Kongsberg has agreed a £500 million deal to acquire Rolls-Royce Commercial Marine, buying the marine products, systems and aftermarket services operations put up for sale by Rolls-Royce after the UK company conducted a strategic review of its business at the beginning of the year and decided to narrow its focus to concentrate on the aerospace, defence and power systems markets.

The transaction does not include Bergen Engines nor Rolls-Royce’s naval business, though Kongsberg says it has an agreement with Rolls-Royce that it will act as a sales and service provider for the Bergen Engines division following the deal.

“The acquisition of Rolls-Royce Commercial Marine makes us a more complete supplier to the maritime industry,” said Geir Håøy, CEO and president of Kongsberg.

“The maritime industry is becoming increasingly globalised and is undergoing considerable technological and market driven changes. With this acquisition we will (be) strengthening our strategic position with shipowners, shipyards and other customers and partners.”

“The acquisition strengthens our global presence and will give increased sales and service volumes.

Kongsberg is a world leader within automation, navigation and control systems, whilst Rolls-Royce Commercial Marine is complementary with its deliveries of propellers, propulsion systems, handling systems and ship design. Both companies hold leading positions within digitalisation, ship intelligence and concepts for autonomy. By bringing together this we are positioning us as a significant strategic supplier of complete solutions for the future maritime industry.”

Kongsberg has approximately 7,000 employees and is already present in more than 25 countries, whilst Rolls-Royce Commercial has approximately 5,600 people managing its operations across 34 countries.

“Forty-two per cent of the employees are in Norway, and that is very important for us as a Norwegian maritime supplier, that we strengthen the Norwegian maritime cluster, and also the Nordic maritime cluster,” noted Mr Håøy.

Rolls-Royce Commercial Marine’s annual turnover was approximately US$1 billion for 2017, compared with Kongsberg’s approximately US$1.8 billion turnover for the same period. Combined, the companies serve around 30,000 vessels worldwide.

Kongsberg has approximately 7,000 employees and is already present in more than 25 countries, whilst Rolls-Royce Commercial has approximately 5,600 people managing its operations across 34 countries.

“Forty-two per cent of the employees are in Norway, and that is very important for us as a Norwegian maritime supplier, that we strengthen the Norwegian maritime cluster, and also the Nordic maritime cluster,” noted Mr Håøy.

Rolls-Royce Commercial Marine’s annual turnover was approximately US$1 billion for 2017, compared with Kongsberg’s approximately US$1.8 billion turnover for the same period. Combined, the companies serve around 30,000 vessels worldwide.
Thuraya to add VSAT product

Europe, Africa, the Middle East and Asia.

For operators who require L-band back-up on a global basis an additional Iridium Pilot unit will be required to connect when outside of Thuraya coverage, though usage on that service will be charged in addition to the monthly package. Pricing will be structured to reflect the differences in coverage and the global versus regional nature of the different products on offer.

Thuraya says it is using the service to appeal to a wider segment of the maritime market and grow its customer base as it works on plans to introduce a next generation satellite constellation during the 2020s. IEC Telecom, already one of Thuraya’s most significant maritime service providers, will be the first partner to offer the new service starting in September 2018, though further providers may be announced in the future.

Finnish maritime communications company KNL Networks has partnered with Kongsberg Digital to make its HF radio and cellular broadband connectivity system available to users of Kongsberg’s Kognifai digital platform.

“One of the barriers for digitalisation in the maritime sector has been related to the high connectivity cost of satellite connection,” said Vignelk Table, VP and commercial manager at Kongsberg Digital.

“Through our partnership with KNL, we can offer the option of a low cost connectivity solution, and thereby accelerate the digital transformation and enable our customers to start harness the tremendous value that lies in their data.”

KNL’s hybrid technology integrates HF radio with cellular broadband to provide always-on data connectivity when at sea and high-speed bandwidth when near shore, built using a unique channel for long-distance data communication and pole-to-pole coverage.

“One look at what’s offered on the Kognifai Digital platform and you can see how much data there is at sea and we’re producing through sensors and smart reporting,” said Toni Linden, CEO of KNL Networks.

“KNL Networks knows that tomorrow’s maritime industry requires a revolutionary new data solution and services, and we’re proud to be part of Kongsberg Digital’s Kognifai platform.”
The first fully managed maritime cyber security solution
Powered by Navarino | Neurosoft

Compatible with any satellite network • Dedicated security team monitoring 24/7 • Maritime oriented IDS and IPS
**Class pursues cyber risk mitigation**

Classification societies ABS and DNV GL are both making efforts to assist their vessel operating customers in improving their cyber security, through the launch of separate initiatives which aim to assess and manage the cyber vulnerability of ship operators.

ABS has developed a new methodology to measure cyber security risk associated with operational technology, providing a calculated risk index for vessels, fleets and facilities.

The index quantifies cyber security risk and gives owners and operators an actionable strategy to reduce cyber risk onboard a vessel, the society said.

“With assets increasing in complexity, comprising several interconnected control systems, it was critical to develop a simple, quantifiable method to measure cyber risk,” said ABS chairman and CEO, Christopher Wiernicki.

“The ABS FCI Cyber Risk model gives owners and operators a straightforward approach to understanding their existing cyber risk and a concrete approach to reducing that risk.”

With its Functions, Connections and Identities (FCI) model, ABS calculates a cyber risk index for a client’s individual assets or entire fleets. From the risk index, an actionable report suggests how to reduce cyber risk, and where to target cyber security investments.

The method evaluates not only the operational systems and connections of a vessel, but also the human and machine identities.

The development follows ABS’ two-year research contract with the American Society of Naval Engineers. DNV GL, meanwhile has also announced the release of its first cyber security class notations, which are now available on the classification society’s rules page.

“Whether in machinery, navigation or communication systems, programmable control systems are a longstanding and essential part of ships and offshore units, but the increasing integration and connectivity of these systems represents an ever-larger target for cyber-security threats,” said Knut Ørbeck-Nilsson, CEO of DNV GL – Maritime.

“Audit of programmable components are theoretically vulnerable to cyber security threats we have set out, with the new Cyber secure class notations, to offer owners and operators a framework to improve and demonstrate their cyber resilience.”

The Cyber secure class notations are divided into three groupings: Basic, Advanced and +. Basic is primarily intended for ships in operation, while Advanced has been designed to be applied throughout the newbuilding process, with requirements for asset owners and operators, system integrators (e.g. yards) and equipment manufacturers.

The Basic and Advanced qualifiers cover a number of essential systems, including propulsion, steering, navigation, and power generation. The third grouping, +, is intended to identify threats, assess and secure extra systems that are not part of the default scope of the Basic or Advanced groups.

The Cyber secure class notations build on DNV GL’s Recommended Practice (DNVGL-RP-0196) on cyber security and extend to the cyber security assessment of control system components type approval programme DNVGL-CP-0291, with which manufacturers can demonstrate the security of their systems through an independent verification process.

**NSSSGlobal completes UK Electronic Solutions takeover**

NSSSGlobal reports that it has acquired 100 per cent of the shares in Marine Electronics Solutions Ltd (trading as UK Electronic Solutions), a specialist in installation, maintenance, supply and development of communication and navigation systems.

The deal adds the remaining 49 per cent stake in the business to NSSSGlobal’s existing holdings, and will see UK Electronic Solutions fully integrated into the NSSSGlobal Group, bringing with it the engineers behind Oceanics Dynamics, a portable motion and impact monitoring system.

As part of the acquisition, Paul Rutherford, previously the managing director of UK Electronic Solutions, will become director of service engineering for the UK division of NSSSGlobal.

“For NSSSGlobal, this is a logical next step in our long-lasting and well-proven partnership with UK Electronic Solutions,” said Sally-Anne Ray, group CEO of NSSSGlobal.

“Besides increasing our service engineering capability with an additional team of highly skilled and customer-focused system and service engineers, NSSSGlobal will further strengthen its service and support and marine expertise throughout the UK, and the North Sea region, which is strategically important for our activities in the UK, Germany, Denmark and Norway.”

**ITC Global extends charity vessel VSAT contract**

Non-profit organisation Youth With A Mission Medical Ships Australia (YWAM MSA), which operates a medical ship serving the Papua New Guinea (PNG) region, has had the vessel’s VSAT communications contract with ITC Global extended by three years.

“Under the terms of the agreement ITC Global says it will provide connectivity and new crew welfare services for the onboard staff of up to 130 volunteers, via the ITC Crew LIVE service which offers internet access and a library of TV shows and movies.”

“The vessel, based in Queensland, Australia, is staffed by medical professionals who work in collaboration with national and provincial health authorities in Papua New Guinea’s health system to deliver medical services and supplies to remote villages.

“We originally began working with YWAM Medical Ships in 2015 on a two-year contract and have grown our partnership as we’ve been supporting the organisation and its mission,” said Yagnesh Randeria, vice president of global enterprise, ITC Global.

“Our renewed agreement is a testament to how vital our services are to YWAM operations and to the crew of generous volunteers as they work to bring modern medical care to those who need it.”
Communicating for the future, today.

Totally trusted, totally Tototheo.

www.tototheo.com
Communications & Cyber Security

Briese and Tipco to roll out Globecomm systems

www.globecomm.com

Maritime communications provider Globecomm has announced two new contracts with shipping companies Briese Schiffahrt and Tipco Maritime Company, to provide connectivity systems and supporting services to their respective fleets.

Germany-based Briese Schiffahrt has agreed a deal for the provision of Ku-band VSAT connectivity to a fleet of newbuild vessels expected to have completed delivery by the end of the year.

Briese, an existing Globecomm customer, is presently undertaking a fleet renewal programme comprising construction of a series of eight ’Open Top Eco 5000’ multi-purpose vessels, designed to consume 30 per cent less fuel but with increased crane and cargo capacity.

The first of four Dutch-flagged, 90-metre ice-class 1A vessels was christened in mid-April 2018 at Zhejiang Zengzhou Shipbuilding Co, with three more of the 3,415 gt ships slated for delivery later in 2018.

Another newbuilding, the project cargo carrier BBC Russia — a sister ship to the 12,500 dwt Jan — was also delivered from Jiangsu Hongqiang Marine Heavy Industry in April. All vessels will be outfitted with a combination of a Sailor 900 VSAT terminal, one or more Iridium OpenPort L-band units as a back-up, and the Globecomm Nimbus network management ‘smartbox’.

“Having Globecomm VSAT onboard makes managing demand for crew and business communications simpler and more cost efficient, and using Nimbus means we can pre-configure any new PC before it gets to the ship,” said Holger Börich, IT manager at Briese Schiffahrt.

“Briese is a company with a large fleet and a small IT department so we can use the Cirrus portal to monitor ships as close to real time as possible and respond as soon as any issues arise.”

Briese is engaged in a global roll-out of the Globecomm VSAT system across its owned and managed fleet, upgrading L-band systems on a continuous basis to around 60 per cent of vessels to date.

The Leer-based owner assumed management of six craned project cargo vessels of 12,780 dwt in 2015 and 2016 and a further four vessels of this type were taken over in March and April 2018, which will also be equipped with VSAT systems.

The Nimbus smartbox, with its Cirrus shore-side portal, will be used to segregate network traffic and employ performance monitoring, while the Globecomm development team in Munich has also developed a system for automatic updating of ECDIS navigation chart data using the technology, with specially-defined firewall permissions.

“Globecomm and Briese have a relationship that goes back 16 years, and we are pleased to have been able to support them as their communications needs have grown and changed,” said Globecomm Maritime president Malcolm McMaster.

Tipco began an overhaul of its communications infrastructure after a review of its existing set-up identified the potential to make better use of its onboard equipment, improve visibility of operations and achieve closer integration with office-based systems.

The new infrastructure will now support remote management and virtualisation of onboard PCs, and connected to the CCTV systems that will be deployed on Tipco’s latest newbuilding.

Automatic switching will choose the most suitable connection from the 4G router and Inmarsat FleetBroadband systems installed on board, typically connecting to the satellite connection while at sea and switching over to the 4G connection when the vessels come within reach of shore.

“Tipco’s shipping activities are a key component of our supply chain across Asia-Pacific so it was important that our communications deliver enhanced operations onboard ship and visibility to the shore,” said Louis Frederic Sachs, director of marine group, Tipco Maritime.

“The Globecomm system allows us to manage our costs by enabling data communications over satellite but also allowing limited browsing and application updates for the vessel’s commercial use when connected to the 4G signal.”

The onboard set-up also includes security features like two fully-managed and customisable firewalls, and an intrusion prevention system with deep packet inspection. Shore to ship connections are encrypted and end-to-end connectivity is via private IP with no exposure to the public internet.

Crew and business traffic are also carried across segregated networks to prevent any potential infections from spreading.

RedPort Global launches combined FX management system

www.redportglobal.com

RedPort Global has introduced a new satcom management system which combines the Inmarsat Fleet Xpress Network Service Device (NSD) with RedPort’s own Optimizer Enterprise satellite router and VoIP gateway.

The single rackmount appliance can be used to manage ship networks, with options for satellite broadband routing, VoIP connectivity and crew services. The unit can be used to replace at least three pieces of hardware that were previously required for Fleet Xpress installations, the company says.

“The RedPort Optimizer NSD includes a software-based NSD to manage Inmarsat’s Global Xpress Ka-band technology with its FleetBroadband L-band service,” said Dr Luis Soltero, chief technology officer of RedPort Global and chief developer of this new system.

“The Optimizer Enterprise NSD replaces previous NSD hardware as well as a host of switches, routers and VoIP gateways that are commonly used to provide a complete solution for vessels. The company says that it will sell the Optimizer Enterprise NSD as a white-label product for external satellite service providers, as well as offering it under its own name. Hosted application opportunities will also be made available to other providers of value-added satellite services.

“We are delighted that RedPort have developed an alternative to our current hardware NSD,” said Ronald Spithout, president, Inmarsat Maritime.

“This will provide a fundamental building block for many of our partners to satisfy the rapidly growing market for onboard applications evidenced by the dramatic growth in Fleet Xpress installations over the last year.”

Otesat launches IRIS cyber system

www.otesat-maritel.com

Otesat-Maritel has introduced a new cyber security system to act alongside its range of maritime connectivity systems, named IRIS. IRIS is an integrated UTM (unified threat management) cyber security package combining a range of security and protection measures that are compatible with all of the mobile satellite communications systems offered by the company.

This includes inspection and protection of all data traffic to and from the vessel, while also incorporating a human element focus with the inclusion of an e-learning module to promote cyber awareness among crew and staff.

IRIS operates via Otesat-Maritel’s owned network, and comes with centralised management capabilities; anti-spam and anti-malware network protection; firewalls and antivirus; automated systems backup and recovery; intrusion protection and prevention (IDS/IPS); real time traffic analysis; and data and incident analysis.

IRIS is backed by data from California-based cyber security specialists Fortinet, and supported by OTE’s own cyber staff at the company’s Security Operations Centre (SOC).
**Communications & Cyber Security**

**Navarino adds Ku-band VSAT with Intelsat**

Navarino has announced a cooperation agreement with Intelsat, which will see the Greek satcom provider add new Ku-band VSAT services to its portfolio.

Under the agreement, Navarino will introduce satellite services delivered from the IntelsatOne Flex platform, starting from Q3 2018.

“Intelsat is one of the satellite industry’s most experienced and respected providers. We are excited to begin working with them to bring multi-layered HTS global coverage and pioneering new Ku-band offerings to the maritime marketplace, offerings which have the potential to be really innovative in terms of how connectivity is packaged and delivered,” said Navarino CEO Dimitris Tsikopoulos.

“Navarino has a vast amount of experience in the maritime satcom market. We have witnessed first-hand how increasing-ly critical connectivity is as an enabler for managing vessel networks and IT infrastructure. Simultaneously, we have also seen that there are certain sectors of our marketplace which are looking for highly specialised types of connectivity that the current market cannot cater to.”

“Our collaboration with Intelsat will enable us to address this wide variety of maritime communications requirements by delivering a tailored, high-throughput global connectivity solution.”

Navarino has also announced a new partnership with Intellian for the supply of antenna equipment for the upcoming Ku-band VSAT service.

“We are delighted to be a part of Navarino’s new Ku-band service offering. I am confident that our systems are the perfect match for the service,” said Eric Sung, Intellian CEO.

“Excellent cooperation projects like those with dynamic, top-quality service providers like Intellian show that the work we put in at Intellian to develop class-leading antenna systems pays off.”

**Zwana approved as FX NSD**

Inmarsat has approved the Zwana communications management system from Cyprus-based One Net for use as a Network Service Device (NSD) with the satellite operator’s Fleet Xpress (FX) product, to reduce the amount of hardware required when implementing the services side-by-side.

One Net already offered a combined vessel server, Unified Threat Management and crew services hardware system through its Zwana ZS3 unit, however the new Zwana ZS4 has been approved by Inmarsat to run NSD v1.5 software, and to receive remote upgrades to future sofNSD versions.

The hardware unit includes an 8 Core Intel Xeon CPU and four solid state disks of up to 1TB each.

“This integration demonstrates One Net’s strength and speed at integrating new technologies, and reaffirms its status as one of the leading innovative players in the maritime industry,” said Ronald Spithout, president, Inmarsat Maritime.

“Fully integrating the software element of the Network Service Device into the Zwana platform will remove hardware from the below deck rack and will allow One Net to develop their own value added solutions for the rapidly growing market for onboard applications evidenced by the dramatic growth in Fleet Xpress installations over the last year.”

One Net says it will now include the Zwana ZS4 with all future Fleet Xpress installations, and will offer other providers the opportunity to implement the unit alongside their own FX services.

**Dobroflot to implement onboard IoT system**

Russian fishing fleet operator Dobroflot is to deploy an IoT system from Orange Business Services onboard its ships, to optimise fuel consumption, analyse weather and monitor vessel positions by sending IoT data via VSAT to shore.

Dobroflot says it will initially pilot the IoT solution on a single vessel before rolling it out across eight vessels in the fleet. The pilot will assess how the system can assist in accurately monitoring fuel consumption and emissions while at sea, as well as during bunkering and refuelling.

It will also be used to help the crew to reduce commercial losses by continuously monitoring the vessel’s main engine, its auxiliary diesel generators and boilers.

The IoT system was developed by Orange Business Services in conjunction with Technodar, a Russian company specialising in fuel consumption monitoring systems and satellite transport monitoring.

Technodar leverages Coriolis flow meter technology to measure mass flowing through a pipe, from which sensors can feed measurements directly to the IoT system, which then sends data back to shore via an onboard VSAT terminal. The system requires no initial investment from Dobroflot, who will pay a monthly subscription for the service.

“The savings from Orange Business Services’ IoT solution will have a significant impact on our bottom line, as around half of a vessel’s operating costs are related to fuel. An active IoT system on board our vessels will enable us to collect data in real time and map the most efficient routes,” said Evgeny Stepanov, CTO, Dobroflot.

**Report examines impact of seafarer connectivity**

A new report looking at crew connectivity on ships has revealed the emotional and operational impact on professional seafarers working at sea of having limited opportunities to interact digitally with friends and family.

Researchers from Royal Holloway, University of London, conducted the ‘Navigating Everyday Connectivities at Sea’ study in conjunction with maritime charity Sailors’ Society and with Inmarsat, using an immersive study approach on board two container ships for 10 days, one with on board Wi-Fi capabilities and one without.

The researchers looked at how seafarers use mobile phones and other digitally enabled devices in their daily lives during long periods at sea, and the opportunities and risks that such usage introduces. The report showed that access to Wi-Fi, even in limited capacity, helped to reduce some of the emotional stresses that come with separation from families.

However, the research also showed that where there were weekly limits to connectivity, seafarers felt forced to ration their allowance to certain periods or to prioritise contact among friends.

Restricting usage meant that domestic issues could not be resolved immediately or in real time, adding to personal stress or anxiety.

Another of the report’s key findings demonstrated how connectivity is becoming a significant factor in recruitment, particularly for those newly entering the industry. Young people brought up with constant connectivity are viewing the ability to get online as a significant deciding factor as to whether they commit to a career at sea.

The argument that connectivity disrupts work and rest patterns was not backed up by the research, which actually showed that not having reliable onboard internet itself impacts such patterns – if the only method of digitally engaging with personal networks is through mobile phones, seafarers would connect when the ship was within mobile signal range, regardless of the time of day, external factors, work or rest hours.

“Digital connectivity at sea has been one of the major talking points of the decade in the maritime industry, which has been slow to adopt technology enabling improvements in connectivity across the world’s commercial fleet,” said Dr Rikke Bjer Jenson, one of the principal researchers from Royal Holloway, University of London.

“While several studies have used surveys to try to establish the rate of these improvements and their wide-ranging implications, none – to our knowledge – has taken observations of crew behaviour and conversations with seafarers as their starting point.”
Inmarsat has rebuffed a takeover offer from US-based satellite operator EchoStar, valuing the London-based business at £3.2 billion.

The dollar-denominated offer of approximately 532p per share was dismissed by Inmarsat’s board of directors soon after its receipt on July 3rd. The £3.2 billion valuation includes all of the UK group’s equity and convertible debt.

“After carefully considering the revised conditional proposal with its advisers the board rejected the proposal on 4 July 2018 on the basis that it very significantly undervalued Inmarsat and its standalone prospects,” said Inmarsat, in a July 6th statement.

“The board remains highly confident in the independent strategy and prospects of Inmarsat.”

This is the second bid made by EchoStar to acquire the company, after an opening bid in June – described as “highly preliminary” – was immediately turned down.

Subsequent to making that bid EchoStar disclosed that it has built a shareholding worth about 3 per cent of the British company, and that it holds 10.4 per cent of Inmarsat’s convertible bonds.

Following the initial bid Inmarsat set a July 6th deadline for EchoStar to return with a more attractive offer. After that second bid was also rebuffed, EchoStar had said that it intended to continue “to seek engagement with the board of Inmarsat on a constructive basis, with a view to agreeing the terms of a recommended transaction.”

However, the American company later that same day announced via the London Stock Exchange that it would not be making an offer for the company.

Inmarsat’s share price had dropped to a closing price below 485p on the news that the second takeover bid had been rejected, a fall of approximately 10 per cent, before recovering to move beyond 500p after markets reopened the following Monday.

Speculation about the acquisition had caused the share price to surge from under 400p at the start of June to a high of more than 632p on June 25th. The stock has stabilised to trade in a range between approximately 520p and 580p during the first half of August.

Speaking later about the proposed deal, during Inmarsat’s H1 2018 earnings call, CEO Rupert Pearce said that the EchoStar proposal did not reflect Inmarsat’s own appraisal of the value of the business given its future prospects, and that the transaction would not have optimised value for shareholders had it gone ahead.

“If you engage at a level that’s way below what you think is the right level, all you’re doing is signalling weakness and a willingness to trade value below fair value, that’s where you end up. So that was absolutely the wrong signal to send,” he explained.

“Thereafter, for all we’re not for sale. We don’t feel weak about our future, and we don’t feel the need to engage in a merger, even with somebody in our industry, at this point in time. We don’t think that would drive exceptional value to shareholders.”

Intellian has introduced a new version of its 85cm Ku- to Ka-band convertible maritime VSAT antenna, with the v85NX unit offering a smaller, lighter form factor with improved RF performance.

The entire NX range of antennas from Intellian will share modular components, with the aim of reducing the number of spare parts needed and lowering the total cost of ownership for the systems.

The v85NX also combines TX, RX and DC power into one cable to simplify installation, and can be installed without the radome having to be removed during the process.

Intellian has upgraded its antenna management and control software along with this new terminal, with the AptusNX tool able to alert an operator to possible problems with its diagnostic capabilities and provide automatic alerts when preventative maintenance may be required.

“Our main goal in designing the v85NX was to offer the best value to customers for installation, operation and maintenance. With the unveiling of the Intellian v85NX, we will continue to lead innovation by developing class-leading next-generation antennas for use in the satellite communications industry,” said Eric Sung, CEO of Intellian.
Marlink expands Ku-band network

Marlink reports that it has expanded its global VSAT network with the addition of new satellites and beams in the Americas and in the Mediterranean, extending its coverage and bandwidth capacity across these regions.

The company says that the additions are part of a strategy to deliver a multi-layered network of high-power overlapping beams that can deliver improved redundancy in congested or remote areas, and expects the improvements to particularly benefit the cruise and superyacht markets in these areas.

New beams have been added to the network covering the Northwest Passage, the Mediterranean and the Caribbean, while a new satellite has also been added to augment Ku-band coverage in the Northwest Passage, from the west coast of Canada to the western tip of Alaska.

“As demand for bandwidth increases in all maritime verticals, our combination of satellites, beams and overall orbital spread enables us to maximise the availability, speed, flexibility and agility of the connectivity services we provide, whilst ensuring high throughput even thousands of miles from the equator,” said Tore Morten Olsen, president maritime, Marlink.

“We see sea ice receding due to climate change, larger vessels are now able to further explore the Northwest Passage, which is generating significant extra demand for connectivity. Choosing a provider with more sources of high throughput services enabled by redundant and overlapping satellite coverage ensures quality of service, resulting in more up-time even in the most remote regions.”

Marlink notes that it has added new widebeam High Throughput Satellite coverage to overlap existing capacity in the Mediterranean, and expanded its available capacity in the Caribbean and over the Atlantic.

In related news, Marlink has also celebrated the 40th anniversary of the opening of its Japan operations in August 2018, with what was then a SAIT Marine office having been established in Tokyo in 1978.

Following (then Marlink owner) Telenor’s acquisition of SAIT Communications in 2002 the regional organisation took the name Marlink Japan. The Tokyo-based operation covers the Japan, Korea and Far East Russia markets, with the company having originally been established as a provider of maritime radio equipment before becoming an accounting authority for ship owners and operators in the region for VHF billing from different nations.

Market expansion in Japan has seen the business move to a larger office in Tokyo at the beginning of this year, reflecting the current growth in VSAT adoption in the region.

COSCO back on track after ransomware attack

COSCO has confirmed that all of its communication channels, including telephone, e-mail, and electronic data exchange, have been restored following a network breakdown reported on July 25th as the result of an apparent ransomware attack.

“We are working at full stretch to process all the service requests received previously, and the service response is expected to be back on track within this week,” the company said in a statement on July 30th confirming restoration of services.

“Global networks of COSCO Shipping Lines are safe and stable, and our global business operations are steady and orderly.”

The network security issue was initially detected in the Americas region, forcing the company to take “proactive measures to isolate internal networks to carry out technical inspections on (a) global scale”, before bringing networks outside the Americas back online that same day as investigations continued.

Contingency measures enacted by COSCO included the creation of online booking procedures using Yahoo e-mail addresses to communicate with affected customers and stakeholders during the shutdown.

The company says that, while its Internet phone service and company e-mail system is now operating as normal, its Yahoo mailbox address will be kept live to maintain service continuity, and customers will not need to resend mails sent to the Yahoo accounts.

DSME granted cyber notation for smart ship system

Daewoo Shipbuilding & Marine Engineering (DSME) has been granted approval in principle (AiP) from Lloyd’s Register (LR) for the DSME Smart Ship Solution (DSS), receiving the Cyber SECURITY notation confirming compliance with LR’s cybersecurity requirements for smart ships.

DSME has worked with SEANET, a supplier of ship computer network systems, in developing its cyber security governance system and finding ways to mitigate the risk of cyber vulnerabilities, or other unauthorised access to the network.

“We aim to embed cyber security seamlessly within our Smart Ship Solution to communicate between the asset and shore office safely, to maximise ship operation benefits and manage the risks presented by connectivity,” said Odin Kwon, DSME senior executive vice president.

“In connection with this initiative, we are glad to receive LR’s cyber security AiP which primarily assures that our smart ship system is able to provide a consistent, reliable and competitive service to our customers with minimum cyber security risk.”

Rock Seven integrates Blue Sky technologies

Rock Seven, a provider of Iridium-based satellite tracking systems, has partnered with California-based Blue Sky Network to support maritime sector growth for the US company’s satellite tracking and communication products.

SkyRouter, Blue Sky Network’s Cloud-based portal, offers tracking, remote communications, and fleet management capabilities on any internet-connected device, including Android and iOS devices.

Features include real-time tracking and mapping, global two-way voice, text and SMS messaging, dynamic alerts, automatic report generation, and customisable geofencing.

Under the terms of the new partnership, SkyRouter technologies will be integrated into Rock Seven’s dual-mode Iridium/GSM RockFLEET tracker, a GPS standalone tracker used by commercial ships and smaller vessels.

“Working with Rock Seven, we’ve integrated SkyRouter, Blue Sky Network’s industry-leading fleet management and analytics portal, into the RockFLEET,” said Gregoire Demory, president of Blue Sky Network.

“Both companies are experts at deploying Iridium satellite-based solutions, meaning our customers can count on 100 per cent global coverage, 24/7.”
FleetBroadband
THE BETTER WAY TO STAY CONNECTED

FleetBroadband has been connecting seafarers worldwide for the past decade. With the launch of new voice services, FleetBroadband is ready to lead for another 10 years.

MOBILELINK
Make convenient and cost efficient operational shore to ship calls

MULTI-VOICE
Easily separate business and crew calls with multiple phone lines

CHATCARD
Simple top-up cards keep crew in contact with friends and family

Powering global connectivity
inmarsat.com/fleetbroadband

inmarsat
The mobile satellite company
Iridium gears up for Certus service launch

Having successfully completed the penultimate launch in its next generation satellite programme, Iridium is poised to launch its new Certus maritime broadband service, with commercial service introduction now expected to take place before the end of the year.

Iridium has completed the seventh successful launch in its Iridium NEXT satellite programme, with only one further launch remaining to complete the full constellation as it prepares for the introduction of the company’s new Certus L-band maritime broadband service before the end of this year.

This latest 10-satellite launch was completed on July 25 using a SpaceX Falcon 9 rocket from Vandenberg Air Force Base in California, similar to each of the previous launches in the series. The satellites were delivered to orbital plane number five, where they will go into operation immediately following testing and validation.

The Iridium network is comprised of six polar orbiting planes, each containing 11 crosslinked satellites for a total of 66 in the operational constellation. Upon activation of all 10 new satellites, orbital plane five becomes the fourth Iridium orbital plane to be comprised exclusively of Iridium NEXT satellites.

In total, 65 NEXT satellites are now in orbit, with just over 50 fully in service and meshed into the network. The complete programme will see 81 satellites built, of which 75 are planned for launch. Nine of the satellites launched will serve as on-orbit spares, and the remaining six will be ground spares.

The final launch in the NEXT series is planned to take place in Q4 of this year, with commercial services on Certus also expected to go live before the start of 2019.

“We don’t have a specific commercial service introduction date yet, because we just want to go through the preparation programme with the VAMs (value added manufacturers) and the service providers. We don’t have a fixed date but it will definitely be later this year,” said Wouter Deknopper, vice president and general manager of maritime at Iridium, in an interview with Digital Ship.

“Our service providers also need to get ready, prepare their value added services for Certus. The terminal manufacturers have also been plugged into those service providers to provide them with APIs. That phase is now ongoing, the SPs (service providers) will be doing benchmark testing in a static environment to make sure their value added services work on the system, get the back office systems working with billing and so on.”

“We don’t need the final ten satellites to be launched in order to commence commercial service introduction. We don’t have a fixed date yet but it will be later this year. It’s our decision of course, but it also needs to line up with the readiness of our key service providers, and the readiness of our manufacturers in terms of production of terminals, which is already underway.”

To date, 15 service providers have been appointed for Certus for the maritime market, including both global and regional operators, with Iridium noting that it expects this number to increase slightly before the commercial service launch.

“I believe we have a good mix of global and regional partners now. There’s going to be a few more that will be announced, but right now we have 15 for maritime,” said Mr Deknopper.

“It’s a mix of global and regional partners, we want to be really strong in certain regions and that’s where regional partners are stronger in their positioning, with market access etc.”

Antenna strategy

The next phase of development for these SPs involves testing of those various services in sea trials on actual vessels during operations, linking new applications into the at-sea live antenna testing that has already been underway since the beginning of this year on terminals built by Thales and Cobham SATCOM.

These two antenna manufacturers were chosen by Iridium to create the maritime broadband systems for the Certus service in line with Iridium’s new strategy of working more externally with specialist manufacturers for the terminals, in contrast with the approach for the Iridium OpenPort and Pilot systems where the company offered its own Iridium-branded antennas.

The Thales VesseLINK and Cobham SAILOR 4300 terminals have reported data speeds of 352 kbps during testing, which will be the initial service offering speed. That will later be upgradeable to 740 kbps with a firmware upgrade, both Cobham and Thales have confirmed, after Iridium has made that higher speed service available with a firmware upgrade. Both companies expect to do a provisioning upgrade but that is not something that’s visible to the customer, said Deknopper.

“That (704 kbps introduction) is definitely scheduled for 2019. We do need to have all of the satellites up in order to do that, but that is definitely already on the programme for 2019. It’s going to be a simple firmware upgrade, the service providers are going to need to do a provisioning upgrade but that is not something that’s visible to the customer,” said Deknopper.

“We with Iridium Pilot we have had our issues at the start as most know, we have fixed them a couple of years back and now it’s all good, but I think we really want to concentrate on what we are best at, and that is making the core modules, the core infrastructure and the network.”

“For the broadband terminals we did an RFI and we selected two world class manufacturers, Cobham and Thales, each with their own identity and unique strengths. They also have their support networks, they are active on a similar level, so it kind of helps in many ways and allows us to focus on the network side.”

Neither antenna has any moving parts, and both are light enough to be carry-on luggage on an airplane – the Thales antenna weighs in at under 3kg, while the Cobham unit has included the Broadband Core Transceiver (BCX) usually found in a below decks terminal in the antenna itself while still keeping the weight down to 8kg.

Target markets

The two antennas feature other differences in both installation options and functionality, so users will need to choose the unit that best suits their own requirements rather than picking between two versions of the same system, and both manufacturers say they will initially target small vessel markets and VSAT companion installations as the initial focus for their products.

“The market segments we will be targeting initially are shipping, fishing, leisure, and government (military). Our solution is designed to meet unique challenges, whether our customers operate a single vessel or a long fleet. Thales VesseLINK is the solution to depend on for essential communications coverage,” said Brian Aziz, director satcom solutions at Thales.

“Thales VesseLINK is designed to be both a stand-alone communications system as well as the perfect VSAT companion. Several of our partners have their own VSAT network; therefore we anticipate that they will be pairing VesseLINK with their VSAT equipment. However, we equally expect the market to adopt VesseLINK as their main communications system.”

The low Earth orbit architecture used to build the Iridium network may also see the service being particularly useful for certain software applications that could appeal to shipping companies, as Matt Galston, Thales’ vice president, maritime at Cobham SATCOM, notes.

“For instance, a number of standard business systems, such as ERPs, CRMs and many common book keeping or accounting solutions simply do not function effectively over a GEO satellite connection. The latency is too long and the systems often time out before a page can even load,” he told Digital Ship.

“This means maritime operators attempting to embrace digital transformation are constantly challenged to customise IT systems just to achieve basic functionality. The lower latency offered by Certus could make it easier for shipping companies to benefit from rolling out more mainstream enterprise solutions like SAP, Salesforce, Sharepoint, etc.”

“This might yield some rather interesting, creatively integrated communications solutions where the Iridium channel is active on a service basis for latency sensitive applications while other heavy data traffic is pushed over the Ku or Ka-band VSAT. Of course the ability to deliver that experience in a fully seamless and transparent manner would be a true ‘Killer App’.”

Iridium is confident that the launch of Certus will help to expand its reach in maritime across these different market sectors, and expects that the maritime portion of its business will grow in importance relative to the various other verticals in which it operates.

“A lot of our business is already maritime, with handsets for instance, a lot of handsets are used with docking stations and other solutions in things like anti-piracy. We also have a lot of SBDR (short burst data) solutions which are used on over 25,000 vessels for fisheries monitoring and catch reporting. Because they don’t use the broadband antennas some people may not look on them as traditional ‘maritime’ customers,” said Mr Deknopper.

“With Iridium Pilot we have grown a nice base, we now have well over 9,000 Iridium Pilot installed and working day in, day out, and with Certus the strategy is not just to replace or upgrade Pilot, it’s really...
Built for Iridium Certus℠, the new SAILOR 4300 L-band minimises lifecycle costs with easy installation and no scheduled service requirements.

sync.cobham.com/satcom/SAILOR-4300
COMMUNICATIONS & CYBER SECURITY

expanding the whole base. We’ll be expanding more into the primary use market with a more powerful proposition than what the incumbent has to offer today, and expanding as a companion to VSAT solutions.”

“We are going out to markets that are already well established, thinking about the merchant shipping market, oil and gas, leisure, and also cruise lines have shown interest in Iridium because more of them go polar these days and want a better companion to their high-bandwidth solutions. I think in the mix of future Certus revenues maritime will no doubt be a very important component, and I think the maritime business will become more important within Iridium.”

IoT goals
The ongoing digitalisation of the shipping industry, and the rise of new opportunities in Internet of Things applications and Big Data analytics, are also trends which Iridium believes will fuel take up of its services beyond voice and data communications, as third-party manufacturers develop new technologies incorporating its own core modules.

There can take those Iridium core modules and create end user products, whether that be an IoT device or anything else, and submit it to Iridium for certification to make sure that the antenna is working within the link budget and in line with other specifications. Iridium does not get involved in certifying the feature set of the end user product, but offers certification that it has checked the operation of that system on the network.

This type of development should be driven by the introduction of new Certus services classes in 2019, different from the 352 kbps core systems used by Thales and Cobham in their current antennas and offering a range of lower data rates for smaller and cheaper form factor devices.

That approach will utilise the existing ecosystem of partners to build new specific applications that embed Iridium modules into things like engines, bridge systems, ECDIS systems, or anything else, which could be linked to antennas as small as a can of Coke.

“We are well positioned with our new L-band network, we already have an important role in the IoT space with close to 600,000 embedded devices across maritime, aviation and land. So we think we know this IoT market pretty well, and we work with key OEMS like Caterpillar on the land side for things like predictive maintenance and remote monitoring, all of that,” said Mr Deknopper.

“Within maritime there are definitely the same drivers that we see in some of our other markets, we see the need for supply chain visibility, across the logistics chain where we already have a number of solutions, to really provide end to end visibility. Small devices that you can attach to containers, for instance, to track location but also to monitor the cargo, temperature, humidity etc. We’ve built up quite a history already together with our ecosystem of partners that is doing that.”

Mr Deknopper also notes that technological developments like these offer a connectivity counterpoint to the high bandwidth requirements that users may have when it comes to activities like internet browsing or large data downloads.

“With Certus we are adding bandwidth and new capabilities to our IoT portfolio, but I think it’s a misconception to think that the connected ship, Big Data or IoT always need that ‘big pipe’,” he told us.

“A lot of market players say that you really need VSAT in order to embrace digitalisation, we would say that bandwidth is an important driver but there are also other considerations than just how big the pipe is. Our LEO L-band network is extremely good for things like availability, latency, and coverage where you can use it everywhere, and also in terms of cost and the form factor of the IoT solutions. Sometimes the antenna needs to be extremely small or you have certain power requirements that you need to meet.”

“I think there’s definitely a drive for more bandwidth, but there’s definitely some caution growing. D鼻nance in shipping is a business model that needs a diversity of connectivity options, sometimes we will be the only option but often we are plugged into other connectivity options – RFID, cellular, VSAT. It’s not a ‘one size fits all’ situation.”

AST and Thales

agree Certus partnership

www.theastgroup.com

The AST Group (AST) has announced a partnership with Thales covering the supply of Thales’ MissionLINK terminals for use with Iridium’s new Certus L-band satcom service.

VesseLINK is a lightweight satcoms unit designed to be simple to install, and can be deployed as a stand-alone solution or used as a VSAT companion.

The communications system will be enabled to be integrated with AST’s INTEGRA range of value added services when delivered to customers, the companies said.

“The AST INTEGRA Certus’ proposition will be the most attractive and capable in the market,” noted Mark Sykes, director, AST.

“Customers will demand the levels of service and features and benefits only we can offer - the Thales partnership is key to bringing some of these to market.”

The partnership agreement also covers Thales MissionLINK, a land-mobile product running on Iridium Certus.

“This is exactly the kind of partnership that we want; AST is highly ambitious and capable, and has the vision to revolutionise land-based and maritime communications with state-of-the-art satellite technology and solutions,” said Robert Squire, director, Thales Certus.

Maritime bandwidth record falls once again

www.speedcast.com

The maritime satellite bandwidth record has been smashed yet again, for the third time in six months, with Carnival Cruise Line delivering a combined 3.174 Gbps connection to its new vessel Carnival Horizon at the ship’s naming ceremony in New York.

The link consisted of 2,424 Gbps on the upload channel and 780 Mbps on the download, delivered by satellite services provider Speedcast and leveraging capacity from satellite operators Intelsat and Telesat.

“Carnival Cruise Line is proud to introduce Carnival Horizon, the company’s newest and second of the Vista-class ships,” said Reza Rousoulian, VP of global connectivity for Carnival.

“The Horizon was delivered with our new industry-leading next generation connectivity solution leveraging an innovative satellite bandwidth and technology approach which we have developed over the past several years enabling our guests to enjoy fast, reliable, land-like connectivity to share their amazing vacation experiences on social media, keep up with news, and interact with friends and family even while at sea.”

The service uses Intelsat antennas, leveraging C-, Ku- and Ka-band frequencies, selecting the best available satellites in terms of power, look angle and coverage. The traffic is then routed via Speedcast’s global MPLS network, which is monitored by Speedcast’s Network Operations Centres on a continuous basis to maximise uptime.

Carnival Cruise Line says it is now working on plans for a further rollout of this new connectivity system throughout its fleet.

“The Carnival Horizon is outfitted with best-in-class technology for both guest enjoyment and operations, and Speedcast is thankful for the opportunity to continue this partnership with Carnival as its trusted provider for communications,” said PJ Beyler, Speedcast CIO.

“The delivery of this record-breaking solution leverages the latest innovations in end-to-end networking, high throughput satellites, next-generation modulation and optimisation technology in order to reach a new standard in guest experience; one which allows them to enjoy an internet experience similar to what they have at home.”

“We look forward to working hand-in-hand with Carnival to push the envelope of innovation, not just in terms of the largest amount of satellite bandwidth provided, but also utilising IT solutions that will help them to achieve top-notch guest satisfaction on all of their ships, from connectivity to data management, entertainment content and more.”

The previous high score in maritime VSAT had also been set by a Carnival ship, with the Regal Princess, operated by Carnival’s Princess Cruises brand, reaching a mark of 2.25 Gbps at the launch of its new MedallionNet guest connectivity service at the end of February this year.

That link was provided by satellite operator SES, using a combination of geostationary satellites and the medium-Earth orbit satellites it acquired following its takeover of O3b in 2016.

The pace of growth in maritime bandwidth speeds has been accelerating, with the previous mark before this year set at the end of 2017 when the MSC Seaside recorded a 580 Mbps link at its service launch ceremony in Italy in late November, with a service provided by Marlink.
Make your **airtime count**

VSAT / FX / FBB / 4G / WiFi

Ships need flexibility in connectivity as some vessels use more data than others. Independently of satellite airtime providers, Marpoint’s enterprise-grade routers and services help you secure, prioritize, segment and manage your airtime.

**The partner you deserve.** Marpoint develops innovative satellite products and services committed to drive you to the future of shipping. As today communications services extend across managing business and crew welfare all the way to cyber security, Marpoint offers bespoke solutions enhancing ship-to-shore and shore-to-ship intelligence.
Satellite communications provider KVH has announced a new wave of new contracts in recent months as the commercial shipping industry continues its connectivity shift into VSAT services to meet the data transfer demand of modern operations.

Among the new deals recently announced is a contract extension with BW Group, which has supplemented its existing deal with KVH to add its mini-VSAT connectivity services to 45 additional vessels in the fleet, joining the company’s LPG and LNG vessels that have used KVH’s systems and services since 2013.

“We chose KVH because of their commitment to excellence, the ease of working with a sole provider, and the cost advantages that we can achieve with fast, reliable connectivity and global coverage,” said Tor-Egil Gjedrem, BW Group’s global head of procurement.

“Connectivity is the key to digitalisation of many maritime operational functions.”

The BW fleet includes product tankers, LPG and LNG carriers, FSUs/Rs, dry bulk carriers, chemical tankers, offshore vessels, and crude carriers.

For the 45 additional vessels, BW has chosen the dual mode C/Ku-band TracPhone V11-IP satellite antenna system and the Ku-band TracPhone V7-HTS; the particular system for each vessel is dependent on the type of ship. The vessels will also receive news and entertainment content via KVH’s IP-MobileCast content delivery service.

“With our vessels transiting the oceans, it is extremely important to have a connectivity provider like KVH, which has the technical and service capability to address issues immediately, and ensure that our fleet is always benefitting from uninterrupted connectivity,” said Juzer Vasi, head of business solutions – fleet, for BW.

Another new member of the KVH mini-VSAT community is ship manager Nordic Hamburg, which has now begun the roll-out of Ku-band VSAT services on board its vessels. Installation has already been completed on 13 out of the 25 ships to be fitted with the systems over the course of this year.

The ships are being kitted out with TracPhone V7-HTS antenna equipment as part of KVH’s AgilePlans subscription-based Connectivity as a Service (CaaS) programme, offering download speeds up to 10 Mbps and upload speeds up to 3 Mbps.

“The AgilePlans programme provides the highest flexibility for our fleet and we were also attracted to KVH’s global coverage, CommBox network management solutions, fast data speed, and the great crew welfare services that are included,” said Jacobus Varosieau, operations and insurance manager for Nordic Hamburg.

“We are very pleased to have found a solution that enables us to offer our customers exceptional value and connectivity. This applies to both our operational efficiency as well as offering our valued crew fast, effective, and reliable communications.”

In addition, KVH has provided excellent ongoing support and we now have a service that helps us future-proof our shipboard communications in line with today’s digital demands.”

**Transpetro**

Brazilian-based Transpetro, transport provider for the state-owned Petrobras oil and gas company, has also announced that it has selected KVH as its VSAT provider for the majority of its tankers after the completion of a satcom tender process.

The agreement will again see TracPhone V7-HTS systems supplied to a total of 45 newbuild and existing tankers alongside a five-year airtime contract. Each installation includes a beloowdecks Integrated CommBox Modem (ICM), with built-in capabilities for onboard network management.

Installations will take place over the course of the next 12 months in Brazil managed by KVH’s local subsidiary, which has been in operation in the country since 2011.

“We selected KVH for the global coverage and the data speed, which will enable us to improve operational efficiency and provide crew welfare,” said Jose Ricardo Ellas, CIO of Transpetro.

“Another deciding factor in choosing KVH VSAT was the ease of use in having one provider for the complete connectivity solution.”

The announcement with Transpetro comes as KVH recently confirmed that it has passed the milestone of shipping its 8,000th mini-VSAT Broadband system.

“Our newest HTS systems are in high demand throughout the maritime industry, and build on the strength and reputation of our entire product line,” said Martin Kits van Heyningen, KVH’s chief executive officer.

“Our global coverage, rugged antenna systems, and innovative subscription-based business model are exactly what the maritime industry needs as it continues to move toward digitalisation.”

Alongside these new deals KVH has also unveiled a new set of ‘6-Level Cybersecurity’ initiatives designed to provide proactive cyber security protection for its maritime VSAT satellite network, which will see all vessels subscribing to KVH’s mini-VSAT service receive the KVH Videotel ‘Cybersecurity at Sea’ training programme at no cost.

The programme, created in conjunction with maritime experts and based on regulations from the International Maritime Organization and guidelines from the shipping trade group BIMCO, covers such topics as assessing and reducing the risks of a cyber incident and responding to a cyber incident.

For satellite network security, KVH says that it implements a range of infrastructure safeguards and different types of authentication, encryption, or proprietary air interfaces.

For the terrestrial network, KVH’s system is designed to provide traffic separation and to route global satellite traffic over private circuits to MegaPOP-IPs, where internet egress occurs.

“To enhance the security of transmissions between ship and shore, we’ve designed our system so that traffic does not touch the internet before going through edge security devices at MegaPOP,” notes Rick Driscoll, KVH’s vice president of satellite products and services.

The cyber strategy also targets the security of hardware and network configuration. For example, onboard local area network (LAN) segmentation can be configured for operations, crew networks, and third-party charter networks via firewall.

In addition, the myKVH portal has been designed to provide the ability to enforce a crew login requirement on the vessel prior to accessing networked vessel systems or the internet.

**LTE**

Outside of VSAT services, KVH has also introduced a new regional TracPhone LTE-A marine communications antenna system and accompanying connectivity service, designed to provide internet access via cellular networks in US waters out to a range of approximately 30km, with data download speeds up to 100 Mbps.

The system uses LTE Advanced (LTE-A) cellular network technology to connect to services from two US LTE carriers, and is aimed at small and mid-size recreational boats.

KVH says that, while the service is confined to the US for the time being, it is currently exploring the potential expansion of the product into other regions in the future.

The system includes a dual antenna array, modem, GPS, and Wi-Fi router inside a 34 cm diameter dome. A single cable connects the antenna to a beloowdecks Power-over-Ethernet (PoE) injector to provide power to the system, with the PoE also used to create a local area network (LAN) on the boat if required (though a Wi-Fi router is built into the dome).

---

**Maritime VSAT expansion continues as KVH announces new deals**

Maritime satcoms provider KVH has announced a range of new summer VSAT deals which will see more than 100 additional vessels add Ku-band connectivity on the company’s mini-VSAT service. KVH will extend its VSAT contract with KVH to add 45 additional vessels in its fleet.
Thales VesseLINK™ on Iridium CERTUS™

Wherever safety and security matter, we deliver

LOCATION TRACKING & SENSOR MONITORING:
Integrates with sensors for temperature, light, humidity, alarms, global keep-ables, and a variety of other Internet-connected equipment

REAL-TIME WEATHER:
With enhanced weather reporting, crews can optimize route planning and locate favorable conditions

GLOBAL COVERAGE:
Even for new polar and northern passage shipping routes with connectivity in any kind of weather, including rain

SAFETY & SECURITY:
Location tracking, up to 3 dedicated voice channels, and is telemedicine capable. Equipment may be concealed in roll-on/roll-off kits for lifeboat integration

No matter where your shipping operation takes you, Thales delivers.

Thales VesseLINK gives your critical maritime operation global communications coverage that you can depend on at sea, anytime, anywhere. Whether you operate a large fleet or a single vessel, this solution is designed to meet your needs for safety and connectivity through highly reliable, mobile and essential voice, text and web communications. VesseLINK operates using Iridium CERTUS broadband services over a network of 66 satellites that deliver the lowest latency rates in the industry.
**Hacking ships – 10 tips to be cyber savvy**

What happens when a group of ethical hackers starts looking at the maritime industry and picking holes in satcom, ECDIS, and vessel networks? They find more vulnerabilities than you might like to think, writes Ken Munroe, Pen Test Partners

**Hacking the ECDIS**

We often find a lack of network segregation on the vessel. Hack the satcom terminal and you're on the vessel network. This can include access to the ECDIS which leads directly to the autopilot – most modern vessels are in 'track control' mode most of the time, where they follow the ECDIS course. Hack the ECDIS and you may be able to crash the ship by tampering with its displayed position, particularly in fog. A common cross check of position is to overlay the synthetic radar on the ECDIS chart. We discovered methods to inject position offsets in both ARPA and chart position. Younger crews also get 'screen fixated' all too often, believing the electronic screens instead of looking out of the window.

We tested over 20 different ECDIS units and found all sorts of crazy security flaws. Most ran old operating systems, including a PC. Just like any computer, it requires a boot process to run, and keyboard, but it is fundamentally just a PC. The boot process to run, and its operating system. During vessel security testing, we found many, many default passwords still in place. Several of the ECDIS we tested presented missing passwords. These included undocumentated web servers, database servers, and file transfer mechanisms. Using a web server interface on one ECDIS, we discovered a configuration interface with an undocumented default password. Reading the vendor's manuals, we could find no mention of this password nor any advice to change it. From this, we could reconfigure the vessel and make it appear to be at a different location. Another ECDIS presented a database connector service from which one could edit the contents of the digital charts. A different ECDIS had a significant security flaw in the ECDIS application itself. It was trivial to edit or reconfigure any aspect of the ECDIS software and digital charts it displayed.

**Updates and USBs**

An ECDIS is usually just a desktop computer. It may have a rugged case, screen and keyboard, but it is fundamentally just a PC. Just like any computer, it requires updates to be applied, both to the operating system, to its ECDIS software and to the digital charts. If any of those are omitted for any period of time, cyber security vulnerabilities creep in.

ECDIS are increasingly being connected to vessel networks to facilitate online chart updates, integration with other bridge systems and remote maintenance. Security flaws that did not matter so much in the past through a lack of connectivity are now becoming very important. Even having dual redundant ECDIS on the bridge is no guarantee of availability - during research we discovered similar security flaws on multiple ECDIS brands. A hacker would have little difficulty in compromising both.

ECDIS USB security is another important issue in shipping. The ECDIS system case must be kept in a robust locked cabinet - to which only senior personnel have access, and it should not be possible for other personnel to access the system case or any of the USB and network ports on it.

A source of several ECDIS security incidents has been from crew charging smartphones from the USB ports. Phones that have not been kept up to date may already be infected with malware. Many ECDIS have USB ports present on their keyboards. Operators frequently report that, despite multiple 'safe' USB charging points being made available on the bridge, crew still charge phones from the ECDIS.

With this in mind, operators should seriously consider installing USB port blockers. Whilst they are not difficult to remove, they do provide a visual deterrent to casual charging.

If the crew persist in charging ECDIS USB, you may consider gluing the blocker in to the USB port. Bear in mind that chart updates can still be applied by opening the ECDIS cabinet and inserting clean USB keys directly into the system case USB ports. It is imperative that the ECDIS computer is subject to regular updates to its operating system. During vessel security
BLAZING FAST & UNLIMITED DATA
Delivered by KVH’s New TracPhone® V7HTS

See us at SMM
4-7 September
Booth B6.208

- High-speed data channel with 10/3 Mbps down/up*
- Expanded global coverage
- Unlimited use data channel
- Advanced, next-generation HTS network
- Affordable hybrid airtime plans
- Easy to upgrade

Now available via AgilePlans® by KVH

Because connections matter: KVH.com/connections

©2018 KVH Industries, Inc. KVH, TracPhone, AgilePlans, the unique high-endurance logo with dark contrasting background are trademarks of KVH Industries, Inc. *Data rates are not for maximum and may vary in different regions and under different conditions.
audits, we have discovered ECDSIs still running Windows NT, an operating system that Microsoft stopped support- ing in 2004! That means that any new security flaws in the software will NEVER be fixed.

Windows XP and Windows 7 are also commonly found on bridge systems. Even as recently as April 2018, Microsoft released 22 vulnerabilities rated ‘critical’. These updates must be applied, as hackers will quickly exploit the updates and work out how to exploit the security flaw.

Not all ECDSIs are based on Microsoft operating systems. A smaller subset of vendors use Linux based operating sys- tems, which require updating in just the same way.

Whilst downloading updates at sea over satellite can be expensive, the operator should determine how critical a new patch is to their systems. Truly urgent patches, such as the ‘Heartbleed’ flaw from 2014 would merit the expense of patching whilst at sea, though most could likely wait until the next port of call and update before leaving port.

Any computers should be subject to ‘hardening’ during installation. This describes the process whereby it is config- ured to be as secure as possible; it should deliver minimum functionality in order to deliver its role as an ECDSI. For example, one would not expect Microsoft games to be present on an ECDSI, nor would one expect administrator passwords to be blank or simple.

10 vital steps

Ship security is in its infancy – most of these types of issues were fixed years ago in mainstream IT systems.

The advent of always-on satellite con- nections has exposed shipping to hacking attacks. Vessel owners and operators need to address these issues quickly, or more shipping security incidents will occur.

I’ve spoken at major industry events warning of the dangers of ship owners and ship managers burying their heads in the sand and thinking that by ignoring the sit- uation it will go away. Others have asked me the key things they need to do to min- imise the threat of a cyber-attack, so I have put together 10 key points that should be addressed by ship operators straight away.

1. Make sure your satcom system isn’t on the public internet

Most airtime providers offer a private IP address space, so hackers can’t reach your satcom system as easily over the internet. It’s easy to find out if your vessel termi- nals are public or not: put the IP address in a browser and see if you can route to the terminal web interface from the public internet. Or you could port scan it. Speak to your airtime provider and check.

2. Make sure that your satcom system has its passwords changed from the manufactur- er default

By far the most common problem – the satellite terminal installer has not changed the admin passwords from the default admin/admin or similar. Ensure the pass- words are complex and only known by those who need to know.

3. Update the software on the satcom system

Make sure it’s at the latest version and ensure it is updated every time the manu- facturer publishes an update. Updates usu- ally include fixes for security flaws, so the more out of date the software is, the more vulnerable it is.

Check the terminal vendor’s software update pages regularly – security fixes are often hidden in the changelog and not easy to find. This takes time and effort, so to spare the legwork you could consider using a patch update alerting service.

4. Check that your bridge, engine room, crew, Wi-Fi and business networks on board are logically separated

If a device on your vessel is comprom- ised, segregated networks will ensure critical systems are kept safe from the hacker. Do crew members personal laptops on the ship network have access to the navigation systems? Have you actually checked to make explicitly sure?

5. Secure USB ports on all ships’ systems

It’s very easy to accidentally get malware on USB keys. We’ve already seen cases of ECDSIs and other systems compromis- ed by ransomware. How often do you see a phone charging from a USB port on a bridge console? Phones can be full of malware too.

To prevent accidental introduction of malware to vessel systems, lock down USB access. If critical systems can only be updated by USB, keep dedicated USB keys in a secure location that are used for noth- ing other this purpose. This isn’t ideal, but is better than open USB access!

6. Check all on-board Wi-Fi networks

Strong encryption, strong Wi-Fi pass- words and good Wi-Fi router admin pass- words are a must. Crew Wi-Fi for personal use must not connect to anything other than the internet and/or onboard systems (e.g. media streaming) for personal use.

Any ship systems that use Wi-Fi (e.g. tablets for comms and navigation) MUST have raised security levels, including stronger authentication.

7. Don’t rely on technology

Officers of the watch must be reminded not to rely too heavily on technology and get fixated on screens. GPS can be spoofed, ECDSIs can be manipulated and even synthetic radar can be hacked to misreport.

Whether it’s navigation, collision avoid- ance or loading, the Mark 1 eyeball must be employed to ensure the situation out- side the bridge reflects what the technolo- gy reports.

8. Teach your crew about cyber security

Resources such as Be Cyber Aware At Sea are great for raising awareness and helping your crew avoid inadvertently opening the vessel to compromise.

9. Make your technology suppliers prove to you that they are secure

If you don’t ask for security, you don’t get it! Your technology and services sup- pliers won’t spend any time on security if they don’t think the market wants it.

A third party audit of your supplier would be a good start, though in the short term you should ask them for evidence of security accreditations such as ISO27001 or compliance with the NIST cyber security frameworks.

10. Get a simple vessel security audit carried out

Some of the worst vessel vulnerabilities are the easiest to find and fix. Bear in mind that marine security issues are often systemic – they don’t affect just one ship in your fleet, the same issue can affect them all.

About the author

Ken Munroe is a senior partner at ethical hackers Pen Test Partners. Additional information is available at www.pentestpartners.com

Global Eagle and Telesat announce collaboration agreement

www.telesat.com
www.globaleagle.com

Satellite operator Telesat has announced a collaboration agreement with service provider Global Eagle Entertainment, to work on the development of services for the maritime and aeronautical markets leveraging Telesat’s LEO (low Earth orbit) satellite system.

Global Eagle provides satellite broad- band connectivity and connected enter- tainment services for maritime, particular- ly in the cruise sector where it also pro- vides live television services, as well as aviation, enterprise and government mar- kets. The deal with Telesat covers devel- opment of user terminals, service-offering design, marketing, and at-sea performance testing.

The collaboration is a result of review of planned non-geostationary-orbit (NGSO) constellations conducted by Global Eagle, which concluded that Telesat’s LEO system design would pro- vide an optimal fit in terms of low laten- cy, high throughput and global coverage (including polar regions).

Design and testing activities will focus on development for Telesat’s planned LEO constellation using the recently launched Phase 1 LEO satellite. The parties will focus on airline and large cruise ship applications in polar and high-latitude regions, and passenger use-cases globally that require sub-50 milliseconds latency.

”Global Eagle uses Telesat geostation- ary satellites today to deliver high-per- forming wireless broadband to millions of airline and cruise passengers,” said Josh Marks, CEO of Global Eagle.

“We believe advanced LEO systems like Telesat’s can offer important advan- tages for aviation and cruise markets, including consistent global coverage, very low latency, and gigabit connections.

“Telesat’s open architecture can pro- vide Global Eagle’s customers with an easy upgrade path to add LEO capacity to existing GEO systems, avoiding technol- ogical or economic lock-in to legacy tech- nologies. We can also bring new technolo- gies to our customers more quickly build- ing on our open architecture. Global Eagle is very excited about this collaboration and eager to begin testing on Telesat’s Phase 1 LEO satellite.”

SC Group to roll-out Thaicom maritime broadband service

www.thaicom.net

SC Group of Thailand has agreed a deal with Thaicom distributor Ship Expert Technology Company Limited for the implemen- tation of Thaicom’s Nava maritime communications service on its fleet of approximately 30 offshore support vessels. The Nava FITTS (Fibre-to-the-Ship) plat- form was launched in early 2018, offering coverage on Thaicom’s Ku- and C-band satellites across Asia Pacific and incorpo- rating L-band services as a backup. Connectivity will be provided to SC Group alongside an integrated Nava Connect fleet management system.

“Connectivity is the key enabler of smart shipping and the digital transformation in the maritime sector,” said Surachai Nimnual, executive vice president, marine, SC Group.

“Asia’s maritime industry is adopting digital technology at a fast pace. The Thaicom Nava service and integrated fleet management solution on board our ships will help us to remain competitive and improve the efficiency of our offshore sup- port business.”

“The integrated fleet management solu- tion will also support crew welfare and enable crew to use online services or call their families at home by using their own mobile devices at sea.”
"We have now worked with Marlink for six years. When we implemented our strategy to future proof our fleet with high-bandwidth communication on board, we decided to test a few other VSAT providers, but Marlink’s excellent service support made the selection process easy. Improved control and management of networks from ashore is a big plus, but more importantly, Marlink VSAT gives our crew members access to modern, reliable and fast communication services that can even be accessed from their own devices."

Daniel Lewandowski, IT Manager, Carisbrooke Shipping Ltd.

Join us at SMM
Booth B6.415

www.marlink.com
IMO approves GMDSS shake-up

At its most recent Maritime Safety Committee meeting IMO approved the biggest changes in the Global Maritime Distress and Safety System in the more than quarter century since its introduction, expanding the number of approved service providers for the first time

The International Maritime Organization’s (IMO) Maritime Safety Committee (MSC) has confirmed its approval for the Iridium satellite network as a recognised provider of Global Maritime Distress and Safety System (GMDSS) services, joining the single previous recognised service provider, Inmarsat, as part of the biggest shake-up in the history of the safety service.

The MSC’s 99th session in late May 2018 accepted that the Iridium satellite network meets all the criteria to provide mobile satellite services as part of the GMDSS, and confirmed that it will adopt the ‘Statement of Recognition’ proposed by the United States as a Committee Resolution.

Iridium and the United States, the delegation sponsoring Iridium’s application at the IMO, have since been working with the International Mobile Satellite Organization (IMSO) in progressing Iridium’s implementation of the service.

With this approval Iridium has become the only second recognised GMDSS provider in the history of the service, with Inmarsat having acted as the sole approved service provider since the GMDSS first entered into force more than 25 years ago.

Iridium formally began the process to become a recognised GMDSS satellite service provider in April 2013, and says that it plans to begin providing services at the beginning of 2020 when the changes to the SOLAS Convention agreed at IMO take effect.

In the intervening period the satellite operator will work on the completion of a test standard for the certification and type approval of GMDSS compliant equipment for use on its network, in preparation for the introduction of those services.

“The test standard comes under IEC (International Electrotechnical Commission), it is put together as part of a drafting group and is an IEC document,” explained Kyle Hurst, director maritime safety and security services, Iridium.

“They approve it, and then it is published so it can be picked up by external testing agencies. Once that test standard is finalised a manufacturer would work with that standard as they’re building their terminal, and then take it out to an external testing agency to type approve the terminal against the test standard. So the type approval itself is relatively external.”

Lars Thirane has already developed an Iridium GMDSS system, the LT-3200, as a prototype ahead of the introduction of safety services on the network, while ships that install maritime broadband antennas from Thales and Cobham SATCOM to connect to the new Iridium Certus service after its commercial introduction later this year (see page 12) will also be able to update their systems for GMDSS compliance at a later date through the addition of a ‘bolt-on’ unit.

Once those bolt-on units, which are expected to be made available by the antenna manufacturers in 2019, are installed alongside the existing Certus units on a ship in line with approved installation procedures, and the systems are tested by the installer in accordance with type approval requirements, then that existing satcom equipment should be ready to meet SOLAS carriage requirements for GMDSS.

Iridium says that it will be possible to conduct this process of type approval of equipment in line with the test standard prior to the commencement of its GMDSS services in 2020 after that standard has been published by IEC, or even earlier in the case of Flag States which accept the draft test standard it submits to IEC as a basis for certification. This would allow vessels with the correct equipment, correctly installed, to be GMDSS compliant immediately when services begin on the Iridium network.

**Inmarsat**

While Iridium’s official entry into the GMDSS arena to double the number of service providers available was probably the biggest news from MSC, the meeting also saw approval granted to the request of China’s BeiDou Navigation Satellite System (BDSS) to have its GMDSS proposal evaluated by the NCSR sub-committee, and, perhaps more significantly, granted formal GMDSS approval for Inmarsat’s Fleet Safety service.

Fleet Safety had already received a recommendation from the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) at the end of February that it be granted GMDSS approval, and this formal announcement means that operators will be able to use the system to combine maritime safety and broadband data services in a single FleetBroadband or Fleet One terminal.

Current users of these two systems will be able to access GMDSS-approved safety services, as well as other new safety features only available via Fleet Safety, by the addition of a small Maritime Safety Terminal (MST).

Fleet Safety includes a new web-based version of SafetyNET, SafetyNET I, the international system for broadcasting and automatic reception of Maritime Safety Information (MSI) and Search and Rescue (SAR) communications.

Inmarsat says that it also intends to create a new generation of stand-alone terminals that, in future, will incorporate both FleetBroadband and MST into a single device and deliver higher speeds, in excess of 1 Mbps.

The new GMDSS service will be delivered over the existing Inmarsat-4 constellation and the new Inmarsat-6 satellites, the first of which is due for launch in 2020. 160,000 vessels worldwide already use the Inmarsat-C stand-alone safety service, which is provided at no charge by Inmarsat.

For Maritime Rescue Coordination Centres (MRCC), Inmarsat has developed RescueNET, a free web-based service linking current and future Inmarsat Safety Services, as well as increasing MRCC capabilities with real-time coordination during a search and rescue operation.

“Fleet Safety is the most significant advance in maritime safety services since the introduction of GMDSS in 1999,” said Ronald Spithout, president, Inmarsat Maritime, “and restates our commitment to maintaining and improving safety services for the maritime industry.”

Mr Spithout has also extended his congratulations to Iridium on joining the GMDSS family, and to BeiDou on its progress in the approval process to date.

“I would like to congratulate Iridium on achieving approval from the IMO to take their GMDSS proposals to the next stage,” said Mr Spithout, “and also congratulate BeiDou Navigation Satellite System on their successful request for GMDSS evaluation by the NCSR sub-committee.”

“We look forward to welcoming them both as GMDSS service providers in the coming years. Together, we must strive to maintain and enhance the exceptionally high standards required by the IMO and demanded by the maritime industry as the lifeline for seafarers at sea.”
Optimize the way you connect at sea with Thuraya VSAT+. A fully integrated high throughput Ku-Band service with unlimited L-Band backup, Thuraya VSAT+ converges high speed and resilience in one solution. This solution provides a unique experience, boasts smoother, faster connectivity onboard vessels across oceans, seas and ports.

As an established provider of marine satellite communications services, Thuraya understands the ins and outs of the maritime markets’ needs. This expertise has enabled us to deliver innovative value-added products and solutions to fishing, naval, coast guard, merchant and leisure vessels, in addition to operators of all kind of shipping lines for over 20 years.

Find out more about our VSAT+ service and solutions.

Thuraya VSAT+ Solution

Comprehensive solution offering

Enjoy the benefits of a singular, powerful satellite communications solution that merges Ku-Band VSAT and L-Band services to deliver one robust offering backed by an extensive network.

More value for customers

As you rely on one service for all your maritime communications, VSAT+ saves time, and delivers operational efficiency and improved decision-making. With a fixed-pricing model, its usage eliminates billing complexities and presents an attractive cost-saving option.

One experience

Thuraya VSAT+ empowers marine crew and officers to seamlessly use one service for multiple vessel applications, thereby facilitating all-round maritime efficiency.
For the 2018 edition of the annual Digital Ship round table discussion series, a global roadshow which has included the US, London, Gothenburg, Copenhagen and Hong Kong among its locations in recent years, we went back to basics to visit the world’s biggest shipping nation and gauge the views of vessel operators on a rapidly shifting maritime marketplace.

The discussion session, titled ‘Technological transformation in maritime’, was kindly hosted by Marlink in Athens. For the discussion, Digital Ship invited a panel of six experts with a wide range of experience and varying perspectives in the field of vessel operations and the application of technology in the shipping environment, to test how their views differ from those you might hear from some of the IT sales professionals in the maritime sector.

The goal of the event was to examine some of the current, emerging and planned future developments in technology for the shipping market, and to gather opinions on how movement in this sector might change the maritime operational environment for different stakeholders across the industry.

Digital Ship posed initial questions to the panel (identified in the table below) to get things underway, beginning with a discussion on the threat of technological disruption in the shipping business, and to gather opinions on how movement in this sector might change the maritime operational environment for different stakeholders across the industry.

Digital Ship posed initial questions to the panel (identified in the table below) to get things underway, beginning with a discussion on the threat of technological disruption in the shipping business, and to gather opinions on how movement in this sector might change the maritime operational environment for different stakeholders across the industry.

**Our Panel**

(KR) Katerina Raptaki, Navios – Mr Raptaki is IT director at the Navios Group, based in Greece but with offices across the globe. Navios owns and manages approximately 200 vessels.

(PF) Panagiotis Falidouris, Marlink – Mr Falidouris is general manager of Marlink Hellas, an office established by Marlink in 2017 to cover Greece and Cyprus.

(FT) Fotis Tsitsirigkos, Euronav – Mr Tsitsirigkos is fleet IT manager at Euronav, joining the company and the maritime industry in 2017 having spent his career working in the technology sector across a range of different industries. Euronav

Digital Ship recently held the 2018 installment of our annual round table discussion series in Athens, Greece, bringing together a panel including vessel operators controlling hundreds of ships and technology specialists focused on the maritime sector. Amongst a wide range of subjects the conversation covered the threat of technological disruption, the real world potential of blockchain and Big Data, and the minimum connectivity requirements for a modern vessel operator.

What is your opinion on this trend? Do you believe that technology is changing or disrupting the way you do business today, or will do in the next 18 months? Do you think this is something still far from the minds of most vessel operators? (PF) Panagiotis Falidouris, Marlink – We know that in the last couple of years shipping operations have changed. The technology has brought into the picture a new way that we can remotely connect with vessels, so the technology enables a lot of transactions between the vessels and operators.

Digital Ship - You talked about exchange of information, the shipping industry already collects a lot of information with traditional processes like noon reports which might have been on paper previously. Do you think companies will change their processes significantly based on new digital applications, or perform the same processes but in a digital manner? (PF) – It will change the way they will operate, like from reaction to things like breakdown or damage that happen on the vessel to a process like preventive maintenance.

The office needs to adapt in the way they are doing business compared to what they used to do in the past, but I think that the technology will add to their business and help them to run operations that are more efficient, to have better communication, and to have real data and information from the vessel.

So, the office needs to adapt in the way they are doing business compared to what they used to do in the past, but I think that the technology will add to their business and help them to run operations that are more efficient, to have better communication, and to have real data and information from the vessel.

That is the most valuable part, the information that can be transferred from the vessel to the office. So, just like the entire world has changed with digitalisation, the same will happen in the shipping industry, and I think it will help to improve the way shipping companies are working.

Companies today have implemented online applications to get information from the engine, from the bridge, from the ballast systems, from the tanks, and all of these things meant that they can monitor what is happening on board the vessel and track all of these incidents and alerts in order to be proactive and do corrective actions before a breakdown that will cost a lot of money.

An example, getting data from the engine about pressure or temperature, having that information online allows the office superintendent or technical manager to take immediate corrective action to avoid failure of that engine.

Do you think this will disrupt the way you do business in the next few years, or just make you more efficient at what you are already doing? (KR) – I think there will be a dramatic change in this area. We will start looking at the daily operations from a totally different perspective, we will be looking at monitors instead of trying to communicate with the master and chief engineer all the time. We will have our own data ourselves and from this data will be able to produce business information which is useful to the management.

I don’t think the management needs to know the exact value of the engine pressures, particularly if you manage 200 vessels, but they need global reports and minimal reports about each vessel. It will disrupt our business, in many ways.

Fotis, would you agree with that, relative to your own operations? (FT) Fotis Tsitsirigkos, Euronav – Yes, I would. I would come back to the last sentence of your original question, about whether this is far from the minds of ship operators. I think if it’s a ‘do or die’ question. The competition, first of all, will make changes and then you can’t keep up, and you need to respond to demand, whether that comes from your customers or from regulators, or the need for efficiency and performance. So they will be forced to, there is no way around it.

On the other hand, I can understand that...
it may be difficult for companies to make changes if they feel they are being forced by the technology, but not taken into consideration by a shipping background I think this is the normal way to do things. The shipping business is just moving into the 21st century, and everybody will need to change their mentality, change their systems, and apply technology to their business.

Of course, it is important that all the systems and applications are adapted to be able to work together. Some new developments that are available for the shipping company. You will sometimes see applications that are developed for an office environment that cannot really work efficiently for a shipping company that doesn’t have the same tools or technologies available that other industries might have.

So we need to keep this in mind, while remembering that it is crucial that the core services that have always been used, like the telephones, should remain almost a commodity, be stable and efficient. In Euronav we are already utilising our satellite connections a lot, and we invest in our on board and on shore infrastructure so we have the best available technologies applied.

DS – Would you say, in the next two years, that the business processes you have been using for perhaps the last decade are going to change significantly, or will the technology just be used to do the same things faster?

FT – Euronav is very dynamic in all aspects of what we are doing, whether it’s the design of a ship or a ship that is going to be commissioned, or the organisation, we’re constantly on the move. So we have a look at everything that comes up, and try to evaluate the benefits and the costs, whether that is in money or the time we need to spend. We’re trying to follow all technologies and all industry changes. If we need to we will change our processes to be more efficient. We do not want to make the same mistakes and not actually take the benefit from the technology, to improve our capacity to work and do business more efficiently.

Human factors

DS – Is part of the impact of a greater level of technology in maritime then, ironically enough, that the IT manager needs to focus more and more on people than on the technology itself? As usage changes and networks become more integrated you need to spend more time worrying about how people will adapt, how they work, and the problems they can cause.

TM – Yes. I agree with Katerina and Fotis about the future, we’re also trying to go forward and use new technologies, but I’m quite worried about habits, and bad quality in some of the vendors’ systems. I don’t want issues to be carried over to new stuff like neural networks and artificial intelligence - if robots are of the quality that our ERP is today, I’m very worried!

DS – That will involve learning from the human experience with technology and taking those lessons into the next evolution of these innovations.

TM – There are also things, from the technology side, that are taken for granted, which I don’t think should be. We have a lot of bandwidth and greater speed, but the consistency and quality is not there. For example, on Friday and Saturday we had two ships that disconnected and nobody knows why, one in the middle of the sea not moving, one close to the shore, and the satellite system went off. Nobody can say why it happened. We’ve had periods where the satcom was off for 48 hours and nobody could do anything, resets were useless, and then after the 48 hours they came back on.

It is a big concern as we become more dependent on technology, I don’t feel we are prepared by the communication companies to find solutions in these situations. Maybe you need to have more than one system on board, we have 4G routers on all our vessels now that can help, but that doesn’t help in the middle of the ocean.

DS – Kostas, sorry to bring you in last on this, but can you share your thoughts on this issue of technology changing the way shipping does business in the next few years? Is this something you are preparing for?

KS) Konstantinos Stalis, Thenamaris – On the one hand I would say that technol-
ogy has already disrupted our operations, but after a second thought I would tend to agree that I wouldn’t call it disruption, because it’s evolution, as Fotsis said. You can look at it in different ways, but I think that if you are working within IT for some years, then you’ll see it as an evolution similar to what happened at shore where we had a dial-up modem, then ISDN, then DSL, and slowly similar steps are happening in shipping as other bandwidths and technologies generally. It is indeed getting easier.

The Master and seafarers need to get more IT literate, unfortunately for them it’s whether they like it or not, while on the shore side we should offer support for these evolving systems.

The support and service role of the IT department has been thoroughly evolving, a few years ago it was simple, to be getting the systems to work, whereas now we need to be providers of solutions, understand the market and work closer with the business. Previously IT was supporting the business side of the company, now IT is strategically cooperating with business in order to understand the requirements and propose solutions.

We definitely need to be better people managers, on both sides. We need to manage the business users, what they need and what issues they have, and at the same time we need to manage our department, moving from a supporting role to becoming project ‘managers’. This means that I need to transform my team from IT engineers to project managers in order to gain an advantage.

DS – Is it getting easier for IT departments to bring these proposals to upper management? Can you understand technology so well? Is there a greater general acceptance that IT is a business process, a strategic issue and completely integrated with the performance of company’s operations rather than the department that makes the computers work?

KS – I think it’s becoming easier because new people are coming in, younger people who count more on technology generally. It is indeed getting easier, but in parallel with this better access to explain and present things there comes also greater responsibility, because more integrated systems means that there are more things that can go wrong, which you need to be in place to analyse and explain.

DS – So you will have management coming to you asking why systems went wrong, which will include factors outside of the technology itself.

Fotsis: People need to put things in a realistic context, if you see the fliers from the service providers they will promise an office-like experience on board, and things like that. The management see that and the seafarers see them, and they expect that we will be online all the time.

But things are not like that, we are far away from this constantly online model, and it can be difficult to explain that these descriptions are the ideal conditions, it’s not real life. When they have these demands then you have to explain to the seafarer when they are 48 hours without a connection that it’s out of your hands, we’re relying on somebody else.

DS – It sounds like the IT manager almost needs to have a ‘psychologist’ within the skill set of the company. Managing expectations and people’s reactions becomes part of the job.

FT – Yes, in every company the IT manager needs to have these kinds of abilities. Maybe we need to have a coach where users can lie and tell us their problems! Sometimes they just need to hear from you, even if there is nothing you can do, they feel better knowing that.

**Big Data and IoT**

DS – Moving on into a new area, terms like ‘Big Data’ and ‘Internet of Things’ are extremely topical in the broader technology industry, but do you think they have had an impact on maritime yet?

KS – There are areas where you think Big Data or Internet of Things technology could have a major impact on shipping.

KR – I think it has already come to shipping. It’s the first time that shipping is becoming really competitive. I remember 15 years ago that competition was not real something considered as important by shipping companies, they would have jobs anyway. Now I see, for example, that oil majors are going to the shipping companies that manage tankers and hire the ones that have a competitive advantage in some area. That starts with VSAT first of all, if they don’t have VSAT they don’t hire them. If you don’t have crew internet, you get 10 points deducted. There is a real added value from technology, not just VSAT but everything that brings us closer to the future, and Big Data is one of these areas.

DS – Do you think that these oil majors see the adoption of technology as a reflection of the attitude of the company perhaps, and their commitment to operating at the highest level they can?

KR – It does, it reflects your approach and your mentality. It reflects whether you can adapt to change well. There may still be problems with some of the technologies, as Tassos said earlier, but I don’t think that should stop us from going ahead. There are problems and ideas that are very interesting, but it is also a challenge to make this work as a system and extract meaningful data. At the same time one needs to be careful, because operational dangers can be introduced.

DS – Have we reached a level yet where data is a ‘product’ for shipping companies to sell to customers? Maybe we are in the very early stages of that process?

KS – I wouldn’t say that we are there yet, but data is becoming a commodity for sure, and we are moving towards this kind of environment. I can say for sure that many companies are in the process of researching the market for these kinds of Big Data solutions and implementing them into their day to day operations. I wouldn’t say that we are already there, but for sure we are exploring that area and trying to find solutions.

KS – I would also say that there’s still significant work to be done on this, but we are certainly looking into it. We have some project with a ‘Big Data’ placeholder name, and we are monitoring the development, but naturally we’re not really at a stage of Big Data yet.

We are gathering a lot of data from the vessels compared to a few years ago, producing kilobytes, which become gigabytes, which become terabytes, and before you notice you get these masses of data. But you cannot call it Big Data yet. It’s getting close though, and it’s interesting for shipping in particular because you have loads of data from each of the vessels that you can explore and use.

At Themararis, we have established a new department called Energy Performance, whose members gather the data coming from the vessels with the aim to understand the vessel operations and how they can use this data to improve performance. There are steps being taken in that direction, but I’m not sure you could call it Big Data yet.

DS – What about the Internet of Things element, where different systems on the ship, like the engines or the fuel lines, are collecting data using connected sensors, is that expanding?

KS – We have been using sensors some years ago, some VLSFO measuring instruments, and it’s a challenge to make this work as a system and extract meaningful data. At the same time, we need to consider stepwise. A vessel that is travelling somewhere on the globe needs to keep operating in any case, it is not like having some home machine in the office, which can quite easily be fixed if something goes wrong.

So Big Data, yes it is coming, while Internet of Things might be a bit slower. All of these hyped keywords are not far away from us, but we need to remove the technology from the hype and see what’s really useful for our operations.

TM – I don’t think this is coming so soon either, I believe that the push for Big Data will be around newbuildings only. That’s where you have a clear possibility of having 10,000 sensors in the ship, it’s impossible to fit an old vessel with even 1,000 sensors.

I see new ideas using cameras, for example automatic recognition from devices, and maybe this is one possibility to have more data than we have today but in an easy way which won’t interfere with the cables and so on. We don’t want to start interfering with systems that work!

Like Katerina said at the beginning, with Big Data it’s something I really think we should be working towards in the near future, in the offing we are having screen with the basic information about each vessel that can allow everyone in the management and whoever needs it to see that straight away, some kind of dashboards.

I have asked many times, what would you do with all the data generated by the main engine if you had it? And people don’t want to know all that data. That’s why you have a chief engineer today, and three engineers on board, to take care of it.

Then there would be legal issues which haven’t been solved yet, if somebody can read data there was data available that you could have used to stop a problem with the main engine. We’re not ready for all of these things yet. We have to solve some of these questions, and we need to stabilise our communications and have it 100 per cent on all the time, so we can feel sure about going ahead with things like Big Data.

KR – But that’s like saying you will only start driving your car once we have all of the traffic lights working and all the roads fixed without a single hole. You can try to improve in parallel as these things are being fixed. You won’t switch off all of the traditional ways of doing things from the beginning either, you will have them both together for a period.

DS – Panos, EY works with various different industries, are there things that you think maritime should learn from the experiences others have had in introducing these technologies?

PP – I would bring it back to part of what we already discussed, in that we need to link it all to the end users.

We’re moving from the traditional basis for this market, with a selling point for all the internal customers, we need to show what can be offered by these
IRIDIUM CERTUS FROM AST
GLOBAL • MARITIME • LAUNCH • PARTNER
EXCLUSIVE TRY BEFORE YOU BUY OFFER

Join the satellite communication revolution with Certus. Enjoy a reliable, truly global mobile broadband service and reduce costs with INTEGRA Control, the only data management solution offering real-time application level control.

For a limited time only, try Certus, INTEGRA Control and tracking free for 6 months and let us prove why Applied Satellite Technology is the smartest choice for Certus.*

✓ 6 months free airtime subscription
✓ 6 months free INTEGRA Control
✓ 6 months free tracking on Thales terminals
✓ 6 months free maritime hardware (Cobham or Thales)
✓ No hassle. No commitment. Cancel any time. Sign up now!

See more / Control more / Save more

iridium connected integracertus.com/promo

* Limited time offer. Terms and conditions apply. Please visit www.integracertus.com/promo for full details.
to provide that data. I don’t think that we didn’t even think to ask questions that we couldn’t be solved through Big Data, we just Data to approximately find the best solution here to assist us in this.

One aspect, mentioned earlier, was preventitive maintenance; we won’t be able to perform proper preventive maintenance without Big Data, we can’t rely on traditional rules-based reports to do this properly, to really predict we need AI algorithms that allow machines to learn and potentially provide new input for us.

In my view, if someone embraces these technologies, and tries to build new models of how they can operate and what questions can be answered by Big Data that can’t be answered now, it is not difficult to experiment and improve. If you look at what people are doing worldwide, there are numerous examples in these areas, other industries are ahead of shipping.

DS – Do you think the uptake of Big Data and Internet of Things in shipping will be influenced by the introduction of other technologies that will rely on that data being generated and collected to be of value? Maybe as part of a greater ecosystem that will require this flow of data to create benefits?

PP – I would put it the opposite way around, the idea of Big Data is to collect as much data as you want and transform that into information. So, if all of those systems on the ship, they generate data, but how we exploit that is a completely different area. Since these systems generate data anyway, why don’t we experiment with it and try to answer questions that maybe we can’t even think of yet? The technology is here to assist us in this.

As an example, the 3PL (third-party logistics) companies perform use cases looking to find the best route for their freight. So, we have an NP-complete problem, and, from the IT point of view, there is no traditional way of solving it, but we use Big Data to approximately find the best solution that exists.

So, there are particular use cases that can be solved through Big Data, we just need to exploit the data that we have. This is the idea of Big Data, to help to answer questions that we didn’t even think to ask before. And the Internet of Things is here to provide that data. I don’t think that modern ships will be delivered without those options, they’ll be a necessity.

FT – For me, it’s a matter of definition. Big Data is something much bigger than what we’ve been really talking about in shipping, it’s not about having some statistics or things like that. For the companies so far there hasn’t really been Big Data, but more so for the industry, with applications that can provide advice to us on things like routes or weather, Big Data is already there. We’ve been the users of the results of Big Data, but not using the Big Data systems ourselves.

Later on when we have new ships with all of the systems and sensors in place then maybe we will, but I think the situation as it is now we can’t call Big Data. First we have to apply existing technologies and make improvements that way. If you apply something like machine learning and good statistics, you can get results for optimisation.

Performance analytics, I think nearly everybody has also started using these technologies, and like Kostas said before, we also have a group focused on this area alone, evaluating multiple systems and technologies for that.

For the Internet of Things, yes we have many sensors, and it’s not a new thing for shipping to get data from the machines, it’s just a different way to do it. More automation is welcome of course, but we have to deal with the construction of the vessel and follow on from that.

I don’t know what percentage of vessels right now are really equipped to provide those levels of information. Of course there are innovative projects going on, but they are very limited in relation to the total fleet across all the companies.

DS – Do you think that, across the industry, we could be doing better in using data to really understand what is happening in shipping operations, and work better as an industry?

FT – Yes, in several areas, but even then we need to prioritise where there is a real need, and where you can invest and get a return from it. Of course, having something as a trial or a proof of concept is good to see how these things work and maybe what you can expect in the future, but before that you need to evaluate if there’s a real need and a return you can get from that.

DS – Panagiotis, at Marlink you are moving data for customers across the world between ship and shore, are you seeing a change in the way that people are using data, the volumes they are sending for operational use?

PF – When we’re talking about Big Data in shipping, if we compare it with the data on board, we’re required on land it is transmitted different, shipping is operating in a very different way compared to other industries when it comes to data. In shipping we can say that today we are still using Small Data, in other words, this is in preparation for the next couple of years, in relation to corporate data at least.

The software vendors have adapted their systems to work with limited bandwidth and limited data, so the transfer only needs to cover critical or important data. In my view, the corporate data will not be Big Data as long as the vendors continue to optimise their software and try to find solutions to operate in a low band-width environment.

Even today with applications like online travel booking, where conferencing on board you want to be online and connected with family on shore, and as the shipping companies provide that access the corporate data will follow that.

Today with a majority still running on L-band systems, the corporate data is base 250MB and 1.5GB maximum. That’s not Big Data. But on the other side, shipping companies using VSAT and providing free internet access to the crew, which a few of them do, that dramatically increases, and in some cases exceeds 300GB and up to half a terabyte per month.

We’re in the early stages of this, and most companies do not provide full free internet access to crews, but that will continue and will drive corporate data higher as these capabilities are available on board.

PP – To complement that, Big Data is not only about volume of data, it’s about velocity and variety as well. If you have very structured data, then potentially you don’t have Big Data. It doesn’t have to be terabytes, if we have many different sources and systems with real-time information.

A great example that applies to shipping is the preventive maintenance, this is already happening in other industries, like oil and gas, and power plants, places like that, and it’s something that would be beneficial for captains and chief engineers to benefit from.

DS – All of the data doesn’t have to transfer over the satellite link either, processing and analytics can be done on board the vessel as well.

PF – That’s where we start talking about ‘smart data’, not everything needs to be transferred. Sometimes you can just focus on abnormalities and deviations because that’s the type of data that requires an action. When everything is working as normal, there is no point to continually transmit that information that it is working normal, because that doesn’t require any action.

PF – You need to have some kind of Big Data and anomaly detection onboard ship, to be able to only transfer that information. In the past, it has been more traditional that people would just ask for everything and they would decide what is important or not, what is an anomaly and what is not.

PF – What we see, in how people have set up these kinds of systems, is that the companies have created some definitions of what they would class as an ‘anomaly’ and what can be classified as ‘normal’. One example could be something like deviation from an expected route, where an alert would go out immediately if that happened and the quartermaster can call the captain to find out if something is wrong. This is a type of abnormality that could lead to an accident in certain circumstances without immediate action.

Blockchain

DS – Outside of Big Data and Internet of Things, also coming under the ‘over-hyped’ banner and briefly mentioned earlier is blockchain technology. Even in maritime there have been a whole bunch of blockchain-related projects, is this something that’s going to play a role in your company, or expect to be dealing with in the next few years?

KS – Blockchain is an interesting approach. Looking at Bitcoins and cryptocurrencies, the technology could prove useful, and shipping is one of the sectors where it could provide value, seeing what companies like Maersk are doing with containers and other examples. But I think for the time being nobody really knows what blockchain is, or how it is going to be used in the industry.

What would a shipping company need to do in order to decide that blockchain is interesting and they want to use it? How would they use the new technology and what would they need to do to get there? In shipping in general we do not tend to do revolutionary things, we prefer to follow after things have been ‘pioneered’ and become more mainstream.

For the time being, we are monitoring any developments related to blockchain and shipping, while most of the IT members understand what the fuss is about. I might be speaking for others out there, but we’re waiting to see whether it will really help us in generating cost savings or in making operations leaner and more efficient.

DS – So despite all the hype you haven’t seen one particular use case that has made you think ‘yes, that’s for us’?

KS – No, not yet.

KR – I agree with Kostas, we are currently in the process of monitoring and assessing the possibilities. I believe that in this area we are at the same stage we were five years ago with Big Data and Internet of Things, so I would give it another five years to develop to give us specific examples of areas where this can be of value to shipping. Maybe for containers there will be some valuable application first.

PF – Because the vessel can be anywhere in the world I think blockchain technology will not be easily adopted in the shipping industry. There will need to be more discussions inside shipping companies to understand where the value comes from using these technologies. It might require networks to be interacting, between vessels and suppliers, on a peer-to-peer basis, so I’m not sure that we’re ready at the moment for that.
FT – I think that blockchain can be used to fulfill some of the specific needs of the shipping industry, but with the mentality in shipping, in the sense that we are used to working with different partners all over the world.

I remember a few years ago, having to send something to a vessel on the other side of the world and I was concerned about how it would get there safely. The ‘trust’ element is fundamental to our business, and with blockchain as a system is built on providing trust. It’s a similar concept, more or less, so it’s close to what we are used to, it’s not something that we can say cannot happen based on the logic behind it.

We don’t know what type of applications will come yet, but maybe they will be introduced to support logistics, security, and the exchange of information between parties. Since these parties are distributed already maybe the blockchain can provide the trust we need to maintain the flow of information we require – even if the VSAT services will come yet, but maybe they will be pen based on the logic behind it.

A good one is to see if we are spending too much on things, if we can share this data, if we can be confident of it, and also about the services we are providing to crew. If you just rely on what you hear, when somebody comes to the office they say that all of these vendors are providing free internet and crew won’t be happy because they don’t get it.

DS – Do you think that Greek shipping companies will happily share information about how they are spending their money? I’m sure it happens unofficially to an extent among peoples’ networks anyway, but for it to be part of an actual data sharing process is a big step.

FT – If it’s a matter of definition, I gave the example of the free internet, which for some companies can be a few hours from a few specific workstations, and we provide cards and a free amount of data over a period and so on, it doesn’t have to be financial data.

Without having this kind of discussion and exchange of information you don’t know who to rely on, you’ll get small parts of the information which create different impressions. Then that will lead to bad decisions. So it is in all other cases exchange the information that we can. Not all information can be made available, of course, but some can.

TM – Officially we do not share any data, but from my point of view though I realise that we do share a lot of information through AMMITEC (Association of Maritime Managers in Information Technology and Communications). This is very useful, and it adds to my quality of work and benefits the company. So I think we should try to have more official channels for sharing data.

Of course the Shipping KPIs (project run by BIMCO) is something, we haven’t really taken advantage of that so far, but we should. Financial data won’t be shared, it’s something I have expressed myself or the company in terms of how much it is spending on operations or crew, and so on. This is not part of my world. On the other side the financial information is important and we do share experiences through AMMITEC. If that was spread wider there would be benefits for everyone.

For example, KPIs about what is happening at ports would be of benefit, real time information about the quality of ports, communications available in ports. This information would be very useful to me to take action, and improve my decisions.

KS – From an IT point of view I’m very open to sharing data. This would mean sharing information on processes and technologies, which I would consider a win-win situation. One example would entail calling Katerina and asking her what they are using as an e-mail system on their vessels, or what they think of third party companies.

That relates to solutions or processes, on how issues are being handled, how a shipping IT department divides responsibilities and vessels are being supported. This kind of information, in case for example Katerina or myself find an approach interesting, I don’t think that it will really affect how a company is performing or what rates we are getting on the market. It will affect our work though, making her or my work easier.

DS – Naturally it is not our position to share financial data for example and I can understand how this can be confidential but it’s also somewhat irrelevant to our work. Maybe we could go as far as discussing how a satcom provider is cheaper than the rest, or that there we found some useful sharesware/free software available.

In the end, if I can make Katerina’s job easier today, maybe in a week’s time she can make my job easier with an approach that she can share. Being open like this would help the whole sector in getting more mature and moving forward.

Data standards

DS – How about the area of data standards, something else that the maritime industry has traditionally struggled with. Should we be doing more to standardise and facilitate better integration among systems? Are we still far from that ideal?

FT – We’re very far away! I was so surprised in my early days in shipping, there are so many small applications, small partners that are hard to reach. It’s really challenging for an IT manager. Everyone has a different approach, some of them are developed for business and adapted for vessels, things like that. But at least it is getting better, the industry is improving.

DS – In what way is it getting better? Are vendor companies collaborating better amongst themselves to make it easier for you to integrate systems?

FT – We are pushing them that way, and that’s something everybody should do, and we’re starting to look for applications that are more integrated. But in any case, it’s about the balance between the investment and the benefits to give us a reason to change something.

There may be some applications that are not that convenient to use, but they are used for various tasks and it’s not worth the time you would invest to change them. However there are things that we can change and integrate, and improve. Most of the companies face the same challenges with their applications, I would call it lack of standardisation.

KS – From an IT point of view I’m very open to sharing data. This would mean sharing information on processes and technologies, which I would consider a win-win situation. One example would entail calling Katerina and asking her what they are using as an e-mail system on their vessels, or what they think of third party companies.

That relates to solutions or processes, on how issues are being handled, how a shipping IT department divides responsibilities and vessels are being supported. This kind of information, in case for example Katerina or myself find an approach interesting, I don’t think that it will really affect how a company is performing or what rates we are getting on the market. It will affect our work though, making her or my work easier.

DS – Do you think, as a consequence of becoming more digitalised as an industry, we will need to be able to share data between systems more easily, and that IT providers will need to make that an integral part of their offering?

FT – This is one consequence of moving in this direction, but also things like security increase in importance, we can no longer accept systems which are not secured or don’t follow proper protocols. The vendors are probably used to installing systems and nobody asked whether this is safe, and how do you secure that?

As buyers we need to examine this, look...
made it secure. That is not the case now; systems are more open and are relying on IT protocols, so there is a lot to be done there. Standardisation would definitely help with that.

**DS** – Tosos, you’ve done a lot of work on software quality and defining requirements for shipping applications, is standardisation one of those elements that you feel would make a big difference?

The majority of businesses have done a lot of work and AMMITEC has done a lot of work on this, and we expect to be able to announce some results from our research at the ShipIT conference this Autumn about comparing the satisfaction level of IT managers with various ERPs. I believe that it should be a standard ongoing procedure, checking and having a way to give feedback about what we are not happy about with the software that we get, whether that is at the man-machine interface level on an ERP, for example, or if the software is closed box where we never know what is happening inside.

On the cyber security side, I agree that there should be standards, and it’s something that’s more open today. But still, as an IT manager I do not have the means to compare firewalls, for example, and that should not be part of my job. This subject of cyber security should be market driven and not knowledge driven.

We don’t know enough, because of the secrecy that is involved in the subject anyway. We don’t know enough about the means we are protecting ourselves. This is something I want to work with other people on, maybe in AMMITEC as well, to find out ways to improve the level of knowledge and be able to soon compare the standards and compare the quality of cyber security systems.

**DS** – Kostas, do you have difficulties in your own work integrating different systems or different data formats?

**KS** – Huge difficulty! I think that this is happening at most companies! When I came here ten years ago, I remember that most systems were customised and in particular they were customised exactly to the needs of the business side of the company. Today, we’re even closer to the idea of each company choosing i.e. every single operator or broker about their needs, and if they didn’t like some specific aspect of the software it would be re-customised and changed to suit their needs.

Thus we ended up with dispersive and customised systems whereby some started becoming unsustainable. If then the initial person who implemented the system left for another company you could end up with a custom system about which there is also a lack of knowledge.

During the last years this has changed significantly, not only at Thenamaris but also the industry is moving towards seeing IT as a business-enabler. This means that IT needs to introduce solutions that really help in supporting the business, resulting in a ‘best of breed’ approach, meaning finding the most suitable existing system on the market and making it work for the company instead of starting from the user.

We take a look at what is in the market, trying to find a solution that comes close to our requirements, and which will probably need limited customisation. Then it is a ‘trading off’ of finding the optimum between user satisfaction and suitability of a best-of-breed platform without the need of extensive customisations. In that case it is expected that this platform will be supported in the future, with a stable third party company behind it.

I think it is becoming more visible now that shipping is trying to become more standardised, implementing solutions that are also being used in other sectors.

**DS** – Is that coming both from the vendor side and the shipping company side, or is it one side more than the other really pushing this?

**KS** – I think it’s the shipping companies that have acknowledged the need for this to happen so they are pushing it, but the vendors also want to react accordingly. So I think it’s both sides.

**KR** – I would agree that standardisation is necessary and wanted. To be the main obstacle in covering the cyber security element, because most systems don’t communicate with each other, and more importantly you don’t know why the system you have been given by a third party and has to be installed on board. You don’t know what the setting are, you don’t know what the security standards are, you’re just forced to put it on board.

If you think of military vessels, for example, they don’t discuss standardisation because it’s already taken for granted. Can you imagine in a military ship case a situation of something on board that is unknown? The technology is there and known, they know how to deal with it.

To me it’s more a commercial issue, a million companies that all want to sell their little thing, that they sell to you with some kind of added value that might have convinced the management. Unfortunately, in merchant shipping we don’t have a huge installation base to gather lots of information on software problems and bugs. If you get a new version of SAP it’s used all over the world, and shipping the knowledge base is very limited.

Another major issue is the need that shipping people have for customisation, it’s a mentality issue in the industry. We need to change that mentality.

**DS** – Do you think it is improving? Has this gotten better over the last five years?

**KR** – Yes, it is improving finally, and we see more companies going to more standard systems or getting off-the-shelf systems with just a little customisation, not changing every screen because the ex-captain who is 70 years old wants it to look a certain way.

**PP** – We performed a project with a shipping company, moving from a fully customised application to something more standard. It actually minimised the cyber risk for the company; you have something that is developed and supported by a major vendor, and you can assess the cyber security properly.

The other aspect was the customisation of that; at the end of the day, it was about the IT department selling that system to the end users, instead of the user requesting it to the IT department saying that they want this and that. They all started utilising one system in one process, and the whole company had changed their operations based on this one project.

**KS** – You need to get the key users convinced first! ‘Key users’ is one of our favourite words over the last few years, as some vendors always have difficulty in convincing the management to sell a new solution. The IT department on its own cannot sell a new system, while by training key departmental users and making them aware of the benefits, they can be rendered champions of any IT-related change.

**DS** – So we’re back to the idea of the IT manager as psychologist again, dealing with people and their approach to technology.

**FT** – Using a well-known vendor does not guarantee by itself that everything will work properly, of course, I have an example where I was asked to install a system, so I asked if they had a cyber security plan and so on. I was told ‘but they are compa- ny X’ – I used as what is to them to provide this information, if they will not provide it then I can’t accept it.

People are seeing the benefits of always being online, transferring data and so on, but also providing internet access to the crew. We are hearing from shipping company HR departments that this is one of the questions they hear when hiring crew, if they have internet on board, when they are choosing were to work. In some cases they will accept less salary if there is internet on board.

So we see the market moving to VSAT and this will continue for the next couple of years, in the Greek shipping market and in the entire market. It’s the only way to move forward operationally, to satisfy the crew, and also to keep up with new regulations that will arise. The majority of new buildings coming out now are coming with VSAT already installed on board.

**DS** – How would you compare the Greek market with the rest of the world in terms of VSAT adoption?

**PF** – In Greece we have three different customer levels. The pioneers, they are the Greek shipping customers using VSAT since ten years ago, they wanted to test the technology to have a modern fleet and provide crew welfare. Then we have the early adopters who tested it after getting feedback on what the others were doing, and we have the late adopters.

In Greece, once it has been proven that it brings value then it starts to move fast. I think that those discussions about value are happening now in Greece, so I would think that next year and the year after will be a lot of VSAT rolled out.

**KR** – Since we have a large fleet we are gradually upgrading to VSAT, with Fleet Xpress from Inmarsat. It’s a flat fee service and also includes the L-band so we can use the Xpress (Broadband) and terminals that we already had on board, so we don’t have to change everything.

To me the main problem at this point is that the resellers maybe don’t have enough personnel to come with you go on board and install it in one day and leave, the ship has to be in drydock, for sure.
The essential tool for anyone involved in shipping

Visit: vp.imo.org/trial to access your free 2-day subscription trial
We have tried to do some installations at sea, and either you have to pay the whole group of installers for a six or seven day trip to the next port, which is not very economical, or they do a very basic installation, and they leave and you’re left with something that you don’t know how to good advantage of, if it’s just giving you internet that you can provide to the crew.

The real benefit of VSAT comes from all of the things we are talking about today, the Internet of Things, access to data, and so on. The easiest thing is to use it to have satisfied crew, but of course, that’s a big thing itself, even if you just have that it ensures that you can attract good crew to be able to deal with all these new technology developments.

**DS** - Do you think that satcom vendors are too quick to ignore the implementa-
tion element of a VSAT project? You may be presented with a long list of potential benefits, but those only apply after instal-
lation, integrating with your business processes, training staff, and all of these other things.

**KR** - You do need some time just on board the ship, not just to install the anten-
a but to train the people on how to take advantage of it by connecting to the PBX and everything else. There are endless pos-
sibilities, so you need to take the time to do that. With FleetBroadband we used to do it ourselves, our own installers would just go and do it, you could just carry it on board.

**PF** - The time frame for implementation is certainly longer than it used to be for a FleetBroadband in the past. As you are enabling internet access the IT manager needs to think of a number of rules and have them prepared beforehand, thinking of how to connect the applications and how to give access to the crew. They need to establish policies for business communica-
tions and crew communications. It takes time, it’s not as simple as it was with FleetBroadband.

**KS** - We also needed to change our internal processes and policies. It is ok in the case of a newbuilding or a drydock, where the vessel is going to be there for a certain number of days which should be enough to install a VSAT, but there is also the case of a second-hand vessel which has to be equipped with VSAT upon delivery. Quite often these vessels are already fixed on the next day after delivery, but they can’t leave the port of delivery without sat-
com equipment.

**FT** - We almost have all of our vessels on VSAT, and the few that don’t have it are being installed right now. VSAT is the only option for us now, we don’t discuss any-
thing else. We feel that we need to have the data availability that we can only get from VSAT, the big thing is the crew. Have any of us met somebody who moved from a vessel with a VSAT to one without it?

Current operational needs could proba-

cably be covered with FleetBroadband or something like that, but crew is very important. When they feel happy they can perform better, and there’s a better envi-
ronment inside the vessel, the collabora-
tion is different.

Then it’s also more practical for us to be able to have remote access more easily to fix something if it needs to be fixed, particu-
larly if it’s something that needs to be done at a specific time before an audit or something like that. There are many bene-
fits, I couldn’t list all of them.

**DS** - If you removed the crew element, is there much difference for you in running on VSAT or L-band if we haven’t really got into using Big Data and things like that.

**FT** - To be honest, we’ve got used to it so we’re high consumers of data. We have everything working in a way that exchanges a lot of data so we couldn’t work the same way without the VSAT, because everybody is used to working that way. Maybe you could work in a different way, but really there is no way back now. We don’t look at those options anymore. What is important is that, since VSAT is not as mature as we might like, the back-
up communications are very important. I think some new technologies like Iridium Certus to come and give us more options that can provide an experience that may not be VSAT but perhaps something close to it in areas with poor VSAT cover-
ge. Currently, if you look at those options any-
more, what is important is that, since VSAT is not as mature as we might like, the back-
up communications are very important.

**DS** - At least I’m not hearing many com-
plications with pricing. Has the pricing gap between FleetBroadband and VSAT diminished to the extent that it’s not a major factor in the decision anymore when you make a satcom choice?

**KR** - To me it’s insignificant now, I don’t think it’s a big issue anymore. I would say with both FX and the other VSAT systems the price is very close to what we want to be, and we pay for the 4GB pack-
age for FleetBroadband per month. Below 4GB it’s impossible to start discussing any of those areas we have covered today, you can just exchange e-mails with the vessel. That’s what we were doing ten years ago.

To have modern communications you either need to have a really big L-band package or you need to go to VSAT. The prices are pretty much the same in those cases, you can get prices from most resellers that get close to what you would pay for the L-band. So price is not a major issue.

**KS** - I agree, the difference between FB and VSAT pricing is not so substantial anymore, in the end it works out close to the same and you expect to have a better solution.

**DS** - That 4GB you mentioned Katerina as a base level monthly data requirement, I would expect that is still more than the majority of vessels are using. Maybe Panagiotis, you could share some details on this based on Marlink’s customers?

**FT** - For the majority of vessels running with FleetBroadband I would say the most common is the 4GB package, there are a few running 8GB or 10GB on FleetBroadband.

**DS** - That’s a significant increase on just a few years ago when the majority on FleetBroadband would have been on less than 1GB per month.

**PF** - The majority have moved on from the standard packages, so now 4GB is most common for us, but it’s still not covering everything the users want to do, so that is also driving the VSAT discussion.

The pricing by some of the satellite operators has changed this way, setting the price point on different packages so that the customers will start to see that VSAT is not that much more expensive than being on FleetBroadband.

The installation is a different issue, but the first installation is the most difficult, once you get all the plans and policies and everything prepared, and you correct any-
thing that you didn’t get right the first time, you can do the same thing for each installa-
tion afterwards and it gets easier. That’s what we’ve seen with most shipping com-
panies, they have a better understanding and more experience of what they’re doing and what they want to achieve.

**Looking ahead**

**DS** - As we come to the end of our discus-
sion, as a closing topic let me ask one final forward-looking question – in five years’ time, what do you think will be the biggest difference in the way that tech-
ology is used in the shipping industry, compared with today? Do you think the indus-
try will have been transformed, or will we have just evolved a little in our application of IT?

**PF** - I think that, if you take the analogy of other industries as well, then my view is that there will be some disruption, but peo-
ple will be doing things more efficiently, more effectively using technology. That’s something we will see in five years’ time. I’m not sure there will be some kind of Big Bang changing the industry, however there are numerous technologies out there that could have an impact, and the way the shipping industry is moving is away from all of the proprietary stuff that they used to have, into a staff-focused, more mature digital solutions.

I think, in five years’ time, we will see
BIMCO has appointed Jakob Larsen as its new head of maritime security, replacing Phil Tinsley who has left the organisation. Mr Larsen previously served in the Royal Danish Navy, and spent three years at BIMCO as a maritime adviser before joining Nordic Tankers. Most recently he worked at Maersk Line, where he has held a range of positions within global security.

JRC and Alphatran Marine have signed a reseller agreement with Speedcast, covering JRC’s portfolio of hardware for Inmarsat’s Global Xpress and FleetBroadband services, which can be combined as a single FleetXpress offering. This includes the JRC JUE-60GX VSAT antenna and either the JUE-251 or JUE-501 FleetBroadband terminal.

KVH has announced that Mark Guthrie has been named as its new vice president for the Asia-Pacific region. Mr Guthrie joined KVH in 2013, and most recently served as vice president for global channel management. Prior to joining KVH he worked in the telecommunications industry at companies like SES, BT, Europe Star, and Verestar.

Intellian’s FleetBroadband terminals, FB250R and FB500R, have received TELEC certification in Japan, to certify that the equipment conforms to technical standards specified by the Radio Act of Japan. As a result, all Intellian Fleet Xpress and FleetBroadband terminals, including Intellian CX100 and GX60, are now certified by TELEC.

Globecom has appointed J&E Papadopoulos as its new representative for the Greece and Cyprus markets, to provide sales and marketing locally as well as support, installation, commissioning and technical services.

KDDI has appointed J&E Papadopoulos as its new representative for the Greece and Cyprus markets, to provide sales and marketing locally as well as support, installation, commissioning and technical services.

Inmarsat and Japanese telecommunications company KDDI have signed a partner agreement to distribute Fleet Xpress to the Japanese maritime market, covering deep sea vessels, commercial fishing, oil and gas, and cruise lines.

From July 2018, KDDI has began offering an end-to-end Fleet Xpress package, including a range of airtime service options and choice of approved antennas.

The agreement comes after Inmarsat’s Global Xpress Ka-band satellite service was granted a licence in Japan by the Japanese Ministry of Information and Communications earlier this year. “Inmarsat’s Fleet Xpress service delivers seamless and reliable global connectivity at high-speeds, with automatic and unlimited fail-over to FleetBroadband when needed,” said Akihiko Yamaguchi, general manager of visual communication service & MSAT business solution sales department at KDDI. “With our Japanese customers looking to digitalise and use greater autonomy, this is what our customers need to operate their business efficiently, while also contributing to the health and welfare of their crews.”
MarineTraffic and NAPA in MOU

MarineTraffic and NAPA have agreed a deal to collaborate in the development of new voyage planning, optimisation, and analysis services for the shipping industry. The two companies have signed a Memorandum of Understanding (MoU) setting out their plans for post-voyage analysis reporting, voyage planning, weather routing and other new services.

“The collaboration makes NAPA’s vessel specific performance modelling and weather routing algorithms available to vast numbers of new users,” said Pekka Pakkanen, director of development at NAPA Shipping Solutions.

“These include many new stakeholders, such as short-term charterers, port agencies and other shoreside organisations, who traditionally do not have access to such data and the benefits it can bring when combined with advanced analytics. Transparency and collaboration are a must for truly improving the operational efficiency of shipping, and we believe this partnership is a major milestone in achieving that.”

The companies say they will immediately begin developing products and services, which include a post-voyage analysis reporting system to allow ship operators to examine alternative fuel saving routes; voyage planning which includes port congestion forecasts; and a new weather routing system.

NAPA will provide its ship performance, analytics and naval architecture expertise, including fuel consumption estimates and weather routing algorithms, whilst MarineTraffic will provide ship tracking data, event algorithms, and technical support.

In other news, NAPA has also confirmed that it has received new funding from INTENS, a VTT-coordinated Finnish research-industry collaborative consortium, to support its work improving vessel technical and operational performance and lowering ships’ emissions.

The work earmarked for funding has already begun, with initial trial customers having already agreed. NAPA says it expects to be able to publicly discuss the first delivered benefits from the project by the end of 2018.

Shipping’s share of global carbon emissions currently stands at 2-3 per cent, a similar level to countries like Japan and Germany. Under a business-as-usual scenario, the IMO estimates that carbon emissions from shipping could increase by 50-250 per cent in the coming decades.

The INTENS research consortium has committed more than €13 million over the next three years to support the work of Finnish maritime stakeholders, with a specific emphasis on energy efficiency improvement and emissions reduction from ships.

“The collaboration and funding from INTENS will further enhance our market-leading voyage planning services, such as NAPA Fleet Intelligence, that provide a rounded appraisal of a vessel’s performance characteristics and achieve better results,” said Captain Risto Kariranta, director, services, NAPA Shipping Solutions.

“Through these services, we can help mitigate voyage inefficiencies such as ‘rush to wait’ or those caused by rough sea and weather conditions, and take practical and profitable steps to save both fuel and carbon emissions.”

SPOS updates to version 9

Weather routing software provider MeteoGroup has introduced a new version of its SPOS (Ship Performance Optimization System) application, with SPO69 designed to support reductions in fuel consumption and emissions by calculating and recalculating optimum routes and anticipating oncoming weather and sea conditions.

The software features a variable speed algorithm that assists captains in bypassing severe weather, and a voyage trim optimisation capability to further reduce fuel consumption. SPO69 also offers an expert routing network, with pre-built ship models to provide more accurate routing and configurable back-to-shore reporting.

Shipping routes are optimised by taking into consideration various sea conditions, such as wind, waves and swell, currents and other weather elements. Weather forecasts are received up to four times a day via e-mail or http download, including more than 20 elements for voyage optimisation from the MeteoGroup Nautical MeteoBase.

Vessel and voyage data can be specified and updated during transit by the user, with the MeteoGroup Ship Profile Library, developed with MARIN, containing algorithms for the resistance impact of wind and waves on specific vessel types.

Route options can be created based on time, cost or fuel constraints, either with or without a given ETA, with the MeteoGroup Route network able to assist in planning port-to-port routes, taking into account navigational constraints and port approaches.

Data from the ship can be shared with stakeholders via the FleetGuard web platform, to offer shore offices a shared view across fleets. Additional modules include Seakeeping (protecting motion-sensitive ships and cargoes), Trim Advisor (optimising trim using ship characteristics, voyage loading conditions and waves) and SPO2GRIB to export forecasts to other onboard display systems.

The software offers calculations based on different speed profiles.
**Keep Steady at Sea**

with the safe, reliable and user-friendly next generation radar

Model: FAR-23x8 / FAR-22x8 series

- Designed to comply with IMO performance standard
- Automatic Clutter Elimination (ACE) for unprecedented echo clarity
- Fast Target Tracking™ function to prevent collision at an early stage
- InstantAccess bar™ gives immediate access to the functions you need
- Re-fined antenna with high signal accuracy and excellent reliability
- Solid State Radar model - NXT - specialized in target detection and maintainability (S-band only)
- Easy installation for new building as well as retrofits, with expanded capabilities

More details on [www.furuno.com](http://www.furuno.com)
Dredger deal for Marine Software

www.marinesoftware.co.uk

UK-based Marine Software Ltd has agreed a deal to supply its MPM - Marine Planned Maintenance Software to Cemex UK Marine, for use in the operation of the newbuild vessel ‘CEMEX Go Innovation’.

Delivery of this Damen Marine Aggregate Dredger (MAD) 3500 vessel is scheduled for late 2019 from Damen Shipyards Galati, Romania. The ship has been designed to extract sand and gravel from the sea bed up to depths of 55 metres, and has a cargo capacity of 6,600 tonnes.

“CEMEX, now a seasoned user of Marine Software’s products, has found in nearly ten years of collaboration that the personal service provided to the CEMEX fleet has been invaluable,” said Cemex UK Marine, in a statement.

“The ability of this company to adapt, update and modify their applications to suit our individual requirements has been second to none, a quality often lacking in much larger software providers.”

“Based on this long-standing partnership and the quality and personal service, CEMEX had no hesitation in wanting to incorporate the Marine Planned Maintenance Monitoring system, a solution that allows the monitoring of the ship’s consumption and performance.”

Vijay Arora, joint managing director of Marine Software’s UK operations, has added: “As a classification society focused on digitalisation efforts in various other areas of maritime operations, IRClass is delighted to be working with Marine Software Ltd to deliver this latest innovative solution.”

IRClass adds e-Certificates

www.irclass.org

The Indian Register of Shipping (IRClass) has confirmed that it has started issuing electronic certificates for all its classed vessels, in accordance with the International Maritime Organization’s (IMO) guidelines for the use of e-Certificates (FAL.5-Circ.39 Rev2).

The e-Certificates can be accessed through a secure platform via the IRClass website, providing stakeholders with real-time access to the latest class and statutory certificates from anywhere in the world.

The e-Certificates incorporate a digital signature and a unique tracking number for online verification, allowing the user to determine the validity of the certificates using a new IRClass Verification Portal.

“IRClass has always strived to meet the needs of our customers and stakeholders, and we are proud to be at the forefront of digitalisation efforts within the maritime industry,” said Sudeep Kumar, MD of IRClass. “The implementation of IRClass e-Certificates is expected to reduce administrative burden and document handling costs for shipowners, coupled with increasing operational efficiency,” said Vijay Arora, joint managing director of IRClass.

“We have started issuing e-Certificates, provided the flag state has approved its use, to all newbuilding vessels on delivery as well as existing vessels on completion of their upcoming renewal survey.”

“As a classification society focused on driving the maritime industry forward, we are looking towards stepping up on our digitalisation efforts in various other areas in the near future, as technological advancements continue to transform the industry at a rapid pace.”

Fuel efficient speed analysis added by Royston

www.royston.co.uk

Diesel power company Royston has developed a new ecospeed analysis capability for its engine electronic fuel management system (EFMS), used to identify and maintain optimum vessel speeds for efficient fuel usage.

Devised in cooperation with marine engineering specialists from Newcastle University in the UK, the ecospeed algorithm is based on speed modelling and analysis of vessel operating data, correlating and synchronising information from different sensors installed on the ship.

A unique optimum performance profile is calculated for each individual vessel by analysing a range of data including fuel use, speed and distance, as well as sea state, wind speed and current.

This information is gathered during a dedicated sea trial or from a vessel’s existing engine system installation, and is used to identify optimum vessel speeds in different conditions to ensure maximum fuel efficiency. As well as fuel consumption, the software module also provides details of carbon emissions and voyage duration.

The engine EFMS system records fuel consumption data by individual engines, presented via touchscreen monitors installed on the bridge and in engine control rooms. The data is also sent to shore, where it can be accessed through a web dashboard.

“Our onboard tests and pilot ecospeed installations have shown that systematically identified economic speeds are invariably different to crew perceptions based on their experience and can have a significant impact on fuel use and costs,” said Damian McCann, product manager for engine fuel management systems at Royston.

“In addition, linking fuel use with CO2 emissions using the carbon emissions factor for the appropriate fuel type also provides the means to ensure that potential environmental impacts are minimised.”

“As a result, the new ecospeed EFMS feature provides an essential means of helping vessel operators to accurately identify optimum voyage speeds in the interests of both maintaining fuel efficiencies and complying with emissions regulations.”

CBT launched for ballast water management

www.alfa-laval.com

Alfa Laval is introducing a Computer-Based Training (CBT) system to boost crew knowledge of its ballast water management technology and help companies to ensure compliance with IMO and US Coast Guard (USCG) requirements.

The CBT for the Alfa Laval PureBallast 3 system is an online/offline training tool that serves as a complement to crew training on board or at training centres. Combining self-study, a 3D computer simulator and a final self-assessment, the training can be incorporated into existing e-learning portfolios and certification programmes.

The training package begins with self-study on the problem of invasive species and ballast water management, as well as PureBallast 3 components and operation.

This knowledge can then be supplemented using the 3D simulator, which promotes familiarity with the system and its integration with the vessel’s piping and tanks. Trainees can use the technology to explore and operate a computer-simulated PureBallast 3 system, learning how to start and stop systems, perform manifold and line configuration, and verify the chemical treatment system operation.

The training concludes with self-assessment testing, consisting of randomised questions that cover both ballast water management in general and PureBallast 3 specifically, with the results documented in a printed training report.

Computer based training has been added for Alfa Laval’s ballast water management system
Digitalization is opening up the world, stay ahead in the game

- Complete control of your ship's operational assets
- Data analytics and reporting for fleet performance management
- Save time with electronic logbooks in recording on-board operations

infoSHIP.it
Rolls-Royce and AXA systems to apply data to maritime risk

Rolls-Royce and AXA Corporate Solutions have signed a Letter of Intent (LoI) to explore ways in which they can combine Rolls-Royce’s Ship Intelligence systems with AXA’s risk analytics capabilities to develop new products for the maritime sector.

Rolls-Royce’s Ship Intelligence systems, including its recently launched Intelligent Awareness product, use an array of sensors on board to capture vessel data, which AXA Corporate Solutions aims to leverage to deliver new services to marine vessels.

"Many of our products are designed to improve performance and safety on board," said Karno Terovuo, Rolls-Royce SVP ship intelligence.

"By working with AXA and their knowledge of risk we hope to further improve our customers’ operations. Insurers are a key part of our vision of the future and we are excited to have AXA, an equally innovative company, join us on the journey."

The data generated may be used by AXA to manage risks currently covered by its Hull and Machinery insurance, as well as new types of products and services to support customers in difficult shipping markets.

"This cooperation reflects AXA’s continued strong focus on our Marine Specialty line of business and supports our Payer-to-Partner strategy, in line with Ambition 2020," said Mathieu Daubin, marine chief underwriting officer, AXA Corporate Solutions.

"Combining AXA’s marine underwriting expertise and Rolls-Royce Ship Intelligence will enable both companies to deliver higher customer value through continuous innovation."

In the longer term, Rolls-Royce and AXA “say they will look at the changing risk profiles of maritime operations driven by increasing levels of remote control and automation, as well as new maritime business models enabled by unmanned ships.

AXA is currently working on insuring autonomous cars and this knowledge will play a key part in establishing standards for insuring autonomous ships, the company said.

Wilhelmsen buys stake in digital start-up

Wilhelmsen has announced that it has purchased 50 per cent of Dolittle, a Norwegian start-up specialising in the creation of IT architecture and frameworks for digital product building, as it expands its range of in-house digital projects.

Following the share purchase Wilhelmsen will jointly own the company with the start-up founders, in a 50/50 split. The move forms part of a strategy to reduce Wilhelmsen’s reliance on external consultants in its IT development by growing its own internal digital competence base.

“By owning digital competency we enable all departments and companies within Wilhelmsen to develop and create valuable digital solutions,” said Thomas Wilhelmsen, group CEO at Wilhelmsen.

“With help from Dolittle we can move quicker and cover the internal and external needs our customers have.”

Technology such as virtual reality (VR) and digital twins lets us simulate and test solutions in a safe environment before we use it out at sea in real life. With VR and digital twin technology from Dolittle, it’s about time we move new solutions onto the digital bridge.”

Dolittle’s team members come from previous roles in companies like Microsoft and Norwegian online retailer Komplett, and all have previous experience building software and digital trade platforms.

“We develop digital solutions for customers in a rapid pace. The first version of a newly announced software system for Wilhelmsen ‘smart ships’ was developed in a week and a half. This used to take months, even years,” said Arif Shafique, CEO and co-founder of Dolittle.

“In addition to fast paced decision and development processes, we use tried-and-tested building blocks for all our products. This gives flexibility where we can scale all our products from day one.”

Veracity enters public preview phase

DNV GL reports that its Veracity data management platform is closing in on a million service subscriptions, with users from 1,500 different companies using the digital marketplace to access a variety of products, as it opens the system up to a new ‘public preview’ phase.

The Veracity ecosystem is used by companies to manage the Big Data generated by their operations, allowing them to store the data, access analytical tools and employ other standalone digital services from the list of approximately 150 offered by both DNV GL and external providers.

From its launch in February 2017 to the middle of April this year the platform’s full range of services had been restricted to a selected number of clients, but this has now transitioned to a ‘public preview’ phase, allowing a wider range of customers to explore the data sharing functionality (also known as the Data Fabric).

“The strong take-up of services on Veracity is indicative of a hunger in many industries for solutions which explore and create value from data,” said Remi Eriksen, group CEO and president of DNV GL.

“Our partners value DNV GL’s trust position and our emphasis on safety, and together with the strong framework provided by Microsoft Azure and our own technical expertise the platform is delivering real value for the 1,500 companies that are already using it.”

Veracity will continue in the public preview phase until entering general availability later in 2018, the class society says.

RS Components joins Moscord purchasing platform

RS Components, a distributor of engineering and electronic components, reports that it has begun trading on the Moscord maritime e-Commerce platform, allowing users to choose items from RS Components’ catalogue of products and have them delivered to any harbour around the globe.

“We are pleased to have made this arrangement with RS, because it gives our maritime customers the full range of RS Components’ more than half a million high quality products and services,” said Freddy Ingenmann, CEO of Moscord.

“Previously ship owners and managers had to run a cost-intensive purchasing team in order to get a reasonable price when ordering various components in a given port. Now they can easily order from RS Components globally via Moscord’s easy-to-use e-commerc marketplace; with one-time last-mile delivery and significant savings on the horizon.”

RS Components currently serves more than one million customers, and ships about 50,000 packages a day. The company hopes to streamline services for its maritime market base through this new collaboration.

“We never say no to an opportunity that enables us to continuously serve our maritime customers, and when an easy-to-use digital trade platform like Moscord provides customers with a choice to order our products and services onboard while also making considerable savings on last mile delivery, it is a given for us to provide them that option,” said Anthony Carter, head of global accounts at RS Components.
ABB Ability for nine heavy lift vessels

www.abb.com

ABB has agreed a deal to supply the OCTOPUS software package from its Ability Marine Advisory System for a fleet of heavy lift vessels servicing the expansion of a giant oil field in Kazakhstan, to assist in mapping the safest and most efficient routes for the vessels.

Tengizchevroil (TCO) has contracted China’s COSCO SHIPPING to carry out the transportation work at the Tengiz oil field expansion, which will see modules weighing up to 1,800 tons moved from fabrication yards in Korea and Europe to the transshipment ports in the Black and Baltic seas. From there, the modules will be further transported to western Kazakhstan.

COSCO SHIPPING Co. has subcontracted part of the work to its partners – NYK Group, Chung Yang Shipping, Donghang Transport Logistics, Hanjin Transportation and CJ Korea Express – which resulted in a host of new orders for OCTOPUS.

As part of the delivery, ABB will also install sensors on each vessel to generate real-time roll and motion data for both the cargo and vessel which will be accessible to officers on the bridge and support teams ashore. ABB will, through its Ability Platform, make defined data points available for the expansion project through Cloud-to-Cloud Integration, enabling TCO to monitor specific KPIs and project progress.

“Together with our partners, we have been contracted to ensure the safe and timely delivery of project modules into Kazakhstan,” said Marc Beerdendonk, chief operating officer, COSCO SHIPPING Heavy Transport.

“With the right technology can potentially bridge the gap in our way of working.”

Maersk extends BigOceanData contract

www.bigoceandata.com

Maersk has agreed a new expanded contract with BigOceanData for the supply of vessel tracking services, extending the companies’ previous agreement by 30 months and increasing the number of vessels covered.

The initial two-year contract was agreed in September 2016, and the system has since been implemented to track Maersk’s Line’s fleet using fused data feeds combining Maersk’s own vessel data received via FleetBroadband with satellite and terrestrial AIS, all backed up by ‘pay-as-you-go’ Inmarsat-C data.

“We are pleased to be extending our relationship with BigOceanData,” said Stephan Martinussen, head of global vessel performance centre, Maersk Line.

“The system has performed well since its introduction and we continue to explore its integration potential and the cost savings that can be derived from it.”

Viking to implement Adonis software

www.adonis.no

Viking Line AB has agreed a deal to implement the Adonis Personnel Suite at its offices in Mariehamn, Finland, and on board six of its ferries, with the roll-out to include the Adonis Safety Module, the Adonis Day2Day planning module and the full Adonis Payroll module.

All modules will be customised by maritime HR software provider Adonis in line with Finnish government requirements. Adonis Personnel Suite will replace several of Viking Line’s legacy in-house systems, with several new interfaces to be developed as part of the project to facilitate data flows, as well as with authorities and other stakeholders.

For a big employer as Viking Line it’s important to manage HR administration of employees and towards authorities in an accurate and efficient manner, said Lena Marcus, sea personnel manager at Viking Line.

“With Adonis we see an opportunity to combine HR administration, safety and payroll, which will improve our performance and give us more time to focus on development of our employees.”

Bahri agrees MariApps ERP deal

www.mariapps.com

Saudi Arabia-based shipping company Bahri Group has agreed a deal with MariApps Marine Solutions of Singapore to implement its PAL 4 software system to manage its 91-vessel fleet.

PAL 4 is the latest version of MariApps’ ship management ERP system. The application will be rolled out to all of Bahri’s operations for a number of years. Bahri operates approximately 150 handysize, supramax and ultramax vessels. The company will use a variety of workspaces within the Veslink IMOS Platform to improve its workflows, including workspaces for Claims Management, Bunker Management, Pool Management, and Trading & Risk Management.

“Clipper conducted a fact-driven selection process to find the optimal shipping system and technology partner. We found a match in Vescon. They have a promising system and technology partner. We found a match in Veson. They have a promising system and technology partner. We found a match in Veson. They feel confident to stay tuned with the development.”

Majid Al Shenaiber, Bahri Group (left), with Sankar Ragavan, MariApps Marine Solutions

Network Innovations to incorporate Rock Seven tech in maritime IoT systems

www.rock7.com
www.networkinov.com

Rock Seven reports that it has teamed up with Network Innovations (NI) to supply the field hardware for NI’s latest IoT applications for maritime users, as well as its systems for customers in the aviation, government and land mobile sectors.

Network Innovations will incorporate Rock Seven’s RockFLEET system for maritime use into its value-added tracking and IoT systems, with the dual-mode iridium/cellular tracking device capable of providing least-cost-routing of location and sensor data from any point on Earth.

“By utilising Rock Seven’s hardware platforms, we are able to deliver complete IoT solutions to our customers faster,” said David Wigglesworth, vice president of IoT and aviation for Network Innovations.

“The hardware is designed for specific vertical markets, it contains a common core for configuration and programming which enables us to reduce the costs and timeline to develop our customer solutions. Enabling customers to achieve strong Return on Investment is a core part of Network Innovations’ strategy to deliver IoT solutions that drive customer value.”

Digital Ship August / September 2018 page 39
Subchapter M software for Crosby and GLDD

The Great Lakes Dredge & Dock (GLDD) Company and Crosby Tugs have both agreed separate deals with class society ABS to implement its software systems to manage compliance with Subchapter M regulatory requirements.

GLDD Company is to roll out the NS Workboat application across its fleet of approximately 40 vessels, to be used by crew to perform work order completions, checklist-based inspections and audits, and to identify critical equipment history during vessel operations.

“We developed the NS Workboat app as the mobile solution to bridge the gap between onshore and onboard collaboration so data, captured from daily operational tasks, provides insights leading to smarter management decision making,” said ABS Nautical Systems COO, Stephen Schwarz.

“Our mobile software is simplifying how operational and compliance data is captured, managed and reported through a user interface that is easy to use for all levels of an organisation.”

NS Workboat is delivered with pre-configured SubM data sets to facilitate faster implementation and ensure compatibility with all compliance path options (USCG, TSMs, RCP, and ISM).

“We see this new technology not only helping GLDD transition smoothly into Subchapter M compliance, but also significantly improving the day-to-day management of our vessel operations,” said Great Lakes Dredge & Dock Company manager Tim Kirby.

Crosby Tugs has also agreed a deal to use Nautical Systems software, aiming to use the mobile version of NS Workboat to manage compliance with Subchapter M across its fleet of tugboats. The application can be used by crews to record compliance data and generate safety reports on mobile devices while carrying out routine operations.

The app is optimised for tablets and also available on smartphones, with no additional installed software required. Ship and shore collaboration is accomplished via the Cloud, and offline work modes are available that automatically sync to the office when the device is connected to the internet.

OMM begins optimisation pilot project

Tufton Oceanic’s asset management company Oceanic Marine Management (OMM) has announced a pilot project with Lloyd’s Register (LR), covering optimisation of maintenance strategies on two vessels in the OMM fleet and the development of a strategy to implement Condition Based Monitoring technologies.

The overall project has been described as a comprehensive optimisation and digital innovation programme, with the initial stages expected to focus on the application of a Reliability Centred Maintenance approach, utilising LR’s RTAMO software.

“Working together with LR, OMM would be amongst the front runners in the industry, moving beyond traditional engineering and maintenance programmes and towards an asset management concept based on both new technologies and advancements in existing ones,” said OMM managing director, Roine Ahlquist.

“We are very pleased with the works that have been done thus far with LR and look forward to a long-standing valuable cooperation.”

Xeneta launches market tracking freight rate system

Freight rate intelligence platform Xeneta has created a new offering called Xeneta Shipping Index (XSI), allowing involved parties to set rates at transparent prices that directly follow market fluctuations.

The global ocean freight index uses Xeneta’s neutral database of some 65 million contracted rates crowd-sourced from more than 700 international businesses, covering in excess of 160,000 port-to-port pairings. The index is continuously updated with rates tracked across major shipping routes, covering 57 corridors and representing 95 per cent of global intercontinental volumes.

The new index allows stakeholders in the negotiating chain to tie rates to the market, to reduce the number of contract negotiations required.

“Freight rates are dynamic and prone to rapid change, so a shipper traditionally negotiating what they consider to be a fair rate for a long-term ocean freight contract can find that, three months later, they’re paying far in excess or below the actual market rates. This has the very real potential to make their products uncompetitive in the marketplace or risk supply chain disruptions,” said Xeneta CEO Patrik Berglund.

“Similarly for carriers, when the market is low or high they risk shippers taking their business somewhere else or not living up to their contracts as these are not enforceable. The current situation is not ideal for buyer or seller and neither one has the upper hand.”

“If all parties looking to sign a contract agree to use the index they can secure competitive rates over the long term, building trust and reliable relationships with one another. What’s more they can save on all the resources, guess work and hassle associated with negotiating.”

Pleiades Shipping signs for iMarine e-Commerce

Greek-based shipowner Pleiades Shipping has agreed a deal with Marine Software to connect its software systems to the Seaproc e-procurement hub.

The deal will see Pleiades Shipping’s ABS Nautical Systems fleet management software linked with the Cloud-based Seaproc trading platform, hosted by Amazon Web Services, with the aim of streamlining transactions and improving data collaboration with suppliers.

Pleiades Shipping operates a fleet of 14 Panamax, Aframax and chemical/product tankers operating along worldwide trading routes, primarily between North and South America, the Caribbean and the Far East.

New York-based iMarine Software’s e-Commerce platform can be used to connect with more than 50,000 maritime suppliers worldwide, and is supported by the company’s US headquarters and regional offices in Hamburg, Istanbul and Manila.

The company has recently launched a new app to allow shipping companies to manage procurement on the Cloud-based software platform via mobile devices. The SeaProc ShipApp can be used to manage the full procurement cycle, from the ship to the shore office and on to suppliers, which the company says can be particularly useful for vessels without an existing fleet management system, as all steps are uploaded on board using a full duplex messaging system, including attachments.

Transactions are initiated on board via the Requisitions List, which includes the title, requisition number, date created, delivery date, status, user and action to be taken. The app also comes with a ‘My parts’ list that remembers frequently ordered parts and supplies to simplify ordering of items that need to be regularly replaced.

Unmapped items may be added using a default template, or an Excel file that can be uploaded to the app, the company says.

In related news, iMarine Software has also recently announced a new partnership with Tero Marine to allow users of that software system to connect directly to the Seaproc platform.

Tero’s TM Master package comprises a range of modules for fleet management, including planned maintenance, procurement, crew management and quality assurance.

The software will be used by to manage compliance across the Crosby tug fleet.
**Nautisk signs up to Kognifai platform**

Norwegian company Nautisk has announced a partnership that will see its digital navigation and bridge management products made available via Kongsberg Digital’s Kognifai platform.

“We see a great upside by partnering with Kongsberg and joining the Kognifai community to make Nautisk’s solutions part of this platform,” said Espen Martinsen, commercial director at Nautisk.

“What Kongsberg is doing with its Kognifai platform is exciting for the entire industry and we strongly believe that utilising Big Data will be of increasing importance for the shipping industry going forward.”

Kognifai is Kongsberg Digital’s digital network platform used to promote knowledge sharing and collaboration across a range of digital maritime tools. It will now feature core Nautisk products such as the NaviPlanner digital route planning application, the NaviTab document library and the ECDS chart updating tool NaviUpdate.

“Nautisk’s applications for voyage planning and digital publications are a great addition to the Kognifai ecosystem,” said Vigleik Takle, vice president and commercial manager at Kongsberg Digital.

“They solve some of the key needs we see in the market, and we are thrilled to offer our customers world-leading solutions within these application areas.”

---

**Marorka management completes buyout**

Maritime fuel data analytics company Marorka has been given a new lease of life after the firm’s management completed a buyout of the company following a decision by German investment group and parent company Mayfair to exit the business.

The management team has acquired all of the shares in Reykjavik-based Marorka under the deal, and says it will maintain the company’s core Icelandic operation and its Marorka Singapore arm, but has closed its German and Danish offices. All intellectual property rights, brand names, contracts and other assets will now be held by the Iceland and Singapore entities.

“As a result of the changes the company says that it has simplified its corporate structure and streamlined management and administration, and while it regrets that several good colleagues have left the company”, it believes that a strong team remains to continue serving customers.

“Our products help operators improve efficiency by reducing oil consumption, while at the same time improving their environmental profile by cutting emissions,” said new Marorka CEO, Darri Gunnarsson.

“We look forward to helping existing and new customers find ways to improve their operations and reduce their environmental impact.”

---

**Tidetech Cubes its weather data**

Metocean data provider Tidetech Commercial Marine has launched a new system to improve access to its weather data, through the deployment of a ‘Data Cube’ which enables users to query weather data in three dimensions — longitude, latitude and time — in the context of their relevant values.

This means that when a user looks for a weather forecast for a voyage, examines tides and currents on a current passage or performs post-voyage analysis, they can query specific data related to a specific time and location.

“Previously it could take time to access historical data or make predictions about future sailing conditions because of how data was stored,” explained Tidetech managing director, Penny Haire.

“(Using a relational database makes the data more available and accessible because the cube is itself made up of data cubes, which can comprise some or all of the weather elements, that can be interrogated either as historical, current or forecast data.”

The Data Cube stores information in a single, consistent format in constituent parts, allowing data to be reorganised, reformatted and manipulated to individually meet customer requirements.

Users can process the data and perform analytics to generate datasets with standard deviation or historical averages, and resample or edit data at different resolutions to receive output in any format, including Excel or Google Earth files.

---

**Wärtsilä to manage data-based maintenance for Virgin cruise fleet**

“Digital Ship August / September 2018 page 41
Hanseaticsoft joins ship e-health project

www.e-healthy-ship.eu

Maritime software provider Hanseaticsoft has joined a new project in Germany to design a platform for the ‘e-healthy ship’, using technology to optimise health management on board merchant vessels.

The EU-funded project aims to improve health care for workers on the high seas, further develop onboard health promotion, and facilitate the implementation of health and safety regulations through the development of a specific e-health platform.

To achieve these goals, the interdisciplin ary team, consisting of scientists in occupational and maritime medicine, software developers and shipping companies, will analyse and empirically survey the needs of seafarers on board four vessels, conceptualise the e-health platform and its contents, test the usability of the platform on board ships and finalise the design of its contents.

One goal of the e-health platform is to provide seafarers with medical information and the ability to contact emergency medical facilities on shore in emergencies.

The exact technical design of the platform will be specified after an inspection of four vessels and an assessment of their technological capabilities (such as the maximum bandwidth available for internet connections), carried out alongside an IT representative from the respective shipping companies.

The project partners include: Institute for Occupational and Maritime Medicine (ZFAM) / University Medical Center Hamburg-Eppendorf; Hanseaticsoft; Peter Döhle Schifffahrts; CONVIS Consult & Marketing; and other project management and public relations companies.

In related news, Hanseaticsoft reports that it has also recently released a new Garbage Disposals module for its Cloud Fleet Manager (CFM) web-based software platform, designed to assist shipping companies in keeping track of all waste, sewage and sludge disposals, across all vessels.

The module was developed to deal with changes to the updated MARPOL Annex V, which came into force in March and included new criteria for assessing cargo residues as well as a new Garbage Record Book format with a category for e-waste - discarded electrical or electronic devices.

“We’re delighted to launch our latest module which enables shipping companies to keep on top of their waste management and comply with regulations. Since CFM is completely Cloud-based, information can be comfortably accessed anytime and from anywhere,” said Alexander Bachmann, managing director of Hanseaticsoft.

“Our software is supporting shipping companies as they increasingly turn to technology to streamline processes. We will continue expanding our software portfolio and creating modules that add value and help shipping companies achieve greater efficiencies and profitability.”

The CFM software portfolio currently comprises approximately 20 different applications, including Cloud Crewing, Cloud Maintenance, Cloud Purchase and Cloud MRV.

Chevron to implement smart shipping systems

www.c-map.com

Chevron Shipping Company (CSC) has agreed a new deal with C-MAP, which will see the C-MAP Integrated Maritime Suite (IMS) deployed on Chevron vessels to optimise operations.

IMS employs evolutionary algorithms and customised ship performance models to assist shipping companies in optimising arrival times and minimising bunker consumption. Overall fleet performance is displayed via C-MAP’s FleetManager, a web-based system that provides analytics to improve operational and strategic decision-making.

C-MAP’s Commercial Services team will provide additional supporting shore-based routing and voyage optimisation services to CSC, as well as technical support and training.

“We are delighted that CSC has chosen C-MAP to provide market-leading voyage optimisation, fleet management solutions, and world-wide charts,” said Sean Fernback, C-MAP’s CEO.

“We are confident C-MAP offers unmatched insight and analysis, as well as chart coverage, to enable users to improve fleet operational efficiency and effectiveness.”

C-MAP’s FleetManager system has been recently upgraded to add new business intelligence capabilities leveraging Microsoft Power BI, allowing users to connect data sources and get a graphical representation of all their ship’s data through interactive dashboards.

“Our customers capture more data about their fleet from more sources than ever before,” said Capt Niles Baker, global sales lead – commercial fleet products, C-MAP.

“But what they needed was a way to easily and efficiently access that data and gain real insights in real-time to manage their fleet effectively. So, we built an analytics tool into our C-MAP FleetManager solution to give our customers a simple and structured way to gain the intelligence they need, when they need it.”

Online verification of CO2 data from Lloyd’s Register

www.lr.org

Lloyd’s Register (LR) has launched an online verification service called CO2 Verifier to cover compliance with both the EU monitoring, reporting and verification (MRV) regulation and the IMO Data Collection System (DCS).

CO2 Verifier is a Cloud-based application designed by LR, with the assistance of ship managers, to provide a single system for managing fleet compliance and submission of data to the EU and IMO. The application features streamlined data submission from multiple uploads and the ability to integrate with ship managers’ existing reporting systems. Users can contact an LR technical expert directly through the service if required, in addition to the online user support available.

“The implementation of these regulations presents a significant compliance challenge for shipowners and operators - LR’s CO2 Verifier offers one simple way to comply with them both. It will save our clients time and effort, enabling them to focus on their day-to-day business,” said Nick Brown, LR Marine & Offshore director.

The EU introduced the MRV regulation to reduce emissions from shipping, designed to gather data on CO2 emissions based on ships’ fuel consumption. In parallel, the IMO introduced a three-step approach, based on collecting and analysing fuel consumption data, before agreeing what further actions may be required to reduce greenhouse gas emissions from ships. The first phase is now implemented through amendments to MARPOL Annex VI, and is known as the IMO DCS.

LR is an accredited third-party verifier for EU MRV and a Recognised Organisation (RO) for IMO DCS. When data is submitted to LR in line with these requirements, the class society carries out the necessary checks and verification procedures to issue the respective certificates required on behalf for Port State Control inspections.

In related news, LR has also launched a new Sulphur 2020 – Options Evaluator system, used to identify appropriate strategies for compliance with the global sulphur in fuel oil limit of 0.50 per cent m/m (mass by mass), which comes into effect on 1 January 2020.

The Options Evaluator aims to explore the potential cost and investment implications for various compliance options, such as transition from fuel oil to MGO, use of scrubbers and HSFO, or use of other compliant fuels such as LNG or Methanol.

The optimum strategy depends on a range of factors, such as trading patterns, distance travelled, speed, size and type of vessels. The new system evaluates the options available by reviewing emissions output and comparing the different CapEx and OpEx implications.

“2020 is around the corner and to date it appears most operators will transition from fuel oil to gas oil operations to meet the global sulphur in fuel oil limit,” said LR’s Douglas Raitt, regional consultancy manager Asia.

“SCRubber uptake or LNG and Methanol as a marine fuel are slowly evolving, perhaps as a function of a ‘wait and see’ approach by the shipping industry. We developed the options evaluator to give some guidance to operators who have not yet fully considered their options to 2020 compliance.”

Digital Ship August / September 2018 page 42
OilComm and FleetComm
Conference & Exposition
BUILDING THE NETWORKS OF TOMORROW
October 3-4, 2018
Houston Marriott Westchase • Houston, TX

Exclusive Discount for The Digital Ship Readers!

Register today with VIP Code: DigitalShip for a FREE Expo Hall Pass!

About OilComm and FleetComm

OilComm and FleetComm is where the major players in energy, maritime, and transportation communities come together to learn about the capabilities of the next generation of communication technologies. This year’s focus is how to marry new technologies to your business, with special emphasis on the impact of automation & machine learning, cyber-security business cases, and IT/OT convergence strategies. Here are just a few of the benefits from attending this two-day event:

- Sit in on sessions and keynotes led by industry leaders, for both OilComm and FleetComm tracks
- Walk a densely populated show floor featuring dozens of vendors showcasing the latest communications services and solutions
- Network with hundreds of your peers at the networking events

Most importantly, attending OilComm and FleetComm is your one-stop-shop for sourcing market knowledge and network technology!

Register at www.OilComm.com today!
Eniram joins Project Forward

www.wartsila.com

Wartsila subsidiary Eniram has signed a Memorandum of Understanding (MoU) with Athens-based Arista Shipping to participate in the Project Forward initiative, under which it will assist in the development of monitoring and optimisation tools for a highly energy efficient dry bulk carrier vessel design, based on LNG-fuelled propulsion.

The project aims to design a vessel complying with all relevant known, applicable, and anticipated regulations proposed by the International Maritime Organization (IMO), including the Energy Efficiency Design Index 2025, SCs post 2020, and NOx Tier III, without any after treatment. Eniram’s systems will be used for data modelling to provide insights to improve NOx Tier III, without any after treatment. (IMO), including the Energy Efficiency and anticipated regulations proposed by complying with all relevant known, applicable, propulsion.

er vessel design, based on LNG-fuelled for a highly energy efficient dry bulk carri-

ment of monitoring and optimisation tools under which it will assist in the develop-

ment. Wärtsilä will also provide two 31DF dual-fuel engines to the project, while Finnish ship designer Deltamarin, classifi-

cation society ABS, and French LNG mem-
brane containment system designer GTT are also involved.

Arista Shipping has signed a Letter of Intent with Yangzijiang Shipbuilding to build a series of up to 20 bulk carriers based on the new design.

BASS updates fleet management software

www.bassnet.no

BASS has updated its BASSnet Fleet Management Systems software package, with the introduction of version 2.10 of the application improving a number of key modules.

“Since BASS’ inception in 1997, cus-
tomers’ needs and feedback have always been at the core of the development of our solutions. This latest release is another fine example of BASS’ customer-centric approach in offering problem-solving solutions, with highlights being the new data privacy features and enhanced fleet management,” said Per Steinar Upsaker, CEO and managing director of BASS.

These improvements include a new feature providing fleet-wide central man-

agement of equipment data, with the ‘Equipment Setup’ facility enabling the user to create and manage a library of machinery organised by manufacturer and model.

This module can also be used to provide shared access to standard instructions, materials and documents across the fleet, while shore-based users can gain an overview of how a particular type of equip-
ment is used fleet-wide via the software.

On the data privacy side, password security has been strengthened through use of a one-way hash algorithm, and administrators have been given the ability to use access rights to restrict access to personal data to authorised users only (in BASSnet and in the BASSnet HR Manager).

Records are kept of crew consent obtained for collection and display of personal data, and a User Masking Tool offers the ability to anonymise selected inactive users in various modules by permanently masking their personal information from view. Inactive crew can also be perma-

nently anonymised using this new tool.

Further updates have additionally been made to modules covering safety, risk management and compliance, in line with the latest developments in these areas.

Frankis Marine integrates procurement platform

www.shipserv.com

Maritime e-procurement company Shipserv reports that it has completed the integration of its e-commerce platform with Frankis Marine Services’ new Enterprise Resource Planning (ERP) system, to streamline the logistics company’s ability to process transactions and respond to RFQs.

Frankis Marine, a subsidiary of the Northern Marine Group, will now be able to respond to RFQs and quote directly from its new ERP system, enabling the company to automate the fulfilment of orders with existing and prospective customers and improve control of the entire process.

Headquartered in Singapore and with subsidiary offices in South Korea, Rotterdam and Shanghai, Frankis Marine sources and procures ship stores, marine and off-field equipment and general consumables for all types of vessels, semi-sub-

mersion, jack-ups and drill ships.

“The growth of Frankis Marine and the global nature of our business, as well as the markets that we work within makes it essential for us to have a state-of-the-art back office function, that is seamlessly linked to all our operational processes,” said Dominic Fernandez, head of Frankis Marine.

“Fully integrating ShipServ into our platform is an important part of this and enables us to have real control over the entire RFQ and order transaction process with customers and prospects, driving operational and time efficiencies.”

“This new integration is also an example of where suppliers to the marine and offshore industries must take advantage of developments in digitalisation, enhancing the services and solutions that can be pro-

vided to purchasers. This is a hallmark of Frankis Marine’s offering and our commit-

ment to the markets we serve.”

Hyundai to work with Oracle on Cloud technologies

www.hmm21.com

Hyundai Merchant Marine has announced that it is to work with tech giant Oracle on the development of a next-generation IT system, built on a Cloud-based infrastructure.

The project will be part of a wider ini-

tiative by Hyundai Merchant Marine to expand its research on new technologies such as blockchain, IoT (Internet of Things) and Big Data analytics, which will also see Hyundai and Oracle form a Joint Lab for collaborative research.

The new Cloud-based system, which is expected to provide support for various improvements in business processes, is scheduled to be introduced in 2020, to provide a more robust IT service envi-

ronment for both internal and external customers.

“The introduction of new IT technolo-
gies is now the key to maritime competi-

tiveness. Our IT assets will be an impor-
tant factor in determining the future of Hyundai Merchant Marine,” said the com-
pany in a statement (translated from the original Korean).

Hyundai Merchant Marine says that it has already been working on the develop-

iment of Cloud-based systems since 2017, and began a recruitment drive to add new IT personnel to its ranks in February of this year.

(1-1) Jason Low, ShipServ; Dominic Fernandez, Frankis Marine; and Sharon Gill, ShipServ
**MSC Cruises deploys compliance management software system**

MSC Cruises has announced a deal with Total Marine Solutions to roll out the Ocean Guardian environmental compliance management software system across all ships in its fleet, following the successful completion of shipboard trials.

The software supports compliance with environmental regulations specified in the International Convention for the Prevention of Pollution from Ships ( MARPOL) and its annexes, as well as the abundance of local regulations applicable in different jurisdictions. The Ocean Guardian database is updated by marine professionals on an ongoing basis, and verified and vetted by a third-party independent maritime law firm.

The application, developed by software developer Brennock in conjunction with Total Marine Solutions, integrates with the vessel’s GPS system to accurately determine its position and display the relevant regulations for that position.

**CargoMate raises funding for port optimisation platform**

www.cargomate.co.uk

UK-based start-up CargoMate, developer of a port call optimisation platform for container ships, reports that it has raised £500,000 through a seed investment round to continue development of the technology.

CargoMate has been piloting its system with an unnamed ship operator since December 2017, with the platform intend- ed to reduce turnaround time for contain- er ships in port by providing real-time port productivity analytics to vessels and to fleet management departments. The software predicts the earliest time a ship can leave port, and is deployed on the vessel so there are no integration issues when travelling to different ports worldwide.

“Closing our seed round is a major milestone for the business, giving us the capital we need to continue to improve our product and begin partnering with container line operators to improve the efficiency of their fleet,” said CargoMate CEO Chris Jones.

**Procurement survey highlights lack of structured data for analysis**

www.shipserv.com

ShipServ has released the results of a survey of 100 maritime buyers across different sectors, pointing to an industry-wide lack of structured data for analysis of procurement trends and optimisation of processes. The respondents included shipowners (44 per cent), ship managers (39 per cent), ship yards (2 per cent), government and military (2 per cent) and other buyers (13 per cent). The research forms part of a report into the best practice and future opportunities for data optimisation within marine procurement.

The survey showed that 78 per cent of respondents would like to increase their procurement spend under contract, but were prevented from doing so due to the complexity and unstructured nature of their data. 69 per cent said that they would like to consolidate their spend with fewer suppliers, but in the majority of cases (60 per cent) were unable to report savings across all spend areas because of inadequate data and reporting tools. 72 per cent of respondents stated that they couldn’t monitor their procurement spend, which extended to the categories, brands, product types and suppliers that they were using, while 72 per cent also emphasised a lack of transparency in their processes, in that they were unable to quickly identify where they were deliveringing orders, what equipment they had bought, or what brands and products each vessel or office had purchased.

“Given the transformational change that is happening right now in the ship- ping industry, there is a fundamental requirement to switch from a transactional model for procurement, which is sporadic and mostly done on intuition, to one that is strategic, and driven by data; a model that harnesses efficiencies, reduces spend, and delivers value beyond the basic price of a product,” said Kim Skaarup, chief executive officer, ShipServ.

“’To achieve this though, there needs to be a cultural shift and disruption of the status quo, which must be driven from the top, and where there is genuine collaboration between procurement and other departments.”

“The current situation is a by-product of a global industry that has always been fragmented with no common standard. This isn’t just applicable to the shipowners and managers, but also suppliers who have suffered from a lack of support for Cloud-hosted catalogue solutions that buyers can subscribe to and use industry standards for identifying units such as IMPA codes.”

ShipServ has recently restructured its business to create two new divisions, respectively focusing on ‘Solutions’ and ‘Customer Engagement and Service Operations’. The Solutions division will be run by chief solutions officer Henrik Hyldahl, while Silvia Lam Imshekien, ShipServ’s chief service delivery officer, will head up the Customer Engagement and Service Operations division. Both report into the CEO.

The new Solutions division will focus on collaborating with stakeholders across the entire value chain around vessel optimisation, working consultatively with customers, partners and specialist vendors within the industry to extend and add to ShipServ’s existing software functionality.

“The pace of change and the challenges facing shipowners and operators have never been greater. By establishing these two new divisions our aim is to build closer relationships with our customers, working with them to fully understand their pressure points so that solutions can be created that tangibly help them, and to do this at a quicker pace,” said Mr Hyldahl.

“We fully recognise that to deliver the ultimate value for our customers, we must widen the scope of our partnerships and develop an even broader ecosystem founded on transparency and collaboration with multiple partners.”

The Customer Engagement and Service Operations division will focus on supporting customers, engaging with them to roll out new systems and proactively making continuous improvements in line with their specific requirements.

**Approved supplier search engine launched by BV**

www.bureauveritas.com

Bureau Veritas has launched a new web-based search engine for maritime stakeholders to identify, locate and contact service suppliers or manufacturers approved by the class society, and to search for certified products and materials.

The Approval Explorer provides options for users to search with keywords, create filters and favourites, and to export and share their findings.

In addition, authenticated users will be able to download copies of certificates and search within the contents of those certificates, where they have been made available by service suppliers and product manufacturers.

“A Approval Explorer is a tool that addresses the concrete needs of ship designers and ship owners, to make life easier for our many clients and stakehold- ers. We wanted to make it functional, use- ful and accurate,” said Laurent Hentges, vice president, operational excellence, Bureau Veritas Marine & Offshore.

**The system was successfully trialled on the MSC Divina before being rolled out to the rest of the fleet**

The system has been piloted since the end of 2017.

**The Approval Explorer provides options for users to search with keywords, create filters and favourites, and to export and share their findings.**

**The Approval Explorer provides options for users to search with keywords, create filters and favourites, and to export and share their findings.**
Foss Maritime has begun a company-wide project to centralise its fleet management on the Helm CONNECT marine software platform, as it looks to streamline its operations across core business units and wholly-owned subsidiaries along the US west coast and in Alaska.

As part of the agreement, Seattle-based Foss will centralise vessel dispatching, billing, maintenance, compliance, and personnel management for its tug and barge fleets within the software platform.

The company operates an integrated fleet of harbour tugs, offshore support, tow- ing vessels and barges, comprising more than 200 vessels managed by four subsidiary companies – Foss Atlantic, AmNav Maritime Services, Young Brothers Limited, and Cook Inlet Tug and Barge.

“At Foss, we’re constantly looking at new ways to improve our business. Helm CONNECT is a great fit for us; it offers an integrated software solution but also acts as a partner in managing our wide variety of vessels and operations,” said Foss President and CEO, John Parrott.

“Our goal is always to find ways to best support our staff and crews in the field. Helm CONNECT is another way for us to better provide the tools and information that are necessary to safe and efficient operations.”

Foss will be using the full range of Helm CONNECT applications, including fleet maintenance, compliance, jobs and crewing modules.

The jobs module will support the ‘order to invoice’ process and help Foss Fleet Monitoring Center watchstanders to track assets and assign tasks, while the personnel module will be used to manage the scheduling and payroll process for more than 2,000 vessels managed by four subsidiary companies – Foss Atlantic, AmNav Maritime Services, Young Brothers Limited, and Cook Inlet Tug and Barge.

A Helm CONNECT Personnel module for crew management has been introduced recently by the company, to sit alongside its existing range of marine maintenance and compliance applications. The module will be primarily focused on the workboat market, promising to assist in management of crew scheduling and payroll, and will integrate with Helm’s existing software package.

“On board the vessels the crew manage time sheets, watch schedules, rest time, overtime, downtime, and costs, across multiple pay or budget centres. And then on shore the team balances payroll while managing leave banks and accrued time, which are very specific to the marine industry,” said Rachel Aylard, product manager, Helm CONNECT Personnel.

“Not only do they have to ensure there’s a properly certified crew planned for each vessel’s ever-changing operations, adjusting for holidays, partial shifts, rest time, and specialised work, they must also confirm that the crew arrive at the right place at the right time for each crew change, and document who’s on which vessel at what time. Although often overlooked, they have one of the most demanding jobs in the industry.”

“We want to solve those problems and give our industry powerful tools to streamline their crew scheduling and payroll. Our goal with Helm CONNECT Personnel is to reduce the workload of crew dispatchers and payroll clerks by hours each day.”

The roll out for Helm CONNECT Personnel began in June with a crew scheduling module, including time tracking of vessel location and route data provided by ShipTracks.

The agreement is the first partnership between the two North American software companies, with New Orleans-based ShipTracks already providing real-time vessel position information to 7 of the top 10 inland towing companies in the US, as well as other oil companies and commercial shipping operators.

“With Helm CONNECT, we’ve grown from nothing to nearly 3,000 assets using our software in just two years since entering the market,” said Helm Operations CEO, Ron deBruyne.

“Through this new collaboration, which will help to further the pace of innovation and provide better tools for our customers. Our work with ShipTracks is a great example of that approach.”

Helm CONNECT users will have access to ShipTracks functionality like vessel location and route history integrated into Helm’s web-based platform, features that were previously available only to ShipTracks subscribers.

The first version of the integrated system will be available to all Helm CONNECT customers after the software’s summer update. The company says it is also looking to expand the capabilities of this new integrated ShipTracks data infrastructure to add further functionality in the future, such as geo-fencing and operational alarms.

Proposals push for ship reporting harmonisation

The European Commission has adopted a proposal to promote increased harmonisation of ship reporting requirements when calling at ports within the EU, including the development of a common IT system for data exchange.

The proposal will now be considered by the European Parliament and by the Member States within the European Council.

Earlier this year, Denmark, on behalf of 13 EU Member States, sent the Commission a letter emphasising the need for an “ambitious approach” in this area, with the goal of reducing the administrative burden on the industry,” said Andreas Nordseth, director general of the Danish Maritime Authority.

“This is a clear priority in the Government’s Plan for Growth in the Danish Maritime Sector. Ideally, we would have one common European system, which is not fully the case with this proposal. Nevertheless, this still represents an important step towards achieving this vision.”

Proposals for greater harmonisation in ship reporting have also been submitted to IMO by BIMCO, Liberia, the Marshall Islands and Turkey, who have together requested that the maritime regulator push for greater harmonisation of data delivered to the April 2019 deadline when new mandatory requirements come into force for automated ship reporting.

Next year’s deadline will see new mandatory requirements added for electronic exchange of information from ships to relevant onshore parties when approaching a port, and will require public authorities to have systems in place to assist ship clearance processes.

Proposals were discussed at the 42nd session of the IMO’s Facilitation Committee (FAL) in London in early June, alongside debate as to how the IMO e-Navigation framework can be strengthened.

“Electronic and automatic ship reporting plays an important role in facilitating efficient shipping. Automated and standardised ship reporting will greatly reduce the administrative burden of both the crew on board and the authorities ashore,” said BIMCO manager maritime technology and regulation, Jeppe Skovbakke Juhl.

“The proposal was very well received by the IMO during this process of preparation. Preparation and implementation of processes that work well for all parties involved will pave the way for automated ship reporting, and help avoid potential chaos of systems for electronic exchange of information created at the last minute.”

The standardised ship reporting measures consist of two integrated parts. The first part is the automatic collection of data on board the ship, which must be submitted in the correct format for transmission to a single window application ashore, the Maritime Single Window.

The second part relates to the distribution of that collected data to relevant shore parties, such as maritime authorities, customs, police and defence via the Maritime Single Window system.

BIMCO says it has also made an additional proposal to the IMO to establish a maritime register (a type of database) to facilitate co-operation and direct exchange of information between the parties involved.

We’ve done that by bringing cutting-edge technology and approaches to the market. Moving forward, our goal is to work with other leading maritime technology companies to further the pace of innovation and provide better tools for our customers. Our work with ShipTracks is a great example of that approach.”

Helm CONNECT users will have access to ShipTracks functionality like vessel location and route history integrated into Helm’s web-based platform, features that were previously available only to ShipTracks subscribers.

The first version of the integrated system will be available to all Helm CONNECT customers after the software’s summer update. The company says it is also looking to expand the capabilities of this new integrated ShipTracks data infrastructure to add further functionality in the future, such as geo-fencing and operational alarms.

www.dma.dk
www.bimco.org

Maritime training provider Seagull has collaborated with IT company SOFTimpact to develop a web interface between their respective software systems, integrating the ‘CREWimpact’ crewing application with the Seagull Training Administration for STAs.

The new integration will enable the automatic exchange of information between the two systems. In practical terms, this means that users can maintain their information in CREWimpact, which is not fully the case with this proposal.

“The CBT programme is controlled from on shore the team balances payroll while managing leave banks and accrued time, which are very specific to the marine industry,” said Rachel Aylard, product manager, Helm CONNECT Personnel.

“Not only do they have to ensure there’s a properly certified crew planned for each vessel’s ever-changing operations, adjusting for holidays, partial shifts, rest time, and specialised work, they must also confirm that the crew arrive at the right place at the right time for each crew change, and document who’s on which vessel at what time. Although often overlooked, they have one of the most demanding jobs in the industry.”

“We want to solve those problems and give our industry powerful tools to streamline their crew scheduling and payroll. Our goal with Helm CONNECT Personnel is to reduce the workload of crew dispatchers and payroll clerks by hours each day.”

The roll out for Helm CONNECT Personnel began in June with a crew scheduling module, including time tracking of vessel location and route data provided by ShipTracks.

The agreement is the first partnership between the two North American software companies, with New Orleans-based ShipTracks already providing real-time vessel position information to 7 of the top 10 inland towing companies in the US, as well as other oil companies and commercial shipping operators.

“With Helm CONNECT, we’ve grown from nothing to nearly 3,000 assets using our software in just two years since entering the market,” said Helm Operations CEO, Ron deBruyne.

“Through this new collaboration, which will help to further the pace of innovation and provide better tools for our customers. Our work with ShipTracks is a great example of that approach.”

Helm CONNECT users will have access to ShipTracks functionality like vessel location and route history integrated into Helm’s web-based platform, features that were previously available only to ShipTracks subscribers.

The first version of the integrated system will be available to all Helm CONNECT customers after the software’s summer update. The company says it is also looking to expand the capabilities of this new integrated ShipTracks data infrastructure to add further functionality in the future, such as geo-fencing and operational alarms.
Maritime projects explore a range of applications for blockchain

The number of blockchain projects targeting the maritime industry is expanding at pace, with new initiatives targeting marine insurance, fuel purchasing and port management to trial blockchain-based processes to improve efficiency and reduce costs.
Creating Value from Digital Twins

A report created for the Danish Maritime Authority by classification society DNV GL has explored the opportunities to apply ‘digital twin’ technologies in the maritime sector. This edited extract from the report examines some of the ways in which the shipping industry could generate value from the adoption of these systems.

Digitisation has become a key enabler for making the maritime industry more innovative, efficient and fit for future operations. Increased use of advanced tools for designing and evaluating system performance, safety and structural integrity are generating a range of digital models of a vessel and its equipment.

In the operational phase, cheaper sensors and increased connectivity together with increasing data storage and computational power are enablers for new ways of managing a vessel’s safety and performance.

The maritime industry has many suppliers and stakeholders, and depends on efficient communication throughout the lifecycle of each vessel. The digital twin ship is a concept introduced to the maritime industry as a platform for efficient visualisation and exchange of all digital content generated for the asset. Digital twin thinking can be seen as an enabler for a more systemic approach in order to create value for all stakeholders in the industry.

The digital twin will integrate data from many different sources including analytical models, information models, 3D visualisation, system models including automation systems and networks, and sensor data. A digital twin gives the possibility to exchange information, system data and analysis results through a platform for information management and collaboration, where the experts can work together to produce knowledge and rework.

As modern ship systems become more complex and integrated, optimal performance depends on all sub-systems working optimally, both within the system and aggregated. It is challenging to have a full overview of these systems, but at the same time essential for designers, system integrators and operators to have a deeper understanding of how systems interact and how their choices and actions affect the overall system performance and robustness.

Many of the stakeholders in the maritime industry already have methods and tools that can be seen as ‘digital twins’ support their products and services. The natural next step is to combine and integrate these tools into the context of a digital twin ship, and thereby maximise the benefits and value creation for the industry.

Ship owners

As ship technology matures, optimising operations is key to maintaining positive revenues in the future for the shipping industry. More systematic use of operational data can provide a comprehensive level of vessel performance and real-time control of the fleet costs.

Onboard systems are installed with an increased level of automation and autonomy, ranging from mere control, through various levels of automatic control, to fully self-controlled. Digital twin simulation models can be used to demonstrate, train and test/verify/certify such systems. This is essential for the safe introduction of these systems, which can potentially offer significant savings in operational costs, both due to increased crew competence level and reduced manning.

For ship owners, digital twins of their assets will provide a tool for: 1) visualisation of ship and subsystems; 2) qualification and analytics of operational data; 3) optimisation of ship performance; 4) improved internal and external communication; 5) safe handling of increased levels of autonomy; and 6) safe decommissioning.

The tools can provide decision support throughout all levels of the organisation. Being continuously updated throughout a vessel’s lifecycle, the digital twin can ultimately provide insight into all factors affecting operational performance.

For sake of simplicity the term ship owner is used here catering for all functions in relation to the ship and its crew. However, shipping takes advantage of outsourcing and out-shoring in relation to technical and operational operations such as vessel maintenance, propelling and crewing etc. The digital twin must allow these suppliers easy access to relevant data and models and at the same time take position on the overall responsibility for the efficiency of the ship.

Updated 3D models for static visualisation of the state of components and vessel, and for dynamic visualisation of historic, real-time and technical data, can act as a powerful tool to investigate initial designs and potential changes in operations. With such visualisations, opportunities and potential conflicts are easier to uncover and explain for all stakeholders within the system.

Visualisation tools can assist in preparing crew for changes to an operation, and provide the opportunity to test such changes in a controlled virtual environment. This way, communication and cooperation between ships’ crews and land-based personnel can be facilitated.

Analytics and performance

Both static and time-domain models offer important input in selecting relevant data to be measured for performance monitoring or reliability-based maintenance of a component or system.

The digital twin can simulate operations that generate data to feed applications during development. This can train applications for future analytics and quality the measurement set-up in terms of required number of measurement points, sensor range, reporting frequency and data quality.

During operations, digital twins can be used to identify faulty measurements (e.g. sensor drift or failure). Deviations between historic data and associated digital twin model data can indicate events that require action.

Also, values not easily measured can be simulated based on a digital twin model fed by continuous measurements that through known physical relationships and analytics can provide the desired output variables.

The structured collection of and access to operational data offered by a digital twin can also be used to identify possible improvements to operations. Some areas for potential improvements that can be visualised/calculated by a digital twin include:

- Optimal operation of machinery systems.
- Optimal retrofit of batteries, more efficient thrusters, bulb etc.
- Performance of hull or propeller cleaning.
- Verification of ship performance on a detailed level, visualising the effect of design choices and changes.
- Benchmarking of performance against other vessels in the fleet.

Overall, digital twins can be used to visualise and calculate the performance of different design choices prior to major retrofits and conversions.

From a fleet point of view, digital twins for different ships can contribute to optimal allocation of resources between vessels by providing decision support as to which vessel will benefit the most from potential upgrades.

A digital twin for a vessel can also offer the benefit of facilitating a common level of ship and system understanding between the crew and the land-based organisation. This way, communication and cooperation between ships’ crews and land-based personnel can be facilitated.

Proper system integration at the design stage can reduce required commissioning time when installing new components. Software updates are typical upgrades to a system that are tested prior to deployment, reducing the risk for the manufacturer of causing down-time for on board systems.

In addition, simulation models with the ability to demonstrate performance of components and systems can be developed by mathematical models and be verified and improved by component-specific operational data.

Such models can be delivered during the innovation and design phase to assure proper component selection and be included in the digital twin to support system and component assessment throughout the vessel lifecycle.

OEMs and their sub-suppliers will require tools to efficiently generate simulation models of their assets that, given the proper format and system interface, can be integrated into a digital twin simulation platform. Such models can be used for internal system quality assurance through model-based testing, from design of components, to project specific applications and throughout operation.

Employing a digital twin framework, modifications and upgrades to a component or system can be tested on up-to-date models and verified through operational
The digital twin can be developed to serve as design verification by authorities and class. The EU-backed EffiSense2 project has investigated a related concept of having an automated flow of information related to port calls. The idea is to provide digital information about the port, and to have a portal for uploading of all information needed from the ship. If all such portals are enabled to take in a data file in a specific format, the digital twin on the ship side could generate this file with only limited action from the crew on board. Furthermore, this could be a first step in preparing for the arrival of autonomous vessels into ports. Such opportunities require that certifying authorities have a prerequisite for efficient and effective data sharing, model ownership and verification of black-box models. As system complexity and the level of autonomy increase, and the exposure of individual OEMs and their business risks increase correspondingly, it will also be essential to ensure the integrity of the digital twin of the ship as a complete system. This means that any unauthorised changes to ship systems must be detected and dealt with. In this context, blockchain technology combined with the digital twin of the ship may hold the answer.

Furthermore, the digital twin can play an important role in new business models such as power-by-the-hour, where manufacturers maintain control of products throughout their lifecycle, reducing investments or operational cost for their customers and increasing longer life-time with less maintenance need.

Wider stakeholder groups

For authorities, the digital twin will offer a systematic framework that can be set up with applications to automatically feed information and generate required reports from each vessel. This can ensure higher quality reporting with a reduced burden on the crew, and enable increased transparency throughout the value chain.

Live vessel information (AIS data) from port and destination is already available online, and for relevant authorities these services could be expanded to contain information about, for example, crew, cargo, certificates, class status and green passports. This information could be exploited to support more efficient port state control procedures.

Looked at from a Flag State point of view, the automated flow of information on areas like safety, navigation, environment and labour can be used to target critical issues for the respective ships. In the same way, live data from operations can be used to support certification.

For class and vetting the same observations can be applied. Furthermore, the digital twin can be developed to serve as design verification by authorities and class.

The EU-backed EffiSense2 project has investigated a related concept of having an automated flow of information related to port calls. The idea is to provide digital information about the port, and to have a portal for uploading of all information needed from the ship. If all such portals are enabled to take in a data file in a specific format, the digital twin on the ship side could generate this file with only limited action from the crew on board. Furthermore, this could be a first step in preparing for the arrival of autonomous vessels into ports. Such opportunities require that certifying authorities have a prerequisite for efficient and effective data sharing, model ownership and verification of black-box models. As system complexity and the level of autonomy increase, and the exposure of individual OEMs and their business risks increase correspondingly, it will also be essential to ensure the integrity of the digital twin of the ship as a complete system. This means that any unauthorised changes to ship systems must be detected and dealt with. In this context, blockchain technology combined with the digital twin of the ship may hold the answer.

Furthermore, the digital twin can play an important role in new business models such as power-by-the-hour, where manufacturers maintain control of products throughout their lifecycle, reducing investments or operational cost for their customers and increasing longer life-time with less maintenance need.

Wider stakeholder groups

For authorities, the digital twin will offer a systematic framework that can be set up with applications to automatically feed information and generate required reports from each vessel. This can ensure higher quality reporting with a reduced burden on the crew, and enable increased transparency throughout the value chain.

Live vessel information (AIS data) from port and destination is already available online, and for relevant authorities these services could be expanded to contain information about, for example, crew, cargo, certificates, class status and green passports. This information could be exploited to support more efficient port state control procedures.

Looked at from a Flag State point of view, the automated flow of information on areas like safety, navigation, environment and labour can be used to target critical issues for the respective ships. In the same way, live data from operations can be used to support certification.

For class and vetting the same observations can be applied. Furthermore, the digital twin can be developed to serve as design verification by authorities and class.

The EU-backed EffiSense2 project has investigated a related concept of having an automated flow of information related to port calls. The idea is to provide digital information about the port, and to have a portal for uploading of all information needed from the ship. If all such portals are enabled to take in a data file in a specific format, the digital twin on the ship side could generate this file with only limited action from the crew on board. Furthermore, this could be a first step in preparing for the arrival of autonomous vessels into ports. Such opportunities require that certifying authorities have a prerequisite for efficient and effective data sharing, model ownership and verification of black-box models. As system complexity and the level of autonomy increase, and the exposure of individual OEMs and their business risks increase correspondingly, it will also be essential to ensure the integrity of the digital twin of the ship as a complete system. This means that any unauthorised changes to ship systems must be detected and dealt with. In this context, blockchain technology combined with the digital twin of the ship may hold the answer.

Furthermore, the digital twin can play an important role in new business models such as power-by-the-hour, where manufacturers maintain control of products throughout their lifecycle, reducing investments or operational cost for their customers and increasing longer life-time with less maintenance need.

Wider stakeholder groups

For authorities, the digital twin will offer a systematic framework that can be set up with applications to automatically feed information and generate required reports from each vessel. This can ensure higher quality reporting with a reduced burden on the crew, and enable increased transparency throughout the value chain.

Live vessel information (AIS data) from port and destination is already available online, and for relevant authorities these services could be expanded to contain information about, for example, crew, cargo, certificates, class status and green passports. This information could be exploited to support more efficient port state control procedures.

Looked at from a Flag State point of view, the automated flow of information on areas like safety, navigation, environment and labour can be used to target critical issues for the respective ships. In the same way, live data from operations can be used to support certification.

For class and vetting the same observations can be applied. Furthermore, the digital twin can be developed to serve as design verification by authorities and class.

The EU-backed EffiSense2 project has investigated a related concept of having an automated flow of information related to port calls. The idea is to provide digital information about the port, and to have a portal for uploading of all information needed from the ship. If all such portals are enabled to take in a data file in a specific format, the digital twin on the ship side could generate this file with only limited action from the crew on board. Furthermore, this could be a first step in preparing for the arrival of autonomous vessels into ports. Such opportunities require that certifying authorities have a prerequisite for efficient and effective data sharing, model ownership and verification of black-box models. As system complexity and the level of autonomy increase, and the exposure of individual OEMs and their business risks increase correspondingly, it will also be essential to ensure the integrity of the digital twin of the ship as a complete system. This means that any unauthorised changes to ship systems must be detected and dealt with. In this context, blockchain technology combined with the digital twin of the ship may hold the answer.

Furthermore, the digital twin can play an important role in new business models such as power-by-the-hour, where manufacturers maintain control of products throughout their lifecycle, reducing investments or operational cost for their customers and increasing longer life-time with less maintenance need.
Maritime ‘on a par or ahead’ in IoT adoption

Original research covering the Industrial Internet of Things that takes in all stages of the supply chain suggests that the maritime industry may be at a more advanced stage of readiness to adopt its analytic, management and operational tools than many have supposed, writes Ronald Spithout, Inmarsat

A newly published ‘Industrial IoT on land and at sea’ study commissioned by Inmarsat and based on 750 interviews conducted by Vanson Bourne explores the use of, and intentions for the IoT (Industrial Internet of Things) across the maritime, transport and logistics, energy, mining and agriculture sectors.

The report’s maritime chapter got an early release at Posidonia 2018 in June, providing an insight into a group of 125 maritime respondents working a full range of vessel types, including container ships, tankers, bulk carriers and offshore vessels. However, the full study offers perhaps the first research-driven assessment of IoT readiness that considers the maritime industry separate-ly, probably offering the most detailed account ever of the sector’s attitudes towards the IoT, while also putting digital penetration among ship owners in the context of other markets.

By its very nature, maritime’s journey towards digitalisation is ‘special’ because its connectivity options are more limited, with 53 per cent ranking satellite connectivity as ‘number one’ by usage, and 69 per cent of maritime respondents reliant on satellite connectivity to support their IoT-based solutions.

In findings that challenge the received wisdom of shipping as a backward-looking business when it comes to digitalisation, the study suggests that actions by the sector’s thought leaders mean that the industry as a whole is ahead of many of its customers on IoT uptake.

However, more stereotypically, shipping also finds room for a sizeable rump of IoT laggards whose resistance to change will ensure that the wider transport industry stays ahead of its maritime component on digitalisation for the foreseeable future.

In some ways, variations in shipping attitudes are inevitable as reflections of the industries with which they engage, and the study offers guidance on how shippers behind different ‘trades’ are shaping up when it comes to future IoT uptake.

For example, as a core contributor to the deep bulk carrier, agriculture is at the forefront of the most stage of investment in the IoT, with 80 per cent of those surveyed characterised as ‘starters’ in the IoT investment cycle.

This contrasts with the maritime industry, where around 55 per cent are considered starters in investment terms, against a 53-54 per cent ‘progressives’ constituency. The mining industry yields IoT starters equivalent to around 42 per cent of all respondents, while identifying 39 per cent as progressives.

These findings put shipping ahead of the curve in terms of IoT investments, but the positives need to be qualified. For example, where around 8 per cent of the study’s respondents overall could be described as IoT investment ‘leaders’, none of these came from the maritime group, but a small number of leaders were found in the mining sector.

Meanwhile, 10 per cent of ship owners and over 10 per cent of mining respondents are described as IoT investment ‘laggards’: proportionately, this is twice the size of the overall ‘laggard’ constituency, demonstrating how both sectors prove a haven for intranet-like IoT sensors.

Investment perspectives can, of course, change: with 77 per cent of respondents from agriculture and 84 per cent from mining agreeing or strongly agreeing that the IoT will revolutionise their industries, for example, there appears to be a clear realisation that change is in the wind.

Sector priorities

A survey of drivers for IoT uptake across the transport sector offers a chance to evaluate motivations, but also for the more competitively-minded to identify areas for empathy.

Those involved in the bulk shipping sector, for example, may be interested to learn that around 50 per cent of respondents from agriculture identify environmental monitoring (of soil and weather conditions) as a main driver, while 44 per cent pinpoint the IoT’s potential to reduce operational costs.

If evidence were needed that the agriculture sector recognises but is yet to realise the IoT’s potential it may be offered by observing that while 64 per cent believe it will help them gain better insight into their supply chains, only 9 per cent have achieved this objective so far.

In the mining sector, meanwhile, the priority for IoT focuses on tracking and smart monitoring of assets, and, like its maritime counterpart, this customer base is attracted to the health and safety benefits associated with wearable technologies.

Given that energy respondents span industry roles from exploration through to distribution, it is unsurprising that this sector elicits a range of attitudes when it comes to the IoT.

In exploration, IoT can help to accelerate and enhance seismic performance data acquisition and analysis to improve production performance. In both exploration and extraction phases, however, health and safety benefits such as wearable technology are cited as key (respectively by 50 per cent and 60 per cent of respondents), while monitoring environmental changes are respectively cited by 53 per cent and 58 per cent.

Collectively, the study identifies two major aspects of IoT readiness among the organisations underpinning shipping’s oil and gas carousels. First, they are further advanced in their commitment and attitudes towards digitalisation than their dry bulk peers, with 50 per cent of energy respondents among the sector’s ‘progressives’. Secondly, 90 per cent of energy respondents believe that the IoT will be essential for gaining a competitive advantage.

From the maritime perspective, however, one of the most striking findings in the report is that ship owning respondents expect average expenditure per business on IoT-based solutions to amount to US$2.5 million over the next three years as part of their IT expenditure.

In absolute terms, the more mature energy and transport sectors predict higher average spend over the period ($4 million and $3.5 million respectively), while the figure for agriculture is significantly lower ($1 million).

Maritime respondents also say that they intend to invest a larger share of their IT budgets (7.8 per cent) in IoT-based solutions than in any other ‘next generation’ technology. Maritime therefore achieves a middle ranking when it comes to the 7.9 per cent range of IT budgets set aside by all sectors for IoT.

However, IT spend may not account for all maritime spending on IoT, where ship connectivity costs cut across the operations, training and safety budgets that often sustain the adoption of new technologies.

Furthermore, analysis also places maritime ahead of agriculture, mining and even energy when it comes to specific attitudes towards IoT-based solutions, with 34 per cent of maritime respondents indicating that they have an IoT solution under ‘full deployment’.

By their own testimony, driving these ‘leaders’ is the need for ships to be more cost efficient, cleaner and safer than ever before, with 56 per cent of maritime respondents already using or trialling smart asset monitoring.

Drilling down into the report, owners

Digital Ship August / September 2018 page 50
show themselves as upholding the maritime industry’s decade-long fixation with costs. While 51 per cent of respondents say that revenue generation does not figure into considerations, 75 per cent say that they have realised, or expect to realise savings using the IoT. Route optimisation is typical and is identified by 57 per cent as in use or on trial.

Environmental agenda
Emissions also matter: the environmental agenda is a key driver for IIoT adoption in the land-based and mass transit sectors, with 61 per cent of respondents saying that monitoring techniques such as emissions sensors provided a primary motivation for IIoT adoption.

In the maritime sector, regulation coming into effect over the short term is providing an extra prompt for adoption. In line with global fuel sulphur limits from 2020, the IMO target to halve ship CO2 emissions by 2050, as well as EU Monitoring, Reporting and Verification requirements for fuel use, 65 per cent of respondents say they already use IoT-based solutions to monitor consumption. Respondents say they already use IoT-based solutions to monitor consumption.

In the maritime sector, regulation coming into effect over the short term is providing an extra prompt for adoption. In line with global fuel sulphur limits from 2020, the IMO target to halve ship CO2 emissions by 2050, as well as EU Monitoring, Reporting and Verification requirements for fuel use, 65 per cent of respondents say they already use IoT-based solutions to monitor consumption. Respondents say they already use IoT-based solutions to monitor consumption.

However, maritime respondents also exhibit a marked ambivalence towards IoT-based solutions that is unique to the sector: enthusiasm in some quarters is tempered, in that the industry is also home to the largest group of IoT ‘laggard’s’ - a description applied to over 25 per cent of respondents. Even the least prepared organisations in the neighbouring mass transit and inland distribution sector said that they would deploy IIoT-based solutions within two years.

In the cost-conscious world of shipping, one explanation may be that while 33 per cent of respondents believe that IoT solutions will bring 10-20 per cent savings within five years, their potential to create new revenues is considered only half as likely, while 14 per cent of respondents believe that even five years out - there will be no savings at all. Some 54 per cent of peers in the mass transit and inland distribution industries identify improving resource efficiency as a primary driver for IIoT adoption.

But direct operational savings are not the only savings available from deploying IoT-based solutions in the maritime sector, according to respondents. Cutting marine insurance premiums is cited by 70 per cent of respondents as one of the most important drivers for adoption.

This finding is especially interesting because the industry self-selects as a ‘laggard’ when it comes to taking steps to remedy its cyber-security shortcomings, even though this topic is one of the fastest growing areas of business for insurers.

Cyber awareness
This is not to say that maritime respondents are not concerned about their cyber vulnerabilities: however, they are more concerned about data storage methods (55 per cent), network security (50 per cent) and potential mishandling of data (44 per cent) than they are about targeted attacks (39 per cent). Even so, only 37 per cent report initiatives to improve security training, with just 25 per cent working on new IoT security policies.

Maritime’s inward-facing security concerns are therefore distinct; the energy sector with 48 per cent of respondents, transport (52 per cent) and mining (64 per cent) most frequently cite the threat of external cyber-attacks as among their biggest security challenges.

The industry’s lack of cyber preparedness raises a deeper malaise over more full-blooded commitment to IoT-based solutions in some quarters: overall, the industry’s lack of decision-making skills is the most frequently cited impediment to uptake (by 56 per cent of respondents). Maritime also identifies itself as behind the curve when it comes to planning skills, where 42 per cent of respondents believe their organisations would benefit from additional skills, against a figure for all respondents expected to amount to 37 per cent.

Once more, however, these findings should be considered in context: lack of in-house skills was identified across all sectors as putting a brake on IIoT uptake, with around 34 per cent of respondents in the energy sector, 38 per cent in mining and 46 per cent in agriculture citing lack of skills as a barrier to uptake.

A different frustration appears to be thwarting ambitions among those already fully engaged in IoT-based solutions. Here, 51 per cent of the maritime audience cited the time lag between data collection and its availability as an obstacle blocking their optimisation of IoT-based solutions: this was 11 per cent ahead of any other explanation given by maritime respondents.

This is despite the finding that only 20 per cent of maritime respondents cite connectivity issues as a barrier to adoption of IoT-based solutions within their organisation – lower than any other sector.

However, to assess the maritime industry’s readiness to adopt IoT-based solutions on owner testimony alone is to overlook a particular quirk of the maritime industry: much of the technical expertise historically held in-house has been outsourced to ship managers and equipment suppliers. Marine equipment can contribute 70 per cent of the value of a new ship, meaning that it has been suppliers – rather than owners – making the running on connectivity. Big Data analytics and app-triggered remote diagnostics and preventive maintenance.

Therefore, while lack of skills and siloed knowledge are acting as a brake on IIoT uptake in the supply chain, the willingness of 64 per cent of maritime respondents to consider external partners for some or ‘as much as possible’ of their IIoT facilitation may, in the long term, be more a benefit than a block.

About the Author
Ronald Spithout is president of Inmarsat Maritime. The full ‘Industrial IoT on land and at sea’ report can be downloaded from the Inmarsat website, at http://research.inmarsat.com/download
The role of class in smart shipping

In our technology-driven future, class societies will continue to focus on standards for safety and excellence in design, construction and operation – but with the integration of data and digital applications powering a new generation of improved services, writes Howard Fireman, ABS

Shipping’s digital transformation is all around us, impacting the smallest vendor to the largest owner, across flag, class and shipyards, right up to the primary regulator.

In these early days there are many competing visions of the digital future. However, the central question for owners and operators is not only whether their partners are delivering the solutions they will need but whether these partners have themselves undergone digital transformation of their own operating models.

When thinking about the impact of digitisation it’s important to recognise that shipping is a highly diverse industry composed of multiple market sectors. The various sectors have their own competitive pressures and are evolving at different depths and speeds.

Even so, there are common threads. Numerous entities have led and participated in multiple pilot projects across the maritime industry, driven by desired outcomes including achieving lower maintenance or fuel costs, spares and parts optimisation, digitising processes and improving day rates.

In terms of early maritime adopters, it’s clear the investment has focussed on energy-related sectors, with assets that have high degrees of technical complexity. As more mainstream companies embrace digital business, they must work to define and align their digital strategy to their business outcomes; investment decisions should be driven by core business requirements and market positioning, and so support their overall strategy.

A digital and data strategy cuts across broader industry trends – performance optimisation, regulatory and environmental compliance and cyber security. As we look forward, it is essential that partners and suppliers are aligned with business outcomes.

It is clear that digital revolution will have a major impact on how class delivers its primary services. Our objective is the same as it has always been – setting standards for safety and excellence in design and construction – but the process of how we deliver services will be transformed, from plan review and throughout the life of the asset.

A digital-enabled class strategy integrates four key elements to deliver services to clients: connectivity, decision-making, efficiency and unlocking the power of data.

Supporting clients from vessel design through operations and maintenance requires that class develops and deploys a lifecycle viewpoint on data. Data use cannot be limited to operations alone, as lessons learned along the way will likely impact the next generation of vessel designs.

Class is focused on enhancing the connection to client data easier and creating new solutions, leading the way to digital-enabled class.

We believe that the class experience – for clients and other stakeholders – will change significantly in the future. Some customers are just beginning to understand what it means to treat data as a valuable asset, while others already appreciate the importance of data and how it could be used.

Exhaustive research with customers including designers, owners, vendors and shipyards is required to understand their data challenges. The consistent feedback is that collecting data for data’s sake was not beneficial without specific business outcomes.

A smarter approach to collecting and analysing data will have a major impact on the management of asset lifecycles.

A customer interface must offer access to everything an owner or operator needs to know – fleet status, statistics, certification, which ships are coming due for survey, as well as comments from the engineering department.

Creating Value

What is clear is that a non-integrated approach to digital investment does not work. A lifecycle strategy suggests working in partnership with vendors and customers, using a more connected model. Leveraging operational data throughout the asset lifecycle requires cooperation and partnership and a different, more connected class model. With a more connected approach, we can address asset and performance management, and drive a new level of value for our clients.

This will also ultimately allow class to swap out the calendar-based approach for a data-driven survey process. Not too many years ago, it’s fair to say, some owners would view class as a potential ‘inhibitor’ with a restrictive interpretation of its rules. Now many understand that working together with owners allows class to better support, not restrict, their operations and help them work smarter.

There are multiple elements to digitalisation but the fundamentals are simple, lever age better connectivity to provide a single portal for survey and compliance information; give surveyors new inspection and data-driven decision tools; provide crew and superintendents with voyage and operational support and create a data platform that enables us to build new applications in a collaborative way.

Digital efficiency efforts are already underway in class, with e-certificates able to be delivered on-demand in a secure environment. To support environmental compliance and maintenance management requiring daily shipping company operations requires reliable automated data capture, with replication to the shore for further analysis and interpretation.

This kind of marine-focused Enterprise Resource Planning tool can capture large volumes of transactional data. Moving forward, we can leverage these large data volumes to create actionable vessel management information.

To drive more effective decision-making, class is focussed on delivering business intelligence tools across a wide range of applications, from compliance and performance efficiency to health, safety, quality and environmental management.

Mobile and Cloud-based apps need to come in different flavours; market-specific for merchant shipping and workboat sectors and able to enhance operations both on board and ashore.

Condition-Based Future

Where the future lies is in Condition-Based Classification (CBC). This reflects the owner’s focus on improving asset reliability and availability in order to meet commercial commitments while enhancing safety.

CB C uses data and analytics to generate a lifecycle maintenance programme, moving towards planned and ultimately preventative maintenance to help detect anomalies that can contribute to unforeseen issues before they happen.

It is a phased journey, first aligning the vessel maintenance cycle and the class cycle, to replace the calendar-based schedule with a condition-based process.

The next phase entails data gathering from multiple sources and data cleansing to allow relevant data analysis. A significant amount of data collected from vessels today is not effectively used. In part, this is because data cleansing tends to unearth data quality problems. However, once these problems are highlighted, we can develop applications to filter data and fix issues.

The third phase is developing models to enable predictive maintenance based on anomaly detection and machine learning algorithms. Taking advantage of advanced data analytics, machine learning and artificial intelligence, which, additionally, including the owner’s KPIs, allows us to identify potential operational issues so the owner can reduce the chances of disruptive and expensive failures and repairs, and related lost revenues.

As it develops, CBC provides an opportunity to not just improve maintenance and performance cycles but also make the quantum leap in design and building shipyards is required to understand their own operating models.

We are very clear that data belongs to the client and it will be used under licence; clients should be completely confident they can share data in a protected format that will be used in an anonymised manner to gain insights into safety and other trends to benefit all industry stakeholders.

It is not a case of ‘give us all your data and we will sell you services’. We don’t think the role of class is to be the ‘Maritime Amazon’. Instead, industry stakeholders and clients believe we should focus on building solutions that solve their problems in innovative ways. Longer term, there will be varied solutions, but owner issues are similar; listening to the industry allows us to tailor outcomes to precisely meet its needs.

The journey is going to be fast paced and exciting. Digital-enabled class will be more effective, efficient, informed and flexible. Working in this way means class can adapt to meet industry needs and expectations as they evolve – and use the digital transformation we have undergone – to predict and anticipate them too.
Nautisk automates ECDIS updates

Nautisk, has launched an automated ECDIS chart updating system, integrated into a new hardware product called NaviUpdate. The system is designed to automatically provide updates to an onboard ECDIS without the need for manual operation or use of CDs, DVDs or USB devices. NaviUpdate acts as a server on the bridge delivering the updated information directly to the ECDIS. The unit is protected by a firewall and anti-virus software to reduce the risk of the ECDIS becoming infected with malware transferred through the use of flash drives or CDs from internal and external sources.

“NaviUpdate streamlines bridge operations, ensuring compliance automatically anywhere in the world while enhancing cyber security. But it also goes that one step further in delivering real-time vessel tracking and monitoring to shore systems,” said John Dawson, Nautisk’s head of marketing. “Using multiple data streams such as GPS, AIS, ARPA, it has the ability to monitor RPM, oil, temperature, fuel state and more.”

“Making real-time data from onboard sensors much more transparent is a huge benefit for operators who are keen to analyse data for improved performance management. Confidence in a secure connection at the right price will really unlock the potential of data analytics within the shipping industry.”

The system was developed in partnership with MarineMTS, and is compatible with existing shipboard communications systems, such as VSAT, FleetBroadband or GSM. The unit is also compatible with the rest of Nautisk’s existing product portfolio. NaviUpdate is a subscription-based service for a fixed monthly fee, with a single invoice for single or multiple vessels.

Denmark and China cooperate on e-navigation

www.dma.dk

Denmark and China have signalled their intention to support increased cooperation between the countries in maritime activities, particularly in the area of electronic navigation.

One of the most recent activities in this regard has been the inauguration of a joint seminar in China organised by the Danish Maritime Authority (DMA) and China Maritime Safety Administration (China MSA) to explore e-navigation initiatives.

China is an important partner with regard to the digital agenda, including global e-navigation solutions. The Chinese-Danish cooperation enables us to exchange knowledge and experiences,” said Bjørn Borbye Pedersen, director of e-navigation at the DMA.

“We have just expanded our cooperation agreement on e-navigation to also include China, so the seminar comes at an opportune moment.”

Aside from Chinese and Danish experiences gained from various e-navigation projects, the three-day seminar will also cover topics such as autonomous ships and the role of maritime authorities in the continuing digitalisation of the industry.

Joining the DMA and China MSA at the seminar will be representatives from China Shipbuilding Information Center, China Classification Society, and other relevant research institutions.

Augmented reality added to seals and bearings maintenance

Wärtsilä’s Seals & Bearings division is to upgrade the repair and maintenance options for its products with the launch of new augmented reality ‘smart glasses’ technologies.

Augmented reality assistance can be accessed by field service engineers, members of a ship’s crew or shipyard personnel to provide immediate access to the combined knowledge of the Wärtsilä Seals & Bearings team when troubleshooting or performing service and repair of stem tube equipment.

The new systems could also prove beneficial in supporting tasks like inspections, alignment measurements, on-site machining, shaft straightening and newbuilding commissioning, the company says.

“Augmented reality can be used to solve complex problems that would otherwise require considerable time to resolve,” said Thomas Pauly, product manager, Seals & Bearings Future Technologies.

“Smart glasses – equipped with Wi-Fi, Bluetooth, camera and microphone – enable real-time communication with a remotely located Wärtsilä expert who can see and hear exactly what happens on board, in dry dock or in a workshop, no matter how far the customer’s installation is.”

The user on site can send and receive visual images, listen to the specialist’s advice, and receive written instructions in front of their eyes on transparent displays. The Wärtsilä Expertise Centre can then guide the person on site through the actions required to solve the problem.

“The expert, located far, far away from the vessel can demonstrate how to make the repairs using images, manuals and even video footage – all while the engineer on site can continue to work,” Mr Pauly added.

Wilson to implement Fleet Operations Solution

www.wartsila.com

Wärtsilä’s Transas division has announced the signing of a new contract to supply a Fleet Operations Solution (FOS) to Norwegian-based fleet operator Wilson ASA, with the new infrastructure to include onboard navigational and communication components, as well as access to fleet data from shore-based locations.

The roll-out of the new set-up will be one of the first applications of the Thesis concept within Wärtsilä’s Smart Marine Ecosystem vision, which aims to connect fleet operations with ships, ports, and with coastal traffic management, using shared data to increase safety, reliability, and efficiency.

“For Wilson’s extensive fleet operations, flexibility and reliability are of the utmost importance,” said Thorbjørn Dulsener, general director, Wilson Ship Management.

“We have worked with Transas for several years, and see them as a trustworthy and competitive partner in developing the systems needed to secure our most efficient operations, and we expect that within a short period Transas will be able to equip our vessels and support them.”

The managed service package incorporates elements of the recently launched A-suite portfolio of decision support tools developed by Transas, which applies machine-learning technologies within a maritime setting to improve operations.

Wilson will also implement Transas’ Advanced Remote Training for Seafarers (ARTS) system, an e-learning application within A-Suite that provides online access to manufacturer-approved type-specific training courses for Navi-Sailor ECDIS.

“This landmark contract with Wilson to roll out the Fleet Operations Solution demonstrates the value that digital solutions can add to large fleet operations in today’s business environment. Joined-up technology has a definite role to play in the marine sector’s transition to a new era of efficiency,” said Frank Coles, Transas leader for Wärtsilä Voyage Solutions.

As a managed service, the FOS is delivered based on fixed monthly fee payment terms, which cover ECDIS charts and associated updates, and maintenance. The charge also incorporates all airtime costs incurred.

D’Amico to open digital fleet operations centre

www.damicoship.com

Italy-based shipping company d’Amico Group has partnered with RINA and Marlink subsidiary Telemar to build a new digital fleet operations centre in Rome, which will see the vessel operator ramp up data collection from its ships to improve performance analysis.

The three-way partnership will involve RINA managing automatic data acquisition on board the ships, as well as analysis and presentation of the data collected, with Telemar providing the VNAT communications systems used to transfer data to the operating centre, as well as assisting in linking onboard operational technology to the digital network.

”D’Amico will provide technical specifications and validation of the overall set-up for the system, and for the design of the monitoring, layout and alerting rules. The new operations centre is expected be completed by the end of 2018.

“We are very proud to be part of this project where, together with RINA and Telemar, we are planning to develop, from scratch, a fleet operations centre built around the shipowner,” said Salvatore massimo D’amico, fleet director at d’Amico Group.

“In d’Amico Group we believe that this is the next step to make our ships safer in an industry where the margin for mistakes is zero.”

Wilson to implement Fleet Operations Solution
**NAVIGATION, AUTONOMY & NEW TECHNOLOGIES**

---

**Royal Bodewes inks six-ship deal with Radio Holland**

Radio Holland Netherlands has agreed a deal to supply a full package of navigation and communications equipment from Furuno to six vessels being built at Royal Bodewes in Hoogezeand, the Netherlands. The package includes Furuno’s FAR-22x5 by TUMSAT ENC screens for all six vessels, as well as a variety of other Furuno ECDIS, echosounder, speedlog, AIS, DGPS, MF/HF, VHF DSC, BNWAS and Inmarsat-C equipment.

These systems will be supplemented by additional navigation and safety equipment from other manufacturers as required. Three of the vessels are dedicated cement carriers to be delivered to Eureka, part of SMT Shipping, while two of the six are general cargo vessels for the British shipping company Scotline.

The sixth ship is a general cargo vessel under construction for German operator Rederei Braren. All of the vessels are scheduled for delivery during 2019.

“Radio Holland is responsible for the execution, engineering, project management and commissioning of the contract, given our strong relationship with the yard,” said Theunis Eelkema, sales manager services north, Radio Holland.

“Three of the six vessels to be equipped will be Eureka cement carriers and people very well. This order shows that Royal Bodewes appreciates our performance on their newbuild vessels over the years.”

---

**SolstadFarstad agrees navigation data contract**

Norway-based offshore operator SolstadFarstad has agreed a new deal with maritime technology provider GNS to fulfil all of its digital and paper navigation requirements, as part of a fixed-price bundle contact.

The agreement will see SolstadFarstad transition from buying on-demand to a fleet-wide fixed-price bundle for the 145 vessels it operates, including 32 construction service vessels, 50 anchor handling tug supply vessels and 63 platform supply vessels. The deal includes a mix of conventional ENC supply and Pay As You Sail ENC options, as well as GNS’s new VOYAGER Hub solution.

“We expect to achieve significant savings and purchasing efficiencies by procuring all of our navigational products through a bespoke vessel from GNS,” said Tor Inge Dale, chief operating officer at SolstadFarstad.

“Sourcing our navigational data this way allows vessels to get very fast access to what they actually need and significantly reduces the administration time we spend on purchasing navigational products, as well as remove the costs associated with processing large numbers of small transactions.”

All of SolstadFarstad’s digital navigational purchasing is now centralised under a single contract, a single Purchase Order and a single invoice, with the data available on board monitored by GNS to ensure compliance and automatically updated with new edition products and licences when required.

“Because we track ships worldwide and capture position data every 60 minutes, GNS can analyse a vessel’s trading history and calculate accurate fixed prices for ENCs, digital publications and other route-specific navigation products,” said Jon Folkedal, country manager Norway for GNS.

“Our unique data intelligence and analysis system collects, stores and analyses millions of data points, allowing us to review the trading patterns and requirements of each individual vessel and identify areas for cost efficiencies and compliance vulnerabilities.”

---

**Merger for Navico and C-MAP**

Navico and C-MAP have announced that the companies are setting together with the C-MAP brand to join Lowrance, Simrad and B&G within the Navico portfolio, effective immediately.

The two firms said that the merger will help to accelerate their shared ambition to create the world’s biggest digital marine ecosystem of hardware, software, services and applications.

“This merger is an incredible opportunity to drive innovation in the marine industry and lead a new digital era,” said Leif Ottosson, CEO, Navico Group.

“We see huge potential to bring our two teams together and accelerate growth.”

Sean Fernback, former CEO of C-MAP, will now become Navico Group CTO and a corporate executive member.

---

**GPS anti-spoofing device launched**

Totem Plus has introduced a new system to protect vessels against GPS jamming and spoofing, through interference or deliberate intervention by malicious actors.

GPS jamming can be performed using simple equipment transmitting on the same frequency as the positioning system, which stops the genuine GPS signal from being received and processed. GPS spoofing requires more advanced equipment, capable of ‘fooling’ the GPS receiver by sending dedicated signals that will be interpreted as genuine, causing the equipment to report an incorrect position.

The GPS Dome system Totem Plus is offering was developed by fellow Israeli company InfilDome, and uses military technologies based on the application of unique RF algorithms (known as ‘Null Steering’).

A small hardware unit is added into the existing GPS set-up, connected between the antenna and the receiver, providing protection by analysing and then filtering out jamming/spoofing signals, ensuring that the real GPS signal can get through.

---

**MOL joins navigation support system project**

Mitsui O.S.K. Lines (MOL) has announced the launch of an ambitious research partnership in Japan aimed at developing an advanced navigation support system for use at sea.

MOL has well join MOL Techno-Trade, the National Institute of Maritime, Port and Aviation Technology, and the Tokyo University of Marine Science and Technology (TUMSAT) in working on the project, which will see the parties conduct research to improve safe navigation of both conventional ships as well as the autonomous ships of the future.

Specifically, this will include the development of a navigation support system incorporating an Obstacle Zone by Target (OZT) concept and application of a ship collision risk index. The project is also expected to include use of technologies such as Automatic Radar Plotting Aids (ARPA).

OZT is a zone where a potential risk of collision with a nearby ship has been identified, with that zone then displayed on the bridge to allow the watchstander to quickly identify whether the ship is at risk of a collision and identify the vessel. The project will be led by TUMSAT honorary professor Dr Hayama Imazu.

Elcome Marine Technologies JSC Free Zone has been appointed by JRC/Alphatron Marine as a full sales and service representative in Egypt. Elcome will sell and service the full range of Alphatron and JRC navigation, communication, internal communication and CCTV systems.

The UK Hydrographic Office (UKHO) has appointed the announcement of Terry Makewell to the position of chief technology officer. Mr Makewell joins the UKHO from the UK Office for National Statistics, where he held the role of chief digital officer, and also previously worked at the UK Met Office.

Nautisk has made four new appointments in sales and customer service roles, with Hamza Mazhar and Bjørn Emil Lillelevik joining its Oslo-based sales team, and Hege Aaslie coming into the Oslo customer service department from a similar role at Disney. The UK-based sales team has also added Michael Simpson to its ranks.

Navico, parent company to Lowrance, Simrad, B&G and C-MAP brands, has appointed Jamie Elgie to the position of senior vice president and chief operating office of the Americas. In his new role Mr Elgie will be responsible for all sales, marketing and operations activities for all of the brands throughout North, Central and South America, after joining the company from Wilson Electronics.

---

**New Navico COO, Jamie Elgie**

www.nautisk.com

www.ukhydrographicoffice.com

www.c-map.com

www.navico.com

www.navico-worldwide.com

www.navico.com

www.mol.co.jp

www.totemplus.com

www.chinaprices.net

www.ukhydrographicoffice.com

www.elcome.com

www.nautisk.com

www.navico.com
Oceanstar is an onboard decision support system that enhances vessel navigation in confined waters.

The Oceanstar system shows position and movement within, or relative to, predefined corridors or quaysides in addition to GNSS quality data.

The Oceanstar system is type approved by DNV–GL as a GNSS receiver, speed and distance display measurement equipment (SDME), rate of turn indicator (ROT) and transmitting heading device (THD).

The Oceanstar system can be used standalone, or integrated with a bridge system.

The Oceanstar system facilitates quick decisions and leads to a safer and more efficient operation.

Fugro
oceanstar@fugro.com
www.fugro.com/oceanstar
IMO takes first steps to autonomous ships

IMO's Maritime Safety Committee has begun taking its first tentative steps towards building a regulatory framework that will allow autonomous vessels to share the waterways with traditional traffic, as research and development projects around the world continue to push these technologies forward.

The International Maritime Organization (IMO) has confirmed that it has begun work to examine how the operation of autonomous ships could be addressed within IMO instruments, with the Organization's senior technical body, the Maritime Safety Committee (MSC), endorsing a framework for a regulatory scoping exercise on the issue.

This scoping exercise includes a plan to create preliminary definitions of Maritime Autonomous Surface Ships (MASS) and degrees of autonomy, as well as a methodology for conducting the programme and a plan of work.

For the purpose of the regulatory scoping exercise, a Maritime Autonomous Surface Ship is defined as a ship which can operate independently of human interaction, with different specified degrees of autonomy.

These degrees of autonomy include ships with automated processes and decision support, with seafarers on board to operate and control shipboard systems and functions, as well as remotely controlled ships with seafarers on board.

Higher degrees of autonomy include remotely controlled ships without seafarers on board, and then fully autonomous ships able to make decisions and determine actions by themselves.

As a first step, the scoping exercise will identify current provisions in an agreed list of IMO instruments and assess how they may or may not be applicable to ships with varying degrees of autonomy, and whether they may preclude MASS operations.

As a second step, an analysis will be conducted to determine the most appropriate way of addressing MASS operations in the future, taking into account the human element, technology and operational factors.

The MSC has now established a correspondence group on MASS to test the framework of the agreed regulatory scoping exercise. Member States and international organizations have also been invited to submit proposals related to the development of interim guidelines for MASS trials to MSC’s next session, MSC 100.

The shape that those proposals might take is still uncertain, but international maritime representative body The Nautical Institute is working on ensuring that all vessels, autonomous or not, should comply with COLREGs.

Captain Ghulam Hussain, head of The Nautical Institute’s delegation to the IMO, stressed the NI's position while attending the most recent MSC Meeting (MSC 99).

"The Nautical Institute will stay engaged in this debate at the IMO and beyond to ensure that the voice of mariners is heard. The Nautical Institute also voiced its opinion to the Committee that, as many technologies associated with autonomous operation will be fitted to manned vessels, the exercise should take into account how these systems can best be used by the professional crew onboard."

The Committee has since agreed that autonomous craft should be required to comply with relevant international regulations, including COLREGs, while also taking into consideration the impact on the human element, in particular in relation to remote operation and related training, as well as interactions between conventional and autonomous ships (e.g. VHF voice communications), including non-SOLAS recreational ships.

Technical issues, such as data and communication systems requirements, cybersecurity, and the availability of related technologies in different countries, were also noted for consideration.

"The Nautical Institute will stay engaged in this debate at the IMO and beyond to ensure that the voice of maritime professionals is taken into account as this new dimension of technology is developed," said Capt Hussain.

R&D

Research and development into the application of autonomous systems in the maritime environment will not wait for regulators, however, with the number and breadth of projects testing these technologies continuing to grow month-on-month.

Among the newly announced projects is a collaboration agreement between Rolls-Royce (recently acquired by Kongsberg, see page 1) and Finnish shipowner Finferries, which will see the firms jointly develop new decision support systems for marine operations and work together on demonstrations of remote and autonomous ferry technologies.

A key focus of the collaboration will be a new research project called SVAN (Safer Vessel with Autonomous Navigation), which will see the two companies implement the findings from the Advanced Autonomous Waterborne Applications (AAWA) research project that formally ended in late 2017.

Funded by Business Finland, AAWA brought together a number of shipping stakeholders to research the commercial and technical viability of advanced ship systems, particularly in the area of autonomous operations. Both Rolls-Royce and Finferries were involved in the project.

"We are extremely pleased that the collaboration we had with Finferries in the AAWA project is to continue," said Karna Tenvuo, senior vice president, Rolls-Royce Ship Intelligence.

"This new collaboration agreement could take safer, cleaner shipping to the next level. Rolls-Royce will develop solutions to enhance the safety and efficiency of marine operations in the ferry sector, which will be demonstrated in the test platform provided by Finferries."

Also in Finland, ice-class vessel design specialist Aker Arctic has recently announced the results of an autonomous ship model trial at its ice model test laboratory in Helsinki. In the demonstration test the ship model was able to detect obstacles in the ice tank through the use of onboard sensors, manoeuvring around them without operator input before mooring itself automatically to a target pier.

The test was carried out in ice-free waters, the company notes.

The wireless model used in the test is equipped with battery powered propulsion units, a data transfer connection to the 'shore facility', and an autonomous navigation system that routes the vessel around the obstacles detected by the onboard sensors.

The various components are connected using Distributed Intelligent Vessel Components (DIVEC), a custom developed network framework that provides a protocol for connecting devices and transferring data between them.

DIVEC offers an adaptable infrastructure that can be interfaced with third party systems and components, and Aker notes that the technology used in the autonomous ship model tests in the laboratory are also adaptable to semi and full scale prototypes.

Guidelines

Also preparing for an autonomous vessel future is classification society ClassNK, which has released its Guidelines for Concept Design of Automated Operation/Autonomous Operation of ships, to promote safety in the design of automated ship operation systems.

The class society believes that guidelines are necessary to clarify the targeted operations or duties that will be automated in any future computer-controlled vessel systems, distinguishing the division of roles between the crew and the machines, and establishing a common understanding among all actors involved in the operation of the ship.

ClassNK notes that its guidelines are being published as a “provisional version” which will be finalised through proper review and revision after being applied for a certain period of time in the context of new developments in this field of innovation.

The society also says that it plans to develop further guidelines for various stages in the automated operation of ships, from development of designs to actual operation.

The document is available to download free of charge via ClassNK’s website for those who have registered for the ClassNK My Page service.
The new ECDIS NX has been designed from the scratch under continuous user participation and user workshops, making it the world’s first user-defined ECDIS.

Raytheon Anschütz now completes the new Synapsis NX series:

Thanks to an unparalleled intuitiveness, Synapsis NX supports users and contributes to efficient operation and safe navigation.

www.raytheon-anschuetz.com/nx-generation
Challenges in optimisation in the maritime industry

Efforts to optimise a vessel’s operations may offer marginal gains, but neglect the wider perspective – we need to optimise an industry, not a ship, writes Frank Coles, Wartsila Voyage Solutions

In a perfect world, a ship would be designed for a specific trade, taking into account all the factors that surround that trade. It would consider the routes, the weather, the logistics requirements, and many more parameters for the life of the vessel in that trade.

In a perfect world, the ship would be built and designed with sensors and tools to provide all the feedback for the operations centre to optimise the operations and manage the fleet within agreed KPIs. In a perfect world the technology human interface would be carefully thought out, not on a piece by piece basis, but as an integrated operations platform.

In a perfect world, the fleet would likely have an enterprise approach to its systems and solutions for operations. In a perfect world, you would not see multiple vendors for various fragmented applications and operational equipment. At the very least they would be connected to provide an enterprise solutions approach and interconnected optimisation for fleet performance.

Of course, we are not in a perfect world. Ships are not always built for specific trades and with attention to detail. In any event, trades change, and demands change. At this point in time, very few ships are built designed as a part of an enterprise solution – an enterprise where the result is optimal operations shared between the ships and the shore, and fit for purpose for the role of maritime in the shipping world.

So what are the main challenges holding us back from achieving some level of optimisation of the fleet?

The industry infrastructure, the way we introduce solutions and how they are sold into the industry are probably key challenges in rolling out optimisation.

Operational optimisation should be seen against the background of the industry. We find ourselves in an era where the maritime transportation industry is trying to be relevant in the changing demands of shipping goods, cargoes etc. It is not enough to present a technology, or a service without a much broader approach to the problem and the solution.

The maritime industry exists to carry cargo, and the relationship between the owner, operator and cargo owner is changing, and likely to change more over the next few years. Technology and solutions are enablers, not the business case or reason why they should be purchased or used.

With so many claims and fragmented technology offerings, it is small wonder that there is a high level of doubt about the value of the applications and presented solutions.

Also at fault is the fundamental way in which we approach technology and change in our industry, the maritime transportation industry.

As a professional transportation infrastructure, it is flawed and outdated. The current infrastructure of implementing rules and regulations, and their enforcement, makes it very difficult to have a professional safety culture and efficiency driven industry. This impacts the design and use of technology, the interaction with the human, and thus the efficient ship operation.

Think about how technology is introduced into maritime operations and consider the manipulations and compromises that occur so that eventually we end up with something that is not optimal at all. The human interface with the technology is also certainly far from perfect today.

This is an area that requires significant work – in design, in operations and in training. There is a very big gap between optimal design and the attitude towards design, use and training in the industry today.

Management of change

Every product or change comes to market in a long drawn out process. Lobbying behaviours water down the solution before they ever see the light of day. Then when they have been put in place they are so open to abuse and interpretation that the value is compromised. This covers the value of the solution, interaction with other tools, human training and use of the tools. Even introducing rule enforcement.

We only have to look at the Ballast Water saga, the Scrubber debacle and the ECDIS story. They all in their own way point to a sub-optimal result in how the industry moves forward. I will use ECDIS to discuss further.

ECDIS is supposed to reduce workload. It is also supposed to be used along with all other means of safe navigation. ECDIS is supposed to be used by qualified and skilled users.

When it is used inside old operational behaviours, it adds to the workload. As a standalone unit for navigation, it increases the risk of an incident. Without proper competence and skills training (not merely certification) it increases the risk of an incident. All of these situations are commonplace in our industry.

As a fundamental error of the industry regulatory environment, ECDIS is poorly regulated, poorly trained and poorly used. Many owners and operators cover the bare minimum required by regulatory requirements for installation, use and training.

We encourage single task focus and behaviours. Many operators rely on the bare minimum of certification, which does not imply skills or competency to use the equipment in a complete bridge operational management structure.

Many operators put the equipment on board but do not factor in or require a change of behaviour, attitude or operational process. A safe navigational mentality and awareness starts from the complete picture in training, in certification and to require skills training and competence training in a complete bridge picture.

Our approach to regulation, training and operational requirements starts from the culture of the industry, the regulators and the attitude to safety, which is the bare minimum and not the highest quality.

We train by single equipment and certify navigators by each piece of equipment. So I suppose it is not a surprise that we introduce optimisation technology in single standalone applications. It is how we approach everything.

But it is also because of the way in which the regulations are left open to interpretation, both in how to design and build the product but also how to use it and how much training is required. We have to be much more specific and much more interconnected in our approach to solutions, equipment and technology. This will provide a more optimised approach.

We have to have a new, more modern professional approach to the whole model. One that befits the stature an industry that carries 90 percent of world trade. One that is responsible.

System of systems

A ship is a system of systems, properly optimised it is a sophisticated interconnected part of a larger fleet operation. Properly utilised it is an efficient, environmentally friendly method of transport. Many would say it is already efficient in terms of the quantity of cargo it carries, and the most environmentally friendly in that regard also.

But it can be so much more efficient and clean. What a ship operation should not be is a fragmented mishmash of individual solutions for each operation on board, without connection to a fleet solution ashore. The system of systems is not IoT, it is the complete system. IoT is an enabler, but does not make it a system.

The common practice amongst owners and operators is to divide and conquer. You will find many operators who buy the ECDIS from one supplier, the charts from another, the weather routing application and other applications from others. Then add the ERP, PMS and even CBM all from different vendors. On top of this, you then have a communications system with various configurations.

Yes, it is driven by competition or movement toward a commodity-based approach to purchasing. But it is also creating a fragmented approach to operations.

It creates cyber risk with many varied offerings. Without connectivity between the various applications, it provides very little efficiency in optimisation.

We have created a quagmire of offerings, solutions and promises without clarity of the benefits. If you only consider optimisation by ship, or by parts of the ship, you are missing huge parts of the picture, large parts of the overall direction of the industry and missing the leverage that is possible when you bring it all together.

Many of the fragmented offerings provide an answer to parts of the problem, but not many (if any) provide a solution that is easily understandable or supported by the buyer, the ship operator. If they were, all...
the ships would be operating in an optimised manner.

One of the biggest challenges in providing voyage performance optimisation in the maritime industry is the messaging. As with most things in the maritime industry the approach is littered with misinformation.

The sheer number of optimised weather or routing products that claim to have the latest approach to providing the optimal route is a galling exercise. Then when you consider the way in which each solution operates independently, it adds another layer of fragmented mushmash. Very little in maritime is done in a coordinated manner.

The widespread use of the term ‘vessel optimisation’ demonstrates that we don’t appreciate the breadth of the way in which optimisation should be approached. A ship is not optimised, the fleet is optimised, and done properly it also benefits by using data from other fleets.

Fleet and ship optimisation starts by designing the right ship, using the right paint and choosing the right propeller. However, it is the operational attitude that will provide the final performance optimisation.

When the owner is presented with a solution, they are looking for a business solution or an understanding of why this will change their business model. Why it will make the fleet or ship more attractive to the charterer.

Maybe this is obvious, but it is not how the industry tends to present solutions to owners and operators. Leading with technical specifications and points scoring between the various technologies does not help an operator make a decision. It confuses them.

Demonstrating value

The conflict of who pays and who benefits provides an interesting conundrum for many in the maritime market. Much is made of the sweeping claims and solutions for fuel saving.

Many applications speak of solving problems, but on further examination, they are not problems the ship owner or operator is focused on. The owner is focused on making money from his charter and needs to understand how this helps them directly.

Obviously, I agree some of the answers are connected, but unless clear and direct they will not get the attention of the owner. As I have already alluded to, one of the key issues is that technology providers need to provide the ability to make the industry green, efficient and safer. It also makes the industry more attractive and more appealing for the next generation to work in.

In order to bridge the gap between technology and people we need to stop talking about the technology and focus on the solutions, but we also need to change the infrastructure and attitude that surrounds the maritime industry.

We have to show the benefits of the technological solutions and the return on investment, but we also have to implement them properly. Which also means including the actual interaction between the human and the technology. This means we have to deal with the broken structure of our industry because the current structure and attitudes will hinder the adoption and realisation of the solution.

We cannot keep compromising on the design of the maritime product as a transportation model. We cannot keep accepting the minimalist approach to safety, efficiency and the environment.

This is about a new business model and a new attitude to how technology works with the human, and the benefits to the maritime transport business. We should not be thinking of this in the current business model, but more in how the model is going to look tomorrow.

A model where we are likely to see specialist ships, that are environmentally clean ships, probably automated ships with humans overseeing operation of the technology, so that we move towards an efficient and clean mode of delivering cargo, which satisfies cargo interests, the general public and future crews.

How to achieve this change? Do we wait for the current industry processes to either change or come up with answers? No, that will simply take too long. It is incumbent on the technology companies to show the ROI, to provide the template for change.

It is perfectly possible for the new world to exist in the current regulatory environment. After all, it operates at a least cost, minimal level of safety. We just need to invest in the future and operate at a higher level.

The challenge here is not the technology; it is the mindset. If we get this right and the efficiency and safety can be proven and demonstrated, it will be simple. The industry cannot find its way through the technology fog to see the channel towards competitive advantage.

The customer does not need a technology – they need a business reason.

CMA CGM in vessel AI partnership

www.cma-cgm.com

The CMA CGM Group has announced a collaboration agreement with San Francisco-based startup Shone, to examine use cases for artificial intelligence (AI) technologies in maritime transportation.

The collaboration agreement will provide Shone with access to CMA CGM vessels to accelerate the development of AI systems that can improve the operation of container ships, allowing the startup to implement and test its technology on board data collection systems which will provide data for analysis at its headquarters in San Francisco.

The ultimate goal is to provide assistance to crews in areas like decision support, maritime safety and piloting, through the integration of data from multiple sensors, such as radar, camera and AIS.

That data can be used to increase detection accuracy and prevent potential collisions by applying the information gathered within the context of the COLREGs.

Shone was founded in 2017 by three French engineers, and is working on methods to detect and characterise the types of artificial intelligence already present in cars to the vessel environment.

Pilot planned for port drone deliveries

Wilhelmsen Ships Service has partnered with Airbus to provide drone delivery of ship supplies at one of the world’s busiest ports.

The Agency by Air project will launch at Singapore port’s Marina South Pier in Q3 2018, piloting the delivery of spare parts, documents, water test kits and 3D printed consumables via Airbus’ Skyways unmanned air system (UAS) to vessels at anchorage.

The Maritime UAS project agreement establishes a framework for cooperation between the parties, with the aim of investigating the potential deployment and commercialisation of UAS for maritime deliveries.

“"We are absolutely thrilled to be working with a forward-thinking industry leader like Airbus. When we announced last year that we were pursuing drone delivery, we were greeted with a fair amount of scepticism, but our collaboration with Airbus shows we really do mean business,” said Marius Johansen, VP commercial, ships agency at Wilhelmsen Ships Service.

“As an outward looking company, eager to utilise technology to help improve our customers’ experiences, drone delivery is a perfect fit for our agency business. Part of our standard husbandry services, we organise the delivery of essential spares, medical supplies and cash to master via launch boat day in and day out all over the world.”

"However, delivery by drone is much more cost effective, quicker, and frankly safer for all involved. Costing on average ninety per cent less than launch boats, they importantly remove the risks inherently involved with making launch deliveries and also have negligible environmental impact.”

Wilhelmsen Ships Service is tasked with setting up the necessary maritime and port operations, gaining the relevant approvals from port authorities and securing maritime customers, while Airbus will take care of all the corresponding aviation approvals, and the running and maintenance of the UAS and its control systems.

The partnership will first see an initial two-week pilot trial with deliveries to ships anchored in Singapore’s eastern anchorage. A command centre and a delivery centre will be set up at the pier to facilitate the deliveries, with an initial delivery range of up to 3km from the shoreline. A second delivery station will be positioned at an open space in Marina South to extend delivery coverage to more anchorage vessels.
ABBB Marine
Delegates calling at ABB's stand at this year's SMM can expect to see various technologies from the company’s 'Electrical. Digital. Connected' (EDC) strategy on display.

Today, more than 1,300 ships employ ABB electric systems, and the company expects that number to grow as the industry begins to explore pathways for decarbonisation and deploy new electrical infrastructure, such as DC Grids, that can more easily accommodate new energy sources like batteries and fuel cells.

Visitors can also learn more about the company’s digital systems, including its ABB Ability Collaborative Operations Centers infrastructure, which uses remote equipment monitoring and data analytics to enable predictive maintenance, planned interventions or remote technical support.

Forthcoming systems based on machine learning and autonomous technologies aimed at assisting bridge officers to navigate more safely are also expected to be unveiled during the exhibition.

Visit ABB at stand A3.202

BASS
At this year’s SMM BASS will be showcasing its new BASSnet Fleet Management System version 2.10.

Developed for the shipping and offshore industries, this version comes with new features developed in collaboration with the company’s customer community and incorporating changes based on key industry trends.

BASSnet 2.10 has been optimised for integrated performance on a fleet-wide basis, and includes new data privacy features, new fleet management functionality, and 12 improved modules.

Visit BASS at stand B6.524

ChartCo
ChartCo will introduce an upgraded version of its flagship software, PassageManager, at SMM 2018, as well as announcing a new eNavigation and compliance platform called OneOcean.

The company says that all key functions and content from the previous version of PassageManager are now fully integrated, enabling users to access information in one place.

A new feature within the OneOcean platform is the incorporation of data from ChartCo’s environmental compliance EnviroManager, used to manage compliance with both MARPOL and national regulations.

Visit ChartCo at stand B6.211

ClassNK
At SMM, ClassNK will set out its vision for ship classification and the future of the maritime industry, focusing on the impact of digital technologies.

The Tokyo-based class society says it is increasingly taking advantage of developments in technology to optimise and streamline survey techniques and to deliver a new generation of technical services for shipbuilding and operations. This will involve, among other things, leveraging ship design data, proactive utilisation of hull and machinery monitoring and using remote survey tools.

ClassNK will also be showcasing its latest guidelines for the use of drones in class surveys and for the conceptual design of automated and autonomous ship systems. Representatives will be on hand to discuss specific topics such as the concept of consolidating design data as ‘digital twins’, the benefits of its ship data platform run by subsidiary ShipDC, and future surveying employing deep data analysis, AI, and remote inspection technology.

Visit ClassNK at stand BG.E2-212

CMR Group
New generation ‘smart’ engine and IAMCS integrated marine console technologies will be in focus for instrumentation, control and power management company CMR Group at SMM 2018.

The company’s IAMCS microprocessor-based systems contain functions for protection and control of ship network installations and can be integrated with other systems to provide Vessel Management System capability.

CMR's technologies combine power management and integrated alarm & control monitoring technologies alongside propulsion and auxiliary engine control and a supervisory system. These are based on an Ethernet network loop architecture, which communicates with other on-board systems.

Visit CMR Group at stand B6.417

Cobham SATCOM
Cobham SATCOM will showcase the equipment in its integrated hardware ecosystem at SMM 2018, offering a standardised interface across all frequencies and networks to deliver a consistent user experience.

As part of this, the company will launch a new 1 metre SAILOR VSAT antenna on its stand and also display the new SAILOR 4300 L-band terminal for the forthcoming Iridium Certus service.

Visit Cobham SATCOM at stand B6.417

Inmarsat
Inmarsat will focus on the benefits of IoT-based systems available through satellite connectivity at SMM 2018.

The company will showcase its Fleet Xpress service at the event, which is now installed on 5,000 ships and combines Ka-band satellite services with L-band FleetBroadband for continuous back-up.

Inmarsat representatives will be on hand to discuss the company’s Certified Application Provider partnership programme, and detail the potential benefits of its cyber security solution Fleet Secure.

Visit Inmarsat at stand B6.116

Intellian
Intellian will display its range of satellite antennas for the maritime industry at the SMM event in Hamburg this year.

Among the latest additions to the company’s portfolio is the new v8SNX Next Generation VSAT system. Also on display will be the Intellian Fleet Xpress system, along with its satellite TV equipment, the Intellian E10Q.

The company’s on-site team will be available to answer questions on products, sales, or technical inquiries.

Visit Intellian at stand B6.226

Iver C. Weilbach
At SMM 2018, Danish supplier of nautical charts Iver C. Weilbach & Co is launching a new digital platform with multiple navigation services, with the latest version of the WENDIS Viewer integrating ADMIRALTY e-Nautical Publications (AENP) from the UK Hydrographic Office (UKHO).

The new integration will allow operators to download and apply the latest...
THE NEW DIMENSION IN E-NAVIGATION & COMPLIANCE

Right now, new technologies are driving change in the shipping industry. By choosing the right solution, you can significantly simplify life for those onboard and onshore. Ensuring that your global compliance, navigation, safety and environmental needs are met.

All it takes to unlock these benefits is ChartCo OneOcean. A new, integrated platform from ChartCo that’s built for the future, designed to meet ship owners’ and managers’ requirements.

PassageManager is the newly developed application for ChartCo OneOcean that’s making e-navigation and information management faster than ever. With the most secure ECDIS integration capability on the market, and a range of brand new features, voyage planning has never been simpler.

Talk to us today about a demo, free trial or to upgrade.

Unlock efficient voyage planning and uncover the benefits at chartco.com/one-ocean

enquiries@chartco.com

ChartCo
OneOcean
UKHO updates to publications electronically, and will also bring the UKHO's ADMIRALTY Information Overlay (AIO) to the WENDIS Viewer, which displays ADMIRALTY Temporary and Preliminary Notices to Mariners (TNPs) and ENC Preliminary Notices to Mariners (ENPs) on top of Electronic Navigational Charts (ENCs).

In addition to AIO, operators can build different information overlays on top of ENCs as required, such as weather services, tides, and emission control areas along with MARPOL zones. The platform also has a remark function allowing shipowners to warn their seafarers if a vessel is entering no-go areas or other designated zones.

Visit Iver C. Weilbach in the Danish Pavilion, at stand B1.EG.213

JSMEA

The Japan Ship Machinery and Equipment Association (JSMEA) will be representing its 260+ member companies, cruise lines, shipyards, ports, and oil companies at SMM 2018, consisting of enterprises manufacturing, repairing and selling ship machinery and equipment.

For this year’s edition of the exhibition JSMEA will be taking 20 member companies to Hamburg for the event, where the Association invites attendees to visit the Japan Pavilion to learn about their various new products and technologies, and other advancements taking place within the Japanese ship machinery and equipment industry.

On the first day of SMM, September 4th, JSMEA will also hold a Japan seminar and reception, which visitors can register to attend on the JSMEA website.

Visit JSMEA at stand B7.440

KNL Networks

At SMM 2018 KNL Networks will be showcasing its systems to connect the Internet of Things and the maritime industry.

The company offers a connectivity service to the shipping industry using a dedicated mesh network with military-grade security to allow encrypted data and e-mails to be transmitted by HF.

Nearshore ships can also benefit from additional internet access via 3G in approximately 150 countries, using the company’s managed service packages.

Visit KNL Networks at the Danish Pavilion, at stand B1.EG.405

Kongsberg Maritime

Kongsberg Maritime will display its operational, digital and seaborne transportation technology including autonomy and hybrid solutions at SMM 2018.

Exhibits will include systems for LNG/gas powered vessels, integrated ocean science and condition monitoring, as well as Kongsberg’s Kognifai open digital platform, which aims to improve integration between information and operational technology by optimising data access and analysis using applications developed by Kongsberg and certified third-party developers.

Applications include integrated fleet-management systems with electronic logbooks, voyage planning and planned maintenance, and new technologies like ‘Digital Twins’ and ‘Simulation as a Service’.

Kongsberg’s work as the primary technical partner for Yara Birkeland, an autonomous, all-electric, zero emissions container vessel will also be showcased at SMM.

Visit Kongsberg Maritime at stand B6.104

MacGregor

At this year’s SMM exhibition MacGregor will exhibit its smart cargo handling systems to improve cargo transportation efficiency and reduce emissions per transported cargo unit, such as the BoxWave service, part of MacGregor’s PlusPartner concept.

MacGregor will also showcase details of its partnership with ESL Shipping Oy, part of Aspo Plc, with which it has agreed to jointly develop and test autonomous discharging bulk cranes. Autonomous crane operation allows discharging operations to be monitored and controlled from the bridge and eliminates the need for personnel to work in hazardous operational areas.

Other products on display will include systems to reduce noise pollution in ports and operational software that reduces fuel consumption.

Visit MacGregor at stand A1.423

Marlink

Marlink will present a new addition to its cybersecurity portfolio at SMM this year, introducing a new layer of defences based on a real-time maritime focused threat detection platform.

The new product joins Marlink’s existing cybersecurity offering, including systems like SkyFile Anti-Virus, firewalls onboard and ashore, and remote IT access with software management and monitoring using the KeepUp@Sea platform.

New developments in the company’s XChange centralised IT and communications management system for crew welfare and operational applications are also planned to be on display at SMM.

Visit Marlink at stand B6.415

Navidiem

Navidiem Maritime CleanTech company Navidiem will exhibit its latest systems at SMM 2018, which aim to increase the effective use of routing and reduce overall operational costs and emissions.

The company’s systems are built to use real-time data supporting IoT technologies on vessels, working with shipping companies, cruise lines, shipyards, ports, and oil companies globally.

Strategic business partners include Heinemann, MariApps and MNS, who help the company deliver its services to the wider maritime industry.

Visit Navidiem at stand B6.506

Ocean Signal

At this year’s SMM, on a joint stand with ACR Electronics, Ocean Signal will introduce its new ATAI01 Class A and ATBI Class B AIS transponders for increased visibility, collision-avoidance and navigational safety.

The ATA100 Class A AIS-transponder is rated to the IPX7 waterproofing standard, and features large illuminated keys and a 7-inch LCD. The ATBI incorporates SOTDMA, a technology used in 22x8/23x8 series, including ECDIS, MMSI, speed log, and integrated bridge and control systems.

Visit Ocean Signal at stand B1.OG.510

Radio Holland

Radio Holland will be present at its usual location at SMM this year. One of the themes of its 2018 exhibit will be the company’s 55-year partnership with Furuno, with the display of the Furuno FAR-22x8/23x8 series, including ECDIS, FMD3200 and the Furuno Voyager Bridge system, on its stand.

The company will also present the BioSea BWT skid at the exhibition, together with its subsidiary Ventivery, as well as firefighting portable radios, cyber security and other services.

Other equipment on the stand will include Hatteland maritime displays, Danecel VDBs, and VISAT and Iridium satcom systems.

Visit Radio Holland at stand B6.301

Raytheon Anschütz

Raytheon Anschütz will exhibit its portfolio of bridge navigation systems, autopilots, and sensors at the SMM exhibition this year, including the latest versions of its Synopsis NX bridge system architecture, first developed in 2016.

A new range of navigational applications has been developed based on this architecture, enhanced with artificial intelligence, including a new SYNAPSS Radar NX, SYNAPSSS ECDIS NX, and SYNAPSS Conning NX. The software is scalable to include additional functionality beyond basic IMO standards to support specific shipping company requirements.

Raytheon will also exhibit its latest heading and radar sensor technology, as well as the new PilotStar NX autopilot. In addition, the company’s newly established RAN-Dock innovation hub will be present on site to discuss ideas about the future of bridge operations.

Visit Raytheon Anschütz at stand B6.304

Sperry Marine

Sperry Marine will showcase its navigation systems for the commercial and defence maritime industry, alongside other recent product and service developments, at this year’s SMM.

Sperry operates in 10 countries, with an international presence in Europe, the Americas and Asia. The company offers a portfolio of navigation solutions which include; radars, compass systems, steering systems, speed log, and integrated bridge and control systems.

Visitors at SMM can enjoy a virtual reality experience at the stand and a look at Sperry’s New Generation Bridge. Sperry experts will also be on hand to discuss further details of the company’s range of products.

Visit Sperry Marine at stand B6.606

V. Group

London-headquartered global marine services provider V. Group will focus on digital transformation and mobility at SMM 2018, with the ShipSure 2.0 marine digital platform for the management of business and operational data.

ShipSure 2.0 is designed to give V. Group clients real-time data on their desktop or on iOS/Android tablets and smartphones anywhere in the world, to support data-driven decision making using real-time information from areas like marine technical, safety & compliance, procurement, crewing and finance.

V. Group will also highlight new developments in condition based monitoring on its stand, with a specific focus on helping clients prepare for IMO’s new 2020 sulphur limits, through its engineering-focused company SeaTec.

Visit V. Group at stand B3.EG.105

Acniia

Mobile apps for access to vessel data at stand B3.EG.105
The SUPERTRACK is the perfect solution for ships looking for VSAT communication network with broadband speed at sea. Through out 3-axis stabilization solution, you may enjoy all the functions of VSAT to stay in touch with your network via high speed access to the internet, email, multiple VoIP phones and more.
Only allowing the messages that are important for your crew and your business.

ORILLA MAIL
• Safe
• Low-cost
• Future proof...

WHY SETTLE FOR LESS?

For more information contact Port-IT

www.port-it.nl
+31 (0)10 260 00 41
sales@port-it.nl