA
Starlight Italia, ITALY
Steerprop Ltd., FINLAND
Trelleborg Marine Systems, UAE
Victaulic, BELGIUM
Voith Turbo GmbH & Co. KG, GERMANY
Wärtsilä Finland OY, FINLAND
YANMAR America, USA
ZF Marine Propulsion Systems, USA

INTERIOR DESIGN &EQUIPMENT
Alu Design & Services, NORWAY
Beurteaux, AUSTRALIA
CITA Design, TURKEY
Forbo Flooring Systems, UK
Gerflor, FRANCE
UES Marine, AUSTRALIA
CONSULTANTS
BoCS Consulting AB, SWEDEN
Briggs Marine & Environmental Services, UK
Glosten Associates, USA
International Maritime Services Pty Ltd (IMS), AUS
JG Maritime Solutions Ltd., UK
KPFF Consulting Engineers, USA
Live Business, UK
PSM Ventures, CANADA
Shipshape Consulting, UK

SHIPBROKERS
Alta Shipping Brokers, S.L., SPAIN
Brax Shipping HB, SWEDEN
BRS Barry Rogliano Salles, FRANCE
IBS Global, AUSTRALIA
Jensen & Partners A/S, DENMARK
Linnhe Shipping & Trading Co Ltd, UK
Maatsuyker Limited, UK
Macholl & Specht GmbH, GERMANY
Malta Shipbrokers, MALTA
Mason Shipbrokers, UK
Navitaship ApS / Trollship ApS, DENMARK
Nordvik Shipping, SWEDEN
Pinnacle Marine, USA
Simsonship AB, SWEDEN
PUBLISHERS
Baird Publications, AUSTRALIA
Direct Public Relations, UK
Cruise and Ferry / Tudor Rose, UK
Marine Log, USA
PressReader, CANADA
Shippax Information, SWEDEN
FINANCIAL, INSURANCE & LEGAL
A/S Global Risk Management Ltd., DENMARK
Hannaford Turner LLP, UK
HFW, UK
HSE Law, USA
The Shipowners Protection, UK
The Standard Club UK Ltd., UK

INFORMATION TECHNOLOGY
Adonis, NORWAY
Brock Solutions, CANADA
Carus Ferry AB Ltd., FINLAND
Connexionz Smart Transit Solutions, USA
Direct Ferries, UK
E-Dea S.p.A. Transport Technology, ITALY
Exis Technologies, UK
Hogia Ferry Systems, FINLAND
Liknoss Group, GREECE
Marine Learning Systems, CANADA
Nextrasoft Ltd., UK
Pharos Data Ltd., UK
Pivotel America Inc., USA
Rhoe Urban Technologies, GREECE
Specto Remote, NORWAY
Surikat AB, SWEDEN
Telenor Maritime, NORWAY
Ticknovate, ENGLAND
Vesseltracker, GERMANY
AGENCIES
Asta Adria, MACEDONIA
Ballyhoo Media, USA
BC Ferry & Marine Workers' Union, CANADA
Port of Seattle, USA
Viamare All Year Travel, GREECE
Washington State Department of Commerce, USA

CLASSIFICATION SOCIETIES
Bureau Veritas Marine & Offshore SAS, FRANCE
DNV, NORWAY/GERMANY
Lloyd's Register, UK
RINA Services, ITALY

ASSOCIATIONS
Association of Pacific Ports, CANADA
Australian International Marine Export Group, AU
Canadian Ferry Association, CANADA
Danish Car Ferry Association, DENMARK
Danish Transport & Logistics Assoc., DENMARK
Discover Ferries, UK
Ferry Shipping Summit B.V., NETHERLANDS
Green Marine, CANADA
International Transport Workers' Federation, UK
International Zinc Association, USA
Mercy Ships, USA
Passenger Vessel Association, USA
Philippine Interisland Shipping Association, PH

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