CSIC and CSSC to merge
MAN and Hyundai agree joint test venture
MTU demonstrates Tier III capability
ICS says compromise is needed on IMO CO2 strategy
HHI receives LR AIP for LNG-fuelled VLOC

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If President Xi’s government goes ahead with plans to merge the China State Shipbuilding Corp with China Shipbuilding Industry Corp into one industrial giant, as Bloomberg reported last week, the new entity could dwarf the output and revenues of South Korea’s Hyundai Heavy Industries, Daewoo Shipbuilding & Marine Engineering and Samsung Heavy Industries combined.

China’s shipbuilding tiger is set to roar once more but this is of little surprise, especially if you’re one of the journalists privileged to visit CSIC and CSSC yards in 2003, not long after the organisations were formed.

Amongst these industry stalwarts were Sam Chambers, then Editor, Maritime Asia, Hugh O’Mahony, then Technical Editor, Lloyd’s List, Paul Gunton, the then Editor of Fairplay, Bob Jaques, then and current Editor, Seatrade, and Patrik Wheater, then the Editor of Marine Engineers Review. What we all witnessed was the development of a modern, globally-focused shipbuilding hub, capable of building standard vessels for significantly less than other builders in the region.

Chambers wrote following the DNV-organised junket: “Significant developments pointing to China’s growth include the successful series construction of the country’s first VLCCs, more export orders of higher value ships, plans announced for the largest shipyard in the world and a growing realisation around the world that Chinese yards build very decent ships at competitive prices.”

O’Mahony, meanwhile, commented that while the southerly CSSC group and the north’s CSIC adopted different growth strategies, “CSSC plans to expand its current 4Mldwt capacity to over 14M dwt by 2015, creating the world’s biggest single yard, and becoming the world’s number one shipbuilder.”

This was something Wheater echoed. “Talk to the President of any shipyard in China, from Dalian to Guangzhou, and you will hear how China’s shipbuilding capacity is expected to be comparable to that of Japan and Korea by 2015. CSSC has accelerated its shipyard development phase, which began in 1999 with the construction of the modern SWS yard, and will follow in 2007 with the relocation of Shanghai’s Jiangnan, and other CSSC-operated shipyards, to Changxing island.”

Had overcapacity problems, the fall in crude oil prices, and shipbuildings’ downturn not put paid to these plans, China would indeed have been the world’s number one builder three years ago, if not before.

It certainly will be if the merger goes ahead.
MAN AND HYUNDAI AGREE JOINT TEST VENTURE

MAN Diesel & Turbo will build a new test-engine facility in collaboration with its two-stroke licensee, HHI-EMD, the engine and machinery division of Hyundai Heavy Industries. The new venture aims to expand MAN Diesel & Turbo’s R&D test capacity, strengthening its development of dual-fuel gas engines.

Lars Juliussen, Senior Manager and Head of MAN Diesel & Turbo’s Diesel Research Centre, Copenhagen, said: “The testing of our engine technology is an essential part of our continued pursuit of delivering the marine segment’s best two-stroke engines. This new test set-up will enable us to further advance our pursuit of highly reliable and environmentally-friendly technology with a strong focus on cost-competitive gas engines and related equipment.”

The test and gas facility, in Ulsan, Korea at HHI-EMD’s works, is scheduled to begin operation in early 2019. It will be the first test engine with online remote control, supporting MAN’s digitisation strategy. In this respect, the test engine will also be connected to MAN Diesel & Turbos research and control centre in Copenhagen, enabling the company’s research engineers to closely follow and enhance the testing of future engine technologies.

The new test engine set-up will feature MAN Diesel & Turbo’s ME-GI Pump Vaporizer Unit (ME-GI PVU), an innovative cost-efficient high-pressure LNG supply unit that makes FGSS installations significantly more compact – reducing both cost and weight.

The ME-GI PVU is designed to pressurise and vaporise the LNG fuel to the exact pressure and temperature required by ME-GI engines. Gas pressure is controlled via control of hydraulic oil flow to the pump, ensuring a very quick and precise control of the LNG supply to the engine. Separate control of each pump head provides full redundancy. Furthermore, the ME-GI PVU is governed by a control system – including supervision and safety functions – that feature a high degree of integration with the ME-GI engine control system.

MTU DEMONSTRATES TIER III CAPABILITY

MTU’s Series 4000 engines equipped with a SCR system has completed the IMO Tier III certification tests. Representatives of the several certification bodies tested a 20-cylinder version of the engine, which was awarded approval as being representative of the remaining versions. This means that the engines now comply with the emission regulations in accordance with MARPOL Annex VI, IMO Tier III.

With a variety of technical advances to the turbocharging system, the combustion process and the injection system of the engines combined with MTU’s new SCR system, NOx emissions have been reduced by 75% compared with IMO II and particulate emissions by 65% compared with EPA Tier III. An additional diesel particulate filter is not required.

For vessels such as tug boats and ferries, MTU will gradually be introducing the engines complying with IMO Tier III and EPA Tier IV emission regulations onto the market as 12, 16 and 20-cylinder versions covering a power range from 1,119 to 3,220 kW. The work boat engines will thus offer a 45% increase in output compared with the predecessor versions and will thus be the only high-speed work boat engines delivering an output of up to 3,220 kW.

Life-cycle costs were also a key focus during the development of the new MTU engines, the aim of which was to create significant benefits for ship owner/operators. Because of improving the operating efficiency of the turbocharger, it was also possible to reduce fuel consumption by a further 5% compared with the predecessor model. MTU has already delivered the first EPA Tier IV propulsion systems for new catamarans operated by the WETA (Water Emergency Transportation Agency) in California.

Operators can switch between modes (IMO II and IMO III) during operation, to comply with the emission requirements of the region in which the vessel is sailing. MTU’s SCR system is fully controlled, with real-time NOx measurement both upstream and downstream of the SCR system. This ensures that the precise amount of reactant is introduced regardless of the conditions. Besides the IMO Tier III certified engines, MTU will continue to offer IMO Tier II engines.
GE LM2500 TO POWER NEW US DESTROYERS

GE’s Marine Solutions’s LM2500 gas turbines have been selected to power the United States Navy’s new DDG 126 and 127 Arleigh Burke-class destroyers, currently building at General Dynamics’ Bath Iron Works.

The US Navy is the largest customer of GE marine gas turbines. GE has already delivered over 750 gas turbines to the US Navy to power frigates, destroyers, cruisers and amphibious ships.

Two GE LM2500 marine gas turbines also power the Japanese Maritime Self Defence Forces (JMSDF) newest destroyer JS Asahi (DD119). This first of two new destroyers in the JMSDF’s Asahi-class destroyer program was recently commissioned by the JMSDF. The ship was built by Mitsubishi Heavy Industries at its Nagasaki Shipyard. The second destroyer in this class, JS Shiranui (DD120), was launched by MHI in October 2017; sea trials for this ship are slated for late 2018.

IHI handles in-country design, manufacture and testing of the LM2500 propulsion modules and LM500 gensets for all the JMSDF and GE military marine programmes and delivers them to shipyards.

IHI has packaged, tested and delivered more than 235 GE LM marine and industrial gas turbines, and offers complete overhaul capability for both GE’s LM2500 and LM6000 family of engines.

GE’s six power and propulsion marine gas turbines range from 25 megawatts to 52 megawatts: LM500, base LM2500 model, LM2500+, LM2500+G4, and two LM6000 models, LM6000PC and LM6000PG.

The LM2500 has achieved over 15 million hours in marine applications as well as another 70 plus million hours in industrial applications. These gas turbines reliably operate for the US Navy, JMSDF and 33 other navies the world over in some of the most arduous conditions.

MTU POWER FOR SINGAPORE FERRIES

Rolls-Royce is to supply MTU engines to fast ferry operator Majestic Ferry in Singapore. Designed by Incat Crowther, a total of seven new fast ferries are being built at PT Cahaya shipyard in Batam, Indonesia over the next two years. Each of the twin-hulled vessels will be powered by two MTU 16V 2000 M72 units.

“The determining factor for this follow-on order is the positive experience the operator has had with MTU engines and with our service,” said Chew Xiang Yu, a member of marine sales staff at MTU Asia. Including the new vessels, the fleet is set to be 16-strong.

“A key criterion for our fleet is the fuel-efficiency of our engines. They should also have long maintenance intervals and be powerful and reliable,” explained Max Tan, Managing Director from Majestic Ferry. “After our initial contact with Majestic in 2016, we worked with them to produce a specification package with the optimum features for large fast ferries. Our 16V 2000 M72, with its 1,440kW power output, offered the ideal starting point,” continued Chew Xiang Yu.

Back in 2016 and 2017, MTU had delivered a total of six MTU Series 2000 engines for the operator’s new Majestic fleet. The first 39m twin-hulled ferry Majestic Dream went into service last summer, followed by the Majestic Pride in the autumn/fall. The third vessel, the Majestic Faith is set to join them from April 2018 onwards.

 Indonesian shipbuilder PT Cahaya is now to build seven more 39m catamarans, each able to take up to 317 passengers. Majestic Ferry’s approach is to acquire larger ferries to be able to accommodate growing passenger numbers. Traveling at around 34.5 knots, the ferries whisk passengers in comfort between Singapore harbour and the Indonesian island of Batam.
The two 80,000m³ VLGCs (Very Large Gas Carriers) Hanjin Heavy Industries is building in the Philippines for Exmar, will each be powered by an individual MAN B&W 6G60ME-LGIP Mk9.5 engine with high-pressure selective catalytic reduction (SCR).

Bjarne Foldager, Vice President Sales & Promotion, Two-Stroke Business at MAN Diesel & Turbo, said: “Interest in using LPG as a fuel, outside of the LPG carrier segment, is growing due to its sulphur-free character, free availability and ease of bunkering. In gas mode, we expect the ME-LGIP engine to operate on just 3% pilot oil and down to 10% load. Ultimately, we expect the engine to operate without need for pilot oil.”

MAN Diesel & Turbo reports that the ME-LGIP engine can reduced CO2 by 10% and particulate matter (soot) by about 90% when running on LPG, compared with MDO.

With this commitment, LPG joins the list of liquid, environmentally-friendly fuels that can power MAN Diesel & Turbo’s portfolio of two-stroke, dual-fuel engines, which are available from all licensees.

MAN Diesel & Turbo further reports that it expects ME-LGIP installation aboard merchant vessels to be extremely competitive price-wise, compared to other, dual-fuel-burning engine types.

Due to ever more stringent emission limits, many LPG carrier operators called for MAN Diesel & Turbo to develop an LPG-fuelled engine that could power LPG carriers in the most viable, convenient and economical way using a fraction of the cargo already onboard.

LPG is an eminently environmentally-friendly fuel, in much the same class as liquefied natural gas (LNG), and an LPG-fuelled engine will significantly reduce emissions, enabling vessels to meet the stringent IMO SOx emission regulations due to come into force globally from 2020.

LPG’s future as a viable fuel for general marine transportation looks promising as it will not require as large an investment in infrastructure – such as bunkering facilities – in contrast to other, gaseous fuels.

Accordingly, MAN Diesel & Turbo expects a strong demand for LGIP engines for very large gas carriers (VLGCs) and coastal vessels from their introduction.

MTU 8000 FOR FRENCH FRIGATES

Rolls-Royce Power Systems has received its first order for the new sixteen-cylinder engines in its successful Series 8000 range: French shipbuilder Naval Group has ordered a total of 20 MTU 16V 8000 M91L engines, each delivering up to 8,000kW of mechanical power.

These are to be installed in the French Navy’s five new FTI-type frigates (Frégates de Taille Intermédiaire – medium-sized frigates) from 2023 onwards. The engines are due to ship between the end of 2020 and 2027. The Series 8000 covers the power range from 7,200 to 10,000 kW. And like its 20-cylinder counterpart, the 16-cylinder engine is said to deliver lower overall operating costs, high power density and low environmental impact, while meeting both IMO Tier II and EPA Tier II emissions limits.

The FTI vessels are each to be powered by four 16V 8000 engines forming a combined diesel-and-diesel (CODAD) propulsion system, with two diesel engines connected to each of the ship’s dual prop shafts. The propulsion system will produce a total power output of 32 MW, powering the frigates up to speeds of 27 knots. The vessels will have a range of up to 5,000 nautical miles.

The five new frigates are due to enter service by 2030, joining the eight slightly larger Aquitaine-class FREMM frigates to form the backbone of the French Navy.

The French FREMM frigates also feature MTU engines, each vessel is equipped with four 16V 4000 M63L engines supplying onboard electrical power and teamed with a gas turbine to form the propulsion system.

MTU and Naval Group (known as DCNS until 2017) have enjoyed a close partnership for over 20 years now, with a total of around 30 submarines and surface vessels built by Naval Group plying the world’s seas with MTU engines.

One current project is for four ‘Gowind’ corvettes for the Egyptian Navy, each powered by two 20-cylinder Series 8000 engines.

The first of these vessels went into service in September 2017.
The two specialist DP2 offshore loading shuttle tankers will feature a range of ABB’s power and automation solutions, including its award-winning power distribution system Onboard DC Grid.

The two twin-skeg 125,000dwt vessels, due for delivery to AET from Samsung Heavy Industries in 2019, will transport oil from the Statoil fields on the Norwegian and UK continental shelves to land-based terminals.

“These state-of-the art tankers will have a service life of up to 30 years, operating in the harsh winter conditions of the North Sea. They need to be robust, competitive, capable of meeting anticipated environmental regulations and prepared for new energy sources. With ABB’s solutions on board, these tankers will be future-proofed for technology and regulations for the years to come,” said Juha Koskela, Managing Director, ABB Marine & Ports.

ABB’s integrated power and automation solutions will play a key role in ensuring that AET’s new vessels achieve high fuel efficiency. A shuttle tanker of similar tonnage would normally use 8,000-9,000t of fuel a year, while ABB’s solution can contribute to annual fuel savings of up to 1,000t.

The vessels will also enjoy the benefits of having the ABB Ability Marine Remote Diagnostic System onboard. The system will allow reducing on-call visits of service engineers up to 70%, and maintenance costs up to 50%, all while increasing the safety and reliability through extended and predictive monitoring.

The power system will be controlled by ABB’s integrated Power and Energy Management System (PEMS), which will enable generators to run at variable speeds in the optimal way. This contrasts with traditional AC systems, where generators run at fixed maximum speed irrespective of the power demand on board, leading to excessive engine wear and poor fuel efficiency at lower loads.

Together with PEMS, ABB’s Integrated Control and Monitoring System will enable the crew to operate the vessels’ steaming and DP operations at the lowest possible specific fuel consumption.

Twin two-stroke engines will act as the main source for all power utilising the Onboard DC Grid shaft generator solution for all the operational modes. The combination of the Onboard DC Grid system and the two-stroke engine shaft generator will result in the vessels burning less fuel and generating lower emissions, compared with the more traditional alternative that relies on four-stroke engines.

NIDEC TO SUPPLY SHORE-TO-SHIP POWER TO GENOA PORT

Nidec, part of the Industrial Solutions sector of the Nidec Group, has signed a €8 million deal with the Port System Authority of the Western Ligurian Sea to design and construct a ‘shore-to-ship’ powering project for the port of Genoa.

So-called “cold ironing” technology reduce shipborne emissions of SOx, NOx and CO2 as ships plug into the national grid thus avoiding the use of onboard diesel generators. This also reduces noise pollution.

“For us this project is a major milestone in the reduction of the environmental impact of port activities, a central theme for promoting a sustainable development model in a country like Italy, which has 7,500km of coastland and 42 large ports.

“The transformation of these ports with a view to achieving greater safety and savings on energy may also contribute to attracting more cruise vessels, and this would have a positive impact on trade and tourism,” said Kaila Haines, Marketing and PR Director of Nidec ASI.

Nidec has already installed in the Port of Livorno, in the Muggiano / La Spezia shipyards, in the Naval Bases of Taranto and in Toulon (France).”

For the Port of Genoa, Nidec will supply two 6MVA static frequency converters which, with the overloads required, can reach up to 12MVA, as well as switchboards and LV/MV transformers, connecting cables for the various devices and any accessory components.
Alewijnse Marine has delivered the complete electrical installation for the new cargo vessel Arklow Venus, the eighth ship in a series of ten 5,150dwt Arklow Shipping traders that Alewijnse has fitted out at Royal Bodewes Shipyard to Bureau Veritas class.

The ninth vessel in the series will be completed in April this year and the final vessel (YN 730) is due for completion by the middle of 2018.

These 87m eco-traders are being built to a proprietary design by Royal Bodewes. Each can burn both heavy fuel oil and gas oil, the latter being necessary for the North and Baltic Seas emission control areas. The vessels have a top speed of 12 knots.

Alewijnse is providing the complete electrical installation and integration for the Arklow vessel series.

“We are supplying and installing almost all the electrical equipment on board, including the switchboards, bow thrusters, shaft generators and bridge consoles”, explained Alewijnse project manager Bertran Smit. "We are working closely with Bodewes to optimise the production processes for this series."

This is not for the first time that Bodewes has outsourced the complete electrical installation for entire vessels to Alewijnse. Other projects include the cement carriers Furuvik and Cymbidium, a number of different Bodewes coasters and the Coralius; a unique LNG flex tanker that was nominated for the Next Generation Ship Award at Norshipping 2015.

**ABS-LED GROUP EXPLORE LNG CHALLENGES**

Some two-hundred shipowners and managers attending an industry conference at the Stavros Niarchos Cultural Centre, in Greece, earlier this month, heard the American Bureau of Shipping, Wärtsilä, Winterthur Gas & Diesel (WinGD), GTT, Shell & Gard explore the technical and operational challenges of using LNG as a marine fuel.

In a joint seminar, the companies discussed the latest thinking on a range of key LNG issues, including technology for dual fuelled ships, the regulatory framework and first hand operational experience of LNG-fuelled vessels.

“LNG as a fuel is already transforming the shipping industry and will continue to expand further as shipowners and operators look to comply with the latest environmental requirements,” said ABS Global Ship Systems Centre Director, Elias Kariambas. “The attendees heard directly from our event partners on the development of new LNG-fuelled projects and related technologies. Forums like this help drive industry dialogue and provide a vital platform to share experiences and discuss evolving technology.”

Arista Shipping Technical Manager, Antonis Trakakis said: “LNG as fuel has the most extensive service record among all other options for compliance, and, apart from meeting all environmental regulations, it clearly brings a substantial cost benefit which justifies the investment.”

The forum included an update on Project Forward, the Joint Development Project to combat global ship emissions promoting adoption of LNG as a marine fuel with a fully LNG-powered deep sea dry bulk carrier.
Ahead of critical meetings at the IMO which commence this week, the International Chamber of Shipping (ICS) has urged governments to compromise to help IMO agree an ambitious strategy for the further reduction of ship-borne CO2 emissions in line with Paris Agreement expectations.

"Governments on all sides of the debate are going to need to show far more willingness to compromise on their current positions or put at risk an agreement on a meaningful strategy. This would greatly undermine the authority of IMO and the future sustainability of the shipping industry" said ICS Chairman, Esben Poulsson.

"Agreement upon a mid-century objective for the total reduction of CO2 emissions by the sector, regardless of trade growth, will be vital to discourage unilateral action and to provide the signal needed to stimulate the development of zero CO2 fuels," Poulsson added. "But the very high level of ambition proposed by certain EU Member States – a 70 to 100% total cut in emissions before 2050 – is unlikely to achieve consensus support."

Poulsson said that while ICS does not fully agree with them in every respect, alternative proposals made by China and Japan merit serious consideration and could form the basis of a possible compromise.

"China seems to have made a real effort to move away from its previous opposition to establishing CO2 reduction goals for the sector’s total emissions. If EU nations want a global agreement they should acknowledge this by similarly modifying their own positions," he said.

In a briefing note to its national shipowner associations, ICS suggested that if IMO was to set an initial objective of cutting the sector’s total CO2 emissions by, for example, 50%, rather than 70 to 100%, this would still require a major improvement in ship efficiency over “business as usual”. When account is taken of the anticipated growth in maritime trade, ICS said this would still only be possible with the widespread use of zero CO2 fuels.

"A mid-century objective like that proposed by Japan would still provide a compelling signal to the industry. This should also be sufficient to stimulate the development of zero CO2 fuels leading to a 100% CO2 reduction in line with the ambitious vision which IMO must agree" said Poulsson.

In advance of zero CO2 fuels becoming available globally, the industry has also proposed that IMO should adopt the following objectives:
1. To maintain international shipping’s annual total CO2 emissions below 2008 levels;
2. To reduce CO2 emissions per tonne-km, as an average across international shipping, by at least 50% by 2050, compared to 2008; and
3. To reduce international shipping’s total annual CO2 emissions by an agreed percentage by 2050, compared to 2008, as a point on a continuing trajectory of CO2 emissions reduction.

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**IMO’S 2020 SULPHUR DEADLINE A DONE DEAL**

Bjarne Schieldrop, Chief Commodities Analyst at Nordic corporate bank SEB, has released a report on the IMO 2020 sulphur emission issue for global shipping, following meetings with more than 100 shipping clients and refineries over the past 12 months.

The report raises a number of key points, of which the most pertinent is that it is now impossible for the IMO to push the 2020 global 0.5% sulphur limit to a later date without breaking its own rules. From January 2020 it will be illegal to run a ship using fuel containing more than 0.5% sulphur without operating an exhaust cleaning gas system.

The SEB report furthers that strong price signals in the form of a wider ULSFO 0.5% to HSFO or Gasoil product price spread are needed to drive the desired shift to lower sulphur emissions.

However, while the IMO is likely favour a wider spread and support such an outcome, a softening of the transitional measures would be required to avoid unnecessary transitional havoc and disruption.

The report goes on to suggest that fewer than 2000 ships will have a scrubber in 2020.

"By 2020, we expect less than 2000 ships to possess a scrubber, and therefore the present HSFO demand will fall sharply from 4 mbl/d to as little as 0.3 – 0.4 m bl/d. Demand will instead switch to higher quality oil products such as ultra-low sulphur fuel oil (ULSFO 0.5%) or Gasoil. This will push the global refining system’s upgrading capacity to the limit as 3-3.7 m bl/d of HSFO suddenly need to be upgraded to ULSFO/Gasoil. Ripple effects of this development will likely be felt across the whole oil product sector and further impact pricing of different crude slates,” states SEB.

**FOUNDATION LAID FOR GREENER SHIPPING**

The International Maritime Organisation is leading a European Union funded project designed to help shipping move into a new era of low-carbon operation.

The Global MTCC Network (GMN) initiative will unite several technology centres – Maritime Technology Cooperation Centres (MTCCs) – in targeted regions in a project that is intended to provide a building block for greener shipping.

Five MTCCs have been established in Africa, Asia, the Caribbean, Latin America and the Pacific. Acting as centres of excellence for their regions, the MTCCs will work with partners to develop technical cooperation, capacity building and technology transfer – sharing the results and their experiences throughout the network to ensure a common approach to a global issue.

Innovative programmes and projects are being developed and carried out by the MTCCs - all designed to promote energy-efficient technologies and operations.

For regions particularly vulnerable to the impact of climate change, it’s a chance to get involved in promoting technologies and operations to improve energy efficiency in the maritime sector.

"When we saw this project, we saw it as an opportunity to build partnership throughout the region to mitigate, at least in the maritime sector, the impacts of climate change,” said Vivian Rambarath-Parasram, Head of MTCC-Caribbean.

Estimates suggest ships’ energy consumption and CO2 emissions could be reduced by up to 75% by applying operational measures and implementing existing technologies. The GMN is on the cutting edge of climate-change mitigation – and, at the same time, opening up a world of opportunities for those who participate in it.

“We’re looking forward to building capacity for not just Kenya but for the African region in general - to reduce greenhouse gas emissions, to improve air quality in our port cities,” said Nancy W. Karigithu, Principal Secretary Maritime and Shipping Affairs, Kenya (pictured).

By promoting technologies and operations to improve energy efficiency in the maritime sector and helping navigate shipping into a low-carbon future, the GMN project is steering a course for a cleaner, greener future.
SAACKE TO SCRUB ELCANO TANKER

The 137,000dwt chemical tanker Spain’s Empresa Naviera Elcano has ordered from Shanhaiguan New Shipbuilding Industry will be fitted out with SAACKE scrubbers and steam boilers.

The vessel will be trading in the North Sea and Baltic emissions control areas (ECAs), where strict emission regulations are in force. The German exhaust gas cleaner will supply its SAACKE EGCS-HM hybrid multistream scrubber system.

“The scrubber ensures almost the full desulphurisation of the exhaust gases. This reliably meets the required emission values in the ECAs as well as the IMO emission requirements for global shipping that will apply from 2020,” said Nils Homburg, Senior Engineer for Scrubber Development at SAACKE.

In addition to the scrubber, SAACKE will supply an auxiliary and combination boiler system. These are used to generate steam for heating heavy fuel oil and water for cleaning the charging tanks.

BALLAST WATER

AQUARIUS BWMS SUBMITS TO USCG

Wärtsilä has submitted its Aquarius Electro-Chlorination (EC) Ballast Water Management System (BWMS) for US Coast Guard (USCG) Type Approval (TA) after successfully completing all the testing procedures required.

Wärtsilä received type approval from the International Maritime Organisation (IMO) in 2013 for the electrochlorination system and the same successful design was used for the USCG application.

“Achieving this significant USCG testing milestone is a major step forward for the product. It provides customers with further assurance that this system efficiently addresses ballast water treatment compliance needs, with a reliable product and a partner committed to long-term global support,” said Joe Thomas, Director, Ballast Water Management Systems at Wärtsilä.

The Wärtsilä Aquarius EC BWMS utilises filtration and electrochlorination technology. It ensures compliance with regulations, even with varying levels of water quality. Safety has been a fundamental consideration in the design, and hazard analyses aimed at eliminating installation and operational risks have supported its development.

Wärtsilä also offers a BWMS using filtration and ultra-violet (UV) irradiation. The Wärtsilä Aquarius UV system is type approved according to the IMO Convention and has an Alternative Management System (AMS) acceptance certificate from the USCG. It is currently undergoing full USCG TA testing with completion expected during 2018. The Wärtsilä Aquarius UV is also certified for installation in hazardous areas (EX).

Wärtsilä says its dual technology offering provides the broadest range of BWMS solutions for fleet wide compliance.
COLDHARBOUR INITIATES JAPANESE TYPE APPROVAL PROCESS

Coldharbour Marine, the manufacturer of a ballast water treatment system based on inert gas technology, has appointed Japanese classification society ClassNK to assist in the process of obtaining Japanese type approval from the Ministry of Land, Infrastructure, Transport and Tourism. The approval is a requirement for all foreign companies in the marine sector seeking to sell their products to customers in Japan.

The type approval process, as required by Japan’s Ship Safety Law and the Marine Pollution Prevention Law, will involve an independent assessment and verification of Coldharbour Marine’s ballast water treatment technology as well as type approval of the product itself. An inspection of the company’s manufacturing plant in Linby, Nottinghamshire, in the UK may also be required.

“This is a key step in establishing our commitment to the Japanese market,” said Andrew Marshall, Coldharbour Marine Chief Executive. “This market is very important to us for a number of reasons. Japanese owners control the world’s second largest fleet, including many of the vessels for which our technology is ideally suited. Japanese owners control large numbers of bulkers, tankers and LNG carriers, which are all key target markets for us. Three of the world’s 10 largest owners are Japanese.

“In addition, Japanese shipbuilders are at the premium end of the ship construction market, appreciating high quality, technologically advanced ship hardware like ours. Our approach to business matches perfectly with the Japanese ethos of excellence and fit-for-purpose technology.”

Marshall said that Coldharbour had engaged in Japan’s type approval process in direct response to a number of requests from large Japanese ship-owning groups, among whom its unique treatment technology had already caught attention.

Marshall believes that the type approval process is likely to take about two months.

B-QUA FOR BALLAST SURVEILLANCE

The Government of Canada is testing aqua-tools’ B-QUA ballast water sampling and monitoring kit for possible use in the Canadian ballast water surveillance programme.

The programme is being led a research scientist from Fisheries and Oceans Canada out of the Great Lakes Laboratory for Fisheries and Aquatic Sciences, in Burlington, Ontario. The research scientist leading the programme was also involved in a 2015 study to test the efficiency of various ballast water testing methods onboard the research vessel Meteor on behalf of Germany’s Federal Maritime and Hydrographic Agency (BSH).

The aqua-tools equipment was one of the methods employed in sampling the ship’s ballast water during 28 trials of paired sampling devices. These trials, believed to be the first time that multiple sampling devices had been tested under real operational conditions, compared the capability of various sampling and analysis tools for measuring organisms of various sizes, zooplankton, phytoplankton and bacteria.

The Canadian laboratory then carried out additional research to better understand the capabilities of different tools, visiting multiple ships with treatment systems and taking samples of treated ballast water. Various analysis and monitoring methods were used.

These tests did not initially include the B-QUA kit because it appeared initially more expensive than some other methods. “Researchers found, however, that other methods were not giving a full assessment of the samples and subsequently added in the B-QUA as it can provide data for all size classes,” said aqua-tools’ Business Development Manager and a specialist in microbiology-based water quality management, Carine Magdo.

B-QUA proved fully capable of providing analysis of organisms in the 10-50μm and >50μm ranges, with typical results for this test provided in 50min. The larger bacteria particles were measured within 15min. The trial verified that the aqua-tools kit was particularly user-friendly.

The Great Lakes Laboratory for Fisheries and Aquatic Sciences now plans to carry out ballast water sampling and testing of up to 20 ships this year to assess which tool or tools might provide the best rapid assessment of ballast water compliance.

The goal of SHI’s Smart Ship Solution is improving vessel efficiencies using real-time data from hull and equipment sensors in collaboration with land-based technical and fleet managers. Real-time data transfer between ship and shore facilities, to enable automated operations, presents a growing cybersecurity challenge for the marine and offshore industries.

“SHI Smart Ship Solution was successfully tested and evaluated for compliance with the ABS Cybersecurity Guide,” said Paul R. Walters, Director of the Global ABS CyberSafety programme. “As a global leader in marine cybersecurity, ABS is pleased to be working with SHI to ensure the next generation of vessels is better equipped to address the increased level of cyber risk they will certainly face.”

“Gaining the ABS Certificate of CyberSafety Compliance is an important first step to apply the Smart Ship Solution in the marine and offshore industries.” said SHI Ship and Offshore Performance Research Centre Vice President, Dr Dong-Teon Lee. “Through the ABS/SHI Joint Development Project, SHI is proud to acquire the world’s first ship system ABS Certificate of CyberSafety Compliance.”

The Government of Ontario has accepted a Damen proposal to build two ferries with full electric propulsion. The 68m and 98m vessels will operate in the Canadian Great Lakes and will be the first fully electric, non-cable vessels in Canada.

It is estimated that electrification of the two ferries, one servicing Kingston and Wolfe Island and the other Millhaven and Amherst Island, will reduce emissions by the equivalent of 7Mkg carbon dioxide per year.

The Honourable Kathryn McGarry, Minister of Transportation, said: “This is great news for residents and commuters in this region, knowing they will soon be able to ride a ferry that is completely powered by electricity. Investing in innovative green technology is helping Ontario become a leader in North America for sustainable transportation and our government is committed to improving service, while simultaneously reducing our carbon footprint.”

Damen Sales Manager Leo Postma said: “This is a solution that looks towards the future of waterborne public transportation. It offers a reliable, state-of-the-art system that will significantly reduce emissions.”

Damen has tailored the design to ensure that the performance profile of the ferries is not affected by electrification. Their capacity to transport 300 passengers and 42 cars (6819 – Amherst Island Ferry) and 399 passengers and 75 cars (9819 – Wolfe Island Ferry) at speeds up to 12 knots remains the same as with conventional propulsion.

Damen’s scope of work in the project includes the installation of an automated mooring system, as well as charging system via which the vessels will be automatically connected to the shore power system for recharging the batteries.

The first two 17,000m3 vessels in a series of five liquid ethylene gas (LEG) carriers built by CIMC Sinopacific Offshore & Engineering (CIMC SOE) have been delivered to their Chinese owner.

The delivery of the first of these vessels marks a significant occasion for the yard, which was successfully reorganised in August 2017 after filing for bankruptcy in 2016.

The two carriers are fitted with cargo handling systems designed and produced by Wärtsilä. The systems include a reliquefication plant for ethylene, ethane, and liquefied petroleum gas (LPG), as well as for various petrochemical cargoes. Also included is the transfer system comprising the cargo pumps together with the control, monitoring, and safety system. Wärtsilä provided site supervision during the construction of the vessels, as well as commissioning assistance, to ensure that the proper quality standards were achieved.

“We have overcome many difficulties, but now we are celebrating the naming of the first two of the five carriers ordered and the delivery of the first one. We thank Wärtsilä for working with us to ensure a successful outcome,” says Gao WenBao, Chief Executive Officer, CIMC SOE.
Hyundai Heavy Industries (HHI) has received approval in principle from LR for an LNG-fuelled 250,000dwt class very large ore carrier (VLOC).

Following the announcement of the IMO’s SOx emission limitations from 2020 and increased developments in the global supply of gas, there has been a growing demand for innovative and environmentally friendly designs to replace traditional oil-fuelled ship designs. In response to this, HHI has been focusing its efforts on LNG-fuelled ships as part of its plans to meet the market’s needs for environmentally friendly shipping.

Anangel, Woodside, LR and HHI commenced a joint development project (JDP) last year to develop an LNG-fuelled 250,000 dwt VLOC design optimised for the trade route from North West Australia to North Asia, based on the XDF engine. The JDP’s main objective is to achieve the lowest practical incremental capital and operating costs to help LNG as a fuel compete against other post-2020 compliance options for bulk carriers.

Anangel, as the ship owner and operator, provided practical advice on the design concept from its extensive fleet operation experience. Woodside as the LNG supplier provided information on the outlook for LNG bunkering infrastructure in the region and outlook for LNG against other fuels. LR facilitated the high-level hazard identification (HAZID) in order to identify the major hazards and verify the safety of the vessel design. HHI completed the optimised design of the VLOC with the LNG-fuelled system, and LR provided class approval and issued AiP to HHI.

Recently all JDP members reviewed an in-depth economic evaluation of the LNG-fuelled system against a wide range of ultra-low sulphur marine fuel oil prices to assess the competitiveness of LNG-fuelled bulk carriers and exchange ideas on what could be done to help advance the use of LNG as a fuel. The preliminary results show promise for LNG as a fuel.

The parties are now discussing the potential for a further phase of the JDP, including additional partners, in order to increase the feasibility and attractiveness of LNG as a fuel through new technologies, reduced capital cost and increased operating efficiency.

**ULSTEIN DELIVERS EARLY**

Acta Marine’s newbuild, the CSV (Construction Support Vessel) vessel *Acta Auriga*, was delivered from Ulstein Verft last week, three days ahead of schedule.

"In just 19 weeks we have completed the outfitting of this vessel and feel certain that the *Acta Auriga* will be a good work platform for the owner and its clients," said Kristian Sætre, managing director at Ulstein Verft.

With state-of-the-art accommodation for up to 120 persons, the vessel features an X-BOW and X-STERN hull form, reducing slamming and vibrations in heavy seas, with a positive impact on the well-being
I-Tech AB, the Swedish developer of the bio-repellent antifouling ingredient Selektope, has signed a supply agreement with Japan's Chugoku Maine Paints (CMP) in deal that represents the largest ever single order of the technology to-date.

Philip Chaabane, CEO I-Tech AB said: “This significant order for Selektope demonstrates how I-Tech’s antifouling technology is meeting market demand for increased hard fouling prevention performance from marine coatings. For I-Tech, securing this significant supply agreement with one of the major paint manufacturers provides evidence of the major impact that our technology continues to make. With this long-term agreement in place, I-Tech can continue to focus on further improving operations and the strength of the Selektope supply chain to ensure commercial competitiveness for our technology.”

Hideyuki Tanaka, Director & Chief of Technical and Production Headquarter CMP said: “Securing CMP’s commercial relationship with I-Tech to support the strong demand received for Selektope-containing products offered by CMP is of great importance. We look forward to working with I-Tech going into the future.”

Selektope is an organic, non-metal compound that works to prevent barnacle fouling by temporarily activating the swimming behaviour of barnacle cyprid larvae, making it impossible for them to settle on the hull. It is characterized by high efficacy at extremely low concentrations, is ultra-low leaching and offers paint manufacturers the flexibility to boost copper-based paint formulations or replace copper completely.

In 2016, CMP launched the first Selektope-containing antifouling coating range onto the market following extensive trialling under two separate brands: Seaflo NEO CF Premium; and Seaflo NEO-S Premium.

Seaflo NEO CF Premium is based on zinc polymer technology and is a coating with an in-service life exceeding five years, ideal for oceangoing vessels operating worldwide. Seaflo NEO-S Premium, is based on silyl polymer technology, and specifically targets ‘low activity’ vessels such as static vessels during outfitting in shipyards.

In 2017, CMP launched a brand-new product based on hydrolysing technology - Sea Grandprix 880HS Plus. Uniquely, CMP guarantees extended static performance of up to 45 days for this product, thanks to the barnacle-repellent boost enabled by Selektope.

Crowley Petroleum Services has extended its service agreement with Wärtsilä to maintain 22 engines installed on board 11 articulated tug barges (ATBs). The agreement extends the original contract term from 2019 to 2023.

ATBs consist of a tank vessel (barge) and a large, powerful tug that is positioned in a notch in the stern of the barge, which enables the tug to propel and manoeuvre the barge. Unlike an ITB (Integrated Tug/Barge), where the tug and barge are locked together in a rigid connection and become for practical purposes one unit, the ATB has an articulated or "hinged" connection system between the tug and barge. This allows movement in one axis, or plane, in the critical area of fore and aft pitch. No such movement is possible with an ITB unit.

"We are pleased to continue our co-operative arrangement with Wärtsilä," said Crowley Engineering Director Marc Aikin.

"Our agreement allows us to execute carefully planned maintenance schedules, customize scopes, and achieve constant cooperation to complete our ATB dry docks on schedule, ensuring the reliability and efficiency of our vessels’ operations.”

Crowley operates and manages the largest US-flag petroleum and chemical tank vessel fleet in the country. With the pending acquisition of three tankers from SeaRiver Maritime, the company will operate 40 Jones Act qualified large petroleum transportation vessels in the United States with a combined capacity of more than 12 million barrels.

The company specializes in providing bulk petroleum and chemical transportation throughout the US Gulf, East Coast, West Coast, and Alaska, as well as international ports.
Fincantieri and the Grimaldi Group have inked a contract for the lengthening and refurbishment of the cruise ferries Cruise Roma and Cruise Barcelona. The construction of the two mid-body sections will begin in 2018, while the completion of the works at Palermo shipyard is foreseen within summer 2019.

The two 54,000grt vessels, built by Fincantieri and delivered to in 2007 and 2008 respectively, will each benefit from 600 additional linear meters for heavy vehicles, 80 sleeping accommodations in new passenger cabins, two new public spaces with a total capacity of 450 Pullman beds and a new self-service restaurant for 270 persons.

At the end of the lengthening project, to be carried out by Fincantieri’s Ship Repair and Conversion, part of the Services division, each 63,000grt ship will have capacity for 3,500 passengers, with a 3000m2 car deck and over 3,700 linear meters for heavy vehicles.

During the project, Fincantieri will install cutting-edge solutions aimed at reducing the environmental impact and energy saving such as the scrubber system for the exhaust gas cleaning as well as a system to power the ship during the turnaround time in ports, based on mega-lithium batteries. This will allow the vessels to avoid the use of the diesel-powered

**REGULATIONS & GUIDANCE**

**COLREGS REMAIN RELEVANT FOR AUTONOMOUS SHIPS**

Rolls-Royce has completed the £1.3 million MAXCMAS (MAchine eXecutable Collision regulations for Marine Autonomous Systems) research project, demonstrating that the operation of autonomous vessels can meet, if not exceed, current collision avoidance (COLREG) rules.

Project partners Lloyd’s Register, Warsash Maritime Academy (WMA), Queen’s University Belfast and Atlas Elektronik (AEUK) found that use of newly developed algorithms allowed existing COLREGs to remain relevant in a crewless environment, finding that Artificial Intelligence-based navigation systems were able to enact the rules to avoid collision effectively, even when approaching manned vessels were interpreting the rules differently.

A key aspect of the research was the use of WMA’s networked bridge simulators. These highly immersive simulators, typically used for seafarer training, were used to analyse reactions from the crew when faced with a range of real-world situations and subsequently hone the MAXCMAS algorithms.

Rolls-Royce Future Technologies Group’s Eshan Rajabally, who led the project, said: “Through MAXCMAS, we have demonstrated autonomous collision avoidance that is indistinguishable from good seafarer behaviour and we’ve confirmed this by having WMA instructors assess MAXCMAS exactly as they would assess the human.”

During the development project, Rolls-Royce and its partners adapted a commercial-specification bridge simulator as a testbed for autonomous navigation. This was also used to validate autonomous seafarer-like collision avoidance in likely real-world scenarios.

Various simulator-based scenarios were designed, with the algorithms installed in one of WMA’s conventional bridge simulators. This also included Atlas Elektronik’s ARCIMS mission manager “Autonomy Engine”, Queen’s University Belfast’s Collision Avoidance algorithms and a Rolls-Royce interface.

During sea trials aboard AEUK’s ARCIMS Unmanned Surface Vessel (USV), collision avoidance was successfully demonstrated in a real environment under true platform motion, sensor performance and environmental conditions.

“The trials showed that an unmanned vessel is capable of making a collision avoidance judgement call even when the give-way vessel isn’t taking appropriate action,” said Ralph Dodds, Innovation & Autonomous Systems Programme Manager, AEUK. “What MAXCMAS does is make the collision avoidance regulations applicable to the unmanned ship.”

The MAXCMAS project is now complete, delivering state-of-the-art regulation compliant collision avoidance. The technology and system has been thoroughly tested both at sea and under a multitude of scenarios using desktop and bridge simulators, to demonstrate its robustness, and prove that autonomous navigation can meet existing COLREGs.
Classification society ClassNK has released its Guidelines for direct load analysis and strength assessment of hull structure. These guidelines incorporate the load and structural consistent analysis structural evaluation method.

As vessels being constructed today continue increasing in size, structural strength assessments during the design stage are essential in helping ensure the safety and integrity of hull structures even in the harshest conditions of the ocean.

Direct strength calculations in structural strength assessments of hulls are one of the class requirements included in both ClassNK’s Rules and Guidance for the Survey and Construction of Steel Ships and the IACS CSR.

Simplified formulae, which calculate loads according to principle ship particulars and loading conditions, are used to carry out structural strength assessments. However, these simplified formulae were developed to cover load conditions estimated from actual ships and have not yet been evaluated for increased sizes and configurations of vessels not yet constructed. Therefore, in some cases, structural strength assessment that takes the loads of each individual vessel characteristics into account is essential.

Structural strength assessment methods based on "load and structural consistent analysis" take the influence of waves at sea into consideration when directly estimating loads and are therefore able to closely replicate actual ship conditions. As a result, shipyards and design companies are widely implementing these assessment methods.

In order to help ensure the safety of this new generation of larger and more advanced vessels, ClassNK developed guidelines for direct load analysis and direct strength assessment methods as essential elements of class requirements.

They will be updated to reflect the latest findings from research and development initiatives. The class notation 'PS-DA-DLA' and/or 'PS-FA-DLA' is respectively affixed to the classification characters of a ship when strength assessments have been carried out for all cargo areas in accordance with the guidelines.

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Wärtsilä will supply its Volatile Organic Compounds (VOC) recovery technology, LNG fuel gas handling systems and the auxiliary engines to two new shuttle tankers being built for Singapore based AET Tankers at the Samsung Heavy Industries shipyard in South Korea.

The ships will operate on Liquefied Natural Gas (LNG) as the primary fuel, but VOC – the gas evaporating from the oil cargo tanks – will also be utilised as fuel by mixing it with the LNG, thereby reducing the vessels’ bunkering needs. This is made possible by Wärtsilä’s VOC recovery system, which by combining the VOC with the LNG, provides the potential for savings of over 3000t of fuel each year per vessel. This is in addition to the notable environmental benefits the use of gas as fuel provides by enabling a significant reduction in CO2 emissions.

This ground-breaking technology for creating a fuel mix of LNG and recovered VOC, both for the two-stroke main engine as well as the four-stroke auxiliary engines, is expected to ignite the interest of tanker fleet owners around the world. Improved economic and environmental performance is a clear industry target for future operations.

“Wärtsilä is once again ahead of the curve with its VOC recovery technology, which was a key consideration in the award of this contract. The fuel savings efficiency of the system enables a fast payback time, while the reduction in emissions of CO2 equivalents is as much as 40 percent when compared to conventional solutions,” said Timo Koponen, Vice President, Processing Solutions, Wärtsilä Marine Solutions.

Wärtsilä’s scope of supply for each of these ships includes the VOC recovery plant, the liquefied VOC fuel tank, the fuel mixing unit, the LNG fuel tank and fuel supply system, the gas valve unit (GVU) and two Wärtsilä 34DF dual-fuel auxiliary engines. The equipment is scheduled for delivery to the yard commencing in the autumn of this year.

The 277 metres long, 125,000 DWT tankers will operate mainly for Statoil, the Norwegian state-owned energy company, in the North Sea.

**VOC RECOVERY SAVES FUEL FOR SHUTTLE TANKERS**

**ROTORK VALVE ACTUATOR TO CONTROL TANKER VOCS**

Minimising the emissions of VOCs (Volatile Organic Compounds) from oil tankers during the fluctuating ambient conditions experienced during sea voyages is vitally important from both environmental and commercial points of view.

The controlled release is often undertaken when the gas pressure approaches a pre-set point. However, it is not always clear at what pressure a manually controlled release should be stopped. Without this information, excess vapours can be released, causing air pollution and a loss of cargo.

To meet this challenge the VOCON Valve and Reporting System controls the vapour pressure in oil cargo tanks to minimise and fully control VOC emissions. Designed to comply with the latest international rules and regulations it is equipped with the most advanced reporting system available.

At the centre of the system, a venting control valve operated by a Rotork CMA electric process valve actuator is installed on the bypass line between the IG (Inert Gas) main pipeline and the mast riser. In automatic mode the actuator modulates the valve position in response to a control signal from a pressure transmitter to control the vapour pressure in all the cargo tanks. This critical duty reduces VOC loss by maintaining a constant pressure in the cargo tanks during the voyage.

The compact and robust CMA actuator selected for this duty is environmentally sealed to IP67 and internationally certified for use in Zone 1 hazardous areas. The wide ambient operating temperature range of -20 to +65°C facilitates long-term reliability and maintenance-free operation in the exposed environments experienced on the decks of oil tankers. Accepting an industry-standard 4-20mA control signal, resolution is 0.2%, delivering the accurate, repeatable and backlash-free positional control demanded by the VOCON application.
Dutch model basin MARIN has completed its study into the capsizing of the Korean ferry Sewol. The ferry capsized and sank near the South Korean coast in April 2014. 304 souls were lost.

Working with Korean Sewol Investigation Commission (SIC) to determine the causes of the capsizing and rapid sinking, MARIN carried out a series of model tests and simulations using scale models of the vessel in MARIN’s test basins in Wageningen. Initially, a 5m freeform model was built. Shifting containers, cars and trucks were also modelled. Subsequent tests were carried out with a 5m long model in which all compartments, tanks and inflow openings were accurately reconstructed to scale to investigate flooding and sinking. Finally, the influence of orders and interventions of the officers on the bridge were examined using a large navigation simulator.

MARIN’s research leader Henk van den Boom, said: "Major ship disasters such as those like the Estonia, Herald of Free Enterprise and 'Sewol' require a thorough investigation so that we understand what exactly happened and determine how we can prevent this in the future. We will analyse the results in the coming weeks and then we hope to be able to identify the causes. The conclusions of this study will also be of importance for new national and international regulations for ferries and cruiseships."

Norsafe, the survival craft manufacturer, has urged shipowners to ensure that all ships’ on-load lifeboat release mechanisms comply with SOLAS Resolution MSC.317(89) by 1st July 2019.

In some instances, this may mean that a lifeboat’s release and retrieval system have to be modified or replaced on or before that date, normally at the next scheduled dry-docking, as only hooks certified and tested in compliance with the aforementioned SOLAS resolution and named in the IMO GISIS database will be allowed on any lifeboat with onload hooks.

Norsafe’s global servicing and maintenance teams can ensure release mechanisms are compliant.
Wärtsilä’s spending spree continues with the acquisition of navigation systems supplier Transas, in a move that the expansive company says will accelerate its ‘Smart Marine Ecosystem’ vision.

This acquisition could take Wärtsilä closer to achieving its mission of enabling sustainable societies with smart technologies. It will also speed delivery on the company’s promise to disrupt the industry by establishing an ecosystem that is digitally connected across the entire supply chain, through applications that are secure, smart and cloud-based.

Wärtsilä’s Smart Marine Ecosystem is a vision whereby “smart” vessels connect with “smart” ports and beyond to deliver three fundamental industry benefits: maximising the use of resources and operational efficiency; minimising environmental impact and risk; and achieving the highest levels of safety and security. Through data integration, greater connectivity and cloud-based technology, Wärtsilä aims to resolve inefficiencies in the shipping sector resulting from overcapacity, sub-optimal fuel consumption, and waiting times at ports and other high-traffic areas.

Roger Holm, President, Wärtsilä Marine Solutions, said: “Combining Transas with Wärtsilä will bring the Smart Marine Ecosystem many steps forward. We can now connect Wärtsilä’s product portfolio, the biggest in the marine industry, with ship traffic control, simulators, navigation solutions and fleet operation solutions from Transas. The combined package will further improve the way a vessel can sail in the most cost efficient and environmentally friendly way for our customers.”

Frank Coles, CEO of Transas, added: “It is incredibly exciting to have this opportunity to join the Wärtsilä brand in delivering the future of maritime transport. We share a common vision; one of a safer, more efficient, and more environmentally friendly maritime industry. The Transas team has significant competences in technology, along with a globally recognized leadership position in navigation, simulation and traffic control systems. Adding these to the extensive, world leading Wärtsilä portfolio of services and products, provides an unparalleled opportunity for a new ecosystem for maritime operations.”

The transaction, valued at €210 million, is expected to be closed during the second quarter of 2018.

NEW HIRE FOR SEA MACHINES ROBOTICS

Peter will advance relationships with our European partners and customers and ensure a successful launch of the Sea Machines 300 technology system to the surrounding markets. We formally welcome him to the team and look forward to the progress he will make from Hamburg.”

The Sea Machines 300 is the world’s first industrial-grade control system to provide autonomous and remote vessel control for workboats and other commercial marine vessels. The technology provides an immediate upgrade to standard vessel operations by enabling Direct Remote Command via joystick and Autonomous Command via PC interface, which pilots boats on pre-planned or routine long-duration missions while providing real-time feedback to a mothership. With this system, Sea Machines serves operations looking for full autonomy, as well as semi-autonomous solutions for applications in survey, spill response, dredging, and security/surveillance, optimizing safety, capability and predictability.
New partners have joined the Open Simulation Platform (OSP) initiative, which aims to create an open source digital platform which will allow the creation of so called “digital twins” in the design of ships. The initiative was launched this week at the Norwegian Maritime Competence Centre in Ålesund.

In July last year Rolls-Royce Marine, The Norwegian University of Technology Science (NTNU), research organisation SINTEF Ocean and classification society DNV GL signed a memorandum of understanding (MoU) with the aim of creating an open source digital platform for use in the development of new ships.

Among the new Joint Industry Partners to join the OSP are Hyundai Heavy Industries, Kongsberg Digital, Vard and Offshore Simulator Centre.

The founding partners are inviting more participants to join to harness the possibilities that exist from working with so called “digital twins”.

A digital twin is a digital copy of a real ship, including its systems, which synthesizes the information available about the ship in a digital world. Using digital twins enable optimization of a ship’s design, maintenance, production and sustainability throughout its entire lifecycle.

Jon Rysst, SVP and Regional Manager in DNV GL Maritime North Europe said: “OSP is a joint industry project where the goal is to establish a maritime industry standard for models and system simulation, a standard that will allow companies to reuse simulation models and construct digital twins of existing and future vessels in a safe and more cost-efficient way.”

The project partners will create a collaboration platform that is open for use by other parties, with core aspects built on an open source framework.

“Through working together in a virtual environment, we can achieve a larger degree of interaction between different systems and their owners. We can also avoid individual businesses and developers spending a lot of time on their own testing systems in isolation, without having the opportunity to test how it actually will interact in operation with other systems,” says professor Hans Petter Hildre at NTNU.

Ship designers, equipment and system manufacturers, yards, ship owners, operators, classification societies, research institutes and academia are the typical participants that will benefit from innovating faster together. The platform is also being designed to support model libraries for storing simulated ship concepts, systems and equipment.

The OSP project is not starting from scratch. A prototype is now running with a simulated vessel and a DP system conducting a dynamic positioning operation. Through the cloud, this particular prototype allows different teams in different locations to work together to: optimise system design and vessel performance; verify correct handling of failures within the control system of the vessel’s automated positioning system; and verify system changes and the operational impact they may have before a change is deployed to the actual vessel.

One of the first projects to utilise the new tool is led by Rolls-Royce Marine. The company intends to create a digital twin simulation model to verify a vessel’s power and propulsion system modules and their integration in a virtual test setup.

Watch a video introduction to the OSP: https://youtu.be/E5KumnkeK08
Fincantieri has reported record revenues for 2017 of more than €5 billion, representing a 13% improvement on 2016 figures. A glut of orders worth €8 billion – up 31% on the preceding year – and sound operational performance in shipbuilding with 12 vessels delivered, are cited as the primary factors influencing the year’s performance.

Revenues from shipbuilding amounted to €3,883 million, with the cruise segment accounting for €2,649 million.

During the year, Fincantieri finalised contracts for two cruise ships for Viking, two cruise ships for Carnival (for Holland America Line and Princess Cruises), one extra-luxury cruise ship for SilverSea Cruises, two cruise ships for MSC (a further evolution of the Seaside Class prototype), and four cruise ships for Norwegian Cruise Line.

In the Offshore segment, as a result of the diversification strategy, the Group acquired orders for the construction of two Expedition cruises for the Australian shipowner Coral Expedition and for Ponant respectively; the latter ships will be the first LNG units designed to take passengers to polar destinations. Furthermore, the Group acquired orders for ten fishery vessels, five aquaculture units, two Car and Passenger ferries and one research expedition vessel. The last vessel, specialised in oceanographic research, will be built in collaboration with WWF Norway.

Between 2018 and 2022, the Group is scheduled to deliver 22 cruiseships, 24 naval vessels, and 48 offshore units.

A total of 12 vessels were delivered during the year: Viking Sky and Viking Sun, the third and fourth of a series of eight cruise ships for Viking Ocean Cruises; Majestic Princess, a prototype for Princess Cruise Line; Silver Muse, the ultra-luxury cruise ship for Silversea Cruises; Seaside, the first of two next generation cruise ships, for MSC Cruises; FREMM Rizzo, the sixth unit of the Italian Navy FREMM program; Romeo Romei, the last of the four U212A Todaro class twin units for the Italian Navy; Little Rock (LCS 9), for the US Navy’s LCS programme; and four Articulated Tug Barges for Kirby Corporation and Plains Towing.

Giuseppe Bono, Fincantieri’s Chief Executive Officer, said: “The results we have presented confirm the state of good health of our Company. We have demonstrated our capacity to deal with truly complex project and tenders. This level of excellence translates into a more than decade long work load ahead of us, in the unfailing ability to transform soft backlog into firm orders, all the while respecting project times and deadlines of ever more demanding clients. This strategy has been a winning one and is confirmed by the creation and distribution of value for our shareholders. We will now put this wealth of experience at the service of our country and of the European shipbuilding sector, the consolidation of which we have been working on for years, favouring an irreversible process of which we are proud to be protagonists.”

Fincantieri is scheduled to deliver 22

cruiseships, 24 naval vessels, and
48 offshore units.
NEW BD DIRECTOR FOR RADIO HOLLAND MIDDLE EAST

Radio Holland announced the appointment of Nikeel Idnani as the Business Development Director for the region Middle East, Indian subcontinent & Africa. Based in Dubai, he will report to the Regional Director.

Nikeel holds an MBA and was a Chief Engineer. He has close to 25 years working experience in the maritime industry, starting his career sailing as a marine engineer onboard a variety of ships for 10 years before being employed by multinational corporations in Dubai. He held regional responsibilities of sales, business development and marketing, working successively for Service companies, Ship Repair/Building, Ship designers and most recently as Principal Consultant/Business Development Leader for a major classification society.

Since 2012, Nikeel volunteers as the Honorary Secretary of the Institute of Marine Engineering, Science & Technology (IMarEST) UAE Branch, hosting conferences to keep the regional maritime industry up to date with technological and engineering advances & developments.

Nikeel hails from a family of Indian seafarers, is 48 years old and married with a 9 year old daughter. He is well known within the Middle East maritime circles.

WÄRTSILÄ TO MAINTAIN PUSHER TUGS

Wärtsilä and Girocantex Uruguay, have signed a five-year maintenance agreement for eight pusher tugs operating in the challenging rivers of South America.

Girocantex will also utilise Wärtsilä Online Services which gives them online access for technical information on their installations.

PRS TEST LAB RECOGNISED

The Polish Register of Shipping’s test lab has been approved a recognised fire test facility by the International Maritime Organisation (IMO).

“We are proud to be the second Polish laboratory on the IMO list of laboratories recognised by the Administrations for Part 3 of FTP-Code 2010,” said PRS
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