



From left: Bernd Aufderheide, president and CEO of Hamburg Messe und Congress GmbH; Thomas Rehder, principal of the shipping company Carsten Rehder and member of the board of directors of the German Shipowners' Association (VDR); Uwe Beckmeyer, parliamentary secretary at the Federal Ministry for Economic Affairs and Energy and federal government coordinator for the maritime industry; Dr Alexander Nürnberg, managing director of MacGregor Hatlapa and chairman of the board of the Marine Equipment and Systems working group at the German Engineering Federation (VDMA); and Dr Reinhard Lüken, general manager of the German Naval Architecture and Ocean Engineering Association (VSM) Photo: HMC / Zapf

## The who's who of the maritime world meets in Hamburg

The leading international maritime trade fair has a leitmotif: Digitalisation in the shipping industry is the main topic at this year's SMM. Smart shipping – the comprehensive network integration of ships and smart use of data to enhance efficiency – is the common theme in the exhibition halls and expert discussions. "Digitalisation is

a key factor for the future success of this industry," declared Bernd Aufderheide, president and CEO of SMM organiser Hamburg Messe und Congress, at yesterday's press conference opening the fair.

With more than 2,200 exhibitors from 66 countries, 93,000m<sup>2</sup> of exhibition area and

about 50,000 expected visitors, SMM is staying the course in spite of the crisis in the ship-building industry. "We're especially pleased to have been able to further increase the share of foreign exhibitors," Aufderheide said. More than two-thirds of the exhibiting companies are based abroad. A number of countries are presenting their combined maritime >

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know-how in national pavilions; this year Iran, Malaysia, India and Greece, among others, are taking advantage of this opportunity for the first time.

The newly erected Hall A5, which is focused on alternative and environmentally compatible propulsion technology, enlarges the SMM exhibition area by 3,500m<sup>2</sup>. “The new exhibition space brings an additional highlight to SMM this year,” Aufderheide noted. Hall A5 has been fully booked for weeks.

At the SMM opening press conference, Uwe Beckmeyer, parliamentary secretary at Germany’s Federal Ministry for Economic Affairs and Energy and the federal government’s coordinator for the maritime industry, underscored the importance of the sector for Germany as an

industrial nation: “German shipbuilding and supply companies enjoy an excellent reputation all over the world. They are known for their innovative technologies and advanced engineering skills. We support this industry so as to preserve its strengths and build upon them.”

### Making better use of available information

New ideas are especially in demand in times of economic difficulties, emphasised Thomas Rehder, owner of the Hamburg-based shipping company Carsten Rehder: “If you want your fleet to remain competitive, you have to address every single efficiency-related aspect,” said Rehder, who is on the board of the German Shipowners’ Association (VDR). Making better use of available

## > IMPRINT

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Uwe Beckmeyer

information and correlating data from various sources is just as important as the combined efforts to reduce ship fuel consumption and the resulting noxious emissions, he added. "SMM provides customers with an overview of recent technological achievements, while allowing them to compare solutions from different vendors," Rehder pointed out.

**Ideal conditions for finding tailored solutions**

As a place where manufacturers and service providers can interact personally with customers, the fair provides ideal conditions for finding tailored solutions for specific needs, noted Dr Alexander Nürnberg, managing director of MacGregor Hatlapa and chairman of the board of the Marine Equipment and Systems working group at the German Engineering Federation (VDMA). "The offshore and shipping industries should not sit on their hands waiting for the economic upturn. For those who are willing to join forces and take action, there are plenty of opportunities to improve



Dr Alexander Nürnberg

the situation right now," said Nürnberg, who also heads the development department of the shipbuilding supplier MacGregor. SMM just might lend some fresh impetus to such initiatives.

**Tremendous expertise in integrating complex systems**

Dr Reinhard Lüken, general manager of the German Naval Architecture and Ocean Engineering Association (VSM), praised German industry's exceptional capabilities in systems engineering. "Germany is not only home to several hundred highly specialised, world-class maritime technology companies but also offers tremendous expertise in integrating complex systems. The digital revolution renders these essential success factors even more important. This is why the maritime innovation initiative as well as excellent professional training are top priorities at VSM," Lüken said. More than ever, SMM is a source of inspiration and new opportunities for the maritime sector, he added.

**> MARITIME FUTURE SUMMIT**

The Maritime Future Summit at SMM 2016 marks the first time the fair hosts a special conference on digitalisation and smart shipping. Digitalisation is also at the heart of the three other SMM conferences, which focus on environmental protection, maritime security and defence, and the offshore sector, respectively. In addition, SMM visitors can follow the Digital Route to study digitalisation-related products and services offered by the exhibitors. *See page 4*

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# Premiere: Experts discuss digital shipping

Autonomous ships, smart on-board systems: At the Maritime Future Summit yesterday, industry leaders discussed the future of shipping. For the first time, SMM hosted a conference dedicated to digital shipping.

Cyber ships: What may sound like a word from a science fiction novel is a hot topic in the maritime industry today. “Low-crew” and “no-crew” concepts are buzzwords in the shipping sector, and initial trials with unmanned ships are already being undertaken. The Maritime Future Summit celebrated its debut yesterday, a day ahead of SMM 2016’s official opening. Under the chairmanship of Prof Volker Bertram of the World Maritime University in Malmö, Sweden, two highly distinguished expert panels discussed the topics “Building Ships for The Future” and “Digitalisation and Automation”. In his keynote address, Knut Ørbeck-Nilssen, CEO of DNV GL Maritime, shared some thoughts on current megatrends paving the way to the future. “In economically challenging times such as these, innovative technologies play an essential role in



Photo: Sadowski

The closing words were spoken by the chairman, Prof Volker Bertram

strengthening our industry,” said Ørbeck-Nilssen.

## What ships of the future will look like

Achieving the greatest possible efficiency is a key objective for designers of tomorrow’s ships. Paolo Tonon, CEO of Maersk Maritime Technology (MMT), explained the “Maersk Vision”. MMT might be called the “workshop for the future” of the world’s biggest containership-owning company. More than 140 engineers are working on improving the fleet in service and developing innovative solutions for tomorrow’s ships.

Dennis Morais, chief engineer at the Canadian company SSI, demonstrated how the design and construction of ships can be optimised using computer technology. SSI is well known for its software application Ship-Constructor. The presentation by Morais at the Maritime Future Summit was titled “Vision 2030”, reflecting SSI’s commitment to inspiring the time-honoured maritime sector with the dynamic impetus of the innovation-driven computer industry. High technology was also the focus of the lecture presented by Mary Etienne, business development director at the US comput-

er company Dell. She explored what future-proof technologies such as the Internet of Things can do for the maritime industry.

## Digitalisation and automation drive

Matthias Schulze, chief executive of the maritime business unit of the German technology giant Siemens, explained how advanced propulsion technology can boost the efficiency of ships sustainably, and which systems are most likely to be successful in the future. Willie Wagen, director of market innovation at the Finnish ship engine manufacturer Wärtsilä, said the industry had reached a historic turning point. He described his company’s conceptual strategy for supporting the shipping sector’s transition into a new era.

In his closing address, Carsten Wiebers, global head of maritime industries at Germany’s KfW IPEX-Bank, investigated to what extent new technologies are fit for practice. “Where would I place my bets?” Hearing a banker’s answer to this question was especially intriguing since visions ultimately need financing to become realities.

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# The digital future of the maritime industry

Members of the working group Marine Equipment and Systems, part of the German Engineering Federation (VDMA), met yesterday in Hamburg – as usual on the eve of the official start of SMM. The more than 140 participants acquainted themselves with the industry’s global prospects.



Dr Ottmar Gast of Hamburg Süd reported on the growth prospects of container shipping  
Photo: Sadowski

Dr Ottmar Gast, executive board chairman of the shipping line Hamburg Süd, reported on the competitive conditions and growth prospects of container shipping from a customer’s point of view. He focused especially on the transport logistics chain and future flexibilisation as well as on the requirements of the means of transport involved. Due to the new possibilities offered by digital technology, container transport, in particular, can expect potential improvements in reliability, speed and quality. In this regard it’s necessary that the supply chain of the participants mesh smoothly, and that quick reactions be possible. Jörn Springer, senior director of Hapag Lloyd AG, spoke about energy management, because

optimised transport routes, intelligently – benefit the environment when emissions and turnaround times and customer-friendly time windows – used heat losses are avoided.

Professor Carlos Jahn, director of the Fraunhofer Centre for Maritime Logistics and Services, ventured a look beyond the horizon. He reported on ways to achieve automated sea transport, prompting interesting discussions in the audience. Once again, the gathering of shipbuilding and offshore supply industry representatives along with their customers and suppliers was a worthwhile event for all.

VDMA German Engineering Federation – Marine Equipment and Systems at SMM: Hall A1 / Stand 518

## > VDMA THEMATIC DAYS AT SMM

The German Engineering Federation (VDMA) is providing a programme of presentations and focused consulting services for its member companies and guests. The presentations will be held at VDMA’s main stand in Hall A1. Attendance is free of charge. The first Thematic Day on September 7th will focus on several aspects of digitalisation and “Industry 4.0”. On September 8th the topic will be the maritime market Iran – with the latest information on business potentials and challenges for the marine machinery industry. Friday September 9th will focus on recruitment and education, providing an overview of the VDMA’s activities and campaigns as well as concrete support for the industry. Experts will hold presentations according to a fixed schedule and will be available for individual discussion at the VDMA stand.



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Photos: HMC / Zapf

# The official symbol has been erected

Weighing in at 48.7 tonnes and measuring more than 8m in diameter, this ship propeller is an instant head-turner on the plaza of Hamburg's fair complex. It is the official symbol of SMM. The specimen on display this year, made by Germany's Mecklenburger Metallguss

GmbH (MMG), is a high-efficiency propeller.

When the fair is over, it will be installed on the 275m container ship *MSC Lorena*, replacing the vessel's original propeller. Manfred Urban, CEO of MMG, remarked: "The new propeller will be delivered with a finned boss

cap that enables further energy savings and helps reduce the ship's CO<sub>2</sub> emissions. Assuming a consumption of 100 tonnes of heavy fuel oil per day, the new propeller will cut CO<sub>2</sub> emissions by one tonne per hour travelled. This is the equivalent of the amount emitted by a passenger car travelling 6,500km."

The propeller thus represents a significant step towards "green" propulsion, a major topic on the agenda of SMM 2016. To provide more exhibition space for innovative propulsion technologies, the fair organisers have erected the new Hall A5, which adds 3,500m<sup>2</sup>.

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# Vulkan Couplings introduces light, highly flexible Vulkardan F

German transmission technology specialist Vulkan Couplings is introducing its highly flexible coupling Vulkardan F at SMM. The new coupling is more torsion-elastic, shorter and 40% lighter than comparable couplings on the market and therefore offers benefits that go beyond cost savings, according to the company.

Designed for maritime drive technology as well as stationary power generation, the Vulkardan F is meant to

be used particularly in freely and elastically installed high-speed combustion engines, Vulkan says.

Besides the new coupling, Vulkan will also be introducing new acoustics concepts at SMM, complementing its expertise in the analysis and layout of drive units and responding to customer requirements of more comfort and the legal standards for emission protection.

Vulkan Couplings at SMM:  
Hall A3/ Stand 302



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## Concise information on newbuilding orders

Among the novelties that the Hamburg-based publishing house DVV Media Group is showcasing at SMM is the New Ships Orderbook, a comprehensive database that provides users with concise information on actual and estimated orders of newbuildings worldwide.

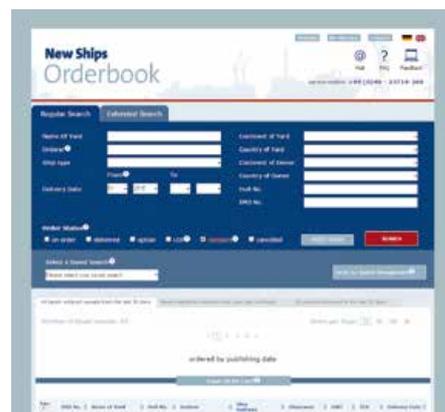
A highly valuable tool for research and analysis, the New Ships Orderbook includes technical details of the vessels and their expected delivery date. Currently, nearly 10,000 global ship datasets, approximately 840 shipyards and an archive with more than 2,430 shipping lines (including charter companies, manage-

ment and finance providers) form the basis of the database. The data stock covers approximately 95% of the global order book and is updated twice a week.

DVV's subscription offer includes New Ships, a concise, six-page weekly information service with brief summaries of the most important developments in the global shipbuilding industry and insider reports on current trends and developments in specific markets.

### Order alerts and data export

The New Ships Orderbook comes with impressive functions: Search results can be saved, exported and immediately edited.



Screenshot: DVV Media Group

E-mail alerts automatically provide notification of new orders and planned ships according to individual search parameters.

DVV Media Group at SMM: Hall A1 / Stand 529

## Premiere for Shell Lube Monitor

Shell Marine will present the Shell Lube Monitor at SMM for the first time, a new cylinder-monitoring service that runs in tandem with the Shell Rapid Lubricants Analysis (RLA) cylinder check, which is being rolled out globally in the second half of 2016.

The Dutch business reckons to have analysed over 50,000 cylinder drain oil samples via Shell RLA, identifying potential oil or equipment issues before they become critical. Many ship-

ping companies use Shell RLA in their planned maintenance regimes. Its use has grown rapidly, with MDT and Wärtsilä now recommending cylinder drain oil analysis in light of changing demands placed on marine engines. Shell Marine expects to analyse about 18,000 cylinder drain oil samples in 2016 alone.

Shell Lube Monitor allows customers to evaluate Shell RLA data and data generated from Shell's Onboard Alert iron analyser and Shell's Onboard Plus BN test kit, to strike the best

balance between cylinder oil cost and engine reliability by optimising feed rates.

Shell Lube Monitor offers an easy-to-read report and includes a complete engine overview, historical data from on board and the lab and, most importantly, comments from Shell experts highlighting areas of concern or possible optimisation opportunities.

Shell Marine at SMM: Hall A4 / Stand 210.1

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# Handling of liquefied gases, high-speed portfolio and two-stroke units

MAN Diesel & Turbo is using its stand at SMM 2016 to introduce a number of new products and initiatives, including MAN Cryo, its new, marine fuel gas supply system business. MAN Cryo enables the company to supply cryogenic equipment for the storage, distribution and handling of liquefied gases, including natural gas, while promoting its fuel-bunkering capability and its engines' ability to meet IMO Tier III legislation.

The MAN Diesel & Turbo stand also has a special display devoted to its high-speed portfolio, featuring an MAN 175D engine, MAN Renk gearbox and MAN Alpha propeller, showcasing its ability to provide complete propulsion solutions within the segment. The display will also showcase the company's new MAN D2676 LE443 engine, the latest generation of inline six-cylinder engines for workboats. It generates an output of 537 kW (730hp) at 2,300rpm with a cylinder capacity of 12.4 litres.

The company's two-stroke unit will be displaying its new Mk 10 design platform,



The MAN 175D engine is on display at SMM

Photo: MAN

which has a host of new design features that have brought about a significant reduction in weight. A key innovation of the new platform is its combined, simplified FBIV (fuel booster injection valve)/

TCEV (top controlled exhaust valve) component.

MAN Diesel & Turbo at SMM:  
Hall A3 / Stand 200



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## Lloyd Werft with new design centre

Lloyd Werft Bremerhaven will be showcasing its expertise in the segments repair, conversion, refurbishment, interior renovation and completion of ships of all types and sizes up to 110,000gt.



The RoRo vessel *Primula Seaways* was lengthened at Lloyd Werft in Bremerhaven  
Photo: Lloyd Werft

The shipyard has two dry docks and a floating dock capable of handling ships with a draught of up to 11m. Some 400 qualified person-

nel, 1,400m of quayside and a spectrum of cranes with a wide range of capabilities are available for all ship services. A new

design centre for shipbuilding was opened this year. Because of its modern workshops and shipyard facilities, Lloyd Werft is capable of carrying out a variety of customised tasks. One of its additional strengths is building high-value luxury yachts to individual customer requirements.

Lloyd Werft Bremerhaven AG  
at SMM: Hall B4 / Stand 319

## Navico brings together latest radar and display technology

SMM 2016 will provide Navico a first opportunity to display the new Simrad® R3016 12U/6X IMO SOLAS CAT 3 radar system for the commercial shipping market, which became available in the summer of 2016.

Bringing together the latest Simrad radar and display technology, the new R3016 12U/6X is aimed at commercial vessels under 500gt, which are required by SOLAS to have minimum capacity for 20 acquired targets, 20

activated AIS targets, and 100 sleeping AIS targets.

The R3016 12U/6X features a 12-kW X-band transceiver and a 6ft open array scanner designed for high reliability and low maintenance. Also included is the completely new Simrad R3016, a compact control unit with a 1366x768-pixel high-definition 15.6-inch diagonal widescreen display.

The radar system is built around a new-generation digital processing user interface fea-

turing enhanced target-tracking capabilities and advanced automated tuning controls. Its control unit incorporates the display, controls and processor in a single integrated system. No bulky additional PC processor is required, while installation costs are further reduced using easily routed Ethernet cabling and a compact, bulkhead-mounted power supply unit.

Navico at SMM: Hall B6 / Stand 222



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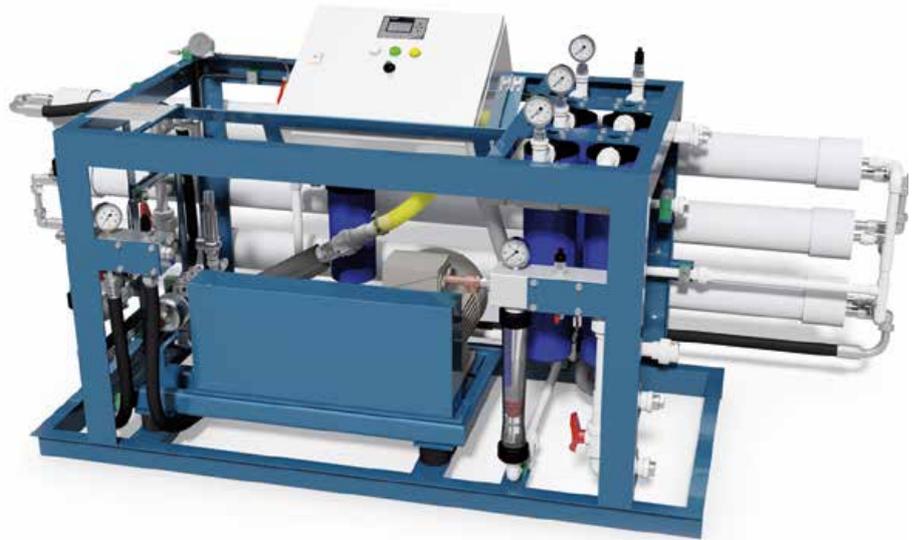
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# CleanSewage Bio water treatment system saves space

At this year's SMM, RWO, a Veolia Group company and one of the leading providers of water treatment systems on ships and offshore platforms, will be presenting the CleanSewage water treatment system CS Bio, the seawater reverse osmosis SRO-COM and a further development of the oily water separator OWS-COM.

Compared with other systems, the CleanSewage Bio water treatment system with its one-sided access can save up to 25% in space, according to RWO. In addition, it requires substantially lower maintenance and enables a faster restart. The CleanSewage Bio is also easy to use for operators and crew. The system features a hygienic no-touch cleaning system and intuitive status control with all information available at a glance.

The seawater reverse osmosis SRO-COM is a desalination system aboard ships. RWO now offers a smaller version of the system with a capacity of up to 60m<sup>3</sup>/day. The new product's advantages are simple, proven technology without the use of chemicals, quick installation, modular design, low maintenance costs, no down-



The seawater reverse osmosis SRO-COM

Photo: RWO

times as well as high performance and water quality. The RWO oily water separator OWS-COM has been optimised with new filter cartridges, among other things. This increases operational reliability and reduces operating costs in a service life

that is more than twice as long. Due to its compact design, the OWS-COM is equally suited for newbuildings as well as retrofits.

RWO GmbH Marine Water Technologies at SMM: Hall A1 / Stand 218

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SMM's global maritime environmental congress, gmec, takes place today

Photo: HMC/Zielke

# Green and digital

Global shipping is currently in rough waters, but even in times of crisis there are innovative ideas and solutions. SMM is hosting four conferences – Ma-

ritime Future Summit, gmec, MS&D and Offshore Dialogue. Leading international experts will be on hand to present their approaches to digi-

tisation, efficiency, green shipping, maritime security, and offshore. Conference participants can meet maritime industry leaders personally, and exchange views



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in the unique environment of SMM, the leading international maritime trade fair. Below is an overview of the main events. Detailed previews can be found in this and the following issues of the SMM Daily News 2016.

**Overview of the conferences**

The **Maritime Future Summit** was held yesterday. It covered all the major trends and latest development in automation, digitisation and “big data”. See the report in this issue.

The **global maritime environmental congress (gmec)** today focuses on alternative propulsion systems, digital transport control and sophisticated measurement electronics. Speakers include Dr Martin Stopford of Clarksons Research.

[www.smm-hamburg.com/gmec](http://www.smm-hamburg.com/gmec)

**MS&D**, the international Maritime Security and Defence Conference, to be held tomorrow, features leading experts discussing security methods today and likely



MS&D features leading experts discussing security methods

Photo: HMC/Fuhrmann

future trends. Speakers include naval expert Bob Nugent of AMI International.

[www.smm-hamburg.com/msd](http://www.smm-hamburg.com/msd)

The **Offshore Dialogue** on Thursday features leading speakers from the international maritime industry, academia

and government organisations. The conference is supported by the German Federal Ministry of Economic Affairs and Energy (BMWi). It will focus on the oil and gas crisis, and on the impact of digitisation.

[www.smm-hamburg.com/od](http://www.smm-hamburg.com/od)

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Wärtsilä piston on NAVIGO MCL Ultra at end of trial inspection

# Optimised cylinder oil for engines running on ultra-low-sulphur fuel

Concerns about the environmental impact of the shipping industry, in particular air pollution, led to the creation of Emission Control Areas (ECAs) by the International Maritime Organization (IMO). Stricter environmental regulations apply for these areas, limiting the amount of emissions from ships, in particular emissions of sulphur oxide (SOx), nitric oxide (NOx), ozone-depleting substances (ODS), particulate matter (PM) and volatile organic compounds (VOCs). Specific ECAs with sulphur oxide limits are called SECAs (Sulphur Emission Control Areas); ECAs with limits on nitric oxide emissions are called NECAs (Nitrous Oxide Emission Control Areas).

The control areas and specific emissions limits are defined by Annex VI of the 1997 MARPOL (Marine Pollution) Protocol, which came into effect in May 2005. By July 2010, a revised Annex VI came into force with considerably stricter emissions limits. In 2013 a chapter was added to MARPOL Annex VI to improve the energy efficiency of international shipping. At present, the following ECAs have been established:

- > Baltic Sea (since May 2006; only SOx)
- > North Sea, including the English Channel (since November 2007; only SOx)
- > 24 nautical miles off the California coast (since July 2009)
- > 200 nautical miles off the coasts of Canada and the USA, including the Great Lakes and Hawaii (since August 2012; SOx, NOx, PM)
- > Coastal waters of Puerto Rico and the American Virgin Islands (the so-called US Caribbean Emission Area) (since 2014; SOx, NOx, PM)

More ECAs are planned for the Mediterranean Sea and Japan, and discussion has arisen about ECAs around Alaska, Australia, South Korea and the Black Sea. To meet the regulations of Annex VI with regard to sulphur emissions limits, most ships use ultra-low-sulphur fuel. The alternative would be the installation of a scrubber to clean the exhaust and reduce the emission of SOx. The sulphur limits for fuels are getting increasingly stricter:

SULPHUR LIMITS FOR FUEL IN SECAS	
Before July 1st 2010	1.50% m/m
Between July 1st 2010 and January 1st 2015	1.00% m/m
After January 1st 2015	0.10% m/m
GENERAL SULPHUR LIMITS IN OTHER SEA AREAS	
Before January 1st 2012	4.50% m/m
Between January 1st 2012 and January 1st 2020	3.50% m/m
After January 1st 2020 (may be postponed until 2025)	0.50% m/m



The back of the MAN piston rings and the ring grooves are extremely clean

Photos: Lukoil

## › ABOUT LUKOIL AND LUKOIL MARINE LUBRICANTS

LUKOIL is the leading Russian company in exploring, producing, refining and marketing petroleum products. It was established in 1991 through the merger of a group of oil-and-gas production companies located in the western Siberian cities of Langepas, Urai and Kogalym, whose initials form the acronym LUK. In 2007 LUKOIL decided to bring its expertise in lubricants technology to the marine industry. LUKOIL Marine Lubricants was founded as a global sales and marketing business focusing on the production and sales of marine lubricants worldwide. Since then the company has positioned itself as a technology leader with the introduction of the first 100 BN cylinder oil NAVIGO 100 MCL as the answer to severe corrosive wear issues of modern engines and the development of iCOLube®, an onboard unit for intelligent cylinder oil lubrication.

For more information visit [www.lukoilmarine.com](http://www.lukoilmarine.com)

However, choosing an adequate fuel is not the only concern of ship operators. The cylinder lubricant must match the fuel in order to protect and maintain the engine in the best possible way. LUKOIL Marine's NAVIGO MCL Ultra is perfectly adjusted for two-stroke engines running on any ultra-low-sulphur fuel, including gas.

### LUKOIL Marine's cylinder oil for ultra-low-sulphur fuel approved by MAN and Wärtsilä

NAVIGO MCL Ultra was developed by LUKOIL Marine specifically for vessels operating in ECAs. In order to comply with emission regulations, ships in ECAs run on ultra-low-sulphur fuel.

The new lubricant has been used by various customers since January 2015 and – after completion of OEM trials – NAVIGO MCL Ultra has been approved by MAN and Wärtsilä. Valeriy Naumenko, senior superintendent at Hamburg-based E.R. Schiffahrt, said, "The tests have shown that NAVIGO MCL Ultra maintains the engine in very good condition with excellent results regarding the cleanliness of the piston ring grooves and the back of the piston rings."

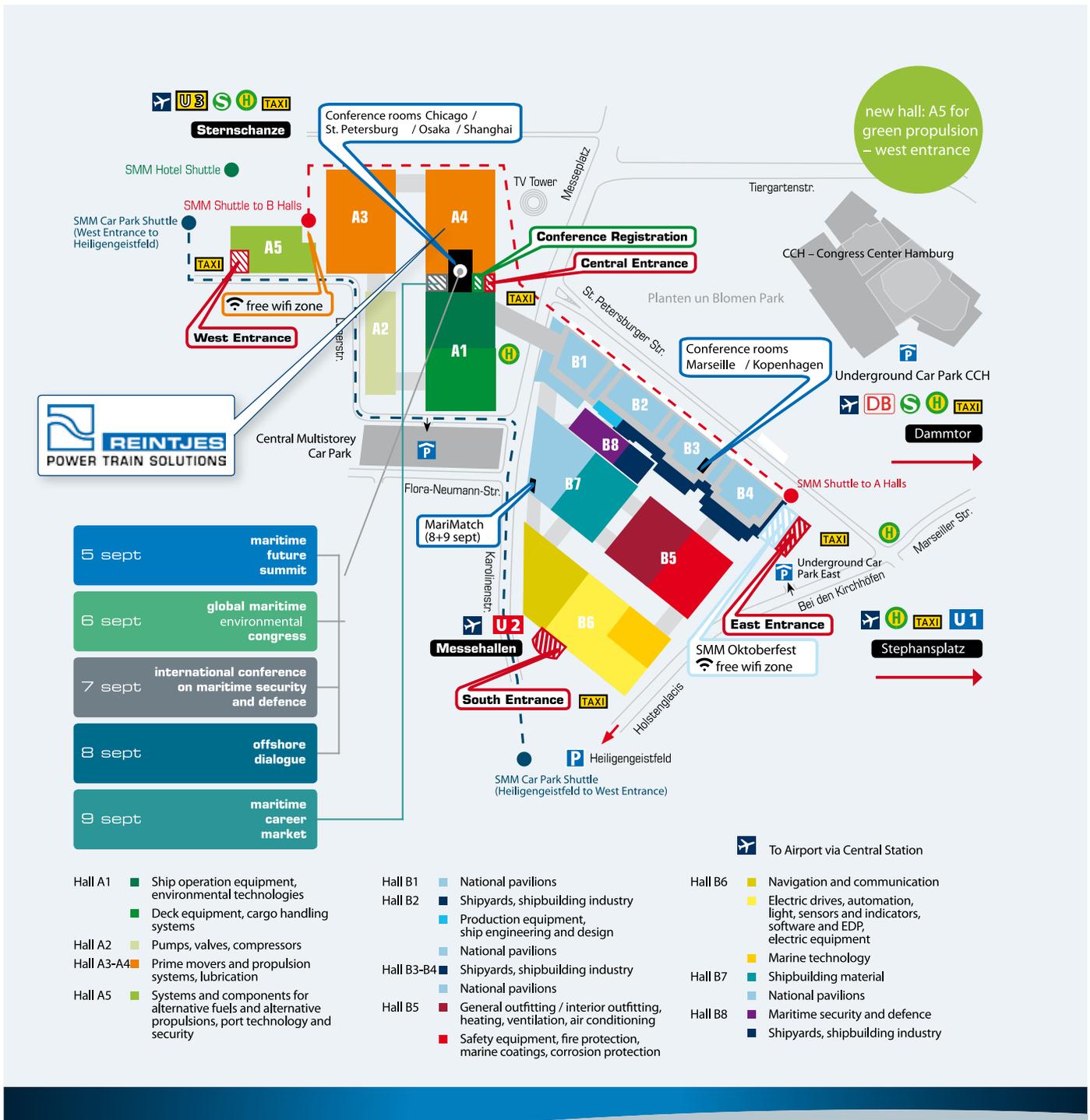
NAVIGO MCL Ultra has been available globally since December 2014 and complements LUKOIL Marine's comprehensive lubricant portfolio, which enables the marine lubricant specialist to provide customers with lubricant solutions for their specific requirements.

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TUESDAY, SEPTEMBER 6th

- |  |  |
|--|--|
| <p><b>09:00</b>      <b>Press Conference:</b><br/>RSC Bio Solutions<br/><i>Room A2.1 – Exhibitor events</i></p> <p><b>10:30 – 16:15</b>    <b>Panels:</b> gmc – global maritime environmental congress<br/><i>Conference room Chicago</i></p> <p>10:30 – 11:00: Opening and Keynote</p> <p>11:00 – 12:00: Harmful air emissions – managing the disconnect between compliance and technology</p> <p>13:00 – 14:30: Panel 2 – Big Data – smart shipping and environment</p> <p>14:45 – 16:15: Panel 3 – Green propulsion – Is LNG the answer? What are other options?</p> <p>16:15 – 16:30: Conclusion – lessons learned</p> | <p><b>11:00 – 13:00</b>    <b>Seminar:</b> “Living with ECDIS”<br/><i>United Kingdom Hydrographic Office</i><br/><i>B6.1 – Exhibitor events</i></p> <p><b>15:00 – 16:30</b>    <b>Presentation:</b> Special Economic Zone LOTUS<br/><i>Room Shanghai 1–2 – Exhibitor events</i></p> <p><b>15:00</b>            <b>Seminar:</b> EU MRV regulation – what are the key requirements? How to comply?<br/><i>Zephyr</i><br/><i>Osaka 1 – Exhibitor events</i></p> <p><b>18:30</b>            <b>MS&amp;D reception – by invitation only</b><br/><i>InterCity Hotel Hamburg</i><br/><i>Dammtor-Messe</i></p> |
|--|--|

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Join us during SMM 2016 in the Wärtsilä Digital Lounge, Hall B6, stand 312

# Creating the integration ecosystem: Apple iOs for shipping?



Image: Transas

As the shipping industry steams into what some are calling the “smart”, “digital” era, the market is awash with forward-thinking technologies and solutions. This digital revolution amongst technology manufacturers, which brings great innovation to the doors of shipowners and operators, is a prodigious feat for the industry. Couple that with the extraordinary advances in satellite communications that have taken place in the past decade, and the scenario of the smart shipping fleet of tomorrow is becoming ever more certain.

But if all of this technological innovation is readily available right now, why is the industry perceived to be lagging behind when it

comes to exploiting smart technologies for improved operations?

Is it because the industry is traditionally perceived as being a “slow mover” when it comes to evolving and adapting? Or because the industry hasn’t had the right support platforms to integrate its digitalised operations and fully embrace a smarter way of operating ships and fleets?

Imagine if the shipping industry had access to its own powerful operating system. On-shore smart technology users have unprecedented access to powerful mobile operating systems that function to connect our personal digital endeavours.

Take the Apple Inc iOS mobile operating system for example. Consider how power-

ful it is to have an iPhone, iWatch, iPod and iMac all connected and controlled by one user profile, sharing all of the user’s digital content thanks to powerful cross-platform integration.

This extremely powerful, integrated, shared ecosystem created by Apple Inc is in the majority of people’s possession and silently supports a faster way of “connected” working and socialising, all with a user-friendly interface.

Now visualise a shipping industry where this same platform exists for shipowners and operators. Where instead of the captain’s range of personal Apple products being linked and synced with each other, it’s the bridge operations and the control of



information and processes that are shared from ship to shore and across fleets.

### Creating an ecosystem based on a powerful platform and infrastructure

The success of the Apple iOS system is based on the creation of an ecosystem with a powerful platform and infrastructure. Such an infrastructure can be created for the shipping industry to exploit: for smarter shipping operations and fleet management. A shipping industry-specific integrated platform could, in theory, allow staff on shore and crew on board to access the same information about the ship, training, e-navigation and many other aspects.

This is the kind of platform that the industry needs, and it will be the future. All of the elements required to make this platform a reality for the shipping industry already exist: the technology, the connectivity and a forward-thinking company that has the ability to create the infrastructure.

Any platform concept should be based on the theory that ships should not be treated as single individuals at sea, but rather the whole fleet managed and optimised. The concept of integrated fleet management should sit at the core. This would result in the same data and information being shared, where necessary and agreed, with external parties such as traffic control, regulators and environmental protection forces, for example.

In an era of increasing technologies and sensors on board, infrastructures that promote integrated, shared working should be developed with the primary focus of reducing the workload for the bridge team.

Usability is an essential aspect. It is something that has made the most successful mobile operating systems celebrate colossal uptake on shore. The change to smarter operations should not necessitate seafarers of today, or tomorrow, being sent back to school to attain an IT degree in order to operate a ship, or in fact engage and work with this kind of platform.

In coming years more and more decision-making will be done from shore. There is a need for ship officers and crew to be liberated from their mounting administrative tasks, which create vast paper trails. They must be moved off the ship, allowing ship officers and crew to concentrate on what is important: running the ship and getting it safely, and efficiently from A to B. The shipping industry's own Apple iOS should have this as a minimum requirement.

### Integration through a shared way of working is the future

Transas believes that the future is integration through a shared way of working, and therefore is driving the creation of this infrastructure.

The concept for a shipping industry-specific platform was unveiled in early 2016. THESIS (Transas Harmonised Eco-System of Integrated Solutions) represents a flexible data resource and a scalable platform, in which solutions all work together and data can be shared between users. This ecosystem that Transas is developing would enable a shipowner or operator to share collected data between the ship and onshore operations so he can make sensible decisions for the safety, performance and navigation of the ship.

THESIS will seek to create a modular formation so that a shipowner or operator can build up the bricks as needed. For Transas the crux of this ecosystem development is to put information on navigation and operations in place where people can extract it easily to make better decisions.

The road to successful adoption by the industry may be a long, and adversity will be encountered. Therefore, engaging industry in the development of an ecosystem-based way of working supported by a powerful platform is essential.

THESIS will evolve as new requirements are included and refined, as maritime stakeholders provide feedback on what is needed and great focus is being put on engaging with the industry to ensure that THESIS is built on industry feedback. Ascertaining what functionality the system should have and what direction THESIS should go in is also a vital part of the platform's development.

The key to the rollout of a new way of working for the industry is an incremental approach, an aspect that sits at the top of the Transas agenda.

However, the industry's attitude has to change towards how we work between ship and shore in order to move into a smart shipping world. At the epicentre of this shift towards integrated, shared operations is the status quo of the ship-to-shore relationship. Current attitudes must change to smart attitudes.

There may be a lot of obstacles to overcome, but Transas is dismantling them one by one.

It is a case of when it is going to happen, not if.

## Transas Harmonized Eco System of Integrated Solutions

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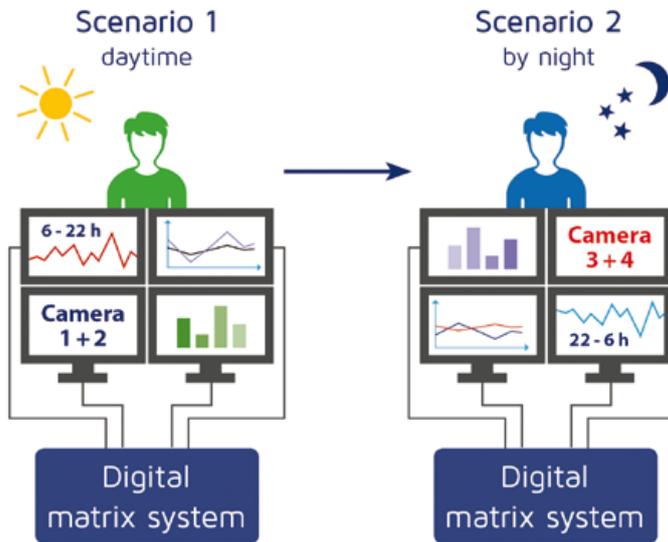
ACADEMY

**Join us for a special presentation by Mr Frank Coles, CEO of Transas at 14:00, 6th September, Stand B6.208** [info@transas.com](mailto:info@transas.com) [www.transas.com](http://www.transas.com)

# Intuitive switching by mouse or trackball

KVM systems have long been considered standard equipment in classical IT applications. Now that more and more computer systems are finding their way into maritime applications, manufacturer Guntermann & Drunck GmbH (G&D) has devoted its developments to the specific requirements of this industry.

At this year's SMM, the IT specialist will present various novelties, including further improved CrossDisplay-Switching for intuitive switching by mouse or trackball, i.e., without the explicit manual operation of the KVM system, and scenario switching.



Example of day and night scenarios: With a single command, all computers required for day or night shifts can be switched at once. In the same way, scenarios can be stored for harbours, at sea or for man-overboard manoeuvres.  
Image: Guntermann & Drunck

AS G&D notes, the applications for KVM systems and their functions are as varied as the application fields of seafaring itself, comprising the optimum implementation of ECDIS, special user processes on workboats as well as comfort aspects on super yachts.

Redundancy concepts for KVM installations are essential since they guarantee maximum reliability of the IT equipment. At their stand at SMM, the KVM experts from G&D will demonstrate what such installations can look like, based on individual requirements and examples from their live installations.

Guntermann & Drunck GmbH at SMM: Hall B6 / Stand 417

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# Cruise industry and green shipping as maritime innovation drivers

The maritime industry is one of Hamburg's key economic factors. Today, shipbuilding companies and suppliers are faced with new challenges due to higher environmental standards and increasingly discerning clients. A pronounced trend towards specialisation strengthens Hamburg as a business and research location.

It is always impressive to watch a large passenger ship such as the *Queen Mary 2* being manoeuvred into the Elbe fairway and docked with the highest precision at the Elbe 17 dry dock, situated in the Blohm + Voss shipyard. All this can be observed from the St Pauli Landungsbrücken in the heart of Hamburg's city centre. Elbe 17 is one of the largest dry docks in Europe and can accommodate



Jessica Wegener

the longest and most magnificent ships. Service and repair contracts are an important economic pillar for the Blohm +

Voss shipyard, which sits right in the middle of Hamburg's port.

## Considerably changes

"Shipbuilding in Germany has changed considerably in recent decades and is facing new challenges," said Jessica Wegener, head of the Hamburg office of the Maritime Cluster Northern Germany. In this trans-regional network, players from the maritime industries and maritime sciences have joined forces in order to strengthen competitiveness and innovation across all industry sectors. "For many years, Germany's maritime industry placed a strong focus on the construction of container ships. However, since the onset of the global economic and financial crisis, a pronounced trend towards specialisation can be ob- >

Photo: Maritimes Cluster Norddeutschland



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served,” said Wegener with reference to the construction of large cruise ships at Meyer Werft, a north German shipyard. Suppliers are also benefiting from this development. Thus SAM Electronics GmbH, a Hamburg-based company, designs specialised navigation and monitoring systems for vessels, and the Amptown Systems Company provides multimedia technology solutions for the entertainment areas of passenger ships, such as theatres, cinemas and bars.

**Broad and innovative range of research and training sites**

The shipbuilding sector alone employs nearly 15,000 people in northern Germany, and the sector’s total turnover amounts to approximately EUR 4.7 billion each year. Not only Hamburg’s shipyards can make use of a broad and innovative range of research and training sites for maritime research. The Hamburg University of Technology (TUHH), for instance, comprises twelve different institutes dedicated to research into maritime systems, with the aim of increasing



Hamburg will sustainably reduce pollutant emissions

Photo: Mediaserver/Modrow

the efficiency and safety of ships. The Hamburg Ship Model Basin (HSVA) was established more than 100 years ago. The institute tests the latest hull types for their hydro-mechanical properties and analyses their manoeuvrability in a 300m-long test pool even under rough sea conditions. The HSVA’s premises also include one of the world’s larg-

est ice tanks, which is used for testing ship models in particularly complex simulations in extreme climate scenarios.

**The maritime industry spans the entire value chain**

Hamburg is also home to the maritime headquarters of the classification society DNV GL.

## Offshore – Maritime Weather Forecasts

Source: Vestas

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► We are looking forward to see you in Hall B8 Stand 302.

The company, which emerged in 2013 from the merger of Det Norske Veritas and Germanische Lloyd, certifies new constructions and monitors compliance with international safety and environmental standards. As well as advising shipping companies in terms of enhancing efficiency, the DNV GL's engineers also develop concepts for future propulsion systems. The Fraunhofer Centre for Maritime Logistics and Services (CML), which was founded in 2010 on the TUHH campus, develops and optimises processes and systems along the maritime industry's supply chain. The CML designs digital solutions in the field of ship and information management to support various decision-making processes in the maritime industry. In addition, the CML also coordinates the pan-European research project MUNIN, which aims to examine the potential of and requirements for unmanned navigation.

**Environmental protection leads to image transformation**

Since 2015, only ship fuels with a sulphur content of 0.1% may be used in European



Queen Mary 2 docked at Elbe 17  
Photo: Blohm+Voss

coastal waters. What is more, the International Maritime Organization (IMO) has tightened its efficiency requirements in an effort to further decrease ships' fuel consumption and greenhouse gas emissions.

These provisions call people like Dirk Lehmann into action, who is managing director of Becker Marine Systems. Located in the south of Hamburg, Becker Marine Systems develops innovative ideas for green shipping. With its high-performance steering systems for mega-yachts, large tankers and container ships, the company is the global market leader in the segment. More recently, the company demonstrated its innovative strength with its LNG concept. In collaboration with the cruise company Aida Cruises, Becker Marine Systems has developed a floating power station for ships that uses liquefied natural gas (LNG). Since 2015, this new LNG barge supplies electricity to cruise liners that are moored in the port of Hamburg whenever there is no access to onshore power supply. Thanks to the LNG barge, giant cruise ships can now refrain from using their own diesel generators in the middle of the city centre, which will sustainably reduce pollutant emissions.

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# Daily forum at the Voith booth

At this year's SMM, Voith will be presenting propulsion concepts for numerous applications. Voith is exhibiting propulsion systems such as the Voith Schneider Propeller (VSP), the Voith Inline Thruster (VIT) and the Voith Linear Jet (VLJ).

Once again, the company sets standards for reliable, efficient and safe vessel propulsion systems and concepts. Exhibits include a model of the Carousel RAVE Tug owned by Dutch towage and salvage specialist Multtraship BV, which features VSP propulsion units.

Individual service solutions offered by Voith are the second focus at SMM. They support the customer from initial counselling to engineering and the development of holistic maintenance and service concepts. Unplanned downtimes can thus be avoided and life-cycle costs are reduced. Regular evaluation of pro-



The Voith Schneider Propeller (VSP) is available in various versions to suit different applications

pulsion system data supports the development of dynamic maintenance cycles and enables preventive maintenance. Individual retrofitting solutions allow Voith to modernise propulsion systems and increase their energy efficiency and environmental compatibility.

Novelties at the Voith booth will be a daily forum, panel discussions and presentations of best-practice examples. Together with vessel operators and renowned shipbuilding industry experts, Dr Dirk Jürgens, head of Research and Development at Voith Turbo Marine, will discuss current requirements for vessel propulsion systems as well as efficient and environmentally friendly concepts. The session will be held daily at the booth at 2:30pm (on Friday at 11am).

Voith at SMM:  
Hall A4 / Stand 203




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# Performance satisfaction and fuel-saving ability

Coatings supplier Hempel is exhibiting its fouling-defence coating Hempaguard at SMM in Hamburg this year.

Hempaguard guarantees performance satisfaction and maintains fuel-saving ability at low speeds and during extended idle periods (for up to 120 days). It retains its effectiveness when ships switch between slow and fast steaming, giving fleet operators unrivalled flexibility, Hempel says. Hempaguard® is said to achieve an average fuel saving of 6% across the entire docking interval.

Hempel AS at SMM:  
Hall B5 / Stand 216



Visitors to Hempel's stand can discuss how coating solutions boost operational excellence  
Photo: Hempel



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## Special Guest

Look forward to an autograph session with HSV Bundesliga star Alen Halilović on our fair stand.

**Date:** Wednesday, 07.09.2016 from 11 am  
**Place:** Hall B6, Stand 202

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# Three questions for...



**DR-ING HARALD RAAK,**  
CEO of KRAL AG

***What are the highlights that KRAL will present at SMM?***

KRAL has been one of the leading manufacturers of fuel and lubricating-oil pumps for the marine industry for decades. Thanks to their reliability and high durability, KRAL screw pumps enjoy a reputation for outstanding quality. The marine industry is always in flux – we have never known a different state. We cannot influence the economic framework conditions, but we observe very

intensely how fuels and maritime regulations change. We share this knowledge with our customers and ensure as a result ensure that they can act together with us on time. A few years ago, when low-sulphur fuels became mandatory in ECAs and reliable shipping operation was endangered, we were the first manufacturer to offer a reliable solution in the form of screw pumps with hermetically sealed magnet couplings.

Nowadays the topic Industry 4.0 offers a particularly wide range of opportunities. One highlight at our fair stand is a pump that is equipped with additional sensor equipment in order to determine its operating state and transmit it to the onboard condition-monitoring systems. We cordially invite your readers to visit us and discuss the demands made on fuel pumps with regard to Industry 4.0. Further highlights are our fuel consumption and cylinder lubricating oil measuring systems. These systems have been part of the KRAL range of products for many years. As a fair innovation we have raised them to a new level technologically. In the so-called “smart solution”, up to 32 KRAL volumeters are interconnected through a bus system, measure the fuel consumptions of the main engine, the auxiliary diesels and the burners as well as the lubricating oil quantities, and pass the measured values on to the onboard performance-monitoring system. We also offer our fair visitors active support with regard to the new regulations “IMO Ship Fuel Consumption Data Collection and Reporting” and “EU MRV”. We show systems for fuel consumption measurement with which the

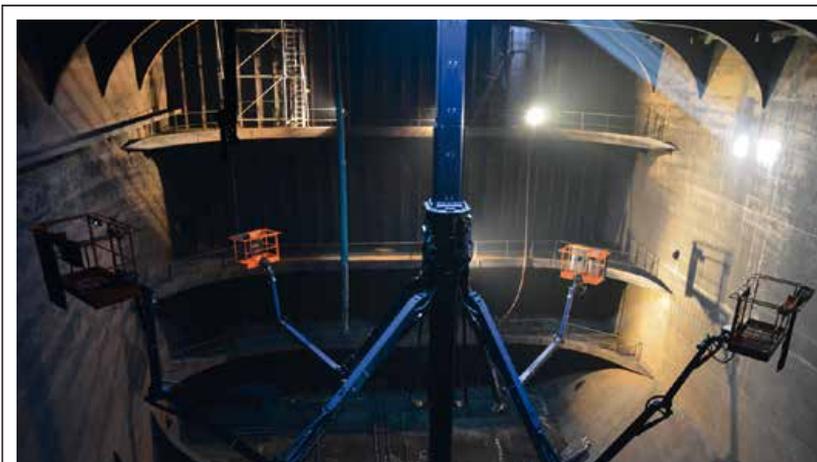
measurements that become obligatory in 2018 can be effected in outstanding quality. We also help in describing the measuring methods – since shipowners have to do so in monitoring plans for each ship from the middle of 2017 onwards.

***What do you expect from SMM 2016?***

We know that the marine industry is steering through turbulent waters economically. Just when budgets are tight new IMO and EU environmental specifications come into force. Nevertheless, the branch is extremely innovative in order to achieve economic shipping operation. From SMM 2016 we expect to master the crucial tasks in the future together – in close cooperation with our customers. We expect considerable interest in our innovations, which in our opinion are the right ones at just the right time.

***What is the role of offshore wind parks in KRAL's business in comparison with your marine activities?***

KRAL has a lot of experience in the marine industry. What the marine industry does not really notice is that we have exactly as much experience in power generation. Our pump modules for transformer platforms in offshore wind parks combine our knowledge from both branches. Particularly exciting is the fact that the technologies for offshore wind parks still hold high innovation potential. Our customers therefore profit from our “special projects” sector by exploiting our competence in detail engineering for fuel modules.



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## Competent crews are key to success

Seagull Maritime celebrates its 20th anniversary this year. At SMM, the company is emphasising how the recruitment, training and retention of competent crews on board are keys to success in shipping today.

Seagull Maritime is showcasing the latest tools and reports available via the Seagull Competence Manager, which allows owners to identify training and competency

gaps in individuals and at ship level, and to take appropriate action.

Interfacing the Seagull Training Administrator with any crewing system has never been easier than with Seagull Maritime's newly developed Web API, developed to save time and avoid double data entries.

New and revised titles are added every quarter to the Seagull Maritime library of e-learning modules and maritime training films, with latest releases including an

onboard course on fatigue management. SMM also provides an opportunity for Seagull Maritime to present its latest developments in type-specific ECDIS training modules. In addition to Kelvin Hughes, Tokyo Keiki, JRC, Consilium and Maris, the company recently released training for Transas, Sperry Marine and Wärtsilä SAM Electronics.

Seagull Maritime at SMM: Hall B7 / Stand 117

## Innovative solution for reliable measurement

Sick is presenting its Marsic ship emission measuring device, an innovative solution for reliable measurement of emissions from ships according to MARPOL Annex VI and MEPC.184(59).

Marsic is type-approved by DNV GL and measures both SO<sub>x</sub> and CO<sub>2</sub> upstream and downstream of the scrubbers, and NO<sub>x</sub> upstream and downstream of SCR (selective catalytic reduction) plants. In addition, it can be used for process measurements such

as CH<sub>4</sub> in LNG (liquefied natural gas) and dual-fuel engines.

At low cost and with little maintenance, a single gas analyser can serve up to four measurement points and measure up to nine components simultaneously: SO<sub>2</sub>, CO<sub>2</sub>, CO, NO, NO<sub>2</sub>, NH<sub>3</sub>, CH<sub>4</sub>, H<sub>2</sub>O, and O<sub>2</sub>. Maintenance on board is also quick and easy. With Marsic, a conscious effort has been made to avoid the use of moving parts.

Sick at SMM: Hall B6 / Stand 602



The Marsic ship emission measuring device from Sick

Photo: Sick



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# Combining the best of lifeboats and life rafts

Viking products and solutions being showcased at SMM include the Viking LifeCraft™, a revolutionary hybrid combining the best of lifeboats and life rafts.

This evacuation system takes up less room than lifeboats, yet offers full manoeuvrability.

Visitors can also try Viking Nadiro Drop-In-Ball™ technology, an innovative lifeboat hook system that is safe and easy to operate and can be fitted/retrofitted to almost any brand of lifeboats.

Additionally, a brand-new generation of combined anti-exposure and immersion suits (PS4190/91) will be introduced. These SOLAS/ISO dual-approved suits perform across multiple marine applications, offering unmatched safety, comfort, functionality and freedom of movement.



The Viking LifeCraft takes up less room than lifeboats

Photo: Viking

With a series of live demonstrations, Viking Saatsea will offer a sneak peek into the future of onboard eTraining, including STCW refresher courses and OODTPs for ERRVs. Training can be tracked,

assessed or scheduled from any onshore or onboard location.

Viking Life-Saving Equipment at SMM: Hall B1 / Stand 504

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Gmec is focusing on alternative propulsion systems

Photo: Wärtsilä

# Green power ahead

Increasing efficiency, saving resources – this year’s gmec, global maritime environmental congress, is focusing on alternative propulsion systems, digital transport control and refined measurement electronics. Gmec brings together leading experts today to discuss how to improve efficiency in shipping while cutting emissions.

The pressure on the industry is tremendous. On the one hand, the tough situation in the market forces shipping companies to keep the prices for their services at competitive levels, which mainly means they have to increase efficiency and reduce fuel consumption. On the other hand, ever stricter international standards require investments in environmental technologies.

And customers also expect the companies to demonstrate sustainable management – that is why “green” propulsion is a major focus at SMM.

The importance of this subject is also evident from the presence of leading international experts who have accepted the invitation to speak at the global maritime environmental congress (gmec). ➤

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They will address three key issues: harmful air emissions, “big data”, and alternative energy. Speakers include Arsenio A. Dominguez from IMO, Dr Martin Stopford from Clarksons Research, Tom Boardley from Lloyd’s Register, and Oskar Levander from Rolls-Royce Marine.

**Emissions must be cut**

The International Maritime Organization (IMO) is the global driver in maritime environmental protection. The IMO Marine Environment Protection Committee (MEPC) is right up front in this effort, so the organisers are very pleased to welcome its chairman, Arsenio A. Dominguez, as a keynote speaker at gmeconline. The path to significant reductions in emissions to the



The industry has long been working on alternatives to conventional fuel

Photo: Wärtsilä

atmosphere will be addressed by David Dingle, CEO of Carnival UK, drawing on practical experience – his company has allocated more than USD 400

million to equip more than 70 cruise ships with emission control systems and flue gas cleaning equipment that combines scrubbers for sulphur

cleaning with diesel particulate filters. The classification companies are a key partner for shipping companies in technical imple-

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**Flow measurement.**  
Two directives will impact us very soon – the EU 2015/757 „MRV“ and the IMO „Ship Fuel Consumption Data Collection and Reporting“. KRAL has been offering systems for fuel consumption measurement for more than 20 years. We convince with our practical knowledge, integrate our flowmeters into your monitoring system and supply consumption values in excellent data quality.

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**SMM 2016**

Hall A2

Booth No. 201.

06<sup>th</sup> to 09<sup>th</sup> September

mentation of environmental protection measures. Their experts know what really works. Tom Boardley, executive vice president of Lloyd's Register, will explain at gmec where he sees opportunities for further technical improvements to achieve sustainable emission reductions.

**The future belongs to "smart shipping"**

Martin Stopford sees "big data" as the key topic for the future of the industry. As long-standing head of Clarksons Research, a maritime research and consulting company, he believes that shipping is moving into a process of fundamental change. "Smart shipping" calls for investments in tools such as sensor-controlled information, satellite communication, data storage, user-friendly apps, IT systems and automation – keeping up with the technology will be essential in the market.

Inmarsat Maritime has the necessary equipment in its portfolio – key innovations will be presented by its president, Ronald Spithout.

Propulsion solutions will be presented by Oskar Levander,

vice president of engine manufacturer Rolls-Royce Marine.

**Alternative propulsion systems – is LNG the answer?**

China recently announced its intention to create emission control areas around its coasts. Limits for sulphur emissions are to be applied from 2018 onwards, on the same basis as the existing SECAs (Sulphur Emission Control Areas) in the North and Baltic seas and off the North American coasts. Background: Seven of the world's top ten container terminals are located in China. Dual-fuel engines will be essential, but the industry has long been working on alternatives to conventional fuel. The clear favourite is liquefied natural gas (LNG). Classification company DNV GL is one of the front-runners in development of this technology. Knut Ørbeck-Nilssen, CEO Maritime of DNV GL, knows the technical challenges and describes how to accelerate build-up of the necessary infrastructure.

For more information please visit:

[www.smm-hamburg.com/gmec](http://www.smm-hamburg.com/gmec) >



Photo: M.Louagie/Fjordline

Alternative propulsion systems: the clear favourite is LNG



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## PROGRAMME GMEC 2016

**10:30 - 10:40** **Opening:** Welcome address by the organisers  
Conference room Chicago

**10:40 - 11:00** **Keynote:** “Environmental shipping regulations: current and future developments, and challenges”  
*Arsenio A Dominguez (Chairman, IMO Marine Environment Protection Committee and Ambassador and Permanent Representative of Panama to the IMO)*  
Conference room Chicago

**11:00 - 12:00** **Panel 1 - Harmful air emissions – managing the disconnect between compliance and technology**  
**Moderator:** Tom Boardley  
Conference room Chicago

“What are the different compliance options and the practical challenges of implementing them on board ships?”  
*Tom Boardley (Executive Vice President, Lloyd’s Register)*

“The practicalities and challenges of operating cruise ships whilst complying with emission regulations”  
*David Dingle (CEO, Carnival UK)*

“The global cap and the level playing field – are they compatible?”  
*Niels Bjørn Mortensen (Director Regulatory Affairs, Maersk)*

“Shipping ETS – the verifier’s perspective: What to expect and how to prepare for MRV”  
*Guido Harling (Lead-Verifier & Managing Director ETS Verification GmbH)*

**Panellist:** *Arsenio A. Dominguez (Chairman, IMO Marine Environment Protection Committee and Ambassador and Permanent Representative of Panama to the IMO)*

**12:00 - 13:00** **Lunch break**  
*ZF Friedrichshafen AG*  
Conference room Chicago

**13:00 - 14:30** **Panel 2 - Big data – smart shipping and environment**  
**Moderator:** Dr Martin Stopford  
Conference room Chicago

“Can unmanned ships become a reality and what is the timeline?”  
*Oskar Levander (Vice President Innovation, Rolls-Royce Marine)*

“How is technology driving operational efficiencies on board and ashore?”

*Ronald Spithout (President, Inmarsat Maritime)*

“How is ‘big data’ changing the shipping industry and what are the potential pitfalls?”  
*Dr Martin Stopford (President, Clarkson Research Services Ltd)*

“As the maritime sector embraces smart technologies, how is it impacting the services provided by and research conducted by class?”  
*Kirsi Tikka (Executive Vice President Global Marine, ABS)*

**14:30 - 14:45** **Coffee break**  
Conference room Chicago

**14:45 - 16:15** **Panel 3 - Green propulsion – Is LNG the answer? What are other options?**  
**Moderator:** Gavin Allwright  
Conference room Chicago

“Wind power and its potential for helping shipping become even greener”  
*Gavin Allwright (Secretary International Windship Association, IWSA)*

“Running ships on alternative fuels – pros and cons?”  
*Erik Lewenhaupt (Head of Sustainability, Stena Line)*

“LNG has been presented as a panacea for clean shipping – what are the barriers to the accelerated uptake of LNG as fuel for powering ships?”  
*Knut Ørbeck-Nilssen (CEO Maritime, DNV GL)*

“Will cleaner bunkering stay a one-horse race or are we headed for a multi-fuel future?”  
*Iain White (Global Marketing Manager, ExxonMobil Marine)*

“The role of green propulsion (alternative fuels) in sustaining the world’s oceans”  
*Christine Valentin (COO, World Ocean Council)*

**16:15 - 16:30** **Conclusion - Lessons learned** Conference room Chicago



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Photo: Hamburgmediaserver/Spahrbier

# Nightlife in Hamburg

Would you prefer glamorous or alternative, international or tranquil, down-to-earth, maritime or hip? In Hamburg, you don't have to settle for a particular lifestyle: the city's 103 neighbourhoods cater to any atmosphere you would expect from a vibrant, modern metropolitan region – ranging from

lively urban settings to idyllic rural neighbourhoods. The SMM Daily News is presenting the city's most interesting nightspots in this and the next three issues.

With more than 1.7 million inhabitants, Hamburg is Germany's second biggest city

after Berlin. More than 30% of its residents have a migrant background. The city's cultural diversity has a long tradition. For centuries, people from around the globe have been arriving in Hamburg via the port. These expatriates contribute to the cultural life of the city's districts. >

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The Reeperbahn was a stepping stone for the Beatles

Photo: Hamburgmediaserver/Modrow

**Shaped by the Alster and the Elbe**  
Hamburg is shaped by the Alster and the Elbe, and a journey along the banks of

these two rivers reveals the alternative faces of Hamburg. The Elbe runs through the city from east to west, past industrial

and commercial sites and residential areas, through the port and past the modern architecture in the city centre, and on to the lively St Pauli quarter, past dikes and beaches, parks and orchards until it finally reaches its North Sea estuary. In contrast, the Alster flows from the north of Hamburg through the quiet district of Poppenbüttel to the south, past unpretentious, quiet districts such as Lokstedt and Alsterdorf, and through more upmarket areas such as Eppendorf, Rotherbaum and Harvestehude, and then joins the Elbe in the magnificent city centre.

**A lively, multicultural street scene**

And yet, from a tourist's point of view, these luxurious quarters of Hamburg compete with numerous other districts such as the Schanzenviertel and St Pauli, which are characterised by port workers and industrial craftsmen and a lively, multicultural street scene. This is where urban trends are developed and lived, and these trends are made public at a later stage by the media.

However, unlike other cities, Hamburg is compact enough to allow you to quickly jump between these different worlds. To experience the larger picture within a few hours, it often takes no more than an extended stroll through the city.

**The Reeperbahn – a red-light district in transition**

The Reeperbahn in the district St Pauli is a living legend. In the old days it was a seedy red-light quarter for seafarers and strollers. During the 1960s and 1970s, it was a stepping stone for the Beatles

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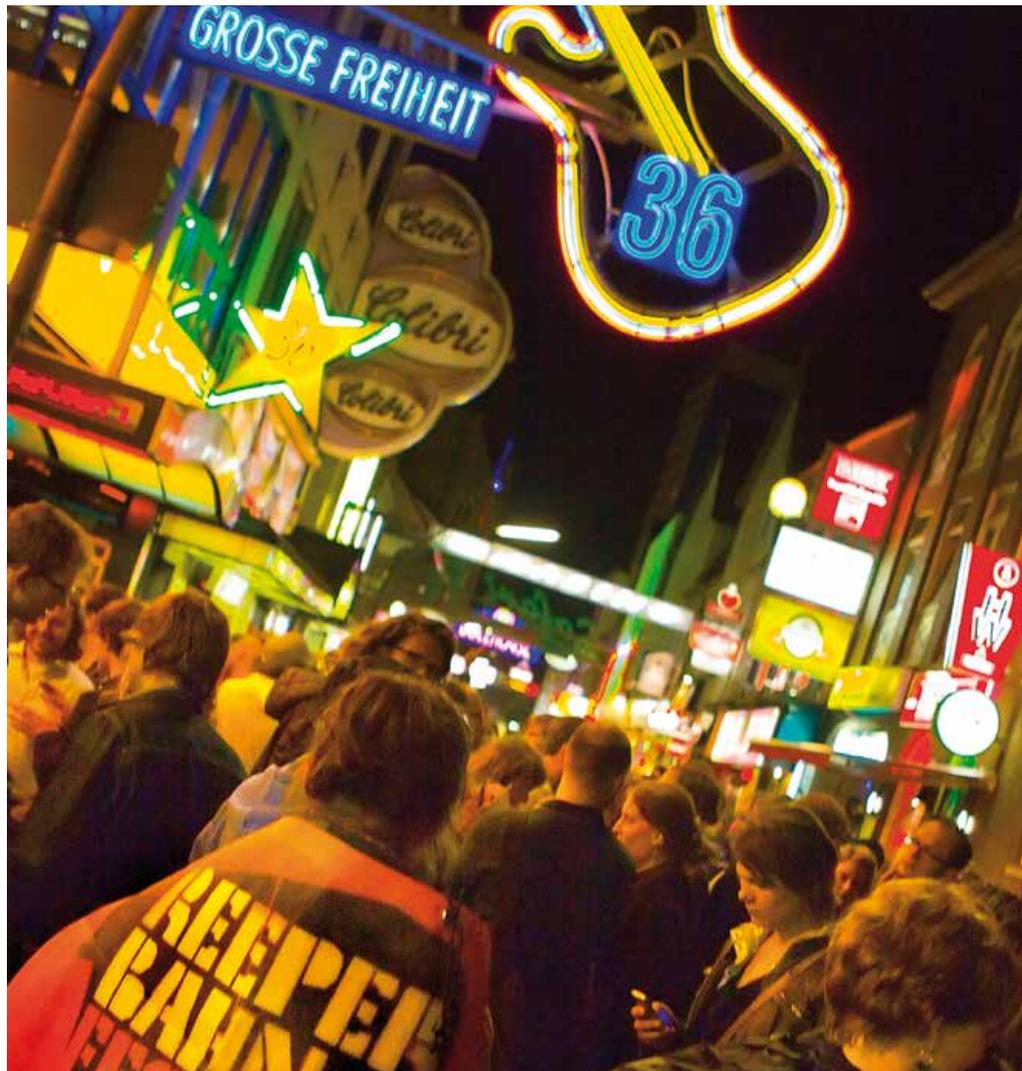
Join us during SMM 2016 in the Wärtsilä Digital Lounge, Hall B6, stand 312

and pop culture, while at the same time serving as an essentially German destination for stolen moments of fleeting, uninhibited sex tourism. Since the 1990s, the red-light district has been gradually transformed into a unique entertainment district with bars and clubs, art galleries, cabarets and theatres, musical palaces and top-class restaurants.

The backbone of this entertainment district is 930m long, lined with night-clubs, bars, pubs and clubs. “Musts” on the tourist route include Grosse Freiheit, Hans-Albers-Platz, the Davidwache police station as well as the Spielbudenplatz with its Panoptikum waxworks and Operettenhaus. Parallel to the Reeperbahn is Herbertstrasse, a street of brothels that is off-limits for juveniles and female visitors. Yet today the masses stream past the red-light haunts into the clubs, restaurants, theatres and on-stage musicals. With two mobile stages, the Spielbudenplatz adjacent to the Reeperbahn offers ample space for open-air concerts.

### Music clubs in Hamburg

Whether with live bands or international DJs, Hamburg’s music clubs offer the perfect ambience for every taste. Legendary hotspots include the Golden Pudel Club and Mojo Club, the new Molotow, Hafenklang, Kaiserkeller, as well as Grosse Freiheit 36, Prinzenbar and Moondoo. Yet the best approach is to enter the night free of preconceptions, fall in with the rhythm of the night, and make your own discoveries in corner pubs, backstreet shrines and hidden bars. The brisk breeze propelling music fads



The Grosse Freiheit is a must on the tourist route

Photo: Hamburgmediaserver/Boem

and trends blows where it will and moves far too fast to allow guided tours. The Clubkombinat, an association of music

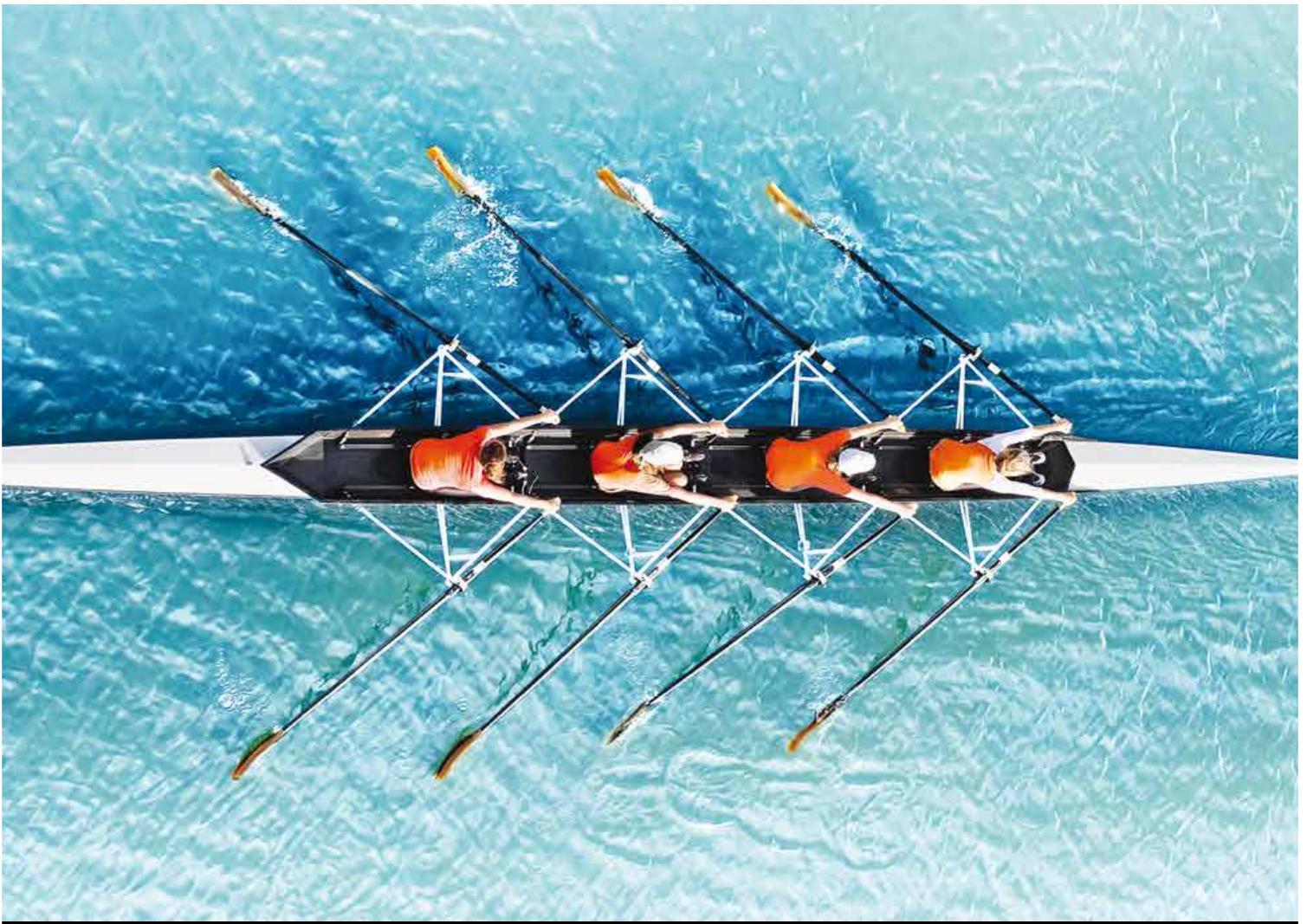
clubs mostly centred around the Reeperbahn, gives an overview of the clubs’ programmes.

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